

## **ANNEX A - INCREMENTAL COST ANALYSIS**

### **Integrated Management of the Ecosystems of the Gulf of Fonseca**

#### **1. Background**

- 1.1 The Gulf of Fonseca is situated along the Central American Pacific coast, bordering the Republic of Honduras to the North, the Pacific Ocean to the South, the Republic of El Salvador to the west; and the Republics of Nicaragua and Honduras to the east. It is a tropical estuarine system made up of a set of interrelated ecosystems, such as its interior estuary, mangroves, and continental and island coasts encompassing an area of 3,200 km<sup>2</sup>. Mangroves occupy 1,100 km<sup>2</sup>, accounting for approximately 22% of the entire area of mangroves along the Pacific coast of Central America. Six main tributary watersheds and other smaller ones cover an area of approximately 21,000 km<sup>2</sup>. The Goascorán and Río Negro watersheds are transboundary, the first shared by El Salvador and Honduras, the second by Honduras and Nicaragua. Along with the Gulfs of Guayaquil, Nicoya, Chiriqui and Panama, the Gulf of Fonseca is one of the most important tropical coastal systems along the Eastern Pacific Ocean in Latin America due to the size of the estuarine complex and mangrove belt and its proximity to areas with high concentrations of nutrients such as seasonal upwellings and seamounts.
- 1.2 Similarly, it is also considered as one of the most biologically rich maritime areas of Central America and provides spawning, nursery and feeding areas for a range of species of fish, shellfish, including stocks that have traditionally supported the most productive artisanal fisheries in the region. Given its physical and ecological characteristics, the Gulf also accounts for a significant share of shrimp farmed in Central America, an important source of revenue for all three countries. But all these important functions are threatened by several factors that affects the Gulf's ecosystems functionality and integrity. As one of the only two multinational maritime formations in Central America with transboundary watersheds, the Gulf requires particularly close international coordination to maintain the integrity of its ecosystem.
- 1.3 In 1993, the Presidents of the three countries signed the Amapala Agreement, where they declared their interest in conserving and preserving the Gulf due to its importance for each country. In the context of Plan Puebla Panamá (PPP), the three countries also selected the Gulf of Fonseca as a priority area, and in 2004 asked the IDB to design a project that would promote the integrated management of its ecosystems. Therefore, as a part of the preparation of the present proposal, in 2005 a donor round for the Gulf of Fonseca was held at Zacate Grande Island, Honduras, and the Ministers and Secretaries of the MARN, SERNA, and MARENA signed the document called Declaration of Zacate Grande, where they agreed to push forward a trinational coordination initiative for the integrated management of the Gulf, at the same time that they considered the aim of managing this important ecosystem in a sustainable manner as a means of enhancing their countries' development with a regional perspective. Effective integrated management of the Gulf and its ecosystems requires additional support from different donors, besides the non-reimbursable GEF funding. With the endorsement of the involved Governments, the IDB has been coordinating the formulation of a joint effort towards this end. The following section summarizes the baseline situation.

## **B. Analysis of the Baseline Scenario (current situation without the proposed GEF Project)**

- 1.4 The overall environmental condition of the Gulf has been studied during the latest months through –among others– a Transboundary Diagnosis Analysis (TDA), as a key part of the formulation process of this proposal. A series of emerging and interconnected problems affecting the marine and coastal resources are threatening the medium and long-term functional integrity of the Gulf's ecosystems. Some of these threats appear to be relatively localized whereas others are common to the three countries or transboundary in nature. These threats are synthesized as follows: increase of pollution and sedimentation; overexploitation of fish and shellfish; transboundary conflicts among fishers; overuse of water resources; and habitat degradation. These direct threats have their origin in the following set of transboundary and interrelated root causes: poor coordination between the involved countries and the absence of common tools in order to co-manage the Gulf's resources with a regional perspective; absence of harmonized legal/financial mechanisms and planning instruments for guaranteeing the sustainability of the Gulf's marine and coastal ecosystems; and limited sustainable alternative livelihoods.
- 1.5 From the TDA process it was evident that a situation involving three countries with parallel institutions, with different technical and operational capacities at the local and national levels, with diverse problems, realities and priorities, as well as the interaction between various economic and social sectors, generates a set of issues that hinder an appropriate coordinated response by the involved countries. Additionally, the analyses undertaken for the TDA, including a simply hydrological model, provide evidence of the connection between severe erosion and pollution in the tributary watersheds and sedimentation and contaminant loads in vulnerable parts of the Gulf such as its estuaries, mangroves and seagrass beds. Excessive sedimentation and contaminant loads can lead to habitat degradation and eventually to declines in coastal and marine resources shared by all three countries. In this baseline scenario, several fundamental questions remain unanswered such as the extent to which sedimentation is human-induced, the micro-watersheds contributing the most pollution and sediments, and the ecosystemic and socioeconomic conditions that have led to the decline of fisheries stocks in the Gulf. These circumstances and the questions underlying them constitute the main argument for proceeding with a cost-effective approach where all three countries can tackle the problems in a cooperative manner.
- 1.6 The Gulf of Fonseca has been the recipient of some funding initiatives that have been used for the design of the project and its eventual implementation. DANIDA has been one of the predominant international cooperation agencies, helping to establish a common strategic framework for management and development in order to address some environmental problems through the project PROGOLFO. This project had been carried out by the governments of El Salvador, Honduras, and Nicaragua from 1999 to 2003 through MARN, SERNA and MARENA. One of the major contributions of this effort was to generate a significant amount of information on the coastal marine zone of the Gulf of Fonseca, which has been used as a basis for developing this GEF-IW project. Additionally, the project PROARCA financed by USAID has also contributed to the involvement of the three countries in a joint management of the Gulf, by developing and sharing information, tools and methods for the integrated management of marine and coastal key ecosystems in Central America<sup>1</sup>.

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<sup>1</sup> There are two projects that are at the initial implementation stages: (i) 'Conservation of Coastal Ecosystems in the Gulf of Fonseca' financed by AECI-ARAUCARIA, which comprises an execution

- 1.7 While important funds have been invested, there has been a tendency to focus on single productive sectors from a country-based perspective and not taking fully into consideration the interrelated nature of the problems in the Gulf. In this context, cooperative and integrated management of the Gulf can only be achieved by building a common understanding of the Gulf of Fonseca as a maritime body linked to its tributary watersheds with coastal and marine resources shared by the three countries locally and nationally, by engaging and promoting ownership in the project among actors involved in the three countries by means of practical activities that can attain measurable field results, and by basing concerted management decisions on scientific knowledge of both the tributary watersheds and the Gulf's waterbody dynamics.

### **C. Analysis of the Alternative Scenario (with the GEF Project)**

- 1.8 The GEF Alternative will build upon and complement the ongoing programs and activities of the baseline scenario. Through the baseline activities alone, it will not be possible to achieve a development that is consistent with the sustainable use of the Gulf's ecosystem. The project has the objective to foster the sustainable use of the Gulf of Fonseca's marine and coastal resources and the integrated management of its ecosystems through the support of a trilateral framework for cooperation. The project will achieve this objective through a series of activities divided into four main components:
- 1.9 Component 1: Institutional Strengthening for Regional Management of the Gulf. This component will be achieved through the following activities: (i) strengthening the technical and operational capacities of key stakeholders in regional and local institutions, as well as social actors; (ii) reinforcement of the trilateral coordination framework; (iii) enhancement of the mechanisms for the involvement of the civil society in the Gulf's management; and (iv) consolidation of the information node for monitoring the Gulf of Fonseca by linking in the local and national information systems with a Regional one.
- 1.10 Component 2: Management of Coastal and Marine Ecosystems. This component consists of the following activities: (i) design and implement a trilateral coastal management plan for the Gulf of Fonseca as a foundation for effective local Coastal Resource Management (CRM); (ii) develop fisheries and aquaculture policy and co-management for the Gulf among the three countries; (iii) enhancing the financial sustainability for the management and co-management of the Gulf's resources; (iv) environmental restoration of mangrove ecosystems.
- 1.11 Component 3: Pollution and Sediment Prevention and Control /Decision-making Models. This component will be achieved through the following activities: (i) expansion of the hydrometric and water quality monitoring network in the tributary watersheds of the Gulf of Fonseca; (ii) update of bathymetric information and establishment of monitoring the atmosphere, the hydrodynamics, and water quality within the Gulf of Fonseca; (iii) implementation and start-up of a hydrological model in the tributary watersheds of the Gulf of Fonseca; (iv) implementation and start-up of a hydrodynamic and water quality model for the Gulf of Fonseca; and (v) designing and execution of a regional strategy for pollution and sediment control in the Gulf of Fonseca.

