

PROJECT BRIEF

1. IDENTIFIERS:

PROJECT NUMBER:	CO-GM-P066646
PROJECT NAME:	Caribbean Archipelago Biosphere Reserve: Regional Marine Protected Area System
DURATION:	4 years
IMPLEMENTING AGENCY:	World Bank
EXECUTING AGENCY:	CORALINA
REQUESTING COUNTRY OR COUNTRIES:	Colombia
ELIGIBILITY:	Colombia ratified the CBD on 24 November 1994 in national law 165 of 1994
GEF FOCAL AREA:	Biodiversity
GEF PROGRAMMING FRAMEWORK:	Coastal and marine ecosystems operational program (OP # 2)

2. SUMMARY:

The objective of the project is to conserve biodiversity and ensure sustainable use of the Archipelago's coastal and marine resources while enhancing environmental equity by implementing a regional system of marine protected areas zoned for multiple-use and managed to reduce human threats and to protect globally important sites of biodiversity in cooperation with the local community.

3. COSTS AND FINANCING:

GEF:	Project:	US\$ 975,000
	PDF:	US\$ 25,000
	Subtotal GEF:	US\$ 1,000,000
CO-FINANCING:	CORALINA	US\$ 2,112,000
	Other	US\$ 1,068,000
	Total Co-Financing	US\$ 3,180,000
TOTAL PROJECT COST:		\$ 4,155,000
+ BLOCK A		\$ 4,180,000

4. OPERATIONAL FOCAL POINT ENDORSEMENT:

Name: Luis Fernando Gaviria **Title:** Acting Minister

Organization: Ministry of the Environment **Date:** 18 March 1999

Name: Claudia Martinez Zuleta **Title:** Vice Minister and Acting Minister

Organization: Ministry of the Environment **Date:** February 2000

6. IA CONTACT:

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**GLOBAL
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COLOMBIA

**Caribbean Archipelago Biosphere Reserve:
Regional Marine Protected Area System**

GEF Medium-Sized Project

Project Brief

8 March 2000

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LIST OF ACRONYMS USED IN THE PROJECT DOCUMENT

Acronym	Complete Name
AGORA	Assessment of Group Options with Reasonable Accord
CARIBWA	Caribbean and Western Atlantic Marine Educators Association
CARICOMP	Caribbean Coral Reef Monitoring Program
CAS	Country Assistance Strategy
CBD	Convention on Biodiversity
CMC	Center for Marine Conservation
CORALINA	Corporation for the Sustainable Development of the Archipelago of San Andres, Old Providence, and Santa Catalina
COSALC	Coast and Beach Stability in the Caribbean project
DIMAR	Division Maritima y Portuaria
EIA	Environmental impact assessment
EEZ	Exclusive economic zone
GEF	Global Environment Facility
GIS	Geographic information system
IRF	Island Resources Foundation
INCO-DC	International Cooperation with Developing Countries
INPA	Instituto Nacional de Pesca y Acuicultura
INVEMAR	Instituto Nacional de Investigaciones Marinas
IUCN	World Conservation Union
LAC	Latin American and Caribbean region
MAB	Man and the Biosphere programme
MARPOL	International Convention for the Prevention of Pollution from Ships
MPA	Marine protected area
MSP	Medium sized project
NMEA	National Marine Educators Association
NGO	Non-governmental organization
OP/SC	Old Providence and Santa Catalina Islands
PDF	Preparation and Development Facility
POT	Plan de Ordenamiento Territorial
SIMAC	Sistema de Monitoreo de Arrecifes de Colombia
SINA	Sistema Nacional Ambiental
STAP	Scientific and Technical Advisory Panel
UNCLOS	United Nations Convention on the Law of the Sea
UNESCO	United Nations Educational, Scientific, and Cultural Organization
WB	World Bank

PROJECT SUMMARY

PROJECT IDENTIFIERS
<p>1. Project Name Caribbean Archipelago Biosphere Reserve: Regional Marine Protected Area System</p>
<p>2. GEF Implementing Agency World Bank</p>
<p>3. Country in which the Project is Being Implemented Colombia</p>
<p>4. Country Eligibility Convention on Biodiversity (CBD) ratification, 24 November 1994 : National Law 165 of 1994</p>
<p>5. GEF Focal Area Biodiversity</p>
<p>6. Operational Program/ Short-term Measure This proposal falls within the coastal and marine ecosystems operational program (OP # 2)</p>
<p>7. Project linkage to national priorities, action plans, and programs The Colombian National Policy for Biodiversity (1996) focuses on conservation, knowledge, and sustainable use. National guidelines and strategies include sustainable renewable resource management plans, assessments of economic potential to insure equitable use, protected areas, legislative and institutional strengthening, technology transfer, biodiversity information systems, and community training and participation. National action plans call for coastal and marine-use planning within the framework of integrated coastal management at regional and local levels. Law 99 of 1993 establishes the need for a regional environmental policy in the Archipelago (article 37) and creates the decentralized national environment system to ensure the design and realization of development programs at the regional level. This law also declares the Archipelago a Biosphere Reserve, empowering the Corporation for the Sustainable Development of the Archipelago of San Andres, Old Providence, and Santa Catalina - CORALINA - to carry out the actions necessary to realize this status. National law 136 of 1994 protects the Archipelago's mangroves, and resolution 1426 of 1996 from the Ministry of the Environment defines the Archipelago's corals as special management areas; consequently regional conservation planning for these ecosystems is a priority.</p> <p>Policies set forth in <i>The Environmental Plan for Sustainable Development of the Archipelago :1998-2010</i> (approved, 1998) include protective management strategies for the cays and banks, definition of significant marine areas to protect biodiversity, special measures to protect endangered species, and realignment and demarcation of coastal and marine reserve areas to protect essential fish habitat. The national law 47 of 1993 calls for the creation of exclusive artisanal fishing areas. Executive Resolution 023 of 1970 established a National Reserve Zone in San Andres Bay from Johnny Cay to Haines Cay which is included in the IUCN/OAS/NPS list of reserves requiring management support. A priority stipulated by the National Constitution is the development of programs to insure community involvement in environmental protection, resource-use management planning, and decision-making processes (articles 2 and 79). Additionally, the National Constitution gives the native residents of the Archipelago special status as an ethnic minority group with a social and cultural identity distinct from the dominant society, requiring that special regional programs be developed to protect their environment and traditional culture (article 310).</p>
<p>8. GEF National Operational Focal Point and Date of Country Endorsement The project concept received official support from the Colombian Ministry of the Environment in the capacity of National GEF Focal Point in a letter sent to Ms Christine Kimes and signed by Mr. Luis Fernando Gaviria, acting Minister, on 18 March 1999. In February of 2000, the project brief was endorsed by the same office in a letter to Ms Kimes from Ms Claudia Martinez Zuleta, Vice-minister and acting Minister of the Environment.</p>

PROJECT OBJECTIVES AND ACTIVITIES	
<p>9. Project Rationale and Objectives</p> <p>The rationale of the project is to conserve biodiversity and ensure sustainable use of coastal and marine resources in the Archipelago while enhancing equitable benefit distribution for the community.</p> <p>The objective is to design and implement a system of marine protected areas (MPAs) zoned for multiple-use and managed to reduce human threats and to protect globally important sites of biodiversity in cooperation with the local community.</p>	<p>Indicators</p> <ul style="list-style-type: none"> • A minimum of (2,000) km² of significant corals, mangroves, and seagrass beds legally protected within a system of 4 larger MPAs. • Endangered and threatened species conservation plan developed with indicators of change for (5) key species. • Resource monitoring program including Coral Mortality Index and indicators of (5) key fish species designed. • Management agreements established with a minimum of (2) stakeholder groups, especially fishers (artisanal and industrial) and water sports operators.
<p>10. Project Outcomes</p> <p>1. Ecological and socioeconomic information needed for MPA design and management collected, systematized, and available to local stakeholders.</p> <p>2. MPA system legally enacted with policies and regulations established.</p> <p>3. Integrated management and zoning plan designed in agreement with the community and under implementation with active stakeholder involvement</p> <p>4. Stakeholders trained in resource management and ways to reduce human threats to marine and coastal ecosystems to ensure long-term biodiversity conservation and sustainable use (institutions, NGOs,</p>	<p>Indicators</p> <p>1.1 Information centers (2) strengthened in San Andres and Old Providence and Santa Catalina (OP/SC). 1.2 MPA system description and background document distributed (50) (Integrated Management Plan, Part I).</p> <p>2.1 Legal declaration enacted delimiting external boundaries for the system of 4 MPAs. 2.2 Management regulations that assure equitable use established for interior zones of the 4 MPAs (no-entry, no-take, artisanal fishing, special use, and buffer areas). 2.3 Policies established and supported with regulations that reduce human threats; particularly for fisheries, water sports, tourism, and water quality. 2.4 Management structure enacted by stakeholder agreement. 2.5 Enforcement agreement with authorities realized and training program implemented.</p> <p>3.1 Management document on issues and actions distributed (50) (Integrated Management Plan, Part II). 3.2 Zones demarcated in the 4 MPAs. 3.3 Financial sustainability plan covering techniques of revenue generation, benefit-sharing strategies, and evaluation of compensation mechanisms completed. 3.4 Operational handbook completed for 2 MPAs (Integrated Management Plan, Part III). 3.5 Community-based monitoring (2) and enforcement (2) programs functioning in 2 MPAs. 3.6 MPA offices (2) opened in San Andres and OP/SC.</p> <p>4.1 Local stakeholders (200) trained. 4.2 Formal education program with the Christian University accredited and students enrolled (15). 4.3 Affiliation with regional networks (2) realized.</p>

cooperatives, businesses, etc).	
<p>11. Planned Activities to Achieve Outcomes</p> <p>1. <i>Data collection and evaluation.</i> Collect the information needed for management planning and implement the information system.</p> <p>2. <i>Legislation and policy.</i> Enact the MPA system and establish legal and policy frameworks.</p> <p>3. <i>MPA management.</i> Design and implement the integrated management plan in cooperation with the community.</p> <p>4. <i>Capacity building.</i> Strengthen local organizations, train stakeholders, and produce communications.</p> <p>5. Project Management</p>	<p>Indicators</p> <p>1.1 Physical, biological, and socioeconomic assessments of each MPA (4) made including information on threats and vulnerability.</p> <p>1.2 Stakeholder analysis completed.</p> <p>1.3 MPA information management system set up.</p> <p>2.1 Legal diagnostic review and study completed.</p> <p>2.2 Inter-institutional meetings held (12).</p> <p>2.3 Enforcement and policy training programs carried out (2).</p> <p>3.1 Series of stakeholder consultations incorporating conflict resolution and local empowerment realized (4 series: zoning for equitable benefit distribution, management planning to reduce threats, enforcement and monitoring, operational strategies to ensure biological conservation and financial sustainability).</p> <p>3.2 International Project Advisory Board functioning.</p> <p>3.3 Community Commissions (2) functioning.</p> <p>3.4 Mooring and marker buoy (50) permits requested for 2 MPAs.</p> <p>3.5 Zoning maps (4) produced for 4 MPAs.</p> <p>3.6 Economic analysis and financing plan completed.</p> <p>3.7 Community-based monitoring and enforcement action plans (2) developed for 2 MPAs.</p> <p>3.8 MPA office space (2) defined.</p> <p>4.1 Community training programs for target groups completed including workshops, meetings, and events (4: MPAs, water quality issues, sustainable tourism, organizational strengthening).</p> <p>4.2 Stakeholder study tours carried out (2: artisanal fishers, diving industry).</p> <p>4.3 Technical training tours realized (3: biodiversity conservation, MPA operations, fisheries management).</p> <p>4.4 Training courses completed with instruction by outside experts (3: fisheries management, water quality, MPA management and operations).</p> <p>4.5 Formal education program curriculum developed</p> <p>4.6 Education and extension materials developed (booklets-2, flyers-5, buttons-1, posters-4, stickers-1, video-1, announcements and programs in local media).</p> <p>4.7 Stakeholders attend regional conferences (8).</p> <p>5.1 Project accounting system set up.</p> <p>5.2 Financial audits completed.</p> <p>5.3 Evaluations realized.</p> <p>5.4 Final review accomplished.</p>

12. Estimated Budget (in US dollars)		
MSP:	GEF:	\$975,000
	Co-financing:	\$3,180,000
MSP TOTAL:		\$4,155,000
MSP TOTAL + PDF A:		\$4,180,000

INFORMATION ON INSTITUTION SUBMITTING PROJECT BRIEF

13. Information on project proposer

The Corporation for the Sustainable Development of the Archipelago of San Andres, Old Providence, and Santa Catalina–CORALINA- is a public corporate body created by article 37 of the Colombian law 99 of 1993 which established the national environment system (SINA). Institutional functioning began in the Archipelago on 30 June 1995. CORALINA is in charge of administrating the environment and natural resources so as to promote sustainable development within the area of its jurisdiction in accord with legal norms and policies of the Ministry of the Environment. CORALINA's jurisdiction includes the insular area of the Archipelago (approximately 57 km²) along with the territorial waters and Exclusive Economic Zone (approximately 350,000 km²). Because of the significance and fragility of the ecosystems within this department, CORALINA is one of 7 regional sustainable development corporations in the nation with a mandate that combines responsibilities of conservation, planning, and management.

CORALINA's mission is to manage, protect, and recover the Archipelago environment by using appropriate technologies to regulate the supply and demand on renewable resources and by promoting sustainable human development in consultation with the community, in order to better regional quality of life through participation and agreement. Functions include determining and specifying conservation and sustainable resource use, directing environmental land and marine-use planning and zoning, enforcing environmental norms, involving the native community in sustainable resource management, promoting equitable benefit distribution, enacting regulations to protect regional flora and fauna, and developing projects of research, environmental protection, restoration, and sustainable use in conjunction with the state, NGOs, and the private sector.

The main office of CORALINA is on the island of San Andres with a branch office on Old Providence Island that also serves Santa Catalina. The Corporation has 33 permanent staff with from 40-45 consultants contracted annually to carry out special projects. On-going activities include environmental research for management planning, environmental impact assessment, issuing environmental licenses, water quality testing, community clean-ups, education and outreach programs, helping community groups develop active stewardship programs and neighborhood environmental projects, enacting protective legislation and law enforcement, and ecosystem monitoring in cooperation with the regional CARICOMP, COSALC, SIMAC, and ReefCheck programs.

Recently completed projects and those in process include establishing environmental impact assessment and permit requirements, developing GIS and laboratory facilities, reforesting degraded farmlands and mangrove areas, recovering gullies and quarries, species inventories and management plans (sea turtles, lobster, conch, land crabs), benthic habitat mapping, establishing a regional mangrove park, realizing the land-use plan for Old Providence and Santa Catalina and the environmental management plan for the Archipelago, beach profiling, developing and implementing the San Andres groundwater management plan, application to the UNESCO World Network of Biosphere Reserves, solid waste management training, installing pilot septic systems, sustainable tourism training and industry greening, and organizing and strengthening environmental NGOs.

14. Information on executing agency (if different from above): Same as above

15. Date of initial submission of project concept: 18 March 1999

INFORMATION TO BE COMPLETED BY IMPLEMENTING AGENCY

16. Project identification number: CO-GM-66646

17. Implementing Agency contact person:

- Christine Kimes, Global Environment Coordinator, Washington, DC

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• Juan Pablo Ruiz, Task Manager, Bogota, Colombia
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18. Project linkage to Implementing Agency program(s)

The project is consistent with the World Bank's overall objective for the Country Assistance Strategy (CAS) for Colombia which is to achieve sustainable development with continual reduction of poverty and improvement of social conditions in an environment of peace. The CAS recognizes Colombia's global environmental importance and identifies environmental protection and conservation combined with macroeconomic stability to be essential elements to ensure sustainable development. This project contributes to the CAS's strategic focus on sustainable development to: i) improve natural resource management and strategic ecosystem conservation; ii) strengthen the effectiveness of the decentralized environmental management system and seek partnership opportunities with the private sector, NGOs and academia; and (iii) promote employment opportunities for the disadvantaged through environmentally sustainable projects.

World Bank project support related to biodiversity conservation and sustainable use is as follows:

The Natural Resources Management Program (WB/3692-CO) is related to this project proposal through the following components: (i) analyzing and strengthening regional environmental bodies, and (ii) sustainable management of the National Parks.

The WB/GEF project *Sustainable Use of Biodiversity in the Western Slope of the Serranía del Baudó* (MSP) is being implementing in the Choco region, within operational programs 2 (Coastal, marine, and freshwater ecosystems) and 3 (Forest ecosystems) with Fundación Natura Colombia as executing agency. The objective of this MSP is the development of a strategy for the sustainable use of biodiversity in the western slope of the Serranía del Baudó and the marine resources of its coastal area in a joint effort between governmental institutions and civil society, designed to benefit local communities.

Four additional WB/GEF projects are under preparation in other parts of Colombia:

- 1) *Conservation of Biodiversity in the Sierra Nevada de Santa Marta*. Executing Agency: Fundación Prosierra Nevada de Santa Marta. The objective of this project is to conserve, restore and promote sustainable use of the mosaic of tropical ecosystems in the Sierra Nevada de Santa Marta (GEF-Council approval, December 1999).
- 2) *Conservation and sustainable use of biodiversity in the Andes region*. Executing Agency: Instituto von Humboldt. The project's development objective is to increase conservation, knowledge, and sustainable use of globally important biodiversity in the Colombian Andes. (Block B granted)
- 3) *Conservation and Sustainable Development of the Mataven Forest* (MSP). Executing Agency: Etnollano. The objective of this MSP is to support the establishment and demarcation of indigenous territory as a strategy for natural resources conservation. It is working on the creation and management of the first "Indigenous National Park" as a strategy for conservation and sustainable use of biodiversity in the Mataven forest in the Amazon region. (Block A granted)
- 4) *Community Based Management for the Naya Conservation Corridor* (MSP). Executing Agency: Fundación Proselva. The objective of this project is to develop and implement a community-based biodiversity management and monitoring plan, endorsed by local communities and government, to be the long term guide for future development in the Naya river basin of the Choco region. (Block A granted) .

1. PROJECT DESCRIPTION

A. RATIONALE AND OBJECTIVES

Biological

The Archipelago of San Andres, Old Providence, and Santa Catalina is located in the southwestern Caribbean and is Colombia's only oceanic and West Indian department. One of the most isolated island regions in the Americas, the Archipelago includes 3 very small inhabited islands - San Andres, Old Providence, and Santa Catalina - as well as several uninhabited cays, with a total insular area of 57 km² and a marine area of around 350,000 km². The exclusive economic zone (EEZ) surrounding this Archipelago includes nearly 10% of the Caribbean Sea (Potter, 1999). The island of San Andres lies approximately 130 miles east of Bluefields, Nicaragua; 450 miles south of Grand Cayman Island; and 500 miles west-northwest of Cartagena, Colombia. Old Providence and Santa Catalina (OP/SC) - which are joined by a footbridge - are 48 miles NNE of San Andres.

Although little studied, the region is defined as a secondary Endemic Bird Area and a center of high or very high marine endemism; additionally, the western Caribbean has been identified as a major site of coral and fish diversity and is considered a biodiversity "hot spot" (Roberts, 1998). The oceanic reefs of the Archipelago make up one of the most extensive and productive reef systems in the Western Hemisphere and include 2 barrier reefs surrounding the main islands of San Andres and Old Providence, 5 large atolls, and other less well defined coral banks that extend for more than 500 km along the Nicaraguan rise; the OP/SC barrier reef alone is 32 km long and covers an area of 255 km², making it one of the largest reefs in the Americas (Geister, 1996). The Archipelago's reef formations are particularly complex because of the open oceanic location and adaptation to heavy wave action. The barrier reefs windward of the inhabited islands enclose lagoons rich in seagrass beds as do the atolls to the north and south. Around San Andres and OP/SC, the coastal mangrove swamps complete highly intact and productive coral reef ecosystems.

Coral reefs are second to tropical rainforests in the numbers of species they contain, and rival or may even surpass rainforests in terms of productivity and taxonomic diversity. Thirty of the 35 phyla known to science are found in coral ecosystems with 93,000 species identified and estimates as high as 1 million yet to be identified. In the Archipelago, reef ecosystems sustain both biodiversity and the local economy - supporting fisheries, tourism, and coastal protection. Healthy reefs produce marine species that provide food and income for artisanal and subsistence fishers of the islands. Corals located in coastal waters play an important role in tourism by attracting snorkelers and divers as well as providing the white sand for the Archipelago's beaches. In small tropical islands the tourism value of coral reefs has been estimated to range from US \$3,000/ km² in low potential areas to US \$500,000/ km² in high potential areas (Cesar, 1996). Nearshore reefs also play a key role in dissipating wave energy, protecting the coastline from storms and wave erosion. The net benefit of this coastal protection has been estimated to vary between US \$25,000/ km² and US \$550,000/ km² depending on the value of coastal infrastructure (ibid). Additionally, some studies indicate that corals help counteract global warming by sequestering carbon.

The value of healthy, productive reefs continues to rise given that reef health is in decline worldwide, and Caribbean reefs are particularly threatened because of the sea's small size and regional interconnection from currents (UNESCO, 1994). The significance of coral reefs to global biodiversity is profound, and good coral health is essential to the survival of small tropical island communities where reef ecosystems are judged to be the breeding ground for 90% of locally harvested sea life. In the remote small islands of the San Andres Archipelago, the death of the reefs and associated mangrove and seagrass ecosystems

would result in the destruction of the native culture along with the islands' economy and quality of life. And in global terms, conservation of these regionally unique and vulnerable ecosystems is vital to close the gap in biodiversity protection and management that exists between the southeastern Caribbean islands and Belize as well as in the southern marine area of the Mesoamerican Biological Corridor. The aim of this project is to conserve these globally important sites of biodiversity through the implementation of a system of marine protected areas (MPAs) zoned for multiple-use in agreement with the local community.