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period from 2005 to 2010, and. currently is performing baseline studies; and (ii) 'Millennium Account' that through agreements with each country, will be carrying out activities for the productive sector and watershed management in the Gulf's area.

- 1.12 Component 4: Promotion of sustainable livelihoods. This component consists of: (i) sustainable use of natural resources and development of alternative livelihoods; and (ii) support the adoption of cleaner production in targeted sectors and industries.
- 1.13 This intervention will result in **global environmental benefits** such as: (i) an overall improvement in the status of the Gulf's marine and coastal resources, including shared fisheries resources, and the prevention of regional (trinational) conflicts over resource use, as a consequence of fully-endorsed social, environmental and economic cooperative agreements for their management in a highly participatory manner; (ii) an enhancement of pollution and sediment control in the Gulf (coastal and marine waters) through harmonized policies, regulations and actions to reduce erosion, liquid and solid wastes, and agrochemicals from tributary watersheds including two transboundary watersheds. This will contribute to the conservation of habitats which sustain the fisheries production not only in the Gulf itself, but also along the rest of the Central American Pacific coast, as well as the maintenance of biological diversity of global importance; (iii) an advance in the scientific understanding and assessment of marine and coastal ecosystems as a fundamental basis for sound decision-making; (iv) at the end, the project will generate global benefits through an integrated approach to Gulf-wide management as reflected in an innovative approach to developing Central America's first multi-national coastal management plan. This and the combined actions of the Project at the field level will strengthen long-term, cross-cutting, and sustainable protection of strategic ecosystems such as the wetlands and mangroves that have been declared to be of global importance by the Ramsar Convention, as habitat for numerous local and migratory bird species.
- 1.14 **National and regional benefits** include, among others: (i) improved technical and operational capacities of institutions, civil society organizations, professional and academic networks, private sector associations, users' groups and local governments for an integrated management of the Gulf, and supported by a common CRM benchmark system; (ii) better legal and technical basis for a permanent regional arrangement for management of the Gulf of Fonseca; (iii) a coherent regional framework of policies for managing ecosystems negotiated by the three countries, reflecting a shared vision of the Gulf as an integral system; (iv) new mechanisms for leveraging the financing for managing coastal and marine ecosystems amongst three countries; (v) regional adoption and replication by the private sector and co-administrators (users of mangroves, cooperatives of fishers, co-managers of protected areas) of innovative cleaner production technologies and good practices.
- 1.15 **Local benefits** include, among others: (i) a progress in the offer of sustainable alternative livelihoods, which are critical for creating better prospects for bolstering the income of the population, at the same time that it boosts not only food security but also the well-being of its inhabitants; (ii) a pressure reduction on key resources of local scope such as the mangrove forest; (iii) improved local socio-economic conditions through reduced water pollution; (iv) increased capacity of local institutions as well as of Municipalities to protect public goods against free riders that will enhance the long-term carrying capacity of the Gulf's ecosystems. The achievements of benefits at local and national levels will be largely financed by non-GEF co-financing.

#### **D. Analysis and calculation of the incremental costs**

- 1.16 **Table 1** summarizes the baseline and incremental cost. **Table 2** presents the analysis of the baseline and incremental costs needed to achieve global benefits under the GEF Alternative. The baseline costs are estimated at US\$ 13,000,000 and were calculated based on

the basis of current and projected government expenditures in the Gulf for the lifetime of the project, as well as funds from other projects carried out by civil society, productive associations, as well as from international cooperation programs. The quantities indicated for the incremental cost of US\$ 26,326,000 are derived from the GEF budget and the confirmed co-financing. The GEF contribution to finance the incremental costs is US\$ 5,000,000. The main source of co-financing for the project is from the Millennium [Challenge] Account (MCC) with US\$ 14,400,000. Other sources of co-financing are the Spanish Agency for International Cooperation (AECI) with an amount of US\$ 4,000,000, and the Japan International Cooperation Agency (JICA) with US\$ 936,000. Therefore, the total amount for the GEF Alternative is US\$ 39,326,000 (baseline + incremental).

**Table 1. Summary of Baseline and Incremental Costs under the GEF Alternative**

Component	Baseline (Thousands US\$)	Incremental (Thousands US\$)	Total (Thousands US\$)
<b>COMPONENT 1: Institutional Strengthening for the Regional Management of the Gulf</b>	827	1,360	2,187
<b>COMPONENT 2: Management of Coastal and Marine Ecosystems</b>	5,712	3,255	8,967
<b>COMPONENT 3: Pollution and Sediment Prevention and Control/Decision Support Models</b>	3,902	8,136	12,038
<b>COMPONENT 4: Promotion of sustainable livelihoods</b>	2,558	12,251	14,809
<b>Other Costs</b>	0	1,324	1,324
<b>Totals</b>	<b>13,000</b>	<b>26,326</b>	<b>39,326</b>

**Table 2. Incremental Costs Matrix**

Component	Category	Cost (US\$ thousands)	Local Benefits	Global Benefits
<b>COMPONENT 1: Institutional Strengthening for the Regional Management of the Gulf</b>	Baseline	827	Progress has been made towards establishing mechanisms for guaranteeing the participation of all stakeholders of the Gulf Region. However, there still are some limitations such as an apparent lack of functional regional management structure and incipient technical and operational capacities of the involved local and regional authorities as well as civil society organizations in order to effectively apply integrated management and planning practices in a coordinated manner.	Although associations of municipalities, NGOs, national institutions and the private sector are aware of the need to work for addressing common transboundary environmental problems, the perspectives for reducing the Gulf's resources degradation and overexploitation and improving the conservation of globally important marine ecosystems will keep constrained by the lack of a harmonized and integrated management framework for the Trinational Gulf of Fonseca.
	GEF Alternative	2,187	Technical and operational capacities of institutions, civil society and local governments for integrated management improved. Local participation enhanced. Improved access to environmental information systems and general awareness.	A model for regional management will be tested through the strengthening of a trinational structure which will include integrated institutional frameworks for managing the Gulf's common ecosystems, the execution of several strategies for guaranteeing the participation of all relevant stakeholders involved; and enhanced trinational capacities to systematize information for an adaptive management.
	Total Incremental Cost	1,360	The GEF will cover 82% of the incremental costs under this activity	
	GEF Incremental Cost	1,120		

Component	Category	Cost (US\$ thousands)	Local Benefits	Global Benefits
<b>COMPONENT 2: Management of Coastal and Marine Ecosystems</b>	Baseline	5,712	Some development has been made towards the management of individual ecosystems within the Gulf, but there is a lack of harmonizing plans for coastal zoning, regulating fisheries / aquaculture activities, encouraging co-management of specific areas, and restoring key ecosystems such as mangroves. Neither exists secure financial sources for covering recurrent costs for addressing the integrated ecosystem management.	None
	GEF Alternative	8,967	Through the design and implementation of an agreed coastal management plan in a trilateral collaborative manner, the pressure on key resources of local scope such as the mangrove forest will be diminished. The development of fisheries and aquaculture policies and the promotion of co-management plans will enable local institutions (both governmental and non-governmental) to sustainable use, protect and manage their coastal resources. Alternative sources of funding for environmental management will be also identified and leveraged.	The prospect of managing in a sustainable manner a globally important marine area will be increased through the implementation of an innovative ecosystem based approach and other co-management models adaptable to the existent conditions (either local or regional), involving local populations, productive associations, governmental institutions at a national level and other relevant stakeholders. Financial sustainability for continuing this management model would be secured.
	Total Incremental Cost	3,255	The GEF will cover 51% of the incremental costs under this activity	
	GEF Incremental Cost	1,666		