Despite limited biological studies within the Archipelago, 57 species of coral and 273 species of fish representing 54 families have been identified with 2 endemics (Diaz, 1999). Mangrove swamps and outlying cays are primary bird habitats; 18 resident species and 76 migrants have been recorded including 2 threatened endemic species and several endemic subspecies. The Archipelago is at the edge of the western flyway and identified migrants include species of Charadriiformes, Ciconiiformes, Passeriformes, Anseriformes, Columbiformes, Gruiformes, Coraciiformes, Falconiformes, and Pelecaniformes (Bond, 1980 and Hilty, 1986). The Archipelago supports other noteworthy species, providing feeding and nesting areas for sea turtles (hawksbill, green, leatherback, and loggerhead) and sea bird colonies (man o'war, boobies, and terns). Several species of coral, fish, and avifauna are listed on the IUCN Red List along with marine turtles. Important commercial species include queen conch (*Strombus gigas*), spiny lobster and spotted spiny lobster (*Panulirus argus*, *P. guttatus*), and food fish such as snappers, groupers, and reef associated species.

Consistent with guidelines for GEF Biodiversity Operational Program 2, the proposed MPAs are planned to be a comprehensive system based on in situ conservation and sustainable use. Complete marine and coastal ecosystems representative of the tropical region are included: a variety of coral formations, seagrass beds, mangroves, beaches, and deep water areas. In this way, the widest goals of global biodiversity conservation and recovery can be met as habitats that support both coastal and marine plants (mangroves, ferns, epiphytes, seagrass, seaweed, algae) and endemic, resident, and migrant animals (fishes, reptiles, birds, invertebrates, fungi, micro-organisms) form the protected areas. Primary project objectives include conservation of these critical habitats to protect and restore species diversity, sustainable marine and coastal resource use, and equitable benefit distribution.

Socioeconomic

The native islander population of the Archipelago has the legal protection granted to ethnic minorities by the Colombian constitution of 1991 and is distinct within the nation for characteristics that include Anglo-puritan/African heritage, Protestant religious tradition, and English mother tongue. San Andres, with an area of 25 km², has an official population of 61,047 and an estimated population of over 80,000 - a figure that does not include the floating population of seasonal workers nor the steady stream of tourists – making it the most densely populated island in the wider Caribbean region with at least 2,442 inhabitants per km². The free port designation given to San Andres in the 1950s shifted the economic base away from agriculture and fishing, beginning a process of economic and political marginalization of the native islanders. The uncontrolled influx of immigrants seeking work in the rapidly expanding tourism and commercial sectors along with economic incentives used to encourage outsiders to settle in San Andres have led to impoverished social conditions, inequitable benefit distribution, divisive cultural tensions, and a decline in quality of life. This situation has been exacerbated in the past decade by the economic and political crises affecting Colombia and by the collapse of the free port tourism model that resulted from loosening trade restrictions on the mainland. Attractions must be developed to appeal to sustainable tourism markets; appropriate alternatives include eco-tourism, sport diving, and yachting. At the present time, the main economic activities of continental residents are tourism, commerce, and government employment while for native islanders they are government employment, artisanal fishing, tourism, and traditional agriculture.

In contrast, the tiny islands of Old Providence and Santa Catalina (OP/SC) are among the least environmentally and culturally degraded locations in the wider Caribbean region, with an area of 18 km² and a population of 4,140. The traditional economic base of fruit farming, cattle and small animal raising, and fishing declined in the 1970s as a result of drought and disease coupled with increased importation of cheap foodstuffs. These factors, combined with policies that hindered growth of private enterprise, have resulted in a dependence on municipal employment. The national plan to severely cut the number of government jobs in the year 2000 will worsen the already low economic status in both OP/SC and San Andres. Unemployment is high and unless alternative forms of sustainable resource use are developed poverty, environmental degradation, and burgeoning social problems will increase. Along with government employment, the main economic activities in OP/SC are tourism, artisanal fishing, home industries, and traditional agriculture.

In regard to marine resource use, the existing open-access regime and lack of marine management lead to conflicts between artisanal fishers and divers, conservation interests and resource users, motorized and non-motorized water sports activities, bathers and water sports, divers and other water sports, etc. However, the most extreme conflict at the present time centers around industrial fishing which takes place primarily in the area of the northern cays. Prior to the new constitution of 1991, Colombian authorities operated under a centralized government system which in terms of fishing meant that this activity was regulated by the National Institute of Fishing and Aquiculture (INPA) in Bogota. Although the law 47 of 1993 called for local autonomy in the issuing of fishing licenses, permits, and concessions through the establishment of a departmental fishing board, INPA did not comply with this law until its resolution 568 of 29 November 1999 which states that this power will be officially delegated to the department in February 2000 (presently rescheduled for May), so industrial fishing licenses have traditionally been issued on the mainland to companies that have no local base, employ no islanders, and generally land no product in the Archipelago. Annual quotas and fisheries management policies have also been established off-island without adequate studies or civic participation. Local stakeholders have found these quotas to be inequitable (for example, the INPA-established quota for conch in 1999 was 200 tons with 3 allotted to artisanal fishers). As stipulated in resolution 568, after May of this year the departmental government will have the responsibility of implementing the Departmental Fishing Board and other institutional mechanisms needed to comply with the law 47. Successful functioning of the Departmental Fishing Board will ensure that actions related to fisheries licensing are carried out locally, but the INPA and Ministry of Agriculture have retained the power to set quotas. Consequently, this delegation of functions is regarded as unsatisfactory by artisanal fishers, native rights groups, and other Archipelago inhabitants who favor decentralized resource management.

Major issues that have resulted from this situation are the increasing difficulty of access to collective fishing grounds by artisanal fishers, failure to respect or acknowledge traditional fishing rights and sea tenure, demands for local autonomy in licensing and management, lack of benefit to the island community, severe over-fishing including exploitation of threatened and endangered species, and neglecting to enforce existing fisheries regulations that include gear restrictions and closed seasons. Besides adding to the decline in local income generated from fishing, foodfish shortages, and rising seafood prices, artisanal fishers report that increasingly complicated and expensive centralized permitting procedures limit their access to the northern cays which causes them to over-exploit the more easily accessible southern area with resulting losses of biodiversity and environmental quality. In consultations with the diving industry on the islands, the belief that over-fishing by off-island industrial vessels is severely reducing the marine biodiversity that attracts sport divers is also stressed.

Along with over-fishing and capturing immature and egg-bearing individuals, most threats to regional biodiversity supported by the Archipelago's reef ecosystems result from poorly controlled human activities that are currently exacerbated by the over-population in San Andres, the inadequacy of

municipal solid and liquid waste treatment, the lack of marine and coastal management and effective enforcement, and growing social problems that lead to over-exploitation such as poverty, drug addiction, and inequity. Primary land- and sea-based threats presently identified include nutrient enrichment from sewage outfalls and septic leachate (especially in San Andres); sedimentation from poor land-use practices and deforestation (especially in OP/SC); over-fishing including reef species and algal grazers (throughout the Archipelago but the main threat in the northern and southern areas); reduced water quality from inadequate waste management systems along with direct dumping of wastes; and physical damage from anchors, groundings, contact, and souvenir extraction.

Legislation and policy

This project complements Caribbean regional actions and international directives of biodiversity conservation such as Agenda 21 and the Convention on Biodiversity. This convention (national ratification, law 165/95) calls for the development of protected areas in its Marine and Coastal Action Plan delineated by the Jakarta Mandate (November, 1995) which also emphasizes the establishment of responsible fishing policies, sustainable artisanal fisheries management, and respect for traditional sea tenure. The IUCN divides the world into 18 oceanic regions to establish a global representative system of MPAs in which the wider Caribbean is region 7 (Kelleher, 1995). The World Bank map of this region (ibid.) reveals a serious lack of MPAs in the western Caribbean; except for a handful of reserve areas on the Central American coast, there are no functioning MPAs in this section. The Convention for the Protection and Development of the Marine Environment of the Wider Caribbean Region requires special management and protection, and the Protocol to this Convention demands the establishment of protected areas to ensure endangered species conservation. The United Nations Convention on the Law of the Sea exacts that coastal states develop conservation and management measures to ensure that living resources in the EEZ are not endangered by over-exploitation.

At the national level, Colombia has enacted legislation that can most effectively be implemented by establishing MPAs. The Constitution (article 310) gives Archipelago natives special status as an ethnic minority group with a cultural identity distinct from the dominant society, requiring that special programs be developed locally to protect their environment and culture; the survival of which depend on coastal and marine resources and the natives' traditional rights of tenure to the Archipelago's marine areas. Law 99/93 declared the Archipelago a biosphere reserve and named CORALINA as the agency responsible for realizing this delegation at the national and international levels. Law 47/93 calls for the establishment of artisanal fishing areas in the Archipelago, law 136/94 protects the Archipelago's mangroves, resolution 1426/96 defines the Archipelago's corals as special environmental management zones, and executive resolution 023/71 declares a National Reserve Zone in San Andres Bay from Johnny Cay to Haines Cay which is included in the IUCN list of reserves requiring management support. Resolution 1021/95 established the only national park in the Archipelago, Old Providence McBean Lagoon, which includes a coastal and marine component that will be strengthened by the implementation of a regional system of MPAs. Locally *The Environmental Plan for Sustainable Development of the Archipelago :1998-2010* (approved, 1998) requires the delimitation of marine areas to conserve biodiversity, special measures to recover endangered species, and realignment and demarcation of coastal and marine reserves to protect species habitat.

B. CURRENT SITUATION: *Baseline Course of Action*

Past project-related activities

As the regional autonomous environmental authority established by the law 99 of 1993 that set up the National Environment System (SINA), the Corporation for the Sustainable Development of the Archipelago of San Andres, Old Providence, and Santa Catalina -CORALINA- has been functioning in the Archipelago since June 1995. From 1995 through 1999 a number of activities were carried out by this agency that provide a foundation of environmental research and management that determines the current course of action in the Archipelago. Selected past activities related to coastal and marine resource management are separated into key areas relevant to the project.

1) *Data collection and evaluation.* As an environmental management agency, CORALINA carries out research that is applied to resource management; consequently a number of activities have been completed that increase knowledge about Archipelago marine and coastal ecosystems. Completed habitat and biodiversity studies include mangrove species inventories and characterizations (birds, reptiles, molluscs, crustaceans), conch and sea turtle studies, marine resource mapping (with the exception of Queena/Quitassueño) jointly with INVEMAR, evaluation of sediment transport mechanisms in the San Andres lagoon, and characterization and delimitation of mangrove areas, beaches, and seagrass beds. Research needed to zone the terrestrial areas of the 3 main islands in accord with UNESCO biosphere reserve guidelines (core, buffer, and transition or cooperative areas) has been completed. Inventories have been made of marine effluent discharge points, solid waste dumping points, and degraded agricultural lands. CORALINA is participating in two on-going 3-year coastal and marine research projects with Heriot-Watt University of Edinburgh, one of which is funded by the Darwin Initiative (*Marine Habitat Mapping in the San Andres Archipelago*) and one by the INCO-DC program of the European Union (*Appropriate Marine Resource Management and Conflict Resolution in Island Ecosystems*). In the Darwin project, field work began late in 1998 to collect data on benthic habitats in the coastal waters of the 3 islands. In 1999 during the first year of the INCO-DC project, data on lobster abundance, distribution, and capture were collected, and inventories of land-based threats to marine ecosystems, particularly from tourism, were made. Information was also gathered about resource use, issues, and conflicts from stakeholder groups.

2) *Legal and policy.* CORALINA has completed the policy document that defines environmental planning and management strategies for the Archipelago region, *The Environmental Plan for Sustainable Development of the Archipelago :1998-2010*, along with regional guidelines based on national and international legal norms and policies related to marine and coastal environments, including a review of fisheries legislation and jurisdictions. Regulations have been enacted that regulate spear gun usage and beach management. The draft policy document and preliminary administrative structure for the biosphere reserve have been completed.

3) *MPA management.* The law 99 declared the Archipelago a biosphere reserve and defined CORALINA as the agency responsible for taking the steps to implement this designation. The actions necessary to submit the Nomination Form for the Archipelago Biosphere Reserve to the UNESCO MAB Programme Secretariat will be completed by June, 2000, and the terrestrial area of the islands has been preliminarily zoned in agreement with the local communities. The geographic information system (GIS) has been developed and a number of maps have been completed on terrestrial (geology, human settlements, landscape units, watersheds, vegetation) and marine (mangroves, marine communities, effluent points) aspects needed for coastal and marine management. An analysis of traditional fishing methods and practices has also been completed. The watershed restoration project in OP/SC reduced threats to marine and coastal ecosystems by reforesting hillsides and recovering gullies, and the mangrove project in San Andres restored 19 hectares within the proposed Archipelago regional mangrove park, including planting more than 3,000 trees. The San Andres groundwater management plan was completed in January of 2000 with technical support from the United Kingdom. The only laboratory for monitoring environmental quality in the Archipelago has been established at CORALINA.

4) *Capacity building.* All CORALINA projects include stakeholder consultation, community training, instruction, and outreach as environmental education is considered an important management tool. For example, some of the activities held in 1999 to foster conservation of coastal and marine ecosystems were a sustainable tourism seminar with international presenters, the design of an environmental code of conduct with the local tourism industry, courses on solid waste management, a seminar on sea and shorebirds in the Archipelago, training in agro-forestry, social cartography on marine resource uses and resource distribution, and meetings about coastal and marine ecosystem management. A stakeholder consultation structure of representatives from marine and coastal resource user groups was set up within the INCO-DC project.

On-going and future project-related activities: Baseline course of action

As the environmental management authority for the Archipelago, CORALINA's mandate is to conserve regional ecosystems and promote and control sustainable use in cooperation with the community. Programs of this agency, along with activities and projects of other institutions (both governmental and non-governmental) - including the departmental Agriculture Secretariat, the Christian University, the office of Old Providence McBean Lagoon National Park, INVEMAR, Ecoastur, the Center for Marine Conservation (CMC), and Island Resources Foundation (IRF) - are scheduled for the future in the Archipelago in key areas relevant to this project. These programs form the baseline course of environmental action during the 4 years in which the project would be carried out.

1) *Data collection and evaluation.* Activities within the Darwin project will include continued benthic habitat mapping in the 3 islands using comparative research methods of GIS, photographic transects, side-scan sonar, and satellite imaging (\$30,600). The on-going information needed to successfully implement management plans and monitor management goals for the regional mangrove park and biosphere reserve will be collected (\$155,047). Wetlands throughout the Archipelago will be characterized, and information will be gathered on wetland and terrestrial species (\$58,935). Research on lobster distribution and capture will continue within the INCO-DC project, and a fisheries database will be set up (in coordination with the Charles Darwin Foundation of the Galapagos); information about fisheries management will be collected as well as economic data related to tourism and fisheries throughout the Archipelago (\$31,250). Question-based evaluation will be on-going related to site selection and monitoring programs of water quality, beaches, reefs, mangroves, seagrass beds, and key species (\$133,735). Information needed to characterize and map seaweed abundance and distribution will be collected in San Andres and OP/SC (\$13,900). A joint research cruise to the northernmost area of the Archipelago (Serranilla and Bajo Nuevo) will be carried out by CMC, INVEMAR, and CORALINA (\$53,700). The coral restoration project that will begin later in 2000 will collect and evaluate data on coral health and vulnerability with technical support from CMC, INVEMAR, and the departmental government (\$150,432). IRF will continue to manage and disseminate the electronic San Andres Research list (\$28,800). Baseline costs for these activities are estimated to be \$656,399 with \$537,899 from CORALINA and \$118,500 from other donors.

2) *Legal and policy.* Legal norms will be drafted declaring and delimiting the regional mangrove park and other terrestrial core areas of the biosphere reserve along with regulations needed to achieve management goals (\$51,682). On-going activities will include evaluating technical concepts and writing administrative acts for the environmental impact assessment (EIA) process, responding to environmental complaints, developing and enforcing environmental regulations, and issuing licenses, permits, and *salvo-conductos* (\$63,602). Advisory support will be given to community groups who request legal assistance in developing civic actions related to regional resource management with technical support from other donors, such as that currently being given to the artisanal fishers to establish and strengthen the

Departmental Fishing Board (\$24,000). In the INCO-DC project regulations dealing with marine resource issues including fisheries management will continue to be translated into English for the native islanders, and joint meetings will be held with the environmental education project to educate the community about policy, legislation, and environmental rights (\$45,554). The departmental Agriculture Secretariat will support the issuing of fishing licenses and review regulations and policy through the Departmental Fishing Board (\$16,560). The total baseline is estimated to be \$201,398 of which \$160,838 comes from CORALINA and \$40,560 from other donors.

3) *MPA management*. Future activities related to the biosphere reserve will include completing the management plan and realizing neighborhood-run sustainable development projects (\$121,055). Pilot projects of mangrove oyster and seaweed mariculture will be established (\$55,600). Management plans will be designed and implemented for the proposed San Andres Regional Mangrove Park and for Johnny, Haines, Rose, and Cotton Cays in San Andres Bay (\$104,258). Within the Darwin project, the GIS will be strengthened (\$20,400). Environmental management studies will be made in the INCO-DC project on tourism impacts to the coastal zone and lobster stock recovery (\$31,250). The reforestation project will continue to reduce threats to marine ecosystems from siltation by reforesting degraded hillsides and farmlands in agreement with stakeholders (\$29,970). In San Andres the porous limestone substrate allows land-based pollution to leach rapidly into nearshore waters so actions essential to maintain marine water quality will be implemented in the groundwater management project (\$25,010). The CORALINA laboratory will regularly test groundwater and seawater for a number of parameters and monitor effluents; other continuous activities will include beach monitoring as part of the COSALC project (*Coast and Beach Stability in the Caribbean*), coral reef monitoring at selected sites in San Andres jointly with INVEMAR using CARICOMP and SIMAC methodology and annual community-based coral monitoring with ReefCheck, and mangrove monitoring in San Andres using methodologies from CARICOMP and the Ministry of the Environment (\$169,748). The coral restoration project will expand the number of CARICOMP monitoring sites with INVEMAR, elaborate reef vulnerability and threat maps, and produce community-based water quality action plans with technical support from CMC (\$121,823). Beginning later this year the departmental government will implement the Departmental Fishing Board (\$38,640). The tourism association in OP/SC, Ecoastur, will carry out an 18-month project (funded by Ecofundo) to realize model activities of responsible tourism and environmental conservation with technical support from CORALINA (\$107,835). The Old Providence McBean Lagoon National Park office in OP/SC will continue to manage the marine and coastal area included in the park's jurisdiction (\$39,600). Management baseline is \$865,189 with \$643,114 from CORALINA and \$222,075 from other donors.

4) *Capacity building*. In the coral restoration project, EIA training courses will be given to CORALINA personnel with technical support from CMC, and an education program on reef ecosystems will begin for inhabitants and tourists (\$109,823). Activities in the INCO-DC project will include intensive consulting with resource-user groups; analyzing marine resource issues affecting fisheries, tourism, and conservation; and testing local applicability of the AGORA system of conflict resolution with technical assistance from the Institute of Marine Biology of Crete (\$31,250). On-going programs will include training in GIS and remote sensing, stakeholder field training, beach and mangrove clean-ups, and workshops on groundwater management (\$58,444). Community training in reforestation techniques will continue in San Andres and OP/SC (\$19,980). Local participation in biosphere reserve and mangrove park implementation will continue along with training in grassroots project development (\$143,719). Other activities will include the on-going community outreach program in the churches, support for environmental education activities in educational institutions, strengthening neighborhood environmental NGOs, development of the document centers, the Environmental Stars program for hotels with training workshops and green management guide, educational publications, information campaigns, radio programs, regular donation of videos to local television stations, and production of the Coastal Zone Bulletin (\$143,471). IRF will build local capacity through the San Andres Research list and, along with

CMC, will continue to donate technical reference and general education materials to strengthen the document centers (\$19,200). In OP/SC the Old Providence McBean Lagoon National Park office will realize environmental education activities on coastal ecosystems, some jointly with CORALINA (\$39,600). The Christian University of San Andres will continue with educational programs to build local capacity, particularly directed towards native islanders (\$160,000). Baseline from these activities is estimated to be \$725,487 of which \$482,687 is from CORALINA and \$242,800 from other donors.

5) *Project management.* CORALINA's operational budget will pay for the infrastructure and support services needed to carry out the baseline activities that this institution realizes independently and jointly with other entities within the Archipelago. The primary of these will be rent for office space, utilities, communications services, maintenance of office and field equipment, and staff salaries. CORALINA has 33 permanent staff members, all of whom support project management and implementation. This staff includes all personnel in the general direction, a number of workers in the administrative section (accounting, procurement, and personnel), technicians and professionals in the 3 main departments (environmental management, planning, and education), and support staff (secretaries, receptionists, and launch and vehicle drivers). The baseline cost is estimated to be \$287,748 from CORALINA.