Component	Category	Cost (US\$ thousands)	Local Benefits	Global Benefits
<b>COMPONENT 3: Pollution and Sediment Prevention and Control/Decision Support Models</b>	Baseline	3,902	Nor national neither regional watershed strategy for pollution control is available. and monitoring has been restricted to meteorological and hydrometric stations in very few places within the Gulf area.	None
	GEF Alternative	12,038	Activities under this component will enhance the monitoring of meteorological, hydrometric, hydrodynamic, and water quality parameters for establishment a baseline and trends for the environmental conditions in the Gulf. This will enable to improve local socioeconomic conditions through reduced water pollution, diminishing at the same time the main driven force for morbidity and morbidity, which is gastrointestinal disease.	The emerging trends that threaten the marine and coastal ecosystems will continue to intensify and reduce the functional integrity of the Gulf. Control/decision-making models will serve as tools for developing a regional (trinational) pollution reduction strategy in the tributary watersheds and within the Gulf's waterbody, allowing the conservation and ecological integrity of the ecosystems that sustains the fisheries and the biological marine diversity of global importance.
	Total Incremental Cost	8,136	The GEF will cover 17% of the incremental costs under this activity	
	GEF Incremental Cost	1,380		

Component	Category	Cost (US\$) thousands	Local Benefits	Global Benefits
<b>COMPONENT 4: Promotion of sustainable livelihoods</b>	Baseline	2,558	Although some producers may benefit from the use of the Gulf's natural resources (i.e. fisheries, aquaculture), these resources are used in an unsustainable manner / overexploited / degraded. Therefore the usual productive activities are less profitable due to the increment of effort / private costs, and even the extinction. Limited market opportunities and lack of incentives reduce the attractiveness of innovative / alternative productive options.	Activities will continue to be carried out only by few actors in a way that is compatible with the Gulf's ecological resilience.
	GEF Alternative	14,809	Local producers will diversify their production as well as will participate in activities that will be encouraged with new incentive mechanisms. Current productive activities carried out in a sustainable manner will continue to be promoted, contributing to the increase of communities' economic-financial return, therefore reducing the pressure on fragile resources. Production sectors and industries that exert the greatest impact on the Gulf will adopt cleaner production practices, diminishing the discharges that are critical to water pollution.	By contributing to a shift from unsustainable productive practices towards sustainable use of environmental goods and services (including alternative / innovative livelihoods), it will be an enhancement of the resilience of marine ecosystems of global relevance, as well as their integrity will be improved.
	Total Incremental Cost	12,251	The GEF will cover only 4% of the incremental costs under this activity	
	GEF Incremental Cost	500		

<b>Other Costs</b>	Baseline	0		
	GEF Alternative	1,324		
	Total Incremental Cost	1,324	The GEF will cover only 25% of the incremental costs under this activity	
	GEF Incremental Cost	334		
<b>TOTALS</b>	Baseline	13,000	Includes activities carried out by government and other donor programs under execution	
	GEF Alternative	39,326	Baseline + Incremental costs	
	Total Incremental Cost	26,326	Includes GEF Funding, the Government of El Salvador, Honduras, and Nicaragua Contribution of US\$1,990,000, US\$4,000,000 million from AEIC, US\$ 936,000 from JICA and US\$ 14,400,000 from the Millennium [Challenge] Account (MCC).	
	GEF Incremental Cost	5,000	Does not Include US\$600,000 from GEF PDF B	

## ANNEX B - LOGICAL FRAMEWORK

### INTEGRATED MANAGEMENT OF THE ECOSYSTEMS OF THE GULF OF FONSECA

OBJECTIVES, RESULTS AND ACTIVITIES	VERIFIABLE INDICATORS	MEANS OF VERIFICATION	ASSUMPTIONS
<p><b>GOAL:</b> Contribute to the health of the trinational coastal and marine ecosystems of the Gulf of Fonseca, as well as the well-being of the population settled along its coastal zone and lower binational tributary watersheds.</p>	<p><u>After 3 years of having finalized the project:</u></p> <ul style="list-style-type: none"> <li>a. The coverage of the mangroves is the same or has expanded compared to the current extension (<i>Baseline: Mangroves: 57,400 ha</i>).</li> <li>b. Land-based pollution is controlled or reduced as measured by Biological Oxygen Demand (BOD) at the mouths of the major tributary watersheds (<i>Baseline: estimated total BOD 170,000 kg/day at the mouths of the watersheds based on TDA</i>).</li> <li>c. Sedimentation in the Gulf of Fonseca is controlled or reduced compared with the current estimated amount (<i>Baseline: estimated total sediment discharges 23,000 – 116,000 tons/day at the mouths of the watersheds</i>).</li> <li>d. The number of inhabitants living in the Gulf's area deriving at least 50% of their income from environmentally sustainable activities and / or alternative livelihoods linked to the use of marine and coastal resources has increased by 10%, compared to a baseline to be updated through a survey in Year 1 (<i>Baseline: 20,000 artisanal fishers; 53,000 persons dedicated to aquaculture; to be refined during year 1</i>).</li> </ul>	<ul style="list-style-type: none"> <li>a. Aerial photography, and official statistics of mangrove coverage from environmental authorities</li> <li>b. Monitoring reports of BDO.</li> <li>c. Monitoring reports of sediment discharges</li> <li>d. Socioeconomic surveys/ statistics</li> <li>Oral reports of beneficiaries</li> </ul>	<p>Integrated Ecosystem Management in the Gulf of Fonseca continues to be considered a joint strategic action for El Salvador, Honduras, and Nicaragua.</p> <p>Co-financing from other projects comes in timely manner.</p> <p>The partnerships with local governments, NGOs, and civil society remain in place.</p>
<p><b>PURPOSE:</b> To foster the sustainable use of the Gulf of Fonseca's marine and coastal resources and the integrated management of its ecosystems through the support of a trinational framework for cooperation.</p>	<p><u>At the end of the project:</u></p> <ul style="list-style-type: none"> <li>a. The Trinational Commission for managing the ecosystems of the Gulf of Fonseca is operating efficiently as a participatory and representative regional cooperation structure (<i>Baseline: Amapala Agreement of 1993 calling for the establishment of a Trinational Commission is not implemented</i>)</li> <li>b. Based on the Transboundary Diagnosis Analysis, the regional information node and its models, the countries share systematically scientific information on the environmental</li> </ul>	<ul style="list-style-type: none"> <li>a. Review of meeting minutes and agreements of the Trinational Commission of the Basin</li> <li>b. Agreements signed between institutions.</li> <li>Reports of monitoring and</li> </ul>	<p>Governments from the three countries cooperate in the development and enhancement of the legal framework, policies and regulations for the integrated management of the Gulf.</p> <p>There is political will in the three countries to sign the Trinational Agreement and ensure the Commission's continuity.</p>

OBJECTIVES, RESULTS AND ACTIVITIES	VERIFIABLE INDICATORS	MEANS OF VERIFICATION	ASSUMPTIONS
	<p>status and trends of the Gulf's tributary watersheds as well as its waterbody, so as to make it possible to agree upon strategies/actions for pollution and sediment control prevention and adaptive ecosystem management. (<i>Baseline: In 2006 there is no harmonized monitoring network or systematic exchange of data on water quality and sedimentation processes in the Gulf or its tributaries, and existing information systems have limited coverage</i>).</p> <p>c. A set of policies, norms and procedures for the use of coastal-marine resources of the Gulf will have been harmonized based on consensus, and their implementation will be monitored using a common CRM benchmark system. (<i>Baseline: in 2006 no Coastal Resource Management (CRM) benchmark system is being used by any of the 19 municipalities</i>).</p> <p>d. Co-management plans for at least two overexploited shared resources (shrimp and fish) are being implemented with fisher associations, local governments and organizations of each country. (<i>Baseline: There are no co-management plans for fisheries resources</i>).</p>	<p>evaluation</p> <p>Annual statistical bulletin and semi-annual report on the status of the Gulf</p> <p>Midterm and final evaluation reports.</p> <p>c. Memoirs of advances made in the implementation of the coastal management plan</p> <p>Reports on the new legal/political framework</p> <p>Publication of regional policies endorsed by the countries and presented in the project's website</p> <p>d. Reports on monitoring of the co-management plans' implementation</p> <p>Annual statistical bulletin and semi-annual report on the status of the Gulf</p> <p>Periodic reports of the national entities in charge of coastal resource management (fisheries).</p> <p>Midterm and final evaluation reports.</p>	<p>Priority of the key stakeholders in the three countries is maintained with regard to the sustainable development of the Trinational Gulf of Fonseca.</p> <p>There is sociopolitical stability in the Gulf of Fonseca region, which enables to improve the conditions for integrated ecosystem management.</p> <p>The trinational agreements established for the joint management of the ecosystems of the Gulf of Fonseca remain in place.</p>

OBJECTIVES, RESULTS AND ACTIVITIES	VERIFIABLE INDICATORS	MEANS OF VERIFICATION	ASSUMPTIONS
<b>COMPONENT 1: Institutional Strengthening for Regional Management of the Gulf</b>			
<b>Activity 1.a: Strengthening the technical and operational capacities of key stakeholders of regional and local institutions, as well as social actors.</b>	<p>a. At the end of year four, at least 60 professionals in the regional offices of SERNA / MARN / MARENA / SANAA / ENP / ANDA (Nicaragua) are trained (and equipped) in the application of hydrological, hydrodynamic and environmental monitoring models in the Gulf and its tributary watersheds (<i>Baseline: limited technical capacity and equipment for the Gulf's management in regional offices as documented in TDA</i>).</p> <p>b. At the end of year three, 40 employees in the 19 Municipalities are trained participatory mapping, local CRM, pollution prevention, risk management, environmental education, and environmental monitoring and evaluation (<i>Baseline: limited local government capacity for the Gulf's management as documented in the TDA</i>).</p> <p>c. At the end of the project, Municipalities and their Federations have basic communication equipment and other facilities needed in their association for carrying out trilateral initiatives of mutual interest (<i>Baseline: scarce and obsolete equipment/facilities in the Municipalities for designing and developing projects amongst the Municipalities</i>).</p>	<p>a. Evaluation documents of the progress of the implementation of the institutions strengthening plans Registries of assistance and evaluation reports of training sessions</p> <p>b. Evaluation documents of the progress of the implementation of the institutions strengthening plans Registries of assistance and evaluation reports of training sessions</p> <p>c. Receipt documents for equipment and supplies.</p>	<p>MARN, SERNA, and MARENA and other actors willing and committed to send qualified personnel to the events for transferring and training in hydrological / environmental monitoring models.</p> <p>Local governments and other actors involved are willing and committed to participate in the training events.</p>

OBJECTIVES, RESULTS AND ACTIVITIES	VERIFIABLE INDICATORS	MEANS OF VERIFICATION	ASSUMPTIONS
<p><b>Activity 1.b: Reinforcement of trinationa coordination framework</b></p>	<p>a. The Trinationa Commission meets at least two times per year starting year one (<i>Baseline: the Commission does not exist</i>).</p> <p>b. At the end of year two, database of projects operating in the Gulf and webpage elaborated consistent with IW:LEARN guidance (<i>Baseline: database does not exist</i>).</p> <p>c. From year three on, organization of at least one workshop per year for information-coordination of donors and developers of projects in the Gulf (<i>Baseline: information – coordination of donors is developed in a non systematic basis</i>).</p> <p>d. Feasibility study for Sea Grant model for applied research, extension and education completed by year three (<i>Baseline: Preliminary discussions have been held on the need for a regional Sea Grant program</i>).</p>	<p>a. Minutes of the Trinationa Commission meetings with record of participants.</p> <p>Agreements signed.</p> <p>b. Project database and Web page in operation.</p> <p>c. Memoirs of the workshops.</p> <p>d. Study’s final report.</p>	<p>Priority of the stakeholders in the three countries is maintained with regard to the sustainable development of the Trinationa Gulf of Fonseca.</p> <p>Federations, NGOs, representatives of civic associations, and the private sector interested in participating in the forums.</p> <p>Specific responsibilities are assigned by the institutions and other stakeholders in order to maintain and update the database of projects and organizing the information / coordination workshop.</p>

OBJECTIVES, RESULTS AND ACTIVITIES	VERIFIABLE INDICATORS	MEANS OF VERIFICATION	ASSUMPTIONS
<p><b>Activity 1.c.: Enhancement of the mechanisms for the involvement of the civil society in the Gulf's management</b></p>	<p>a. The Trinational Advisory Group and the network of local committees meet at least twice a year for planning and following-up the project's activities, and reports on those meetings are disseminated (<i>Baseline: the Advisory Group doesn't exist</i>).</p> <p>b. At the end of the first year, the regional social communication strategy for disseminating the project's activities through grassroots groups is designed and its implementation started during the second year (<i>Baseline: social communication strategy and associated activities / outputs do not exist</i>).</p> <p>c. At the end of the project, 10 education centers (primary and secondary level), related to the project intervention sites in the three countries have included formal and non-formal education projects and activities related to the Gulf's ecosystems in their institutional structure (<i>Baseline: Gulf-wide formal environmental education programs related to the Gulf's ecosystems do not exist</i>).</p> <p>d. Selected groups of key decision makers (gremial groups, donors, conservation and development NGOs, farmer groups, etc.) have been provided with information responding to their demands through the work of Municipal Environmental Units (<i>Baseline: involvement of these groups in the sustainable management of the Gulf is incipient</i>).</p>	<p>a. Reports of the Trinational Advisory Group – Network of local committees.</p> <p>b. Assessment documents of the degree of advance related to the implementation of the social communication strategy</p> <p>Oral reports of beneficiaries</p> <p>c. Non-formal education project documents produced by education centers</p> <p>d. Reports of key decision makers' participation in events / forums / workshops where information is shared</p>	<p>Civil social organizations and public institutions are committed to assume responsibilities regarding the Advisory group.</p> <p>Media leaders, private organizations, gremial groups, and the educational sector keep their willingness to be involved in the project execution</p> <p>Will of the government institutions, NGOs, and municipalities of the three countries to share information.</p>

OBJECTIVES, RESULTS AND ACTIVITIES	VERIFIABLE INDICATORS	MEANS OF VERIFICATION	ASSUMPTIONS
<p><b>Activity 1.d: Consolidation of the information node for monitoring the Gulf of Fonseca by linking the local and national information systems with a Regional one.</b></p>	<ul style="list-style-type: none"> <li>a. At the end of year one, at least 5 cooperation agreements established among associations of local governments, NGOs, training and research institutions, and the CCAD for determining responsibilities and allocating resources in tasks related to information management (<i>Baseline: no agreements have been signed</i>).</li> <li>b. At the end of year two, the regional information node is established in order to develop the monitoring and evaluation system that estimates the performance and impact of managing in a trinational manner the Gulf's resources (<i>Baseline: regional information node does not exist</i>).</li> <li>c. At the end of the project, 30 stakeholders of the Gulf will have participated in different forums for the exchange of experiences in the management of transboundary bodywaters, including IW: LEARN activities (<i>Baseline: Gulf's stakeholders have not participated in any exchange</i>).</li> <li>d. At the end of year four, a document with index of systematized information and record of good practices will be produced and posted in the project's webpage (<i>Baseline: document doesn't exist</i>).</li> </ul>	<ul style="list-style-type: none"> <li>a. Letter(s) of understanding and/or technical cooperation agreements between groups that generate information on the Gulf's resources / ecosystems.</li> <li>b. Memorandum of understanding that establishes the regional information node signed.  Minutes derived from the node's meetings.</li> <li>c. Evaluation documents of the progress of the forums and exchange of experiences Agreements signed on exchange of information and good practices.</li> <li>d. Document of systematized information and record of good practices posted in the project's Web page.</li> </ul>	