Complementary projects with funding pending include the Archipelago Agenda 21, facilities plans for the regional mangrove park with an associated education and visitor center, sustainable tourism for OP/SC and San Andres, and the development of the regional integrated solid waste management plan. Fund-raising for additional baseline activities related to integrated coastal zone management by CORALINA and technical project partners - CMC, IRF, and the Christian University - would continue throughout the project's 4 years to allow activities to be carried out in areas such as sustainable tourism, marine and coastal ecosystem research, and waste management that would strengthen project scope, help ensure sustainability, and expand the range of participatory opportunities for stakeholders.

C. EXPECTED PROJECT OUTCOMES: *Alternative Course of Action*

The proposed mid-sized project (MSP) is complementary to the baseline described above. The main expected outcomes of the project are the conservation of biodiversity, sustainable use of coastal and marine resources in the Archipelago, and equitable participation of local community members in the economic benefits of such programs. These outcomes will be achieved by designing and implementing a system of marine protected areas (MPAs) zoned for multiple-use, managed to reduce human threats, and designed to protect globally important sites of biodiversity in consultation with the local community. The proposed protected area system is composed of 4 separate MPAs that include the most significant reefs, atolls, mangroves, and seagrasses in the Archipelago region: 1) San Andres barrier reef and coastal waters (incorporating an existing regional marine reserve and proposed mangrove park), 2) Old Providence and Santa Catalina barrier reef and coastal waters (coordination with an existing national park), 3) Southern Archipelago off-shore cays and marine area (including ESE Cay and SW Cay), and 4) Northern Archipelago off-shore banks and marine area (including Roncador and Serrana Cays, Quitasueño or Queen Reef). Detailed information on these 4 sites is given in Annex 2 (biological, existing or proposed cooperative management units, and legislation currently in effect).

Studies of management methods confirm that effective ways to conserve and promote restoration of corals and reef-associated ecosystems include designating protected areas in which uses are restricted, regulating resource uses to insure sustainability, and controlling anthropogenic sources of pollution. Therefore, the proposed MPA system integrates these methods through a plan that employs multiple-use zoning to establish both conservation areas and sustainable use zones that ensure equitable access to the Archipelago's marine and coastal areas combined with legal measures, education, consensus-building, and

community participation and involvement designed to reduce threats and achieve management goals. Overall project methodology emphasizes community participation at the decision-making level to resolve resource use conflicts, empower the native community, integrate threat mitigation into management planning, and achieve equitable distribution of benefits with emphasis on local nature-based tourism and fishing. Outcomes are produced in 4 key areas to reach the goal of long-term biodiversity conservation: 1) *Data collection and evaluation*. Ecological and socioeconomic information needed for MPA design and management collected, systematized, and available to local stakeholders; 2) *Legislation and policy*. MPA system legally enacted with policies and regulations established that assure equitable access to resources and reduce human threats; 3) *MPA management*. Integrated management and zoning plan designed in agreement with the community and under implementation with active stakeholder involvement; and 4) *Capacity building*. Stakeholders trained in resource management and ways to reduce human threats to the marine and coastal ecosystems to ensure long-term biodiversity conservation and sustainable resource use (institutions, NGOs, cooperatives, businesses, etc).

D. ACTIVITIES AND FINANCIAL INPUTS: *Increment needed to enable change*

The project will be realized over a period of 4 years. International technical partners include the Center for Marine Conservation (CMC) with head offices in Washington, D.C. and Island Resources Foundation (IRF) with head offices in the US Virgin Islands. A formal education training program will be realized jointly with the Christian University, a nationally accredited institution of higher learning in San Andres. In order to achieve project objectives, the following activities will be carried out by CORALINA, these partners, other involved institutions, and stakeholder groups:

1) *Data collection and evaluation. Collect the information needed for management planning and implement the information system.* Physical, biological, and socioeconomic assessments that include information on threats and vulnerability will be made for each MPA by a technical team consisting of personnel from CORALINA, INVEMAR, and CMC among others with participation of stakeholder groups to provide the information necessary to complete Part I of the Integrated Management Plan which covers the MPA system description and background. A complete stakeholder analysis will be made that recommends strategies to effect change in designated target groups. Information relevant to biological and social aspects will be collected from the community, including traditional knowledge of the native islanders. The bibliographic database will be designed and entered, and the information management system for the MPAs will be set up by technical partners. All information will be made available to the local community and visiting researchers by strengthening the CORALINA document centers in San Andres and OP/SC with personnel, computer equipment, and basic facilities. Data will also be shared with the Clearing House Mechanism (CHM) set up for consolidating national data on biodiversity trends as well as with the CARICOMP network, COSALC project, and other related Caribbean regional marine resource information networks. Best practices and lessons of interest to worldwide MPAs will be disseminated through information-sharing programs including the internet lists managed by IRF, and publication such as the MPA News, Mangrove Action Project Friday News, and CARIBWA-NMEA newsletter. Baseline costs for these activities are estimated at \$656,399. Incremental costs are considered to be \$255,950 with \$130,550 from the GEF, \$110,000 from CMC, and \$15,400 from IRF.

2) *Legislation and policy. Enact the MPA system and establish legal and policy frameworks.* A diagnostic review will be carried out to analyze existing legislation and policy pertaining to the MPA system by CORALINA and CMC. Regular inter-institutional meetings will be held to involve offices with relevant jurisdictions in formulation of MPA polices and legislation. Policies and norms will be developed with the community that legislate external MPA boundaries, regulate internal management zones (no-entry, no-take, artisanal fishing, special use, buffer zones) to promote equitable access to resources and assure long-term sustainability by controlling human-based threats from inadequate management of fisheries, water sports, tourism, shipping/boating lanes, and pollution. Cooperative agreements with stakeholder groups and institutions will be negotiated. Existing agencies and newly established groups responsible for permitting (Departmental Fishing Board) and enforcement (such as MPA rangers or Marine Park Police) will be trained in MPA policy, legislation, and regulatory methods. The baseline costs for these activities are estimated at \$201,398. Incremental costs are figured to be \$135,100 with \$68,500 from the GEF, \$60,000 from CMC, and \$6,600 from IRF.

3) *MPA management. Design and implement the integrated management plan in cooperation with the community.* A series of activities including workshops and informal and public meetings will be carried out each project year with stakeholders to consult, share information, and make decisions on zoning, management planning, daily operations including enforcement and monitoring, and strategies to achieve long-term goals of biological conservation and financial sustainability; these consultations will take into account the need to resolve conflicts between user groups, empower native islanders, reduce threats, and ensure equitable access to and distribution of resources with emphasis on tourism and fishing. An International Project Advisory Board (made up of individuals and/or organizations with expertise in coastal and marine management) will be set up to function throughout the project with a minimum of one meeting per year in the Archipelago and continuous communication maintained via email, fax, etc. Community Consultative Commissions of stakeholder group representatives will be functioning in San Andres and OP/SC that are involved at the executive decision-making level. Part II of the Integrated Management Plan will be completed covering management issues and actions, and Parts I and II will be published and made available to the public. Each MPA will be mapped with zones physically demarcated using a system of marker buoys, signboards, and geographic coordinates. An economic analysis of the MPA system will be completed, and a program of revenue generation will be designed to ensure financial self-sustainability and local benefit-sharing, particularly as regards nature-based tourism and fishing. Part III of the Integrated Management Plan which are operational handbooks will be written for 2 MPAs as determined during project execution in consultation with stakeholders. An endangered marine species (including sea and shore birds) action plan with key species indicators will be designed along with a resource monitoring program (including key fish species indicators and a Coral Mortality Index). Community-based monitoring programs and an enforcement system that includes new methods such as volunteer watchdog groups, MPA rangers, Marine Park Police, and partnership patrols carried out and financed jointly by community groups and institutions will be developed in agreement with existing authorities. Mooring buoys will be put in place in 2 MPAs with stakeholder involvement in site selection, installation, and shared responsibility for monitoring and maintenance programs. During the final project year, MPA offices will be functioning in San Andres and OP/SC with trained staff, basic facilities, equipment, and an introductory outreach program in place. Baseline costs are estimated at \$865,189. Incremental costs are \$593,300 with \$412,300 from the GEF, \$170,000 from CMC, and \$11,000 from IRF.

4) *Capacity building. Strengthen local institutions, train stakeholders, and produce communications.* Community education programs especially targeted for particular resource user groups on MPAs, sustainable tourism, water quality issues and other human threats, and organizational capacity building will be realized through workshops, meetings, and special events. 2 study tours for artisanal fishers and the local diving industry will take place in which stakeholders visit Caribbean islands for training and information exchange. 3 technical tours will send local environmental management personnel off-island for training in methods of biodiversity and key species conservation, MPA operations, and fisheries management. 3 training courses on MPA management and operations, fisheries management, and water quality will be given to stakeholders including institutions with instruction by visiting experts. A formal education program in environmental management to train native professionals and technicians will be designed and underway in partnership with the Christian University. General education and extension materials will be developed including 2 booklets, 5 flyers, a button, a sticker, and 4 posters. A video and media broadcasts will be produced locally. Caribbean regional bonds will be strengthened by representation at an estimate of 8 conferences. The creation of new participation mechanisms such as the Community Consultative Commissions and community-based monitoring and enforcement programs also builds capacity, and the project training/outreach programs will help consolidate their effectiveness. Baseline costs are estimated at \$725,487. Incremental costs are \$317,650 with \$246,650 from the GEF, \$60,000 from CMC, and \$11,000 from IRF.

5) *Project management.* Incremental expenses related to management of the project alternative will include salaries for a project coordinator and financial project manager who will direct and monitor project activities and advancements. New auditing procedures will also be put in place to satisfy GEF-WB project requirements. The international and Caribbean regional nature of the alternative will require funding for communications. Implementing the alternative will increase expenditures on items like utilities and consumables, in particular office supplies and fuel needed to carry out the extensive marine field work, monitoring, and enforcement required to develop and implement the regional MPA system. The baseline is estimated to be \$287,748. Incremental costs are \$117,000 from the GEF.

These activities will be done in coordination with regional and national conservation and planning initiatives and CORALINA's overall agenda given this agency's mandate to establish integrated coastal management and promote sustainable development throughout the Archipelago. The accredited education curriculum and program will be developed jointly with San Andres' Christian University, and a formal agreement outlining the responsibilities of these two partners will be realized. CMC and IRF are committed to provide technical assistance throughout the project and to spearhead international participation and cooperation. Linked activities will be coordinated with the Mesoamerican Barrier Reef System GEF-WB Project (under preparation). National institutions will be integrated into the project and actively involved according to their fields of expertise. INVEMAR will participate in data collection and monitoring while the National Parks Offices (national and local) will be involved in cooperative management planning, implementation, and training determined by the relationship between the OP/SC MPA and the Old Providence McBean Lagoon Park. Special enforcement programs will be coordinated with DIMAR, and enforcement agreements between responsible institutions and the local community will be realized. Mechanisms in the project ensure that local, national, and regional linkages are established with government institutions, Caribbean regional programs, other marine protected areas, NGOs, and stakeholder groups.

E. SUSTAINABILITY ANALYSIS AND RISK ASSESSMENT

Sustainability factors

A number of factors are present which should provide a solid foundation for long-term sustainability of project activities and outcomes. These include multiple-use marine zoning to achieve long-term management goals designed with a high level of expert assistance, extensive community participation mechanisms, generation of local economic benefits, institutional stability, and international commitment to project goals.

1) *Technical - state of the art zoning of complete marine ecosystems.* The inclusion of associated reef ecosystems in each MPA (including deep water areas surrounding the northern and southern cays) aims for comprehensive biodiversity conservation and large-scale habitat management to increase the effectiveness of spatial control as a marine management tool. Multiple-use zoning of these entire ecosystems delimited in cooperation with resource users will set up no-entry and no-take areas, artisanal fishing zones, special dive sites with features like mooring buoys and snorkel trails, and water sports zones. The extremely high participation level of a number of international MPA and marine management experts in zoning and management planning for this MPA system will ensure state of the art technical design, resulting in optimal resource conservation and sustainable use. Biodiversity conservation will be realized in no-entry and no-take zones that emphasize in situ conservation and monitoring; no-take areas will also promote tourism, diving, research and educational uses. Conflicts are reduced between resource-users by creating areas reserved for artisanal fishing, delineated in collaboration with the fishers themselves, and cooperative management methods determined with water sports operators. Island-wide education about boundaries and permitted uses of each zone combined with training in ways to reduce

human threats to ecosystem health and productivity will promote long-term successful implementation of the zoning and management plans.

2) *Social - fostering local involvement and stewardship.* In order for the project to achieve long-term sustainability, it is essential that the Archipelago community understand the relationship between global biodiversity conservation and local sustainable use including human threats to marine ecosystems and realize that project objectives are essential for the survival of the native culture, both socially and economically. International conservation efforts have shown that chances for long-term success increase relative to the amount of local community involvement in decision-making processes combined with the cultivation of a sense of stewardship. Consequently stakeholder involvement in all phases of project implementation (the 4 key activity areas) along with training in biodiversity conservation, sustainable use, and threat reduction will be emphasized. Given that sustainability improves when fishers, divers, and other users understand the local benefits of biodiversity conservation and are willing to play active roles in management, monitoring, and enforcement, this project will develop community-based monitoring programs and create and train locally staffed enforcement groups such as MPA rangers and Marine Park Police. Other features of the Archipelago MPA system designed to ensure a high level of local involvement include the concurrent formal training program in coastal and marine resource management to prepare the native community for jobs that result from the establishment of the MPA system and an intensive program of conflict resolution.

3) *Economic - promoting local economic benefits and equity.* By conserving the Archipelago's significant sites of global biodiversity, benefits will accrue to the local community that help ensure long-term conservation and sustainable management including artisanal fishing support and fisheries replenishment, improved recreational and tourism opportunities for both the resident and native communities, and job creation. No-take areas will stimulate economic benefits for all classes of the local community from nature-based tourism, sport diving, research, and educational programs, and no-entry and no-take zones are likely to benefit surrounding fisheries in 2-10 years. Although it is not anticipated that the project will cause a short-term loss of benefit for any local stakeholder group, considering that closure of certain areas for conservation should be balanced by improved access to and priority use of other areas, this aspect will be carefully monitored during project implementation and compensation mechanisms will be developed in collaboration with affected users if required.

4) *Institutional - national and international.* As the SINA representative for the Archipelago department, CORALINA was created by the law that enacted Colombia's decentralized environment system and has the nationally legislated status of a regional autonomous environmental corporation. Because of the significance and fragility of the ecosystems within this department, CORALINA is one of 7 regional sustainable development corporations in the nation with a mandate that combines responsibilities of conservation, planning, and management. The Colombian political and economic system is becoming decentralized in accord with national policy and legislation reforms demanded by the new constitution of 1991. This national policy framework is soundly based in constitutional law although the required regulatory systems are not fully functional. These policies include the constitutionally mandated involvement of local communities in environmental decision-making (article 79) and special provisions that further strengthen the territorial rights of the Archipelago's native islanders (article 310). All CORALINA projects and actions are based on these directives; consequently the agency enjoys a high level of popular support which further contributes to its institutional stability. CORALINA priorities that help ensure project sustainability include strengthening global ties, creating international bonds, pursuing advanced training for islander resource managers, and supporting the national commitment to decentralized environmental management understanding that local institutional and community empowerment will ultimately result in better resource management decisions and improved local resource access, causing a self-reinforcing cycle of ecological and social sustainability.

In a few short years, CORALINA has established a number of strong international and regional ties with NGOs and Caribbean programs; many of whom participated in project planning and have made a commitment to both project implementation and long-term MPA system functioning. In addition to NGO project partners CMC and IRF, these organizations (both non-governmental and governmental) include among others the international CORAL program, the CARIBWA chapter of the National Marine Educators Association, the Mangrove Action Project, the Barbados Coastal Zone Management Unit, and the Caribbean Fishery Council. Three major international conservation NGOs with a strong presence in Latin America and the Caribbean (LAC) - the Nature Conservancy (which has designated the Archipelago one of 9 priority coastal ecosystems in LAC), the World Wildlife Fund, and Conservation International - have established preliminary contact with CORALINA expressing an interest to examine possible avenues of involvement in the conservation work of this agency.

Risk factors

Risks to the sustainability of the project were identified during project preparation and taken into account in project design. These include lack of commitment from authorities, inability to achieve financial self-sustainability, loss of community interest, and failure to reduce human threats to the marine ecosystems.

1) *Lack of commitment from other government agencies that share jurisdiction over marine and coastal management with CORALINA, resulting in a failure of implementation and enforcement.* Primary institutions whose active support is needed to ensure effective implementation of the MPA system - particularly in terms of enforcement and compliance with new regulations and policies that control industrial fishing and define use zones - include the Departmental Fishing Board (Agriculture Secretariat), DIMAR (navy, coast guard, and port captains), INPA, and Port Authority. To mitigate this risk the project will include an institutional presence in data collection and evaluation, policy and management planning, and training in aspects relevant to MPAs. A comprehensive analysis of jurisdictions and legal aspects will be made by CORALINA's legal department with assistance from CMC. Regular meetings will be facilitated between responsible institutions, both local and national. New enforcement mechanisms based on partnerships and cooperative programs with the community, regional authorities (CORALINA, Departmental Fishing Board) and national authorities (DIMAR) will be extensively evaluated using the project's consultative structure; the aim will be to negotiate and activate a formal agreement between stakeholders and authorities. A community-based monitoring and enforcement plan will be designed in collaboration with responsible institutions, cooperative agreements will be negotiated, and a training program in policy, legislation, and regulatory methods will be carried out. These activities will be coordinated by a lawyer who forms part of the project team.

2) *Lack of support from institutions that accredit and supervise educational programs.* The formal education program will be designed in conjunction with the Christian University, an accredited institution of higher learning, and the curriculum program will be modeled on international and national environmental programs in keeping with national accreditation standards for curriculum development. The coordinator of the formal education program will make up part of the project team and will have access to the facilities of both CORALINA and the Christian University. Other project team members, CORALINA technical and professional personnel, cooperating institutions, and the International Project Advisory Board will assist in curriculum development, teaching modules, and related activities. During the duration of the project, funding strategies to insure the long-term success of this joint program will be investigated, developed, and applied.

3) *Inadequate long-term funding.* MPAs in developing nations frequently fail to achieve objectives, one of the main reasons for this failure being insufficient financial resources to develop and implement

management plans. In order to ensure long-term sustainability, the MPA system must seek methods to generate funds to pay the continuing costs of management including monitoring and enforcement. Therefore, a complete financial analysis of the MPA system will be made during the project including a cost/benefit analysis and a financial sustainability program. Methods of income generation used to support protected areas worldwide will be evaluated with stakeholder groups to develop and implement strategies to achieve self-sustainability of the MPA system. Since dive tourism and eco-tourism are among the fastest growing types of tourism, while tourism itself is becoming the world's largest industry, most of the financial mechanisms used to generate funds within the MPAs will be directly or indirectly tourism-dependent. Some of the income-generating mechanisms that will be evaluated include tourist and mooring fees, licenses and permits (fishing, diving, bathing, boating), special events and fund raisers, souvenir sales and concessions, memberships, promotion of research and educational opportunities, conservation levies, tourist tax and/or percentage of airport head tax, performance bonds, government subsidies, grants, and partnerships between government, the private sector, and NGOs. Issues related to setting up an environmental trust fund will also be considered and acted upon if deemed viable. Activities related to achieving financial sustainability will be coordinated by an economist on the project team.

4) *Lack of long-term support and commitment by the local community.* Since this project grew out of local demand for marine resource management, support for this project is very high with a strong community commitment. However, the existing level of support also leads to high expectations which may be difficult to satisfy, posing the threat that if the project is not perceived to be affecting positive change, the community will lose interest. To mitigate this risk, the methodology is based on stakeholder involvement and bilateral consultation at every stage of project execution. Consultations and training activities will be predicated on respect for traditional sea tenure, techniques to build consensus and resolve conflicts, and the need to achieve equitable benefit distribution and increase local autonomy in resource management. The Community Consultative Commissions will involve local stakeholder groups at the executive decision-making level, and on-going participation activities and events will be directed towards different levels, classes, and ages of the community. Activities and indicators will provide practical results throughout project implementation as well as long-term success; especially in prompt MPA legal enactment, zoning plans, fisheries and tourism management, information dissemination and availability, and training. This project will be coordinated with complementary baseline actions that enhance short-term project results like strengthening the Departmental Fishing Board, setting up the regional mangrove park, stimulating native-based eco-tourism, and executing water quality action plans.