OBJECTIVES, RESULTS AND ACTIVITIES	VERIFIABLE INDICATORS	MEANS OF VERIFICATION	ASSUMPTIONS
<b>COMPONENT 2: Management of Coastal and Marine Ecosystems</b>			
<b>Activity 2.a: Design and implement a trinational coastal management plan for the Gulf of Fonseca as a foundation for effective local Coastal Resource Management.</b>	<ul style="list-style-type: none"> <li>a. At the end of year three, the coastal management plan formulated through a participatory mapping process in the municipalities and the consolidation of the best available information is officially endorsed by the Trinational Commission, local authorities and interested groups. (<i>Baseline: plan does not exist</i>).</li> <li>b. At the end of the project, the coastal management plan is under implementation with advances reported using the common CRM benchmark system (<i>Baseline: advances in local CRM in the Gulf are not being reported</i>).</li> </ul>	<ul style="list-style-type: none"> <li>a. Elaborated plans and acts of endorsement.</li> <li>b. Annual reports of plan's implementation.</li> </ul>	<p>There are technical tools and legal mechanisms that facilitate national and regional conditions for designing and implementing the plan.</p> <p>Innovative mechanisms for maintaining the dialogue among institutions and civil society organizations are enhanced with the development of the coastal management plan.</p>
<b>Activity 2.b: Develop fisheries and aquaculture policies and co-management plans for the Gulf among the three countries.</b>	<ul style="list-style-type: none"> <li>a. At the end of the second year, criteria and indicators for the harmonization of legal instruments and procedures for fisheries and aquaculture are approved by line agencies (<i>Baseline: common criteria and indicators do not exist</i>).</li> <li>b. At the end of year three, Fisheries and Aquaculture Policy adapted to the local reality of the Gulf is endorsed and its implementation started before the end of the project (<i>Baseline: Fisheries and Aquaculture Policy only exists for CA</i>).</li> <li>c. At the end of year four, at least 500 fishers in each country and three cooperatives in suitable areas are participating in co-management (registries updated, by-catch reduction measures adopted) (<i>Baseline: limited experiences in fisheries co-management in the Gulf</i>).</li> <li>d. At the end of the project, agreements among governments, industries, individual producers, cooperatives and institutions for innovative dispute settlement mechanisms will be established (<i>Baseline: these agreements do not exist</i>).</li> </ul>	<ul style="list-style-type: none"> <li>a. Fisheries / aquaculture policy documents endorsed by the Governments and published on the website of the project/CCAD.</li> <li>b. Follow up report on the implementation of the new policies</li> <li>c. Periodic record of fishers / cooperatives involved in co-management actions.</li> <li>d. Agreements signed (alongside an implementation schedule) between different actors for disputing settlements.</li> </ul>	<p>Users of resources, local and national authorities in charge of artisanal and industrial fisheries, as well as the aquaculture sector, are aware of their impacts on the Gulf of Fonseca and the need for designing and implementing regional plans / policies for enhancing the sustainable management of fisheries/aquaculture</p> <p>Political will of the national and local governments of the 3 countries and the municipal governments to harmonize the environmental legislation.</p> <p>Willingness of the competent authorities to participate in the process of harmonization and dissemination of the legal instruments.</p>

OBJECTIVES, RESULTS AND ACTIVITIES	VERIFIABLE INDICATORS	MEANS OF VERIFICATION	ASSUMPTIONS
<i>Activity 2.c: Enhancing the financial sustainability for the management and co-management of the Gulf's resources.</i>	<ul style="list-style-type: none"> <li>a. At the end of year three, two financial mechanisms / instruments for covering the recurrent cost of the Trinational Commission are be designed (<i>Baseline: mechanisms / instruments do not exist</i>).</li> <li>b. At the end of year four, feasibility analysis and financing strategy of a potential Trinational trust fund is finished (<i>Baseline: do not exist</i>).</li> <li>c. At the end of the project, the first roundtable of investors and potential donors is held (<i>Baseline: roundtable held occasionally</i>).</li> <li>d. At the end of the project, countries are willing to allocate financial resources for the Trinational Commission operation (<i>Baseline: countries only allocate financial resources for the operation of their own institutions</i>).</li> </ul>	<ul style="list-style-type: none"> <li>a. Progress report / records of revenues / income derived from the financial instruments / mechanisms.</li> <li>b. Document of feasibility analysis of the Trust Fund and agreements for its creation and management.</li> <li>c. Memoir of meetings / roundtable.</li> <li>d. Records of yearly allocation to the Trinational Commission form the Ministries of Finance of each country.</li> </ul>	<p>The legal frameworks from the countries enable to establish the financial instruments / mechanisms, including a potential Trust Fund.</p> <p>Commitments from the notional budgets are accomplished.</p>
<i>Activity 2.d: Environmental restoration of mangrove ecosystems.</i>	<ul style="list-style-type: none"> <li>a. At the end of year three, a land tenure study to determine appropriate intervention strategies for the allocation of resource rights in multiple use mangrove ecosystems (ME) is completed (<i>Baseline: ME are not addressed systematically</i>).</li> <li>b. At the end of the project, at least 100 ha of mangrove are restored and 10 forestry plantations for the production of firewood are developed (<i>Baseline: there are no forestry plantations and ME are seriously degraded</i>).</li> </ul>	<ul style="list-style-type: none"> <li>a. Study's final document</li> <li>b. Aerial photography.</li> </ul>	<p>Alternatives to generate fuel form different sources are available.</p> <p>Financial resources for performing restoration activities are provided in a timely manner.</p>

COMPONENT 3: Pollution and Sediment Prevention and Control/Decision Making Models			
<b>Activity 3.a: Expansion of the hydrometric and water quality monitoring network in the tributary watershed of the Gulf of Fonseca</b>	<p>a. At the end of year one, protocols for monitoring and analysis are harmonized (<i>Baseline: common protocols do not exist</i>).</p> <p>b. At the end of year one, four new hydrometric stations for complete coverage of the seven principal watersheds that discharge into the Gulf will be installed (<i>Baseline: ten hydrometric stations for minor tributaries are in operation, but only three near where the rivers discharge into the Gulf are functioning</i>).</p>	<p>a. Technical report on the critical values of the parameters and protocols agreed</p> <p>b. Bi-annual report on the status of the Gulf</p>	<p>The offices of the national and local governments, the NGOs, and other sectors affected are willing to let their technical personnel to receive advanced academic training.</p> <p>Government institutions facilitate access to installed equipment.</p> <p>The fisheries sector and Navy in the three countries are interested in participating in and supporting the project.</p> <p>The three countries facilitate the free transit of the research boats in their territorial waters.</p>
<b>Activity 3.b: Update of bathymetric information and establishment of monitoring the atmosphere, the hydrodynamics, and water quality within the Gulf of Fonseca.</b>	<p>a. At the end of year one, surveying and hydrographic capabilities will be assessed (<i>Baseline: MAHC has preliminary information on capabilities</i>).</p> <p>b. At the end of year one, strategic sectors will be incorporated as key partners in obtaining information through signed agreements (<i>Baseline: these sectors are not part of the information node</i>).</p> <p>c. At the end of year three, updating of selected gaps in the bathymetry of the Gulf completed (<i>Baseline: Assessment of gaps to be completed in year 1</i>).</p>	<p>a. Technical report on the results of the assessment survey.</p> <p>b. Formalized agreements with key sectors.</p> <p>c. Technical report on the results of application of the models, associated with each of the scenarios considered.</p>	<p>All the cartographic, climatic, and hydrometric information on the tributary watersheds of the Gulf, will be provided at no cost by the competent institutions of each country.</p> <p>The estimates of current and future demand for water will be provided by each country.</p>

<p><b>Activity 3.c: Implementation and start-up of a hydrological model in the tributary watersheds of the Gulf of Fonseca.</b></p>	<ul style="list-style-type: none"> <li>a. At the end of year two, the main watersheds that drain into the Gulf will be characterized (<i>Baseline: During the TDA a preliminary (small-scale) characterization of the watersheds was completed</i>).</li> <li>b. At the end of year two, an inventory of the main point sources of pollution (by sector) including their georeferenced location will be done (<i>Baseline: A systematic inventory of point sources is not available</i>).</li> <li>c. At the end of year two, the analysis of non-point agricultural sources of potential pollution (agrochemicals) and sediments from tributary watersheds will be completed (<i>Baseline: During the TDA, a preliminary analysis of potential erosion in the tributary watersheds was undertaken</i>).</li> <li>d. At the end of year three, a hydrological model for seven watersheds will be calibrated and verified (<i>Baseline: hydrological model is not currently available</i>).</li> </ul>	<ul style="list-style-type: none"> <li>a. Reports on the characterization of the main watersheds.</li> <li>b. Inventory reports of main point sources of pollution (including their georeferenced location)</li> <li>c. Inventory reports of main non-point agricultural sources of pollution and sediments</li> <li>d. Technical report on the results of calibration and validation of the model.</li> </ul> <p>Technical report on the results of application of the model to the remediation scenarios.</p>	<p>Historical information will be available on tides, currents, winds, and concentrations of pollutants.</p> <p>The up-to-date bathymetry and data from the monitoring campaigns carried out under activity 3b will be available.</p>
<p><b>Activity 3.d: Implementation and start-up of a hydrodynamic and water quality model for the Gulf of Fonseca.</b></p>	<ul style="list-style-type: none"> <li>a. At the end of year three, hydrodynamic and water quality model of the Gulf will be calibrated and verified (<i>Baseline: Hydrodynamic model is not currently available</i>).</li> </ul>	<ul style="list-style-type: none"> <li>a. Reports on development and evaluation of scenarios.</li> </ul> <p>Technical report on the results of calibration and validation of the model.</p>	
<p><b>Activity 3.e: Designing and execution of a regional strategy for pollution and sediment control in the Gulf of Fonseca.</b></p>	<ul style="list-style-type: none"> <li>a. At the end of year three, medium term water quality and sediment targets for the Gulf are set (<i>Baseline: The foundation for agreeing on targets does not exist</i>).</li> <li>b. At the end of year four, a trinational pollution and sediment control strategy for preventing the impacts from main tributary watersheds on Gulf ecosystems is agreed upon (<i>Baseline: no common strategy is working to date</i>).</li> </ul>	<ul style="list-style-type: none"> <li>a. Agreements on water quality and sediment targets</li> <li>b. Document on pollution and sedimentation reduction strategy endorsed by the three countries and published on the website of the project/CCAD.</li> </ul>	<p>There is political will to enter into an agreement to reduce pollution and sedimentation at the highest level.</p> <p>Information for decision taken is provided in a timely manner</p> <p>Efficient coordination among the involved institutions at different levels (local, national, regional)</p>

	c. At the end of the project, investments for pollution and sediment control are aligned with the strategy ( <i>Baseline: investments are made without consideration of potential impacts on the Gulf</i> ).	c. Records of yearly private and public investments in pollution and sediment control of each country.	
<b>COMPONENT 4: Promotion of Sustainable Livelihoods</b>			
<b>Activity 4.a: Sustainable use of natural resources and development of alternative livelihoods.</b>	<p>a. At the end of year two, five financially viable and innovative pilot projects using environmental goods and services of the Gulf for youths and other target groups are implemented in each country with results reported by year three (<i>Baseline: limited opportunities exist for youths for innovation in sustainable use of the Gulf's environmental goods and services</i>).</p> <p>b. At the end of year two, subject to the accomplishment of agreed criteria among the three countries, at least 9 sustainable projects submitted by micro- and artisanal producers are selected and begin implementation (<i>Baseline: to be established in year one</i>).</p> <p>c. At the end of year three, at least three Municipalities (one in each country) introduce an incentive scheme in areas that fall under their responsibility to promote innovation in resource use, pollution and sediment control. (<i>Baseline: existing incentive schemes to be inventoried by the end of year 1</i>).</p> <p>d. At the end of year four, 30 alternative producers with high multiplier effects (10 per country) will have participated in technical exchanges with other projects / programs that have designed payment for environmental services' mechanisms specifically designed for watersheds (<i>Baseline: no exchanges exist at this point</i>).</p>	<p>a. Reports on projects' performance (including output indicators), according to the targeted group.</p> <p>Field visits</p> <p>b. Minutes and inter-institutional agreements related to the coordination and management of projects.</p> <p>Reports on monitoring and evaluation of productive projects.</p> <p>Field visits</p> <p>c. Municipalities records / reports on innovative schemes for encouraging pollution / sedimentation control.</p> <p>d. Reports on monitoring and evaluation of productive projects.</p> <p>Field visits</p>	<p>Private owners and farmers perceive benefits derived from the adoption of best practices, as well as from the development of activities of sustainable management</p> <p>Groups that intervene in the use / management of natural resources are willing to establish cooperation agreements to coordinate pre-investment of programs and projects</p> <p>Community leaders, private owners and NGOs are willing to support / participate in this component's activities</p>

	<p>e. At the end of year four, at least 30 small community-based initiatives / enterprises / organizations that –in a cooperative and collective manner— use the Gulf’s resources will receive support from the project (<i>Baseline: preliminary inventory of eligible organizations exists</i>).</p>	<p>e. Reports on monitoring and evaluation of productive projects.</p> <p>Field visits</p>	
<p><b>Activity 4.b: Support the adoption of cleaner production in targeted sectors and industries.</b></p>	<p>a. At the end of year four, three industries per each of the three priority sectors will be trained in cleaner production governmental institutions (<i>Baseline: inventory of target companies to be conducted in year one</i>).</p> <p>b. At the end of year three, at least three model clean production projects in three priority sectors in the Gulf of Fonseca area are disseminated. (<i>Baseline: Opportunities for disseminating clean technology in the Gulf are limited</i>).</p> <p>c. At the end of year four, a trilateral network of technical assistance providers in cleaner production is established in the Gulf of Fonseca region (including tributary watersheds). (<i>Baseline: a trilateral network does not exist</i>).</p>	<p>a. Cleaner production guidance documents</p> <p>b. Monitoring and evaluation reports on-site pollution and sedimentation</p> <p>Report on visits to producers</p> <p>c. Agreements that supports the trilateral network alongside documents / lessons learned / posted in the Project’s web site.</p>	<p>Institutions that carry out administrative and natural resource management activities within the Gulf establish cooperation agreements with private owners and industries.</p> <p>Municipalities work in close coordination with national institutions regarding the provision of updated and accurate information of industries.</p> <p>Information derived from component 3 (above) is used efficiently for performing this component.</p>

## **ANNEX C – FINAL<sup>1</sup> STAP ROSTER REVIEW**

### **Integrated Management of the Ecosystems of the Gulf of Fonseca (RS-X1019)**

**Alan White**  
**February 21, 2007**

#### **Preface**

A review of this kind can take different approaches and perspectives and each reviewer will certainly have his/her own views. As a preface, I admit that I have my own ideas about how best to promote a strategy for “integrated ecosystem management of the Gulf of Fonseca” based on experience in other parts of the world. This is inevitable given a topic of this scope and with a wide range of possible approaches about how to best implement it. Any critical statements are intended to encourage the planners and implementers of this project to think beyond the strategies being proposed. Most importantly, all my comments are in good faith and given the critical need for programs such as this one to protect and sustain coastal and marine resources, I certainly hope that it can proceed with adequate support in the most effective and timely manner possible.

The review presented below was preceded by reading through the project documents that were provided: the draft IDB Project Document; the GEF Project Executive summary; the logical framework; the Financial Sustainability Analysis and several research reports and baseline studies on fisheries, hydrology, climatic patterns and conditions in the area. These various reports were helpful to give a full picture of the area of concern and provided insights into the management issues and their various causes. Nevertheless, considering that I have not visited the management area nor had direct contact with persons who have, I have depended entirely on the reports provided as basis for my comments and recommendations. Suggestions are based primarily on my experience working on integrated coastal management (ICM) in Southeast Asia.

This review follows the outline suggested by the Guidelines for STAP Reviews and is comprised of three sections: 1) an introduction that presents some broad points that can be considered for integration into the proposal as appropriate, 2) a discussion on the ‘key issues’ listed for the technical review, and, 3) more specific recommendations. Finally, the reviewer is available for further consultation and can send references as needed.

#### **Introduction**

This project appears very timely and needed to address the pending and escalating environmental and social issues affecting the Gulf of Fonseca. It is also an area that is naturally productive through its fisheries and agriculture sectors as well as growing seaport traffic. Thus, the project area is very important for the economies of Honduras, Nicaragua and El Salvador primarily through the fisheries (capture and aquaculture) industries that are almost totally dependent on the Gulf’s resource base for existence. The proposed mega-port in the Gulf is an additional economic opportunity while at the same being a major environmental concern.