5) *Failure to reduce anthropogenic threats to the coastal and marine ecosystems.* a) Internal threats to the MPAs. The proposal to establish a regional MPA system emerged from the search for solutions to existing threats to marine and coastal ecosystems. CORALINA, as the environmental management authority, in consultation with local stakeholders determined that a viable management tool to reduce human-based impacts on biodiversity would be to establish locally managed MPAs in 4 productive but highly threatened areas. Delimiting management zones for conservation, artisanal fishing, and water sports designed and implemented in agreement with stakeholders will provide a legal and spatial basis for controlling the severe threats to the region's marine ecosystems that result from the open-access regime, particularly in nearshore San Andres and OP/SC waters, and from the severe over-fishing in the northern cays by off-island national and international fishing vessels. Management policies and regulations within zones will be designed to promote sustainable use and reduce threats from activities such as dumping, over-exploitation, use of illegal fishing gears, and anchoring. Involving stakeholders in decision-making to determine regulations and set limits for their own use zones will create a sense of stewardship and foster voluntary compliance, while community training programs will be carried out to develop awareness of human-based threats to water quality, habitat conservation, and species survival.

b) External threats to the MPAs. As the environmental authority for the Archipelago, CORALINA has the power to regulate land- and sea-based threats that will come from outside the boundaries of the MPA system. Since this agency's activities are geared towards controlling threats to the Archipelago's ecosystems, the extensive mandate and jurisdiction of CORALINA differentiate this system from many MPAs in which management power stops at MPA boundaries (frequently on land at the mean high water mark). National authorities including the Presidency, the Ministry of the Environment, and DIMAR form part of the CORALINA directive board so this board will assist with threats of national origin. The MPA system will also form part of the Archipelago biosphere reserve structure which will contribute to controlling and reducing threats to regional ecosystems and biodiversity. Given that marine biodiversity is also threatened by international actions, treaties signed by Colombia including MARPOL, UNCLOS, and the Cartagena convention will help control international threats. In addition, this project will be coordinated with baseline activities to develop sustainable tourism and reduce threats to coastal and marine ecosystems through CORALINA's future or on-going programs of reforestation, coral restoration, environmental education, solid and liquid waste management, and water quality testing and population management. Lastly, project team member involvement in the realization of the Departmental Fishing Board, the Integrated Fisheries Management Plan, and the Archipelago Territorial Ordering Plan will result in integration of conservation considerations into sectoral programs.

F. STAKEHOLDER INVOLVEMENT AND SOCIAL ASSESSMENT

1) *Stakeholder Involvement*. The project planning process included a number of stakeholder activities directed towards different levels of the community that were carried out during 1999. A preliminary stakeholder analysis was made, and more than 40 meetings were held with resource user groups in that year alone to discuss problems, evaluate conflicts, and seek solutions to the situation of declining coastal and marine biodiversity and increasing use pressure in the islands. These meetings were held with artisanal fishers including all existing cooperatives (4) and independents, all registered businesses in the water sports and diving industry (12 enterprises including dive shops), all legally established conservation groups (6 environmental NGOs), the tourist sector, and established traditional user groups (9 native rights NGOs). These consultations resulted in the development of the project concept and the design of the Block A PDF.

Cooperative planning activities - particularly about fisheries management - and discussions of the necessity for and objectives of the MPA project were carried out prior to and during the Block A with local and national government offices considered to be stakeholders including Old Providence McBean Lagoon National Park; Departmental Secretaries of Agriculture, Planning, and Tourism; INPA (Instituto Nacional de Pesca y Acuicultura); DIMAR (Dirección Marítima y Portuaria) which includes both the navy and the port captains' offices; and the research institutions of INVEMAR (Instituto Nacional de Investigaciones Marinas) and the Institute of Caribbean Studies (National University). The project planning team consulted with other offices of CORALINA and with the members of the Territorial Ordering Plan (POT) which is in the preliminary stage. Non-affiliated resource users and the general public were also informed and consulted through presentations and interventions at meetings and workshops held during other CORALINA project activities - especially the biosphere reserve project and the community outreach program in churches and community action groups. A valuation questionnaire was given to selected groups to determine social issues and collect data on marine resource use.

During the Block A phase, in-depth bilateral consultation meetings (21 in total) on the design of this project brief were held on the islands with cooperative and independent artisanal fishers (4 meetings), dive shop owners and managers (2), other water sports businesses (1), representatives of the tourism sector (3), the marine resource users community forums (2), and NGOs including the most active native

rights organizations, civic watchdog groups, the women's foundation of the islands, and conservation groups (9). Consultation meetings (3) to incorporate final changes and suggestions into the MSP brief were held immediately before submitting the project document for GEF consideration; these meetings were attended by approximately 130 representatives of stakeholder groups from the 3 islands including residents of native neighborhoods, churches, native rights groups, conservation NGOs, local universities, the water sports and diving industries, the tourism and commercial sectors, the launch and fishers cooperatives, independent fishers, the Port Captain's office, members of the POT, the Secretary of Tourism, and the Archipelago naval commander. Interest in the project is high with stakeholders feeling that quality of life will be improved and that many current resource problems will be solved; indeed, the level of expectation, particularly in San Andres, may be unrealistic.

A major event during the PDF Block A was a partnership planning workshop sponsored by CMC and hosted by CORALINA. This workshop involved intensive cooperative technical planning sessions and site visits that were attended by staff of CORALINA, CMC, and IRF; international participants from other Caribbean islands and Hawaii; and representatives from national institutions including INVEMAR, the National Parks Office, and the Departmental Secretary of Agriculture. Open community meetings were held in San Andres and OP/SC that were attended by an estimated 550 and 65 people, respectively. Other workshop events included a consultation with artisanal fishers about fisheries management and zoning in OP/SC and a session with native rights leaders in San Andres to discuss general policies and project development. Outputs from this workshop included 7 summary reports that contributed to this project document and that form a basis for aspects of project implementation: 1) environmental characterization, 2) inventory of resource use and issues, 3) analysis of legal and institutional frameworks, 4) assessment of management needs, 5) preliminary zoning plans, 6) structure for stakeholder involvement and consultation; and 7) steps needed to plan, design and implement the system of MPAs.

2) *Stakeholder Assessment*. The islands' inhabitants fall into 3 main subgroups: 1) the West Indian islander population who descend from the original settlers and are defined by Anglo-protestant and African heritage and English mother tongue; 2) resident immigrants from the Colombian mainland and their descendants who are predominantly defined by Latin, African, Arab, and/or American Indian heritage and Spanish mother tongue; and 3) resident immigrants from foreign countries who mainly originate from Central and South America, other West Indian islands, and Europe. These social subgroups live on the 3 inhabited islands with continentals the majority in San Andres and native islanders the majority in Old Providence and Santa Catalina. The 1993 census figures classify 20,312 individuals out of a total of 61,047 as born in other departments of Colombia and 551 as resident foreigners. The first statistic is locally considered to be low because of the difficulty of accurately canvassing the numerous shanty towns, squatters, and illegal residents; even if correct, this figure does not include descendants of these individuals born within the Archipelago who are not native islanders ethnically speaking. The National Constitution of 1991 (articles 7, 10, and 310) grants the Archipelago's native islanders special protection and rights as an ethnic minority group with a racial and cultural identity distinct from the dominant society. More information is included in the social assessment attached as Annex 3 of this document.

2. INCREMENTAL COST ASSESSMENT

This project both complements existing activities described in the section on the current situation (baseline course of action) and adds new activities (alternative course of action) to the baseline that are required to achieve global environment benefits.

Baseline Scenario

Activities and results. The baseline investment - the total cost of which is \$2,736,221 - will carry out activities related to environmental management in the Archipelago in the key project-related categories:

- 1) *Data collection and evaluation.* Activities will include research on marine resources in San Andres and OP/SC, habitat characterizations, limited socioeconomic data collection, dissemination of information through the San Andres Research list, and an expedition to the northernmost area of the Archipelago which does not form part of the MPA system in the present plan.
- 2) *Legal and policy.* Actions will include enacting terrestrial zoning and management regulations, on-going responsibilities related to EIA and environmental control, advisory support and basic legal training for community groups, and strengthening the Departmental Fishing Board.
- 3) *MPA management.* Activities will include completing management plans for several terrestrial areas, reducing human-based threats to marine and coastal ecosystems through reforestation and groundwater management, technical ecosystem monitoring and water quality testing, and sustainable development pilot projects related to tourism and maricultures.
- 4) *Capacity building.* Activities will include technical training courses in GIS and EIA evaluation, the on-going community education and outreach program, a test case of conflict resolution between marine resource user groups, stakeholder training in groundwater management and reforestation, and general education and information campaigns related to baseline activities.

Benefits of the baseline. Benefits achieved by the baseline will mainly be at the national level and will include improved terrestrial ecosystem management, increased data on easily accessible sites, technical monitoring systems, a program of regular terrestrial environment controls, the EIA process, and stakeholder training in environmental management and planning, primarily of terrestrial ecosystems. However, the scope and number of activities financed will be limited, and the baseline will not permit design nor implementation of a comprehensive eco-regional conservation strategy such as the MPA system. Not only will the baseline not permit measures to be developed that conserve and manage the extensive marine ecosystems of the Archipelago, but also the baseline will not allow the biosphere reserve to be implemented in the marine area. In addition, the local community will be less involved in making environmental decisions, and biodiversity considerations will not be adequately incorporated into management since the most significant regional sites of global biodiversity are associated with coral reef ecosystems.

GEF Alternative

Activities and results. The GEF Alternative - total cost of which would be \$4,155,221 - would build on the baseline scenario and would support a number of incremental activities needed to achieve global environmental objectives in the key project areas:

- 1) *Data collection and evaluation.* The alternative will allow data collection in the most productive northern atolls (including Queena) which cannot be studied under the baseline as well as greatly expanding opportunities for collecting data in the islands' productive coastal waters. Comprehensive

assessments of the most significant sites of global biodiversity in the Archipelago will be made along with a complete stakeholder analysis because the alternative will permit substantial information-gathering from target groups on socioeconomic aspects and traditional use. Although the baseline includes research activities, the alternative will realize application and dissemination of expanded knowledge about tropical marine and coastal ecosystems by implementing a comprehensive information management system and strengthening local document centers.

2) *Legal and policy.* Within the alternative a regional multiple-use MPA system designed to protect globally significant sites of biodiversity will be legally enacted. A policy structure will be completed that incorporates marine biodiversity issues, and regulations designed to achieve biodiversity conservation, sustainable use, and threat reduction will be in place - particularly through fisheries management regulations that can be enacted for zones in decentralized regionally managed MPAs. Under the baseline, enforcement by national institutions (DIMAR and INPA) is weak and overly centralized; lacking regular patrols, CORALINA - which has certain regional enforcement powers - is able to respond only to nearshore marine violations and only on an emergency basis. The alternative will finance the establishment of cooperative enforcement mechanisms with training programs to ensure effective control and regulation by existing and new enforcement bodies who work in partnership.

3) *MPA management.* The alternative will enable development and implementation of multiple-use zoning and integrated management plans for significant sites of marine biodiversity that will actualize the biosphere reserve in the marine area. Although CORALINA encourages community participation in all projects, the Community Consultative Commissions and cooperative management structure will involve local stakeholders in marine management at the decision-making level, fostering a stronger sense of environmental stewardship. Under the baseline regular technical monitoring will be carried out, but the alternative will expand these programs and implement community-based monitoring programs, as well as an endangered species conservation plan. The alternative will also provide funding to put in place practical and valuable but costly conservation measures like mooring buoys and physically delimited zones and transportation lanes.

4) *Capacity building.* Although the CORALINA baseline will include extensive community education and outreach programs, activities under the alternative will allow stakeholders to gain firsthand experience of resource management by travelling to other islands and to receive intensive training in MPA and fisheries management and threat reduction from visiting world experts. The alternative will also permit the development of a formal training program in resource management that will empower the native community and increase the quality of regional environmental management for years to come.

Global benefits of the Alternative. These activities will result in the generation of global benefits, particularly by legally establishing and actively managing the Regional Marine Protected Area System that will conserve a unique and threatened eco-region and preserve biodiversity of global value. Through conservation and sustainable management of significant marine ecosystems, the MPA system will increase the likelihood of endangered species survival, protect endemic species habitat, and promote restoration of biodiversity. Strong participation by the local community in MPA management and decision-making and increased local control over regional resources will produce a positive impact on the livelihood of the majority of Archipelago residents that will ensure long-term sustainability of conservation activities. By means of the MPA system zoning and management plan, alternatives will be developed that integrate biodiversity conservation with sustainable development activities. The knowledge base will be improved by collecting the information needed to implement long-term strategies of biodiversity conservation and sustainable use of coastal and marine ecosystems. In addition, training stakeholders will result in more equity and better resolution of conflicts related to regional resource use.

Incremental cost assessment

Costs of implementing the project are estimated to be \$4,155,221. Over the 4 years of project implementation, baseline funds total \$2,736,22, including \$2,112,286 from CORALINA and \$623,935 from other donors. Incremental costs to implement the proposed project alternative are estimated at \$1,419,000. GEF involvement in the MSP program made it possible to leverage \$444,000 from project technical partners, CMC and IRF. Consequently, \$975,000 is requested from GEF as a partial contribution to incremental costs. Activities that would receive GEF support would be those that contribute to achieving global benefits: a) gathering and systematizing biological and socioeconomic information needed to protect regional biodiversity, b) developing legal and policy frameworks essential to ensure habitat conservation and sustainable use of biodiversity, c) designing and implementing integrated management and zoning plans for the MPA system in consultation with stakeholders, d) training, educational activities, and communications to build local capacity and promote long-term biodiversity conservation by reducing human threats, and e) project management costs incurred by the executing agency. Project partners CMC and IRF will help cover incremental costs of the project alternative, particularly in activities related to information collection and management, policy and management planning, and expert training in fisheries management, endangered species conservation, local organizational capacity building, and water quality issues.

A total of \$123,000 was used during the project preparation phase including a counterpart of \$98,000 from CORALINA, CMC, IRF, and the Christian University. The partnership planning workshop held during the PDF Block A to build local capacity and exchange information on project design was completely financed by CMC and IRF at a cost of \$60,200. Remaining counterpart funding included project review by MPA expert consultant Tom van't Hof and CMC and IRF staff members, compilation of international research and information on Archipelago marine ecosystems, contribution of numerous reference materials on MPA design and management to CORALINA, and a number of community meetings in San Andres and OP/SC along with participation in the on-going outreach program. Incremental costs for the PDF were covered by a Block A grant of \$25,000 from the GEF which included: a) reviewing and compiling local and national research and existing policies and norms, b) stakeholder consultation meetings, c) preliminary curriculum planning, d) preliminary financial analysis, incremental cost assessment, and MSP budget design, and e) development of the project brief. GEF financial support sought for the MSP including the PDF Block A grant is \$1,000,000.

The incremental cost assessment is summarized in the following table:

	BASELINE (US\$)			ALTER- NATIVE	INCREMENT (US\$)		
	CORALINA	Other Donors	Total	TOTAL	GEF	CMC & IRF	Total
Preparation (PDF)							
Preparation of MSP	21,000	19,800	40,800	123,000	25,000	57,200	82,200
Implementation (I)							
1. Data collection and evaluation. Collect information for management and implement the information system.	537,899	118,500	656,399	912,349	130,550	125,400	255,950
2. Legislation and policy. Enact the MPA system and establish legal and policy frameworks.	160,838	40,560	201,398	336,498	68,500	66,600	135,100
3. MPA management. Design and implement the integrated management plan in cooperation with the community.	643,114	222,075	865,189	1,458,489	412,300	181,000	593,300
4. Capacity building. Strengthen local institutions, train stakeholders, and produce communications.	482,687	242,800	725,487	1,043,137	246,650	71,000	317,650
5. Project management.	287,748	0	287,748	404,748	117,000	0	117,000
Total Implementation (I)	2,112,286	623,935	2,736,221	4,155,221	975,000	444,000	1,419,000
Total (PDF+I)	2,133,286	643,735	2,777,021	4,278,221	1,000,000	501,200	1,501,200

3. BUDGET

GEF alternative project costs are broken down into expenditure categories as shown in the following budget table. These categories are itemized in the project procurement plan outlined in Attachment 2.

Category	GEF	Other sources	Project total (US \$)
PDF	25,000	98,000	123,000
Technical assistance	343,800	1,136,823	1,480,623
Workshops / Training	236,030	545,624	781,654
Goods	78,000	358,114	436,114
Works	98,100	236,185	334,285
Services	67,750	544,384	612,134
Unallocated	34,320	71,343	105,663
Operational costs	117,000	287,748	404,748
Total implementation (I)	975,000	3,180,221	4,155,221
Project total (PDF+I)	1,000,000	3,278,221	4,278,221

4. IMPLEMENTATION PLAN

CORALINA will execute the project with the participation of a number of other organizations. International technical partners include the Center for Marine Conservation (CMC) with head offices in Washington, DC, and Island Resources Foundation (IRF) with head offices in the US Virgin Islands. These partners will be involved in activities related to their areas of expertise as well as in general project implementation. CMC will particularly assist with technical aspects of data collection, establishing legal and policy frameworks, management planning advice, and training both resource management personnel and stakeholder groups in sustainable fisheries and water quality management, endangered and key species monitoring and conservation, and MPA operational methods. The expertise of IRF will be particularly applied to analyzing policy and coastal management issues, strengthening local NGOs and community groups, evaluating strategies to achieve financial sustainability, and developing the information management system.

The formal education training program will be realized jointly with the Christian University, a nationally accredited institution of higher learning in San Andres Island. Biological information needed for zoning and management planning will be collected in collaboration with the national marine research institute, INVEMAR, and international partners. An International Project Advisory Board composed of members with expertise in MPA design and management will be set up and involved throughout project implementation. Besides taking part in the continuous process of stakeholder consultation, decision-making, and the Community Consultative Commissions, local NGOs and other stakeholder groups will help implement a number of activities including assisting with data collection and information-gathering, citizen-based monitoring and enforcement, installing mooring and marker buoys, organizing workshops and meetings, providing food and refreshments for training activities, and distributing outreach materials.

The duration of the project is 4 years, and the implementation plan is illustrated in the following table:

PROJECT ACTIVITIES	PROJECT MONTHS							
	0	6	12	18	24	30	36	42
1. <i>Data collection and evaluation.</i> Collect the data required for management planning and set up the information system.	🌐 _____ 🌐							
2. <i>Legislation and policy.</i> Enact the MPA system and establish legal and policy frameworks.	🌐 _____ 🌐							
3. <i>MPA Management.</i> Design and implement the integrated management plan in cooperation with the community.	🌐 _____ 🌐							
4. <i>Capacity building.</i> Strengthen local institutions, train stakeholders, and produce communications.	🌐 _____ 🌐							
5. Project management.	🌐 _____ 🌐							

5. PUBLIC INVOLVEMENT PLAN

a) *Stakeholder identification.* A preliminary analysis identified 7 primary stakeholder groups: 1) artisanal and industrial fishers, 2) recreational users including the tourist industry, 3) native rights organizations representing traditional users), 4) conservation interests, 5) educational institutions offering marine resource management programs, 6) the general public of the Archipelago, and 7) government agencies with relevant jurisdictions at local and national levels. A number of locally established NGOs, sectoral boards, and cooperatives made up of the first 4 stakeholder groups exist so the project will work in collaboration with these organizations whenever possible. Members of the last group have been determined to be the Departmental Fishing Board (when established), Municipal Offices of Planning and Tourism, the Old Providence McBean Lagoon National Park Office, INPA at local and national levels, DIMAR at local and national levels, INVEMAR, and the Departmental Secretaries of Agriculture (fisheries), Tourism, and Planning. A complete stakeholder analysis will be realized during the first year of the project that recommends strategies to affect change in target groups. A gap identified during the PDF Block A was the absence of knowledge about and contact with the industrial fishing sector. It is essential to fill this information gap and provide opportunities for a level of contact, consultation, and conflict resolution with this sector. An early project priority carried out as part of the stakeholder analysis will be formulating a methodology to identify and communicate with this target group.

b) *Information dissemination and consultation.* Information will be disseminated through a series of meetings each project year with primary stakeholder groups and the general public who will be reached through churches and community action groups, media programs on local radio and television, distribution of written materials, door-to-door campaigns, and public meetings. Education campaigns will be designed to increase knowledge about and appreciation of marine resources, create awareness about the MPA system, and foster a stewardship ethic along with support for the system. Education will be used as a management tool with the power to change resource user behavior and promote voluntary adherence to resource management regulations. The on-going CORALINA outreach program with church groups, cooperatives, NGOs, and community action groups will provide a regular forum for this project. This outreach program is carried out mostly in churches at their invitation as this has proven to be the most effective way to generate community support and achieve actual ethical and behavioral change. Bilateral

consultation and information exchange will be encouraged at every meeting, and intensive workshops will be held with stakeholder groups to determine policy and regulations, zoning, management planning, monitoring and enforcement systems, and financial planning for MPA system self-sustainability. Open forums will be part of the annual meeting of the Project Advisory Board and of at least one inter-institutional meeting per year to guarantee that stakeholders are fully informed. Existing CORALINA document centers will be strengthened and upgraded with computer equipment so that stakeholders will have permanent access to all information collected and generated by the project and the MPA system in the long-term.

c) *Stakeholder participation.* Basic project methodology is predicated on stakeholder involvement at the level needed to produce collaborative management, formal and informal agreements between stakeholders and institutions, active community involvement in monitoring and enforcement, and bilateral consultation and information exchange. A series of activities will be held each project year to insure that zoning, management planning, and legal and policy aspects will be determined in collaboration with stakeholders. The Community Consultative Commissions, composed of representatives from stakeholder groups, will be involved throughout the project at the executive decision-making level. Capacity building and training programs will be carried out to strengthen and sensitize local institutions and organizations, promote biodiversity conservation and sustainable use, reduce threats, and develop active stewardship. Study tours will be sent to other islands, and representatives from the Archipelago will attend Caribbean regional conferences and develop international ties. The formal education program will prepare native young people to fill managerial and technical jobs resulting from establishment of the MPA system. Community-based monitoring and enforcement programs will be designed and implemented, and community organizations will play active roles in project activities of data collection and works, including installing buoys, posting signboards, and setting up MPA offices. In addition, subcontracts to organize workshops, plan events, and assist with field work will provide opportunities for active involvement as well as economic benefit to local NGOs.