The proposed project to undertake the “Integrated Ecosystem Management of the Gulf of Fonseca” is a large and complicated undertaking that intends to develop and implement integrated

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<sup>1</sup> Final submitted in response to several minor comments on the draft version from the IDB and in knowledge that responses to this review are being prepared.

coastal resources management in the three countries of concern. In general, the project proposal appears very well researched with much thought and good analysis applied to make the project as realistic and doable as possible, given the large scope and complexities of the endeavor.

The title sets the tone with “integrated” being essential to long term success. Integration has many meanings and is sometimes ignored simply because it is too broad a term to easily define. Yet, integrated management is certainly a foundation upon which this project can proceed. Yet, what integrated means for this project in practical terms, could benefit from a short paragraph in the proposal that guides implementers as to the main thrust of “integration”. A key concept to convey is the need for full horizontal and vertical integration among the institutions that will implement and sustain the project. Also, the links between land and sea should be emphasized given the important role land-use practices play in the Gulf water quality and its improvement. These points are emphasized in the proposal while an explicit statement would be beneficial.

Then “ecosystem management of the Gulf of Fonseca” is really the main undertaking of the project. A slight variation in the title could convey a more direct statement of the real project goal, which is to manage the human uses and impacts on ecosystems of the Gulf. Although titles rarely state the “management of people” as such, it is bit of a misnomer to imply that the “ecosystems” will be managed. This point is raised to set the stage for the discussion later that highlights the need for figuring out how the project will minimize or manage the various human impacts that in turn are causing the degradation of the water quality, habitats, fisheries and other natural resources of the Gulf. And, since this is occurring in the context of a complex socioeconomic-environmental and political system that has tremendous momentum in the direction of long term degradation, slightly more emphasis on managing the forces that degrade the ecosystems would tip the focus the project more towards addressing, head on, the main issues.

The theme of ecosystem management could also be translated into “ecosystem-based management” since an important aspect of this project is that the Gulf is one large and closely connected ecosystem or network of ecosystems that is overlaid by three political jurisdictions. Building on the essential need to think “ecologically” because of these interconnections is certainly a theme that can be emphasized in all aspects of planning and education pertaining to the Gulf management process. This also helps build a common identity for the Gulf users and their management scheme which must cut across political boundaries and be all inclusive.

In presentation of the issues to be addressed in the project proposal, it is important that for the issues to be fully understood and addressed, the project design needs to get to the point quickly as to the known causes of the issues facing the Gulf. To the extent possible, issues need to be quantified and possible implications of not addressing them noted. A case in point is the rate of sedimentation, although quantified in a table, a small graph projecting existing deposition rates into the future would be a powerful reminder that the Gulf could fill with sediment, if left unchecked. In this regard, several more graphs or tables that highlight the magnitude of key issues like sedimentation, changes in hydrology or declines in fish biomass and the major decline in mangrove cover due to aquaculture expansion, would strengthen the rationale for the project. In this regard, a graphical analysis of the issues and their underlying causes is essential to make the project rationale understandable.

Then, in presenting the strategies, the proposal needs a bit more focus on the level of activity that will make the biggest difference in reversing the current trends. This is at the level where most degradation is occurring. Although this focus will vary among the project components or areas of management focus (e.g. fisheries, habitats, hydrology, watersheds, etc.) between local vs. national and/or transnational levels of implementation. Development of a more detailed work plan that is

focused more from the bottom (local) up to national and transnational could be an important undertaking of the early stages of project implementation. This exercise with local stakeholders would have the effect of engaging all the important participants in a planning process that would encourage buy in and make them feel part of the decision process from the beginning. Since, large GEF supported projects are sometimes seen as more top down when more than one country is concerned; a participatory planning process would help to mitigate this perception early in the project implementation.

Connected to the need to engage stakeholders at the local level, the program will need to deliver tangible outcomes at a scale that will sufficiently generate more buy-in, counterpart and action. When a program is spread too thinly and involved in many different kinds of activities and interactions, it must be careful to achieve tangible results that are highly visible and measurable. This goes without saying but is mentioned because it leads to the following suggestions regarding engaging the municipal governments as the core of the field work with communities to ensure that substantial results can be achieved that people can witness and support for expansion.

An initial impression is that the project is attempting to cover a large area and may be trying to address a variety of issues beyond its capacity to be effective. In this regard, it is worth pointing out that similar projects project this image in their proposals and as a result spend their first year deciding what they can effectively accomplish. The project targets need to be focused and not too ambitious while still a bit optimistic to create a challenge for the project management to attain. For the most part though, the targets as spelled out in the proposal and Logical Framework are quite manageable and focused.

Overall, the proposal is well prepared and very thorough in its coverage of the outcomes and the activities to accomplish the outcomes. The threats analysis also leads logically into the outcomes and activities so that the proposal is comprehensive and seems to cover its bases without any major gaps. But, because the project is quite broad in nature and addressing a range of issues spread over a wide geographical area, I encourage the implementers to try to be more specific in some cases and to give the main emphasis or focus of work for the project. This can be done by articulating the issues as noted and linking these directly to the strategies and activities.

I understand that several major forces will permanently change the areas' resources and ecosystems, if not redirected soon. These forces are destruction of the coastal and marine environment from over fishing; habitat destruction and changes from shoreline land use (primarily aquaculture and harvesting of wood) and from large amounts of sediments being deposited in the Gulf from inland erosion and land use problems as well other types of pollution. Although these are all major challenges, the proposed project provides an excellent framework to address the issues in an integrated manner using known approaches. Yet, achieving the objectives as set out will not be easy if the most important stakeholders are not fully engaged in the planning and implementation process throughout the project.

In the Philippines, a factor contributing to the increasing awareness about coastal resources management (CRM) or integrated coastal management (ICM) is that many local municipal and city governments are engaged in the planning for and management of their coastal areas and resources. More than 100 coastal municipalities and cities (covering 3500 km of coastline) have CRM plans that are being implemented with their own budgets and personnel and with such best practices in place as: improved coastal law enforcement, marine protected areas (MPAs), zoning schemes for marine uses including tourism and aquaculture, licensing of selected activities. In all cases, coral reefs, mangroves and their associated fisheries, among other resources, are a high priority for protection and management and are usually the beneficiary of the law enforcement

and MPAs. Nevertheless, this scale of management at the local government level is still relatively new and requires much technical assistance to make it viable.<sup>2</sup>

The Philippines, similar to the Gulf of Fonseca, has severe over fishing and destructive fishing issues to deal with. And, in many cases, this is mixed with growing pollution problems of sedimentation and domestic waste and from industry in urban areas. Local coastal residents depend on fisheries for livelihood. These issues in coastal and marine areas, among others, have highlighted the need for integrated planning and management as the most viable means to manage all the various uses under one umbrella of the local government with some guidance from the national government and with technical inputs from donor projects and NGOs. And in the Philippine case, the local government has full jurisdiction over its coastal and marine resources to 15 km offshore. Although the national government sets the broad policy context, all enforcement is devolved to the sustaining unit of management of the municipality and city. Thus, although local stakeholder communities are important in the management process, being the primary stakeholders of a given fishery, communities operate under the laws of the local government, and the only organized and sustained enforcement, registration and licensing for small-scale fisheries, and for most aquaculture, is through the local government (municipality or city). Localized law enforcement through the volunteer groups in the Philippines although effective in some areas, is variable. A new system is emerging whereby the local governments form a coastal law enforcement unit that coordinates with neighboring municipalities and has some support from the national police and coast guard.

This point regarding the local government role needs to be fully reflected in the Gulf of Fonseca. Past projects that were too heavily controlled by the national government (including national marine protected areas) in the Philippines have failed in many areas because of poor or unenthusiastic participation of the communities or local governments. Several instructive projects in the Philippines, such as Apo and Gilutongan Islands described in the literature have the support of the municipal government as well as the immediate coastal communities. Technical assistance has been provided by outside projects in both cases but the sustaining factors have been the full participation of the local authorities and community groups (e.g. fishers, tourism operators, small business owners, etc.).