Government offices and institutions will participate in the formation of policy, regulations, and management planning through regular inter-institutional meetings besides being included in educational meetings and workshops designed as a management tool to sensitize authorities and policy-makers to the importance of the MPA system. Training in legislation and enforcement methods will be given to personnel of existing agencies responsible for enforcement, as well as negotiating agreements to set up new enforcement mechanisms determined during the project. Data collection activities, information exchange, and monitoring programs will be carried out with INVEMAR. Policy, management, and regulatory actions related to fisheries management will be coordinated with the Departmental Fishing Board and appropriate authorities. The project will work closely with the National Park System, in particular the office of the McBean Lagoon National Park, to coordinate OP/SC MPA design and management in relation to the existing park. Inter-institutional participation will also be advanced at the regularly scheduled meetings of the CORALINA directive board that includes representatives from a wide range of departmental and national institutions and stakeholder groups. The International Project Advisory Board will allow for the intensive participation of a number of Caribbean regional and international organizations in all aspects of project implementation as will collaborative activities realized with the Mesoamerican Barrier Reef GEF-WB Project (under preparation) and other linked initiatives and programs.

d) *Social and participation issues.* Major social issues raised by stakeholders during project preparation are: 1) Marginalization of the native community. Important considerations are the failure to recognize and respect rights to traditional fishing grounds and collective tenure to other coastal and marine areas of the Archipelago, concern that the MPA system will be politically manipulated to further reduce local control rather than resulting in native empowerment, lack of opportunities for natives to work in and benefit from

tourism, and the importance of integrating traditional knowledge about biodiversity, habitat conservation, and resource use into scientific assessments and management planning. 2) Cultural diversity. Relevant issues are tensions between native islanders and continental immigrants, language differences, the introduction of values that lead to systems of social stratification along with inequitable resource and economic benefit distribution, and lack of respect for and loss of native cultural values including the failure to inform tourists about native customs and acceptable behavior. 3) Strained relations between Archipelago inhabitants and the national government. Primary factors are insufficient local autonomy in marine resource and fisheries management due to political and institutional centralization, lack of response to the particular environmental needs and limitations of small islands, the national economic crisis, long-standing policies of paternalism and colonialism towards native islanders, increasing militarization, imposed isolation from the rest of the Caribbean, the perception that control and enforcement are inadequate and not equitable, and conflicts over fishing rights. The project grew out of the demand for reforms by the local community so these issues have been taken into account in designing basic project methodology, objectives, outcomes, and activities.

6. MONITORING AND EVALUATION PLAN

Monitoring of biological trends in the Archipelago will be assured by the on-going strategic ecosystem monitoring programs included in the baseline course of action as well as by the new methods that would be established by the alternative as the project advances. CORALINA will monitor project objectives, outcomes, and activities using logframe indicators presented in the project summary. In addition, performance benchmarks are being developed to complement the overall project indicators presented in the project summary that will provide the basis for the Bank's disbursement of GEF funds throughout the project. The project coordinator and financial project manager will be responsible for constant monitoring and evaluation to determine the success of project administration. Project technical and financial implementation reports will be completed every 6 months to meet both project requirements and internal CORALINA planning and evaluation schedules. Project accounts will be monitored and evaluated during CORALINA's regular financial audits by a certified accountant. Selected programs of stakeholder consultation, training, and capacity building will include evaluation sessions using instruments such as questionnaires, group evaluation forms, and open discussions. Special reports will be completed as necessary. The International Project Advisory Board will meet at least once a year in the Archipelago and will serve as an expert panel of advisors/evaluators. Monitoring results and conclusions reached as a result of evaluation reports will be used to recommend and implement changes in project management and for future reference in the development of similar or related projects.

7. TECHNICAL REVIEW

The technical review by the expert selected from the roster of the Scientific and Advisory Panel (STAP), Dr. Carl Safina, is attached as Annex 1. The STAP reviewer gave strong support to the proposal and considered its strengths to be that the goals for biodiversity conservation are on the right track, it is thorough and covered all the basic points needed to establish a regional system of MPAs, it was evident that the project proposer (CORALINA) had reviewed various MPA models worldwide, and that a well thought out method of involving stakeholders in the planning process was described. The primary concern of the STAP reviewer was that many protected areas, including a number in the United States which have more access to financial and technical resources, exist only in name or on paper. To address this important issue of effective functioning, the reviewer recommended 5 areas of concern: 1) on-going management of sites, 2) enforcement of regulations, 3) external threats, 4) education, and 5) stakeholders versus opinion makers. CORALINA is in full agreement with these comments and has strengthened sections of the

project brief to reflect the reviewer's concerns. How the project addresses these 5 issues is also presented in Annex 1.

8. PROJECT CHECKLIST

Boxes that describe project activities are checked to assist in project tracking and data management in the following standard format:

PROJECT ACTIVITY CATEGORIES			
Biodiversity	Climate Change	International Waters	Ozone Depletion
Prot. area zoning/mgmt.: X	Efficient prod& distrib:	Water body:	Monitoring:
Buffer zone development: X	Efficient consumption:	Integrated land and water:	Country program:
Inventory/monitoring: X	Solar:	Contaminant:	ODS phaseout:
Eco-tourism: X	Biomass:	Other:	Production:
Agro-biodiversity:	Wind:		Other:
Trust fund(s):	Hydro:		
Benefit-sharing: X	Geothermal:		
Other:	Fuel cells:		
Protective legislation: X			
	Other:		
TECHNICAL CATEGORIES			
Institution building: X			
Investments: X			
Policy advice: X			
Targeted research: X			
Technical/management advice: X			
Technology transfer: X			
Awareness/information/training: X			
Other:			

Wider Caribbean Region with the Archipelago Location

Source: Internet

(note: the red box indicates the location of the Archipelago and in no way approximates actual boundaries)

ANNEX 1a. TECHNICAL EVALUATION: STAP REVIEWER'S COMMENTS

In general, the proposal covers all the basic points needed to establish a system of marine protected areas. It is evident that the authors of this proposal reviewed various models, worldwide, for establishing MPAs. The proposal reflects and shows a tremendous amount of thoughtful work. The presentation and education materials and enclosed pamphlets are excellent and of very high quality. The thinking is thorough and the goals for biodiversity protection are very much on the right track.

These are a brief set of comments that should be addressed in order for this to be a successful, effective marine protected area that will allow CORALINA to fulfill its goal of protecting the biodiversity of the region.

1. Ongoing management of sites. While it is understood that this proposal is for a four year project to establish the system, there is not a clear statement about the ongoing operation and management of the protected areas once they are established. The proposal states that native young people will be trained to fill managerial and technical jobs resulting from the establishment of the system, but no where does it describe the management structure, staffing needs, expected budget of operating a system and from where the funds will come. Designating an area as a marine protected area is only the first step, It must be clearly articulated how these sites, once designated, will be maintained.

2. Enforcement of Regulations. Throughout the proposal, reference was made to existing regulations that were not being enforced. Designating an area as protected will not necessarily make enforcement any easier. To ensure the effectiveness of the system, I suggest strengthening the enforcement strategies in the proposal.

3. External Threats. Many of the threats to the resources come from outside the boundaries and management jurisdiction of the marine protected area. Does the management body of the system have the clout to affect changes in areas outside their jurisdiction? If not, I suggest developing strategies to strengthen this.

4. Education. Education is a multifaceted component of any marine protected area program. It includes teaching the local students about their marine resources and fostering an appreciation of the resources, which hopefully leads to stewardship. It also includes creating awareness in the general public about the marine protected area system and fostering a stewardship ethic among the adults and support for the system. But most importantly, education is a management tool that can change resource user behaviors in respect to the resources needing protection. Education can foster voluntary adherence to resource management regulations.

Education campaigns are only as effective in changing peoples behaviors as the research that goes into developing the campaign. The proposal identified several target audiences whose actions negatively impact the marine resources and therefore need to be changed: military personnel stationed at outposts, motorized water sports users, commercial fishers, native fishers, boaters and divers anchoring on coral reefs, locals poaching, agencies responsible for land based sewage outfalls, landowners with septic tanks that leach into the proposed marine protected areas, to name a few. Each one of these target audiences may need a different message and a different way to deliver it. Instead of listing the number of videos, posters and buttons to be produced, I suggest focusing the education on researching the various target audiences and the most effective ways to positively change their behaviors.

Examples of models of this kind of work include:

- a) Kathleen Blanche, Ph.D. Vice President for Research and Education, Quebec-Labrador Foundation. Her education and research work focused on the North Shore of the Gulf of St. Lawrence in Quebec, Canada, where severe decreases among the nesting seabirds was due, mainly, to the illegal hunting and collecting of birds and eggs by residents of isolated fishing communities holding strong traditions.
- b) Susan Drake, Ph.D, Director, Tangier Watermens Stewardship for the Chesapeake. She focused on working through the churches of this small, isolated, island in the middle of the Chesapeake Bay, in the United States. Many of the residents on Tangier are direct descendants of the original settlers and have a distinct cultural identity, separate from the residents of the mainland.
- c) Bruce A. Byers, 1996, *Understanding and Influencing Behaviors in Conservation and Natural Resources Management*, African Biodiversity Series, No.4. Washington, D.C.: Biodiversity Support Group. Available from World Wildlife Fund.

5. Stakeholders vs. Opinion Makers. The proposal describes a well thought out method of involving those who use the marine resources (stakeholders) in the planning process. However, the community members should be more formally brought into the process. Increased interest, acceptance and long term support for the system can be generated by getting from the community opinion makers. These may not necessarily be the decision makers or the resource users, but their opinion counts and can sway the views of the community.

In sum, I would very much like to see this project go forward and succeed, and I support it. However, many marine protected areas, including many of the "protected" areas in the United States, are protected in name or on paper only. Any protection plan, in its design and implementation, must consider the potential pitfalls that will reduce the area's effective functioning as a reserve. Attention to long-term management, enforcement, external threats, and local education will be key to developing this and any effective protected area project.

Thank you very much for the opportunity to review this proposal.

**ANNEX 1b. TECHNICAL EVALUATION:
CORALINA's RESPONSE to the STAP REVIEWER'S COMMENTS**

The comments of the Scientific and Technical Advisory Panel expert, Dr. Carl Safina, Director of the Audubon Society's Living Oceans Program, have been addressed in the project document, as described below. The reviewer's comments are quoted below and each recommendation is followed by CORALINA's response (in italics).

STAP reviewer's comments:

1. Ongoing management of sites. While it is understood that this proposal is for a four year project to establish the system, there is not a clear statement about the ongoing operation and management of the protected areas once they are established. The proposal states that native young people will be trained to fill managerial and technical jobs resulting from the establishment of the system, but no where does it describe the management structure, staffing needs, expected budget of operating a system and from where the funds will come. Designating an area as a marine protected area is only the first step, It must be clearly articulated how these sites, once designated, will be maintained.

CORALINA's response:

The degree to which the project will realize operational management has been clarified in the project summary (pp.v,vi) and description of the project alternative (p.11) as explained below. In order to foster a sense of community ownership of the MPA system, management structure, staffing needs, and a number of other aspects related to general operations will be determined in consultation with stakeholders during project implementation. Taking into account both the high level of community involvement considered optimal to ensure MPA system sustainability and current baseline limitations, information-gathering and decision-making on management needs require funding and can only be carried out within the project alternative. The project will legally declare and demarcate, set up internal zones and regulations for, and complete Parts I (description and background) and II (issues and actions) of the Integrated Management Plan for the 4 MPAs but will only guarantee to complete operational handbooks (part III of the Integrated Management Plan) for and implement 2 MPAs. The decision about priority MPA implementation will be made jointly with the community during project execution; however CORALINA's preliminary recommendation is that these sites should be Area 1, San Andres coastal waters, and Area 2, OP/SC coastal waters, because of the greater extent of local stakeholder involvement in these areas, ease of access, complexity of management issues, and wider range of funding mechanisms that could be put into effect to support these areas.

Financial strategies and budget planning will also be carried out during the project at both the technical level in the cost/benefit analysis, economic feasibility study, and revenue generation plan and the practical level of determining with the community how to manage and control the funding plan (see project description, part E, financial sustainability, p. 15). In addition, CORALINA's chief of economic project development is currently studying for a master's degree in environmental economics, and his dissertation (to be completed in 2001) will cover economic and financial analysis that can be directly applied to MPA system management.

STAP reviewer's comments:

2. Enforcement of Regulations. Throughout the proposal, reference was made to existing regulations that were not being enforced. Designating an area as protected will not necessarily make enforcement any easier. To ensure the effectiveness of the system, I suggest strengthening the enforcement strategies in the proposal.

CORALINA's response:

In the project description, the part dealing with enforcement in the risk section has been strengthened to reflect this concern (p. 14) as has the description of activities (p. 11). The project emphasizes establishing new enforcement mechanisms based on partnerships and cooperative programs with the local community, regional authorities (CORALINA, Departmental Fishing Board) and national authorities (DIMAR) Within the project's consultative structure, additional ways to strengthen enforcement will be extensively discussed, investigated, and evaluated including possibilities like joint patrols and cooperative financing as it is understood that to strengthen this aspect is essential for MPA system functioning. A project outcome, as mentioned in the project summary (p. 5), will be a formal enforcement agreement between local stakeholder groups and existing authorities (DIMAR and CORALINA), and the incremental operational budget includes money for fuel to carry out enforcement patrols. The project also will include education activities designed to sensitize authorities to the importance of biodiversity, coastal and marine resources, and the MPA system as a conservation management tool.

Several factors are expected to help improve enforcement. The main enforcement issue at the present time is that of illegal and legal industrial vessels licensed by INPA that use illegal fishing gear and fail to respect quotas, size limits, and closed seasons. When established, the Departmental Fishing Board will give permits locally, ensuring more effective control and local access to records of permit-holders, and DIMAR has publically stated a commitment to the development of the MPA system. The closure of large areas to industrial fishing will simplify enforcement as an industrial vessel can easily be spotted in a restricted area; consequently, the declaration of the MPAs and enactment of zoning regulations will provide a basis for enforcement that does not exist in the present open-access regime. Finally, by fostering a sense of community ownership and increased equity, the project will aim to achieve a high level of voluntary compliance by the local community.

STAP reviewer's comments:

3. External Threats. Many of the threats to the resources come from outside the boundaries and management jurisdiction of the marine protected area. Does the management body of the system have the clout to affect changes in areas outside their jurisdiction? If not, I suggest developing strategies to strengthen this.

CORALINA's response:

A paragraph has been added in the risk section to clarify this point. The most severe external threats to these areas at the present time result from land-based sources of pollution and regional over-fishing. As the most effective environmental authority in the Archipelago, CORALINA has the power to regulate land- and sea-based threats within the Archipelago that will come from outside the boundaries of the MPA system (and outside the jurisdiction of the MPA management body). Since all this agency's activities are geared towards controlling threats to the Archipelago's ecosystems, the extensive mandate and jurisdiction of CORALINA are a strength of this proposal, differentiating this system from many MPAs in which management power stops at MPA boundaries (frequently on land at the mean high water mark). National authorities including the Presidency, the Ministry of the Environment, and DIMAR form part of

the CORALINA directive board so this board can assist with threats of national origin. The MPA system will also form part of the Archipelago biosphere reserve structure which will contribute to controlling and reducing threats to regional ecosystems and biodiversity. Over-fishing can be greatly alleviated by the successful establishment of the Departmental Fishing Board which is slated to take place later this year. Given that marine biodiversity is also threatened by international actions, treaties signed by Colombia including MARPOL, UNCLOS, and the Cartagena convention will help control international threats.

STAP reviewer's comments:

4. Education is a multifaceted component of any marine protected area program. It includes teaching the local students about their marine resources and fostering an appreciation of the resources, which hopefully leads to stewardship. It also includes creating awareness in the general public about the marine protected area system and fostering a stewardship ethic among the adults and support for the system. But most importantly, education is a management tool that can change resource user behaviors in respect to the resources needing protection. Education can foster voluntary adherence to resource management regulations.

Education campaigns are only as effective in changing peoples behaviors as the research that goes into developing the campaign. The proposal identified several target audiences whose actions negatively impact the marine resources and therefore need to be changed: military personnel stationed at outposts, motorized water sports users, commercial fishers, native fishers, boaters and divers anchoring on coral reefs, locals poaching, agencies responsible for land based sewage outfalls, landowners with septic tanks that leach into the proposed marine protected areas, to name a few. Each one of these target audiences may need a different message and a different way to deliver it. Instead of listing the number of videos, posters and buttons to be produce, I suggest focusing the education on researching the various target audiences and the most effective ways to positively change their behaviors.

CORALINA's response:

The comment that education is in itself a major management tool is a very important aspect that has been used to strengthen the project description in several places (pp. 6, 23, 24). The explanation of the need to develop education campaigns appropriate for different target audiences is a valuable point that will help implement effective capacity building activities and that will be taken into account during project execution, particularly in community training programs and technical training courses (see pp.vi.,11). The 4 community educational programs realized during the project will be based on particular themes that will be developed with specific strategies designed to reach and affect change in each target group. CORALINA works closely with the community and is primarily staffed by native islanders who have a high level of understanding of local behaviors and expertise in effective ways of communicating with local target groups The stakeholder analysis has been added as an indicator in the project summary (p. vi). This analysis will collect more information on user groups and recommend specific strategies to change target group behavior; this has been elucidated in the project description (pp.10, 19, 23).

STAP reviewer's comments:

5. Stakeholders vs. Opinion Makers. The proposal describes a well thought out method of involving those who use the marine resources (stakeholders) in the planning process. However, the community members should be more formally brought into the process. Increased interest, acceptance and long term support for the system can be generated by getting from the community opinion makers. These may not necessarily be the decision makers or the resource users, but their opinion counts and can sway the views of the community.

CORALINA'S response:

As described below, this aspect has been strengthened in the project description (p. 24) and social assessment (pp. 53, 56) along with clarifying that this project grew out of local community pressure for reforms (pp. 15, 25). The leading opinion-makers in the islands are the clergy and native rights leaders, who are often but not always the same. CORALINA works extensively with these people and the groups that they represent; the on-going community outreach program is carried out in the churches at their invitation as this has proven to be the most effective way to generate community support and achieve actual ethical and behavioral change. It is expected that the establishment of the Community Consultative Commissions will bring the resource users into the project at the formal executive decision-making level. In addition, the CORALINA directive board will be formally involved throughout MPA system development and implementation; this board includes both decision-makers (governor, mayor, departmental secretaries) and opinion makers (representatives of local environmental NGOs, the farmers and fishers cooperatives, and the native community).

ANNEX 2. DETAILED INFORMATION ON REGIONAL MARINE PROTECTED AREAS

The coastal and marine ecosystems of the Archipelago of San Andres, Old Providence, and Santa Catalina in the southwestern Caribbean are among the most extensive and productive reef systems in the Western Hemisphere and include 2 barrier reefs on the windward sides of the main islands of San Andres and Old Providence, 5 large atolls, and other less well defined coral banks. The proposed protected area system will be made up of 4 marine protected areas (MPAs) delimited in the areas of the Archipelago where the barrier reefs, atolls, mangroves and largest seagrass beds are found. CORALINA, the regional environmental management authority, in consultation with local stakeholders has determined that a viable management tool to conserve these productive but highly threatened and isolated oceanic sites of marine and coastal biodiversity would be to establish locally managed MPAs. The 4 marine protected areas, all of which will be zoned for multiple-use, are:

AREA 1 : San Andres reefs and coastal waters

AREA 2 : Old Providence and Santa Catalina reefs and coastal waters

AREA 3 : Southern marine area including Southwest Cays (also called Cayos de Albuquerque, located 35 km SSW of San Andres) and East Southeast Cays (also called Cayos de Bolivar, located 22 km ESE of San Andres)

AREA 4 : Northern marine area including Queena Reef (also called Quitasueño, located 70 km NNE of Providence), Serrana (located 150 km NE of Providence), and Roncador (located 150 km E of Providence and 210 km NE of San Andres)

The only significant marine ecosystems in the Archipelago not included in these 4 proposed marine protected areas are Serranilla and Bajo Nuevo which are found in the extreme north. Although rich in biodiversity, these cays and banks are not proposed as part of the MPA system at this time for a number of reasons, the primary of which are: several international treaties are in effect related to this section of the Archipelago (with Jamaica and the recent controversial re-ratification with Honduras), the vast distance from the inhabited islands would make an MPA in this region virtually impossible to manage and enforce, funding an MPA in this area would be prohibitively costly, and there is insufficient information in the Archipelago to carry out adequate conservation and management planning for these cays and banks. In the future, a regional or international marine park developed to include Serranilla and/or Bajo Nuevo could be affiliated with the Archipelago MPA system.

Physical features

AREA 1. *San Andres Coastal Waters.* Corals (barrier reefs, fringing reefs, patches, coral heads, soft corals), lagoons and seagrass beds, mangrove swamps, beaches, small cays.

AREA 2. *Old Providence & Santa Catalina Coastal Waters.* Corals (barrier and fringing reefs, patches, pinnacles, coral heads, soft corals, mini-atolls), lagoons and seagrass beds, mangrove swamps, beaches, small cays.

AREA 3. *Southern Marine Area.* Atolls, cays, corals (barrier reefs, patch reefs, mini-atolls, coral heads, soft corals), lagoons and seagrass beds, beaches, ocean deeps.

AREA 4. *Northern Marine Area.* Atolls, banks, cays, corals (barrier reefs, patch reefs, coral heads, soft corals), lagoons and seagrass beds, beaches, ocean deeps.

Reef structure, corals and fish

Although some studies have been done and the coastal waters of the islands and cays have been characterized and mapped (with the exception of Queena, which is in process jointly by INVEMAR and CORALINA), these significant tropical Atlantic ecosystems have received little scientific attention. Most of the status assessment work on marine species has focused on commercially important species, particularly conches and spiny lobsters. No studies have been made to date of many marine species in the region including other crustaceans, echinoderms, or sponges. Therefore, the status of the majority of fishes and other species is unknown; however, a number of marine species occurring in the Archipelago are considered threatened with extinction at the global level (IUCN, 1996). A total of 273 species, including 2 endemics, from 54 families normally associated with tropical reef ecosystems have been identified in the Archipelago. Fish species included in the IUCN 1996 Red List are the endemic Providence hamlet (*Hypoplectrus providencianus*), giant grouper or jewfish (*Epinephelus itajara*), red porgy (*Pagrus pagrus*), hogfish (*Lachnolaimus maximus*), and many others (see list at the end of this annex). Further field work is expected to clarify regional status of these globally threatened species as well as to document the status of additional species.

AREA 1. San Andres Coastal Waters. San Andres Island is surrounded by a complex reef system on the insular shelf made up of a variety of coral formations: barrier and fringing reefs, patches, and associated lagoons. The windward barrier reef located on the eastern edge of the shelf is composed of a series of calcareous fossil terraces covered with well developed coral communities (50% live coral) including a wide diversity of hard corals, octocorals, and sponges. This reef, although not unbroken, runs from the extreme north to the south end of the island and is 15 km long and 60-80 m wide, providing effective breakwaters and a large lagoon. The coral reefs found in the waters surrounding San Andres are made up of approximately 30 identified species including: *Millepora* spp., *Porites porites*, *P. astreoides*, *P. furcata*, *P. divaricata*, *Diploria strigosa*, *D. clivosa*, *D. labyrinthiformis*, *Acropora palmata*, *A. cervicornis*, *Montastraea annularis*, *M. cavernosa*, *Siderastrea siderea*, *S. radians*, *Agaricia* spp., *Favia fragum*, *Isophyllastrea rigida*, *Dendrogyra cylindrus*, *Stephanocoenia intersepta*, *Madracis decactis*, *M. mirabilis*, *Leptoseris cucullata*, *Meandrina meandrites*, *Colpophyllia natans*, *C. amaranthus*, *Dichocoenia stokesi*, *Mycetophyllia* spp., and *Eusmillia fastigiata*. Other corals commonly found include antipatharians, gorgonians, *Stylaster roseus*, *Zoanthus sociatus* and *Palythoa* spp. Of the identified fish species, 131 species from 46 families have been recorded in San Andres coastal waters. One of the 2 endemic species, *Gambusia aestiputeus*, is found in the Hooker Bight mangroves.

AREA 2. Old Providence & Santa Catalina Coastal Waters. The Old Providence and Santa Catalina reef complex is regionally unique because it surrounds the only high altitude volcanic island found on the MesoAmerican shelf. The barrier reef is 32 km long and varies from 50-200 m in width, covering a total area of approximately 255 km². This reef is characterized as the second largest true barrier reef in the Western Hemisphere (Geister, 1997). The coral reef system surrounding these islands is divided into 4 units : fore-reef terrace, windward barrier reef, lagoon with patch and fringing reefs, and leeward and outer shelves. Identified species include *Millepora* spp., *Porites astreoides*, *P. porites*, *P. furcata* (var), *P. clavaria*, *Diploria strigosa*, *D. labyrinthiformis*, *D. clivosa*, *Agaricia agaricites*, *A. crassa*, *Acropora palmata*, *A. cervicornis*, *Colpophyllia natans*, *Favia fragum*, *Dichocoenia stockesii*, *Montastraea annularis*, *M. cavernosa*, *M. faveolata*, *Dendrogyra cylindrus*, *Stephanocoenia michelini*, *Isophyllastrea rigida*, *Siderastrea siderea*, and *S. radians*. The area also includes black corals, fire corals, and lace corals as well as zoanthids. The Providence hamlet, (*Hypoplectrus providencianus*) is endemic to Old Providence waters and is on the IUCN Red List.

AREA 3. Southern Marine Area. Southwest Cays (known as Cayos de Albuquerque in Spanish) emerge from a nearly circular atoll that has an east-west diameter of a little over 8 km. The windward peripheral reef extends nearly 6 km to the north, east, and southeast. In shallow areas the reef crest is barely submerged, and it is composed primarily of species of *Millepora* and *Palythoa*. The lagoon has two distinct depths, -9 m and -15 m, with plentiful seagrass beds. There are also abundant hard corals, octocorals, patches of *Montastraea*, and peripheral reefs of *Acropora palmata*. East-Southeast Cays (also known as Courtown or Cayos de Bolivar in Spanish) are part of a kidney-shaped atoll are a little larger than 13 km in diameter. Windward reefs have developed to the northeast, east, and southeast sides. Heavy waves, turbulence, swift currents, and an intricate system of caves have created an unusual and unique reef environment (Geister, 1997). The northern half of the lagoon is covered with dense patch reefs. Predominant corals are *Millepora* spp., *Palythoa*, *Diploria*, *Montastraea annularis*, *Porites* spp., and *Acropora cervicornis*. In the recent past, conch and spiny lobster were abundant in both southern atolls. Although serious over-fishing has occurred, particularly in ESE Cays, it should be possible to recover these species by introducing sustainable fisheries management strategies such as no-take and artisanal fishing zones, size restrictions, and closed seasons combined with adequate enforcement.

AREA 4. Northern Marine Area. Queena (known as Quitasueño in Spanish) is the largest atoll in the Archipelago although it can more accurately be described as a half-atoll. Including shelf areas, it is over 60 km long, varies in width from 10 to 20 km, and has a windward reef that extends more than 40 km. Although it has no land area, the bank is very shallow and is partially exposed at low tide. The reef is primarily composed of *Millepora* spp. with *Acropora palmata* common to leeward. Irregular patch reefs, exhibiting both ribbon and knoll configurations, are plentiful. This bank is one of the least studied areas in the Archipelago even though the conch and lobster beds have traditionally been regarded as among the most productive in the southwestern Caribbean. Serrana is a large reef complex about 36 km long and 15 km wide including the insular shelf. The lagoon is extensive with numerous algal patches to the west along with highly productive seagrass beds. Long narrow secondary barrier reefs (*Acropora palmata*) enclose the rest of the lagoon, creating very calm conditions with deep patch reefs (*Montastraea*) covering 60% of the sea bottom. Other coral species found in quantity are *Agaricia agaricites*, *Porites* spp., *Mycetophyllia ferox*, *Diploria* spp., and *Siderastrea siderea* among others. Roncador is an elongated atoll, approximately 15 km long by 7 km wide. The windward peripheral reef is nearly continuous for 12 km breaking the surface in calm weather. The lagoon is considerably shallower than others in the region and is exposed at low tide. Dense patches of *Montastraea* reach almost to the surface with thickets of *Acropora cervicornis* growing along the crest. In the southern part of the lagoon, patch reefs cover 70% of the sea bed. Other significant coral species include *Acropora palmata*, *Diploria* spp., *Agrarcia undata*, *A. lamarcki*, *Montastraea franksi*, *Mycetophyllia aliciae*, and *M. reesi*. Gorgonians are numerous as the massive mortality that devastated these species in other Caribbean areas appears to have had minimal effect here and in Serrana. The proposed MPAs in both the southern and northern marine areas include the deeps between the atolls. Evidence is rapidly growing to support the inclusion of deep water in open ocean MPAs. Not only do biologically and commercially important “ocean giants” frequent these areas but little is known about biodiversity in the deeps. Additionally, it is probable that these areas include corridors used by species travelling between atoll systems.

Birds and marine reptiles

The proposed MPAs surrounding the main islands include the largest and most productive mangrove swamps in the Archipelago; Hooker Bight and Honda Bay in San Andres that make up the proposed regional mangrove park and bird sanctuary and McBean Lagoon in Old Providence which is already protected as part of existing national park. Other mangrove areas that will be included in the MPAs are found on the east and south sides of Santa Catalina, in Jones Point, and in the Cove Seaside section on the leeward side of San Andres. Because these mangroves are the primary bird habitat on the inhabited

islands, a small amount of information is included on migrant and resident birds. Few of these species reside only in the mangroves but many sea and shorebirds nest there, and since the islands are so small most avifauna depend on the mangroves at least occasionally for food and shelter. In addition to resident and migratory birds, mangroves provide essential habitat for numerous other species that are not discussed here including fish, reptiles, crustaceans, insects and other invertebrates.

Birds : The Archipelago is at the edge of the western flyway and 76 migrant species have been recorded along with 18 resident species including 2 endemics and several endemic subspecies (Bond, 1980 and Hilty, 1986). The majority of these are found in mangroves, cays, and coastal areas. Information on sea birds is poor but abundant species include man o'war (*Fregata magnificens*), laughing gull (*Larus atricilla*), terns (*Sterna* spp.), and red-footed and brown boobies.

Reptiles : Four of the world's 7 threatened marine turtle species (IUCN, 1996) feed and nest in the Archipelago: hawksbill (*Eretmochelys imbricata*), classified by IUCN as Critically Endangered; green (*Chelonia mydas*), Endangered; loggerhead (*Caretta caretta*) Endangered, and leatherback (*Dermochelys coriacea*), Endangered. The species most commonly found in the Archipelago are the loggerhead followed by the hawksbill. However, numbers of all species have declined dramatically, presumably as a result of continued exploitation and loss of nesting habitat. Beaches throughout the Archipelago, especially in the outlying cays, provide excellent sites for marine turtle nesting so increases in nidification should occur if protective measures, including intensive education and local awareness programs, are put into effect to insure that hunting and egg-gathering (by artisanal and industrial fishers as well as by military personnel stationed at outposts on the southern and northern cays) ceases.

AREA 1. San Andres Coastal Waters. According to Bond (1980), San Andres harbors 2 known endemic bird species : the St Andrew Mockingbird (*Mimus magnirostris*) and the St Andrew Vireo (*Vireo caribaeus*) which is listed by IUCN (1996) as Critically Endangered. The actual status of *M. magnirostris* is currently considered uncertain by BirdLife International (Collar, 1999) and others (e.g., D. Brower, 2000); further studies are required to confirm both taxonomic and conservation status. Endemic subspecies include : Mangrove Cuckoo (*Coccyzus minor abbotti*), Black-whiskered Vireo (*V. altiloquus canescens*), Green-breasted Mango hummingbird (*Anthracothorax prevostii hendersoni*), Caribbean Elaenia (*Elaenia martinica cinerascens*), Bananaquit (*Coereba flaveola oblita*), Yellow Warbler (*Dendroica petechia flavidi*), Black-faced Grassquit (*Tiaris bicolor grandior*), and Jamaica Oriole (*Icterus luecopteryx lawrencii*). These birds are primarily found in the mangroves (133 hectares) and coastal woodlands. The endemic subspecies of Mangrove Cuckoo, known as the Old Man Bird, is considered endangered by the local community to whom it is a bird of traditional legends. Sea turtles sporadically nest on the beaches of San Andres but are either killed for consumption or, on the rare occasions that hatchlings result, become confused by the lights from coastal development.

AREA 2. Old Providence & Santa Catalina Coastal Waters. Old Providence and Santa Catalina have several recorded endemic subspecies of birds : Black-whiskered Vireo (*V. altiloquus grandior*), Thick-billed Vireo (*V. crassirostris aproximans*), Bananaquit (*Coereba flaveola tricolor*), and Yellow Warbler (*Dendroica petechia armouri*) as well as the same subspecies of Mangrove Cuckoo, Hummingbird, Elaenia, and Grassquit found in San Andres. Primary habitat is mangroves (53 hectares) and transitional woodlands. Sea turtles occasionally nest on the north-facing beaches of Santa Catalina.

AREA 3. Southern Marine Area. Migrant birds frequent these cays including merlin and peregrine falcons, ospreys, herons and egrets, and a variety of others. Although only occasional turtle nesting has been observed in recent years, the extensive seagrass beds are important feeding areas for the 4 species of sea turtles found in the Archipelago. Regionally, it is in this area that the herbivorous green turtle is most frequently seen. ESE Cays are the area most heavily fished by artisanal fishers in the Archipelago

showing serious declines in species abundance. Turtle nesting was common in the past, but all species have been extensively hunted. If enforceable management strategies are developed with the cooperation and support of artisanal fishers, species abundance and biodiversity should gradually recover, including increased turtle nesting on both SW and ESE Cays.

AREA 4. *Northern Marine Area.* Migratory shore and seabirds frequent the entire northern region and these cays and banks are the Archipelago's primary sea turtle nesting and feeding areas, particularly for hawksbill and loggerhead. Green turtles are occasionally observed in these cays, and a single leatherback nest was found in 1999. The highest number of nests has been found on Serrana. The beaches of Serrana offer excellent sites for marine turtle nesting so a major increase in numbers of nests should result from protective management, education, and enforcement. Serrana is the largest sand cay in the Archipelago, supporting dunes over 10 m high covered with dense vegetation that offer habitat for nesting colonies of resident and migrant seabirds, primarily gulls and boobies. In contrast, Roncador is formed from coral debris and is extremely rocky with only a small beach. These rocks provide ideal nesting sites for boobies. However the once sizeable booby colony, although still present, has suffered from the traditional harvesting of eggs for local consumption and from over-harvesting, vandalism, and carelessness by military personnel stationed at the outpost on this cay. Frigate birds nest in sand areas including the two small sand spits south of the cay. Several years ago these sand areas were the primary nesting grounds for green turtles in the region but a noticeable decline has occurred. Nests of greens, hawksbills, and loggerheads are still found but not in quantity. It is assumed that nesting would increase if proper management was developed in collaboration with artisanal fishers and the military. It should be mentioned that artisanal fishers and other visitors to the cays report that the military regularly shoot sea birds in both Roncador and Serrana for sport.

Present Status and Relevant Legislation

All reefs and corals in the Archipelago are defined as special environmental management zones by resolution 1426 of 1996 from the Ministry of the Environment, and mangroves acquired the legal status of protected parkland through national law 136 of 1994. The congressional law 47 of 1993 prohibits the extraction, transportation, storage, sale, or use of coral sand and natural resources from the beaches, reefs, or sea bottom within the Archipelago. This law also forbids the use of certain fishing gears including set nets, gill nets, seines or trawls, circle nets, and dynamite throughout the Department and the use of long line in areas reserved for artisanal fishing (no such areas exist as yet). A resolution from the INPA also bans fishing with diving compressors. Congressional law 99 of 1993, article 37, paragraph 2, declares the Archipelago of San Andres, Old Providence, and Santa Catalina a Biosphere Reserve and stipulates that CORALINA will coordinate the national and international level actions needed to achieve this status. Resolutions from CORALINA are in effect regulating beach management and prohibiting spear gun use, except by traditional subsistence fishers who require an identity card. The only fisheries management regulations that presently exist define a closed season for conch, length limits for lobster, and weight limits for conch. It should be noted that these regulations are rarely enforced except occasionally in coastal waters of San Andres and Old Providence.

AREA 1. *San Andres Coastal Waters.* San Andres Bay from Johnny Cay to Haines Cay, including the unbroken section of the windward barrier reef NNE of the island, was declared a National Reserve Zone by Executive Resolution 023 of 1971 (this reserve is cited by Kelleher, et. al in the IUCN list of reserves that require management support). The Hooker Bight mangrove area is in the process of being declared a regional park and bird sanctuary by CORALINA. Although external boundaries and internal management zones of this MPA will be determined in agreement with stakeholders, it is proposed that the coastal waters surrounding the entire island be included in the MPA so that the existing reserve zone, which

passed to the jurisdiction of CORALINA when this entity began functioning in the Archipelago in 1995, will be expanded and incorporated into the larger MPA. The proposed regional mangrove park and bird sanctuary will form a special management unit with a separate infrastructure and management plan that will also be included in the larger MPA.

AREA 2. *Old Providence & Santa Catalina Coastal Waters.* The only national park in the Archipelago is in Old Providence - Old Providence McBean Lagoon National Park - and includes the McBean mangrove swamp, a section of the barrier reef with associated lagoon and seagrass beds, 4 small cays, and the land area known as Ironwood Hill. This legally established park is administered by the Office of National Natural Parks, an office of the Ministry of the Environment, and is the only section of the Archipelago not under the jurisdiction of CORALINA. The National Natural Park Office supports the establishment of the MPA and will cooperate with CORALINA to reach an agreement on the relationship between the existing park and the MPA, which is expected to extend around the park's marine area, which has no buffer zone, on all sides. Therefore, the national park will probably function as a special management unit within the larger MPA, having its own infrastructure, management plan, office, and personnel operated by the Office of National Natural Parks. As is the case with each of the MPAs in the proposed system, the external boundaries and internal management zones will be determined in agreement with stakeholders, but preliminary planning includes the waters up to and including the northernmost point of the barrier reef, some 9 miles north of the islands.

AREA 3. *Southern Marine Area.* SW and ESE Cays have no special legislation at this time.

AREA 4. *Northern Marine Area.* In addition to the regulations normally in effect for fisheries management throughout the Archipelago, extraction of conch is prohibited at all times in Queena Reef. No other special legislation exists for this area, but the Vasquez-Saccio Treaty (re-ratified September 8, 1972) between Colombia and the United States of America is in effect in certain sections. The terms of this treaty were reviewed during MPA project planning (PDF Block A) and it is apparent that this presents no complications to the establishment of an MPA in this area because the USA defers to Colombian law when in its sovereign waters so legally enacted conservation measures and fisheries management regulations would apply equally to both nations. With this exception, the international treaties which Colombia has that affect the use of Archipelago waters in regard to fisheries do not pertain to the 4 sites proposed for the regional MPA system.

IUCN Red List Species occurring in the San Andres Archipelago
(For explanation of Categories and Criteria, refer to Annex)

Marine Fishes

Species	Common Name	IUCN Red List Category	Listed
Balistidae			
<i>Balistes vetula</i>	queen triggerfish	VU A2d	1996
Batrachoididae			
<i>Batrachoides manglae</i>	cotuero	VU D2	1996
<i>Sanopus astrifer</i>	whitespotted toadfish	VU D2	1996
<i>Sanopus greenfieldorum</i>	whitelined toadfish	VU D2	1996
<i>Sanopus reticulatus</i>	reticulated toadfish	VU D2	1996
<i>Sanopus splendidus</i>	splendid toadfish	VU D2	1996
Carcharhinidae			
<i>Carcharias taurussand</i>	tiger shark	VU A1ab+2d	07.1996

<i>Carcharodon carcharias</i>	white shark	VU A1bcd+2cd	1996
Chaetodontidae			
<i>Chaetodon marleyi</i>	Marley's butterflyfish	VU D2	1996
Labrida			
<i>Lachnolaimus maximus</i>	hogfish	VU A2d	1996
Lutjanida			
<i>Anisostremus moricandi</i>	brownstriped grunt	EN A2c	1996
<i>Lutjanus analis</i>	mutton snapper	VU A2d, B1+2e	1996
<i>Lutjanus cyanopterus</i>	cupera snapper	VU A2d	1996
Pristidae			
<i>Pristis pectinata</i>	smalltooth sawfish	EN A1bcd+2cd	1996
<i>Pristis perotteti</i>	largetooth sawfish	CR A1abc+2cd	07.1996
Scaridae			
<i>Scarus guacamaia</i>	rainbow parrotfish	VU A1d+2d	1996
Scombridae			
<i>Thunnus obesus</i>	bigeye tuna	VU A1bd	1996
<i>Thunnus thynnus</i>	northern bluefin tuna	DD	1996
Serranidae			
<i>Epinephelus drummondhay</i>	ispeckled hind	CR A1d+2d	1996
<i>Epinephelus guttatus</i>	red hind	Proposed: VU A1d+2cd	
<i>Epinephelus inermis</i>	marbled grouper	VU A2d	1996
<i>Epinephelus itajara</i>	jewfish	CR A1d+2d	1996
<i>Epinephelus nigritus</i>	Warsaw grouper	CR A1d+2d	1996
<i>Epinephelus niveatus</i>	snowy grouper	VU A1d+2d, B1+2e	1996
<i>Epinephelus striatus</i>	Nassau grouper	EN A1d+2d	1996
<i>Hypoplectrus providencianus</i>	Providencia hamlet	VU D2	1996
<i>Mycteroperca bonaci</i>	black grouper	Proposed: VU A1c+2cd	
<i>Mycteroperca tigris</i>	tiger grouper	Proposed: VU A1c+2cd	
<i>Mycteroperca microlepis</i>	gag grouper	VU A1bd+2d	1996
<i>Mycteroperca venenosa</i>	yellowfin grouper	Proposed: VU A1c+2cd	
Sparidae			
<i>Pagrus pagrus</i>	red porgy	EN A1bd+2d	1996

Notes:

1. "1996" refers to the published 1996 IUCN Red List of Threatened Animals.
2. "07.96" refers to revised Red List assessments that were not published in the 1996 IUCN Red List but were, instead, updated on the WWWeb version.
3. Species "proposed" for listing have been assessed internally by IUCN Species Survival Commission experts and are being reviewed through the designated IUCN Red List Authority for possible inclusion in the 2000 IUCN Red List of Threatened Animals to be published for the IUCN World Conservation Congress schedule for Amman, Jordan in October 2000.

Summary of New IUCN Categories and Criteria

Use any of the A-E criteria	Critically Endangered	Endangered	Vulnerable
A. Declining Population			
Population decline rate, using either	80% in 10 years or 3 generations	50% in 10 years or 3 generations	20% in 10 years or 3 generations
1. population reductions observed, estimated, inferred, or suspected in the past, or			
2. population decline projected or suspected in the future, based on:			
a) direct observation			
b) an index of abundance appropriate for the taxon			
c) a decline in area of occupancy, extent of occurrence, and/or quality of habitat			
d) actual or potential levels of exploitation			
e) the effects of introduced taxa, hybridization, pathogens, pollutants, competitors, or parasites			
B. Small Distribution and Decline or Fluctuation			
Either extent of occurrence or area of occupancy, and 2 of the following 3:	< 100 km ² < 10 km ²	< 5,000 km ² < 500 km ²	< 20,000 km ² < 2,000 km ²
1. either severely fragmented (isolated subpopulations with a reduced probability of recolonization, if one extinct) or known to exist at a number of locations;	= 1	≤ 5	≤ 10
2. continuing decline in any of the following:	any rate	any rate	any rate
a) extent of occurrence			
b) area of occupancy			
c) area, extent and/or quality of habitat			
d) number of locations or subpopulations			
e) number of mature individuals			
3. fluctuating in any of the following:	> 1 order/mag.	< 1 order/mag.	< 1 order/mag.
a) extent of occurrence			
b) area of occupancy			
c) number of locations or subpopulations			
d) number of mature individuals			
C. Small Population Size and Decline			
Number of mature individuals and 1 of the following 2::	< 250	< 2,500	< 10,000
1. rapid decline rate	25% in 3 years or 1 generation	20% in 5 years or 2 generations	10% in 10 years or 3 generations
2. continuing decline rate, and either	any rate	any rate	any rate
a) fragmented or			
b) all individuals in a single subpopulation	all sub-pops ≤ 50	all sub-pops ≤ 250	all sub-pops ≤ 1,000
E. Quantitative Analysis			
Indicating the probability of extinction in the wild to be at least	50% in 10 years or 3 generations	20% in 20 years or 5 generations	10% in 100 years

ANNEX 3. SOCIAL ASSESSMENT

Demographics

The population density of the Archipelago is very high with the great majority of inhabitants living in the vulnerable coastal zone. San Andres Island has the highest population density of any island in the region with an official population of 61,047 (1993) in an area of 27 km²; however, the proliferation of shanty towns, squatters, and unchecked immigration from the continent lead to unofficial population estimates ranging from 80,000 to 100,000. The island is flat with a spine of low hills in the north-central section that reach an altitude of 90 m. Over half the population lives in the urban commercial and tourism center which has sprung up with minimal planning since 1960 on the coastal flats and unstable filled wetlands at the extreme north end of the island. Most of the remaining population lives along the windward coast, referred to as San Luis, and in the Hill sections on the center of the island. Although also over-populated, these areas are more spacious being made up of detached residences in tidy yards befitting the native islanders' English heritage. Old Providence and Santa Catalina (OP/SC) have a combined population of approximately 4,200 in an area of 18 km². These islands are mountainous with rugged hills reaching a height of 350 m. Virtually the entire population lives in 10 small traditional-style villages scattered along the narrow coastal flatlands. The outlying cays are uninhabited although SSW, ESE, Roncador, Serrana, and Serranilla Cays have military outposts staffed by a small number of rotating personnel.

The islands' inhabitants fall into 3 main subgroups: 1) the West Indian islander population who descend from the original settlers and are defined by Anglo-puritan/African heritage and English mother tongue; 2) resident immigrants from the Colombian mainland and their descendants who are predominantly defined by Latin, African, Arab, and/or American Indian heritage and Spanish mother tongue; and 3) resident immigrants from foreign countries who mainly originate from Central and South America, other West Indian islands, and Europe. These social subgroups live on the 3 inhabited islands with continentals the majority in San Andres and native islanders the majority in OP/SC. The 1993 census figures classify 20,312 individuals out of the 61,047 total as born in other departments of Colombia and 551 as resident foreigners. The first statistic is locally considered to be low because of the difficulty of accurately canvassing the numerous shanty towns, squatters, and illegal residents; even if correct, this figure does not include descendants of these individuals born within the Archipelago who are not native islanders ethnically speaking. The National Constitution of 1991 (articles 7, 10, and 310) grants the Archipelago's native islanders special protection and rights as an ethnic minority group with a racial and cultural identity distinct from the dominant society.

Administrative structure

Related in historic, linguistic, and ethnocultural terms to other West Indian islands colonized by the English, the Archipelago of San Andres, Old Providence, and Santa Catalina has nonetheless been a Colombian territory since the 1800s and was declared a department by the National Constitution of 1991 (article 309). The center of government is on San Andres and is presided over by an elected governor and an 11 member assembly, all of whom serve 3-year terms. Before becoming a department, the Archipelago had the status of an *intendencia especial* and was governed by an *intendente* appointed in Bogota. Old Providence and Santa Catalina are a municipality within the department and have a mayor and municipal council with 7 members; these officials are elected every 3 years by the OP/SC residents who also vote for governor and the assembly. Archipelago residents elect 2 representatives to the national congress but have no representation in the senate.

Although the islands have been governed by Colombia for a century and a half, Colombian presence in the Archipelago was minimal until roughly 40 years ago. Prior to the free port declaration in the 1950s, the islands were left alone for several hundred years with minimal outside political interference or direction, with the result that the islanders essentially governed themselves. During this period, the strongest influence and quasi-government authority came from the islands' Protestant churches, particularly Baptist and Seventh Day Adventist sects. Still today, with the addition of the Catholic church in recent decades, these institutions are at the center of the native islanders' social structure and religious leaders remain the primary opinion-makers. Along with the islands' small size and geographic isolation, these circumstances contributed to the creation of a society characterized as recently as 1960 by: a high level of self-sufficiency and independence, an egalitarian and classless social structure (relative to European and New World colonial societies), essentially no technological development, a productive economy based on artisanal fishing and agriculture, a high quality of life (with an actual standard of living higher than that of the mainland and other western Caribbean societies), a system of measuring wealth in terms of "real" goods such as an abundance of land and food and/or animals rather than in monetary terms, and functional conservation practices - particularly in the management of scarce soil and freshwater resources and in the small amount of garbage and pollution produced.

However, national and local development policies of the last 3 decades have led to environmental degradation and a loss of ethnic identity. The environment and culture of OP/SC remain more intact but the possibility of large-scale tourism development by off-islanders poses a recurring threat. The native islanders of the Archipelago are now plagued by many of the same situations that are contributing to the destruction of ethnic and biological diversity around the world - overpopulation, urbanization, political and economic marginalization, increased pressure on already depleted natural resources and ecosystems, poorly planned development, and the resulting loss of ethnic responses, self-reliance, and cultural identity. A recent trend by the churches to take an active stand on issues related to native rights, equity, land and sea tenure, local autonomy, and environmental protection is unifying and mobilizing the native islanders in a fashion akin to the early stages of the church-led civil rights movement in the southern United States.

Resource Users

Inventories of marine resource user groups were made in San Andres and OP/SC in 1999 including artisanal fishers, the water sports and dive industries, marinas and yacht clubs, launches and water taxis, hotel associations, relevant government offices, environmental NGOs, and native rights NGOs (traditional users). The final list was made up of 81 organized groups and institutions on the 3 islands directly dependent on marine resource use. In San Andres, these user groups are ethnically divided with artisanal fishers being natives and the diving, water sports, and tourism industries controlled and staffed by continental and foreign residents. In OP/SC, all stakeholder groups are predominantly made up of native islanders. Industrial fishing is based off-island and involves almost no residents of the islands in any capacity. An inventory of resource uses was made in consultation with these user groups that resulted in a list of 47 uses of coastal and marine resources in the Archipelago.

Tourism, water sports, and artisanal fishing are mainstays of the local economy that directly rely on these resources. Participation in these activities is summarized in the following table using several units of measurement including number of persons when known. This table is made up of information gathered from primary and secondary sources including user groups and businesses, the Chamber of Commerce, CORALINA inventories, the Port Captains' Offices, and others.

CATEGORY			SAN ANDRES	OP/SC	TOTAL
Activity	Unit of measurement	Sector	No	No	Estimated persons
Fishing cooperatives (artisanal)	persons	fishers	191	30	221
		other	17	8	25
Fishing unaffiliated (artisanal)	persons	fishers (estimate)	178	80	258
Industrial fishing and shipping	vessels over 47'	locally registered	40	0	--
	persons	plant employees	35	0	35
Launches (registered)	vessels	general use	168 (x2)	156 (x2)	648
		fishing (active)	87	54	--
		water taxis (active)	82 (49 coop)	15	--
	employees	water taxis	164 (98 coop)	30	194
Fishmongers (independent)	establishments	registered vendors	68 (x2)	11 (x2)	158
Diving	establishments	registered shops	9	4	--
	employees	active shops	19	10	29
Tourism	employees	hotels	1,234	154	1,388
	employees	taxis (coop)	200	42	242
	employees	related services	5,332	377	5,709
TOTAL (estimated persons)			7,842	1,065	8,907

Adding the total number of individuals shown in the above statistics plus a conservative estimate of 2 persons per vessel in general use and per establishment that market fish, the number of people whose livelihood depends directly on marine resources is over 25% of the population in OP/SC and approximately 15% of the population in the entire Archipelago. However not only does the scarcity and inaccuracy of existing socioeconomic information make it difficult to quantify the proportion of the population that depends on marine resources, but also these data have major limitations.

In the first place, persons who depend on these resources but are not organized are not included. The number of independent artisanal fishers is known to be much larger than the number who are affiliated to the 4 cooperatives (3 in San Andres and 1 in OP/SC). An estimate is given based on related information from several sources, but since fishing is a traditional islander occupation the number of fishers - particularly those who supplement their regular income by fishing - is presumably much larger. Most launches would be used at least occasionally for fishing and these statistics do not include the many non-motorized canoes, cat boats, and dinghys that do not require registration. The small size of OP/SC insures that all motorized vessels are included in registration figures, but a conservative estimate of 25-30% of launches in San Andres are thought to be unregistered. Other activities which rely heavily on independent operators are land and water taxis.

Secondly, since the collapse of the commercial tourism model in the last decade, the tourism industry in the Archipelago is entirely of the "sun, sand, and sea" variety with a small number of eco-tourists visiting OP/SC. Both of these types of tourism depend completely on the condition of local marine and coastal ecosystems. Businesses included in the table's related services category are only those directly connected with tourism. Independent guides, food purveyors, and water sports operators are not included nor are entertainment groups of traditional dancers and musicians among others. Commercial enterprises, including numerous remaining free port shops and importers, depend primarily on tourism for revenue, and like other developing nations and societies with limited access to capital, there is a large sub-economy of street vendors, independent workers, and hustlers who rely heavily on tourist traffic and/or the harvesting of available natural resources.

Finally, these statistics do not reflect the number of subsistence users nor dependents of the recorded individuals. In virtually every island household, one or more persons earns a living from the listed categories, and taking into account that nearly 40% of adults are thought to be unemployed or, at any rate, not formally employed, income-sharing within extended families is the norm. Therefore, a more accurate estimate would be as many as 80% of Archipelago residents depend on marine resources for at least part of their livelihood. However, on small isolated islands where the total land area is considered coastal zone - as differentiated from mainland "linear" coastal communities - the continued existence of human settlements and economic activity is inextricably bound with the availability of marine and coastal resources and the productivity of marine ecosystems.

Existing conflicts

The present open-access regime and lack of marine resource management lead to minor (at the present time) locally based conflicts; such as site and resource competition between artisanal fishers and divers, conservation interests and users in general, motorized and non-motorized water sports businesses, bathers and water sports, and divers and other water sports. However, several more serious conflicts related to marine resource use currently exist.

1) *Conflicts about industrial fishing.* A major conflict centers around legal and illegal industrial fishing which takes place primarily in the northern banks. Industrial fishing licenses are issued on the mainland to national and international companies that are not based in the islands, employ no islanders, and generally land no product in the Archipelago. Major issues are difficulty of access to collective fishing grounds by native fishers, failure to respect or acknowledge traditional fishing rights and sea tenure, demands for regional autonomy in licensing and management, lack of benefit to the local community, over-fishing including exploitation of endangered species, and neglecting to enforce regulations on legal and illegal industrial vessels.

2) *Conflicts resulting from over-population.* The steady influx of immigrants from the Colombian mainland has led to extreme competition for scarce resources, particularly in San Andres. Tensions are increasing between native islanders and continental residents as well as between established Latin residents and the growing number of impoverished individuals and families fleeing to the islands from the political and financial insecurities of the mainland. In San Andres, a high level of resentment is felt by native islanders because of the take-over of their traditional sea area and the depletion of marine and coastal resources by resident immigrants, continental exporters, and the tourist industry.

3) *Conflicts with authorities.* Militarization. The problem of drug smuggling through the region combined with national strategies to assert sovereignty over the marine territory have increased the military presence in Archipelago waters. Although major abuses of power do not occur, the resulting oppressive atmosphere is considered detrimental to the development of international ecological and diving tourism, and intimidates and alienates artisanal fishers and traditional users. Language and cultural differences exacerbate these conflicts. Enforcement. The main conflicts between resource users and local authorities emerge from the failure of users to respect regulations that prohibit the extraction of coral sand, spear fishing except in certain areas by traditional users, size limits for key commercial species, bans on the capture of endangered and threatened species, and the use of illegal fishing gears. On the other hand, a main complaint of stakeholder groups is the failure of local and national authorities to consistently and impartially enforce existing regulations.

Stakeholder consultation structure

The project methodology calls for stakeholder involvement at a level that will produce collaborative management, formal and informal agreements with stakeholders, community-based monitoring and enforcement, and facilitate bilateral consultation and information exchange. To insure active community involvement in the project planning process, several existing mechanisms established by CORALINA to facilitate stakeholder consultation were used in project preparation and will continue to be used in project implementation. The first was developed within the INCO-DC funded project that is being carried out jointly with Heriot-Watt University of Scotland, Charles Darwin Research Foundation of Galapagos Islands, and the Institute of Marine Biology of Crete entitled: *Appropriate Marine Resource Management and Conflict Resolution in Island Ecosystems*. This 3-year project began in October of 1998 and included the establishment of committees of representatives from marine resource user groups that have been used from the time of inception to collect information and provide a forum for MPA project planning. This stakeholder consultation structure includes:

1) *Working groups*. Inventories of marine resource user groups were made in San Andres and OP/SC to support the formation of stakeholder working groups. Five subcommittees composed of members from the primary resource-user groups were set up in San Andres: artisanal fishers (16 representatives from the 3 cooperatives and independents), water sports (1 representative from each of 10 enterprises including all dive shops, launch cooperatives, marine equipment rentals), conservation (1 representative from each of the 5 local environmental NGOs), traditional use (1 representative from each of the 8 native rights NGOs), and education (1 representative from each of the 5 educational institutions that offer related programs of study). In OP/SC, 3 subcommittees were established: artisanal fishermen (2 members from each of the 10 villages), tourism (representatives from hotels, restaurants, launch drivers, and beach services), and sport diving (all dive shops and independent diving instructors).

2) *Council of delegates*. Each subcommittee chose its representative(s), the number being based on amount of resource use and number of users, to the Community Forums. The remaining delegates to the Community Forums are non-subcommittee members who represent other stakeholder interests. One of the main gaps identified at meetings with this group was the absence of knowledge about and contact with the industrial fishing sector. It is essential to fill information gaps about this sector and provide opportunities for a level of contact, consultation, and conflict resolution. An early project priority as part of the stakeholder analysis will be formulating a methodology to identify and communicate with this sector. The structure of the two representative councils that were formally set up in 1999 and meet regularly on the islands are summarized in the following table:

Community Forums : Membership Structure			
San Andres Island		Old Providence and Santa Catalina Islands	
Organization	Resource-user group	Organization	Resource-user group
Roos Carlos Barker Coop.	artisanal fishers	COPROPESCA	artisanal fishers
Cove-Seaside Cooperative	artisanal fishers	Working subcommittee	artisanal fishers
Elliott McGowan Coop.	artisanal fishers	Working subcommittee	artisanal fishers
Cove Alliance	traditional users	Civic movement	traditional users
Paradise Foundation	traditional users	Churches	traditional users
		Community	traditional users
Madre Tierra	environmental NGOs	Trees and Reefs	environmental NGOs
Mundo Marino	water sports	Working subcommittee	water sports
Ocean Sport/Barlovento	water sports	Working subcommittee	water sports
Funny Splash	water sports		
Tourism Secretary	government entities	Municipal Tourism Office	government entities
Agriculture/Fishing Sec'y	government entities		
CORALINA	government entities	CORALINA Board	native representative
Port Captain/DIMAR	government entities	Port Captain/DIMAR	government entities
INPA	government entities	INPA	government entities
Sociedad Portuaria	government entities		
		Environmental health office	government entities
		National Park Office	government entities
Ashotel	tourist industry	Hotel Association	tourist industry
		ECOASTUR	tourist industry
Antillana, SA	industrial fishing		
Nene's Marina	Marinas		
Universidad Valle	educational institution		
		Municipal Council	public representative
		Municipal ombudsman	public representative
		ANUC	farmers union

Non-affiliated resource users and the general public were also informed and consulted during project planning through a number of presentations at meetings and workshops held as part of other CORALINA project activities - especially the biosphere reserve and sustainable tourism projects and the community outreach program with churches and community action groups (33 meetings in 1999) in which community groups invite CORALINA to attend their regularly scheduled meetings and give a brief presentation or initiate a discussion on environmental management issues. Within this on-going program, project personnel will have the opportunity to regularly visit neighborhood churches, NGOs, community action groups, and other organizations led by the islands' leading opinion-makers during project implementation.

As part of the PDF Block A, meetings (21 in total) to discuss and collect information needed to design the mid-size project were held with user groups represented in the consultation structure as well as with other sectors of the community including: cooperative and independent artisanal fishers (4), dive shop owners and managers (2), other water sports businesses (1), representatives of the tourism sector (3), the marine resource users community forums (2), and NGOs including the most active native rights organizations, civic watchdog groups, the women's foundation of the islands, and conservation groups (9). Institutions were also consulted including: Old Providence McBean Lagoon National Park; Departmental Secretaries of Agriculture, Planning, and Tourism; INPA (Instituto Nacional de Pesca y Acuicultura); DIMAR (Direccion Maritima y Portuaria) which includes the navy and port captains' offices; and the research institutions of INVEMAR (Instituto Nacional de Investigaciones Marinas) and the Institute of Caribbean Studies (National University). The project planning team also met with other offices of CORALINA and with persons involved in the design of the Territorial Ordering Plan.

ANNEX 4a. COLOMBIA GEF PORTFOLIO : PORTFOLIO OVERVIEW

Colombia is generally recognized to be among the world's five most biologically diverse nations (Mittermeier, 1998). With a surface area of 1.14 million km² - approximately 0.8% of the earth's surface - Colombia is home to about 15% of all known terrestrial species, giving it one of the highest concentration of species per unit area in the world. Colombia has the largest number of species of avifauna and amphibians in the world and also ranks high in numbers of vascular plants and vertebrates. The country supports 18 eco-regions (WWF/World Bank report, 1996), making it the second highest of any country in Latin America. The most recent ecosystem map for Colombia (Instituto Alexander von Humboldt, 1998) identifies 65 ecosystem types. Consequently, the GEF strategy in Colombia concentrates on the conservation of globally important biodiversity as reflected in the portfolio of GEF projects that are currently under implementation.

Common Vision

The Colombia GEF biodiversity portfolio currently consists of 9 full size (FP) and medium size (MSP) projects which are under implementation and preparation. These projects all share the same vision and strategy, whose main characteristics are: 1) the conservation of biodiversity of global importance, through the sustainable use of biodiversity and natural resources; 2) the identification and implementation of Sustainable Production Systems, as part of the strategy for to prevent biodiversity loss; 3) the participation of the local communities, and civic society in the definition and execution of the conservation strategy; 4) strict conservation, albeit very important, as only one management category for a conservation strategy; and 5) decentralized environmental management at the regional and local level, as a necessary factor for the success of any environmental management strategy.

Operational Programs and Ecosystem Coverage

Although all the Colombia GEF Projects fall under the GEF Biodiversity window, they respond to three different Operational Programs (#2, #3, #4) and to the crosscutting issues of Land Degradation and Watershed Management. They cover a very wide spectrum of ecosystems, geographical areas, environmental and social issues, from the Andean Paramo, to the Amazonian Forest, to the Pacific Coast, and to the Caribbean Marine Resources. This makes the Colombia GEF biodiversity program one of the most diverse and highly differentiated of the GEF country programs and enhances the complementarity of the different initiatives. The Portfolio Overview provides information on project objectives, status, and partners.

Institutional and Organizational Coverage

Another interesting feature of the Colombia GEF Biodiversity Portfolio is the institutional variety of the different executing agencies, ranging from National Government Institutions (like the National Parks Unit), to Regional Government Institutions (such as Corporaciones Autonomas Regionales, like CORALINA and CORMACARENA), to National NGOs (like Foundation Natura and Foundation Pro-Sierra), to local NGOs (as Proselva and Etnollano), and to research institutes (like von Humboldt). This institutional diversity makes the dialogue, exchange of experiences, and methodologies very rich and constructive. All the different institutions have demonstrated a strong institutional capacity and a willingness to collaborate and share information and experiences.

Coordination Mechanism

Given the important GEF biodiversity portfolio in Colombia and the number of initiatives presented to the Implementing Agencies by national, regional, local governments, and NGOs, at the beginning of 1999 the Minister of Environment (MMA), UNDP and the World Bank decided to establish a GEF Permanent Committee to exchange information and coordinate between the different initiatives. The Committee became fully operational in the second semester of 1999 and its stated objectives are: 1) to make sure that all new GEF initiatives respond to Government priorities, as defined by the National Environmental Policy; 2) to clearly establish the thematic complementarity of different initiatives and their different geographical location; 3) to exchange information on successful and unsuccessful experiences and lessons learned during project preparation; 4) to create a forum of discussion for Implementing Agencies, Executing Agencies and GoC on the advances and difficulties of the different projects in order to improve the efficiency in the use of the financial and human resources; and 5) to exchange technical assistance between the different initiatives.

To avoid duplication of efforts and assure unity of criteria, the Office of National Natural Parks (UAESPNN) and the Institut von Humboldt (IavH) will coordinate the activities of all projects related to national parks and biodiversity information collection and management, respectively. This coordination effort will be undertaken with the collaboration of and by strengthening regional and local agencies, NGOs and communities. In order to promote experience and lesson-sharing among projects, all projects will be invited as observers to IA project evaluation missions.

Portfolio Overview

The Colombia GEF biodiversity portfolio comprises nine projects that are under implementation (1), preparation (7), and identification (1). A summary of project partners, objectives, and status is described below.

Under Implementation:

1. Sustainable Use of Biodiversity in the Western Slope of the Serranía del Baudó (Choco) –Medium Sized GEF – Implementing Agency: World Bank. Executing Agency: Foundation Natura Colombia. The objective of this MSP is the development of a strategy for the sustainable use of biodiversity in the western slope of the Serranía del Baudó and the marine resources of its coastal area (Choco- Pacific Coast) in a joint effort between governmental institutions and civil society, designed to benefit local communities, within OP#2, Coastal, Marine, and Freshwater Ecosystems) and OP#3, Forests (GEF Approval April 1999; WB Approval June 1999; project start up September 1999).

Under Preparation:

2. Conservation of Biodiversity in the Sierra Nevada de Santa Marta – Full Size GEF – Implementing Agency: World Bank. Executing Agency: Fundación Prosierra Nevada de Santa Marta. The objective of this project is to conserve, restore and promote sustainable use of the mosaic of tropical ecosystems in the Sierra Nevada de Santa Marta, within OP #4, Mountain Ecosystems, and OP# 3, Forests (GEF-Council approval, December 1999).

3. Conservation and sustainable use of biodiversity in the Andes region. – Full Size GEF – Implementing Agency: World Bank. Executing Agency: Institute von Humboldt. The project's development objective

is to increase conservation, knowledge, and sustainable use of globally important biodiversity in the Colombian Andes, within OP #4, Mountain Ecosystems, and OP# 3, Forests (Block B granted).

4. Biodiversity Conservation in the Paramo and Montane Forest Ecosystem of the Colombian Massif – Full Size GEF – Implementing Agency: UNDP. Executing Agency: National Parks Unit. The proposed project will protect two globally outstanding ecosystems currently under threat, the Northern Andean Paramo and the Northwest Andean Montane Forest, establishing a regional network of protected areas, improving buffer zone management by enhancing sustainable land use in areas adjacent to parks, and integrating biodiversity management principles into regional and local processes, within OP #4, Mountain Ecosystems, and OP#3, Forests. In view of the fragility and severe land degradation of mountain areas, it will also address the crosscutting issue of land degradation (Block A granted).

5. Biodiversity Conservation in the Special Management Area La Macarena – Full Size GEF – Implementing Agency: UNDP. Executing Agency: CORMACARENA. The objective of this project is the conservation of biodiversity in the special management area La Macarena, strengthening the management of the reserve and contributing to sustainable natural resources practices, within OP#4, Mountain Ecosystems, and OP#3, Forests (Block B granted).

6. Conservation and Sustainable Development of the Mataven Forest (Amazonia) –Medium Sized GEF – Implementing Agency: World Bank. Executing Agency: Etnollano. The objective of this MSP is to support the establishment and demarcation of indigenous territory as a strategy for natural resources conservation. It is working on the creation and management of the first "Indigenous National Park" as a strategy for conservation and sustainable use of biodiversity in the Mataven forest in the Amazon region, within OP#3, Forests. (Block A granted)

7. Community Based Management for the Naya Conservation (Choco)–Medium Sized GEF – Implementing Agency: World Bank. Executing Agency: Foundation Proselva. The objective of this project is to develop and implement a community-based biodiversity management and monitoring plan, endorsed by local communities and government, to be the long term guide for future development in the Naya river basin of the Choco region, within OP#3, Forests, and OP#4, Mountain Ecosystems (Block A granted).

8. Caribbean Archipelago Biosphere Reserve: Regional Marine Protected Area System –Medium Sized GEF – Implementing Agency: World Bank. Executing Agency: CORALINA. The objective of the project is to conserve biodiversity and ensure sustainable use of coastal and marine resources in the Archipelago, while enhancing equitable benefit distribution for the community, within OP#2, Coastal, Marine, and Freshwater Ecosystems (Block A granted).

Under Identification:

9. Marine and Coastal Protected Areas System of the Caribbean and the Pacific – Full Size GEF – Implementing Agency: UNDP. Executing Agency: INVEMAR. The objective of this project is the conservation and sustainable use of biodiversity in the marine and coastal protected areas of the Colombian Caribbean Sea and Pacific Ocean, in order to contribute to the preservation of the cultural diversity and the sustainable development of the nation, within OP#2, Coastal, Marine, and Freshwater Ecosystems (Block Bunderpreparation).

**ANNEX 4b. COLOMBIA GEF PORTFOLIO :
RELATIONSHIP BETWEEN the CORALINA PROJECT and OTHER GEF PROJECTS**

National

The *Caribbean Archipelago Biosphere Reserve: Regional Marine Protected Areas System* - MSP was prepared by CORALINA in 1999 with the assistance of the World Bank, and it is now being submitted for approval to GEF-SEC. This proposed project fully reflects the five principles of the common vision of the Colombia GEF portfolio and complements the strategy for biodiversity conservation in Colombia by working on Marine and Coastal Resources, and within an operational program (OP#2: Coastal, Marine and Freshwater Ecosystem) that is not yet covered in the Colombian Caribbean.

In particular, the Caribbean Archipelago Project relates to the Serrania del Baudo Project in the Pacific. In fact the latter, already under implementation, is working on communities' use and management of marine resources with the participation of ethnic minorities, Afro-Colombians, and indigenous groups (Embera) in a highly conflictive area owing to the presence of groups coming from inland and competing for the same resources. Lessons learned in the Baudo project will be very relevant to Caribbean Archipelago project, especially in relation to community participation in the management of marine resources. Both projects will contribute to strengthening the decentralization aspects of the National Environmental System (SINA), in which national bodies are expected to design and consult policies while regional bodies should implement these policies in a decentralized and highly participatory way¹.

In addition, the Caribbean Archipelago project relates very strictly to the recently identified Marine and Coastal Protected Areas System of the Caribbean and the Pacific - Full Size GEF Project- UNDP. INVEMAR is discussing this project with UNDP, and is preparing a Block B request. This project shares with the Caribbean Archipelago project the same general objective (conservation of marine and coastal ecosystems), and some specific objectives (protection of certain species and habitats and sustainable use of marine resources), and being a national government initiative, might serve as an umbrella project for marine and coastal resources conservation policies. Since the beginning, it has been designed to exclude execution of activities in the area of the Caribbean Archipelago project. Even recognizing that socially and ecologically the island Caribbean environment is very different from that of the Caribbean coastal areas, it is expected that the INVEMAR project will learn from the advances and experiences of the CORALINA project and that, at the same time, it will retrofit and enrich the management experience of CORALINA, as the autonomous corporation that will create and administers the Regional Protected Area System. The Coordination Committee is working on making sure that the two projects complement each other and are differentiated geographically in their execution.

Regional

In addition, the CORALINA project is related and complementary to a regional initiative: the proposed Mesoamerican Barrier Reef System GEF-WB Project, executed by the Commission Centro Americana de Ambiente y Desarrollo (CCAD). The primary goals of the program for the Conservation and Sustainable Use of the Mesoamerican Barrier Reef System (MBRS) are to enhance protection of vulnerable and unique marine ecosystems of the second longest barrier reef in the world and to assist the countries of Mexico, Belize, Guatemala, and Honduras to strengthen and coordinate national policies, regulations, and

¹ The SINA, created by law 99 in 1993, is only now starting to be built. This is an excellent opportunity to incorporate lessons learned from the projects' experience into the system.

institutional arrangements for marine ecosystem conservation and sustainable use, within OP#2 (Block B granted). It is planned that the Mesoamerican project and the Caribbean Archipelago project will establish collaborative agreements to share information for biological and economic research, for training purposes, and to interchange management experiences. In fact, although the coral reefs they propose to protect are different at a larger scale the marine and coastal ecosystems that affect the reefs are related.

ANNEX 5. REFERENCES

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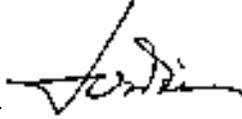
THE WORLD BANK/IFC/M.I.G.A.

OFFICE MEMORANDUM

DATE: June 16, 2000

TO: Mr. Mohamed El-Ashry, CEO/Chairman, GEF

FROM: Lars Vidaeus, GEF Executive Coordinator



EXTENSION: 34188

SUBJECT: **COLOMBIA – Caribbean Archipelago Biosphere Reserve: Regional Marine Protected Area System (MSP)
CEO Endorsement**

Please find attached the final GEF MSP Brief for CEO endorsement for the above-mentioned project.

This MSP was approved for Work Program entry at the May 2000 Council meeting. Council comments were received from three constituencies, and were highly complimentary to the proposed project approach and design. Council members requested additional information on the following topics: (i) attention to pollution issues; (ii) linkages between the establishment of the biosphere reserve and the GEF MSP; and (iii) recurrent cost financing and sustainability after the project period.

The executing agency, CORALINA has prepared very informative and detailed responses to each of these questions, which we attach as Annex 1.

With these clarifications, we look forward to receiving CEO endorsement for the Colombia Caribbean Archipelago Biosphere Reserve proposal, so that we may approve the GEF grant and initiate project start-up with our partners in CORALINA.

Many thanks for your attention to this matter. We look forward to hearing from you soon.

Attachments (2)

cc: Messrs./Mmes. King, GEF Program Coordination (GEFSEC), T. Serra, C. Kimes, T. Bradley, M. Isaac, J. Ruiz (LCSES); Castro, Aryal (ENVGC); ENVGC ISC, IRIS 1

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**GEF COUNCIL COMMENTS:
CORALINA's RESPONSE**

CORALINA appreciates the comments of the GEF Council members and briefly replies below to several of these comments.

1. Comment from Switzerland: *We have some doubts as to whether sufficient attention is paid to pollution.*

CORALINA is in full agreement that pollution poses a serious threat to regional biodiversity and the success of the MPA system. The main pollutants threatening the proposed MPAs are solid and liquid waste and sedimentation. Since controlling pollution is part of CORALINA's mandate, the baseline course of action includes a number of past, on-going, and future activities related to pollution control and water quality management: identify and mapping waste disposal sites and deforested areas; inventories of land-based threats, particularly from tourism; water quality and ecosystem monitoring programs; integrated groundwater management plan; reforestation and gully recovery; training in solid and liquid waste management and pilot septic systems, agro-forestry, and sustainable tourism including best management practices and hotel greening; environmental impact assessments of proposed development including waste treatment alternatives; and community clean-ups. The development of integrated water quality action plans with the community is also included in the baseline along with continuous pollution control throughout the islands. For example, CORALINA currently is taking legal action against approximately 16 hotels for polluting and is requiring them to cease polluting, instate management plans and alternatives, and undergo training.

In addition to CORALINA's on-going work to reduce and control the threat of pollution, the GEF alternative will make it possible to more effectively address this threat within the context of the MPA system, particularly non-point source pollution. Project actions designed to mitigate and control the threat of pollution to the coastal and marine zone will be strengthened and include policies and legal regulations to reduce land- and sea-based pollution that can degrade water quality and ecosystems, integrated MPA management planning to evaluate and reduce pollution in the coastal and marine zone, and capacity building in ways to protect water quality and reduce anthropogenic threats to biodiversity and ecosystems through a year-long general community training program, a technical training course by outside experts, and elaboration of education materials and island-wide media campaigns against pollution.

2. Comment from Switzerland: *The project brief does not give enough information on the topic of the Biosphere Reserve. We recommend making more information available about the current status of the declaration process and about the relations between the activities related to the Biosphere Reserve.*

Congressional law 99 declared the Archipelago a Biosphere Reserve in 1993 and designated CORALINA to implement this declaration at the national and international levels. Therefore, since CORALINA began functioning in June 1995, the agency has been working to set up the Biosphere Reserve. The CORALINA action plan designed in 1995 created the Biosphere Reserve project, and in 1996 a grant from UNESCO implemented by the Education Ministry allowed the project to begin. Since then CORALINA has worked continuously with the community in the biosphere reserve education and outreach project, and awareness of the goals of the Man and the Biosphere (MAB) programme and the World Network of Biosphere Reserves is widespread. In 1999 a grant from the IADB implemented by the Environment enabled the project team to expand and collect information and do the management planning to complete the nomination form and elaborate the draft management plan. The community participated actively in zoning and management planning and is currently receiving training in sustainable economic project development to implement the Biosphere Reserve.

Since the Biosphere Reserve is the whole Archipelago - both land and sea - the entire area must be divided into core, buffer, and transitional zones and adequately managed to satisfy MAB programme guidelines. Zoning has been completed for the islands' terrestrial area but given the size, complexity, and cost of developing the Biosphere Reserve in the marine area, zoning and management planning to set up the Biosphere Reserve in the sea has not begun. To fill this need, CORALINA with the support of the community developed the GEF MSP in which the alternative permits the establishment of the regional system of marine protected areas that is the heart of the Biosphere Reserve in the marine area. The multiple-use MPA management plans will be designed to balance MAB programme functions of conservation, development, and logistics.

Biosphere Reserves can include many different management units and are structurally unrelated to conventional parklands. A key MAB directive explains: "Develop biosphere reserves that include a wide variety of environmental, biological, economic and cultural situations, going from largely undisturbed regions and spreading towards cities." (Seville Strategy). Therefore, the Archipelago Biosphere Reserve includes many distinct management units within its boundaries. The Old Providence McBean Lagoon National Park is a core zone in the Biosphere Reserve as are the mangroves and the Hooker Bight Regional Mangrove Park. No-entry and no-take zones in the MPA system will be core zones in the Biosphere Reserve. Core areas designated no-entry emphasize in situ conservation and monitoring, while those designated no-take protect biodiversity while allowing economic activities like nature-based tourism, sport diving, research and educational programs. Biosphere reserve buffer areas stimulate sustainable economic activities and will include MPA artisanal fishing zones that encourage recovery of traditional methods and sustainable fisheries management, and water sports zones that provide recreational opportunities. Marine areas such as the Municipal Ports, docks, and shipping lanes are defined as transitional zones within the Biosphere Reserve.

CORALINA has completed the Biosphere Reserve Nomination Form for submission to the UNESCO MAB programme. At the present time, this document is undergoing final review by the CORALINA project technical team, stakeholder groups, and the CORALINA Directive Board and is expected to be submitted to the UNESCO Division of Ecological Sciences in Paris at the end of June 2000. The MAB programme has made a preliminary review of this nomination and has expressed a high level of interest in accepting the Archipelago Biosphere Reserve into the World Network. "There is a particular potential, and need, to apply the biosphere reserve concept in the coastal and marine environment." (Seville Strategy, key direction # 2).

3. Comment from France: *As with most of the projects submitted for GEF financing, the question of recurrent costs for protection at project completion is not discussed. This is unsatisfactory(so) the GEF should be given satisfactory assurances on this matter in advance.*

Realizing the importance of long-term financial self-sustainability for the MPA system, CORALINA emphasized activities related to financial evaluation and methods of cost recovery during the Block A phase. The following activities were carried out:

a) An MPA expert and financial consultant led a 10-day planning workshop in the Archipelago in August 1999 (sponsored by project technical partners CMC and IRF) that included training in 26 techniques that MPAs employ to generate revenue and a preliminary evaluation of the applicability of these to the Archipelago proposal. Also in attendance was the manager of the Bonaire Marine Park, who shared information on this park as one of the most successful models in the Caribbean.

b) Possible methods of revenue generation were analysed. Those included in the preliminary financial evaluation are: government subsidy stemming from regional and national government responsibility for maintaining common property and collective areas; grants from national and international funding organizations; conservation levies on other activities; tourist tax or percentage of airport entry or departure tax; taxes on development projects that negatively impact coastal and marine biodiversity or that receive benefit from these resources or the MPA system; percentage of performance bond required for coastal development; off-set requirement for coastal development; trust funds including debt-for-nature swap funds; partnerships between government, the private sector, and NGOs; tourism fees (separate fee structures for visitors and residents) of which there are several types such as entrance, use of specific object, and/or admission to certain facility or site; mooring fees; licenses and permits (fishing, diving, bathing, boating); sales of souvenirs, educational materials, etc. by local stores and/or special visitor center gift shop; concessions to conduct activities within the area or to use resources such as glass-bottom boat, tour boats, and snack shop; donations and memberships like a Friends of the Reserve group; sponsoring special aspects or activities; special events and fund-raisers; and promotion of tourism and research opportunities.

It should be noted that as the regional environmental management agency, CORALINA has the authority to put many of these measures directly into effect. A non-profit Friends of the Biosphere Reserve group is being established in the United States and is expected to be operational by August.

c) A preliminary financial analysis was made including comparative data from other MPAs, and a number of revenue generating techniques were determined to be of possible use in the regional system. The Archipelago's Gross Domestic Product (GDP) in 1995 (the last year for which statistics are available) was estimated at \$187.422 million pesos (current prices). The main economic activity was tourism-commerce including hotels, restaurants, shops, casinos and night clubs, vehicle rental agencies, and tour services. This sector accounted for 84% of the GDP with approximately 250,000 tourists visiting the islands. In 1997, the average tourist expenditure was US \$231 (sun and sand) that can be compared with \$1,170 per tourist in the Galapagos (protected area model) and a conservative estimate of diver expenditure of \$500-\$700 at the Saba Marine Park by the second year of operation (marine park model).

A study made by the World Tourism Organization revealed that 40-60% of annual visitors to any location visit protected areas and parklands. The Venezuelan tourism corporation estimates that a protected area is the principal destination of 60% of all tourists to that country, and in a major survey of tourists to Mexico, Dominica, Costa Rica, and Ecuador, the World Wildlife Fund discovered that protected areas constitute an important factor in determining travel destination for 50-79% of visitors. In the Caribbean, ecotourism and the number of tourists who come to dive or snorkel are growing rapidly, and marine conservation has been proven to attract tourists. For example, the annual recurring costs of the Bonaire Marine Park (BMP) are approximately \$150,000. In the first year of operation \$170,000 was generated in user fees alone, covering operating costs and contingencies; total direct and indirect revenues related to park tourism were \$23.2 million (1992). In Virgin Islands National Park, total annual costs were \$2.1 million with direct benefits of 3.3 million and indirect benefits of \$20 million (1980s). Within 4 years of establishment (1992) the Saba Marine Park had become self-financing, and it is estimated that half of the total revenue earned from tourism is generated by the marine park.

In 1992 BMP began with 3 full time and 1 part time employee, 2 vehicles, and 1 boat. The Archipelago MPA system proposes to begin with 4 full time employees, 2 boats and computer equipment (purchased in the GEF project), and donated office space in existing facilities such as the Fishers' Cooperatives or CORALINA. The CORALINA proposal is based on protected area models that ensure conservation sustainability by generating local economic benefits and revenues.

d) A bibliographic search was made and documents on economic valuation of protected areas were collected from sources such as IUCN, World Bank, and WWF.

e) Direct contact was established with Bonaire Marine Park, Soufriere Marine Management Area (SMMA), Saba Marine Park, Florida Keys National Marine Sanctuary, Cayman Islands Marine Parks, Charles Darwin Foundation (Galapagos Islands), and the Caribbean Fishery Management Council. Financial information was received from these organizations. All of these marine parks or marine park management entities are financially sustainable (with the exception of SMMA which is undergoing management revision), employing a variety of mechanisms to achieve this status determined by management method - government, non-government, or combination. Experts agree that the type of funding available and what will work for a specific MPA will be different for each MPA.

f) Economic data related to marine resource use in the Archipelago was collected from the Ministry of Finance and Census Bureau, Chamber of Commerce, and fishing and tourism industries. Questionnaires to collect quantifiable economic information have been distributed to tourists, hotels, and commercial establishments on the islands that will be returned at the end of June and analysed by the end of July.

g) Following the completion of the project brief, a planning session to prioritize project activities was held with CORALINA, CMC, IRF, and advisors. It was agreed that socioeconomic data must be collected as soon as the project begins and that a professional consultant should be hired during the first 6 months of the project to complete the financial sustainability plan. A format is being developed for the Archipelago MPA system to itemize estimated operational costs per annum and set the financial target in US dollars per annum, including the terms of reference for line items.

h) World Bank, UNEP, and IUCN were contacted for recommendations of financial consultants to further assist in this work. Names of potential candidates have been collected, and CMC has committed funds for this consultancy.