Another analogy that could help in the design of Gulf of Fonseca project is the recently adopted coastal resource management benchmark system for local governments in the Philippines. This “CRM benchmark system” is a relatively simple and yet robust system by which local governments and national government can set targets and measure advances in the development of CRM or ICM within local governments around the country. In the case of the Gulf, such a system could be designed and tested for the project area that would need to be adopted by each of the three countries. This system is described in several publications on the website [www.oneocean.org](http://www.oneocean.org).

In addition to the CRM benchmark system, the Philippines is rapidly establishing and improving MPAs to help sustain the larval sources for target fishery and vulnerable marine species as well as for stricter biodiversity conservation objectives. Most MPAs include no-take zones or “sanctuary areas” are established for multiple reasons, including improved food fish catch as well as developing tourism opportunities in some areas. The planning for MPAs needs to be flexible and consider all the conservation concerns of a given area, community and local government. In this

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<sup>2</sup> Philippines is most likely farther along in decentralizing CRM or ICM functions to local governments than in the Gulf of Fonseca. The Philippine experience is rich in this regard and could offer some lessons for policy reform. Information on the Philippine experience is available on the website: [www.oneocean.org](http://www.oneocean.org)

regard the newly established MPA rating and evaluation system in the Philippines is valuable to ensure consistency in MPA design and in establishing common criteria for good MPA management and results.<sup>3</sup> The Project might consider adopting a similar rating and evaluation system for the MPAs or managed zones within the Gulf covering marine and mangrove areas.

Another key point about management of fisheries is that true no-take zones are essential for reef and estuarine ecosystems and their associated fisheries to recover to a relatively natural state. It has been shown in various studies that reef fish abundance, diversity and biomass recover quickly inside no-take or ‘sanctuary’ zones within MPAs. It has also been shown that fisheries outside of no-take marine reserves tend to recover to some extent from a spill-over effect together with limitations on fishing methods in the same area.

A few key points that could be considered for incorporation into the proposal based on the above, are:

- a. The role of local governments could be strengthened to assist to sustain and institutionalize the project at the local level, monitor the more strictly protected areas and to integrate with the municipal or city development plans.
- b. The CRM or ICM planning process could be incorporated into the initial stage of the local area management to ensure proper baseline assessment to planning and implementation so that the local government builds on addressing all their CRM needs. The CRM benchmark system can be adjusted and adopted to make larger project wide interventions more consistent and to help to institutionalize the project objectives within the local government system up to national and tri-national level.
- c. There are tested database models that the project could benefit from. One is the “municipal coastal database” which is quite a complete cross section of information management designed for local governments implementing ICM. This is available through the website: [www.oneocean.org](http://www.oneocean.org) of the Coastal Resource Management Project in Philippines. Another is the MPA Coast and Reef Database available through the website: [www.coast.ph](http://www.coast.ph).
- d. The MPA rating system being initiated in the Philippines can assist to guide the protected area planning and development process of the project. The various protection zones could be monitored and evaluated as separate MPAs so that local stakeholders could begin to identify with the management regime for areas that affect their traditional uses and practices. In this regard, the MPA management and rating system could help standardize the localized management efforts and to engage more closely the stakeholders for a particular place. All titles could be determined locally.
- e. The need for improved national policy can partly be addressed by linking lessons being learned through the management of the protected areas within the Gulf and the evolving policy of integrated coastal management (and fisheries) so that it is part of whole management process. The three national governments can improve their ICM policies by beginning to integrate fisheries and aquaculture management from this process.

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<sup>3</sup> The Coastal Conservation and Education Foundation, Inc. (CCEF) based in Cebu City along with more than 20 partners nationwide (government and non-government) have endorsed the MPA rating system so that a common MPA guide exists for the country. This is available at [www.coast.ph](http://www.coast.ph) or by email at [ccef@mozcom.com](mailto:ccef@mozcom.com)

- f. Appropriate and participatory CRM plans can help set the trend within project areas and local governments for effective implementation of MPAs and associated management plans. The implication is that stakeholder involvement is essential and to fully address the problems of illegal and over fishing and destruction of mangroves, stakeholders to the smallest community must be involved and feel some benefit from the project.

These introductory paragraphs set the stage for some suggestions to make the project more focused, effective and doable. This may require some shifting of priorities among the four project components. Since Component 3 that begins to address the pollution issues will require large investments and long term strategies that can only be designed and planned for during the 5 year life of the Project, the balance of funds used for Component 3, versus 1, 2 and 4 needs to be carefully evaluated. Being strategic in the implementation of some planned “regional” interactions could save resources for the essential needs of effectively assisting coastal resources management in the three countries. A balance is needed between actions in the present that make a measurable difference and those that build institutional sustainability at the national and tri-national scales that are often time consuming, expensive and may not pan out over time.

### **Key issues**

#### **Scientific and technical soundness of the project**

The scientific basis of the project as proposed is sound in that it is based on the most recent and tested scientific knowledge regarding conservation and management of marine and coastal resources as indicated in the literature and from various coastal management projects. Lessons from other projects are cited in the background to the project proposal and clearly there is a logical plan of activities based on tested and known scientific and technical solutions.

But, whether there is sufficient information and knowledge available on the dynamics, functioning and structure of the Gulf of Fonseca ecosystems covered is a question given the scope of the program, and the complexities of the Gulf hydrology and mangrove and estuarine ecosystems. Yet, baseline information does exist and sets the stage for measuring change over time for the important resources. The project will need to carefully design a monitoring program that builds on the existing baseline information so that changes and trends are measured.

To the extent that the program is able to support management regimes that focus on particular areas and ecosystems, part of the management process will be to improve on the baseline information for these areas. This would also need to be fully internalized with the local and national governments of concern and not dependent on the project as such. This has implications for building capacity in local and national institutions to perform this role.

The approaches for collecting relevant information for management of resource uses and their impacts, local economic activities, water management are implied to be scientific and done, for the most part, by national agencies and research organizations. A question to ask is at what scale can more participatory approaches be applied? It is known that the more contact stakeholders have with a resource area or to the extent they are dependent on a particular resource base, they will generate more responsive and effective management plans. To this extent, the project will need to engender site-specific management in appropriate areas of concern working through local governments and stakeholders. It is not clear to what extent this will be possible given the broad focus of the project and the key role of national agencies without a significant role for local municipalities and in some cases community groups in the monitoring process.

The proposed modeling efforts to better understand the dynamics of the watershed and main sources of sediment and other pollution, are a significant and well planned start on the process of designing an effective management plan. It is to the credit of the project designers that this incremental and scientifically based type of analysis is proposed. If good monitoring data can indeed be collected and analyzed in a consistent manner, it will provide essential information to policy makers in each government responsible for making decisions that will assist in addressing these issues. It will also be important that this research and modeling data be presented in a format that is easily understood by policy makers and the general public as well. This will lead to more buy in from each country and the various stakeholders affecting and using Gulf waters. Such a hydrological modeling approach can also emphasize the common threats to the Gulf waters and its mutually shared resources. This should support the ecosystem basis for management.

The work on watershed and hydrological modeling raises the question of boundaries to the project since in theory full watersheds should be management areas of concern. Although it is implied that full watersheds will be considered in the analysis, it is not clear that full data sets will be readily available for this analysis. Small projects typically cannot provide meaningful technical assistance in such broad fields of environmental management where watersheds are large and complex.

From a scientific and technical perspective, the scope of the project is quite broad with four components doing rather different sets of activities. It will be necessary to carefully integrate the four components so that they complement each other. The manner that these can most easily complement each other is by working through the municipal and national governments and by having common pilot field projects that are supported by each component. This line of thought leads to another suggestion that the municipal governments become an important focus of the program in general as discussed earlier. This is suggested because the level of government together with community that will most probably have the largest impact on the creation of tangible benefits that can be measured and witnessed by local stakeholders will be the municipalities. Municipalities will most easily work with coastal communities and interface with non-government organizations that work directly at the community level.

The broad scope of the project necessitates that the issues described in the background information and baseline are focused and match the overall objectives and strategies of the Project. A careful matching of the management issues to be addressed with the proposed objectives and strategies will ensure that the project has a tangible and doable framework.

### **Questions related to the use of technology**

The primary technology to be used for managing the Gulf natural resources is the development and implementation of a zoning plan for the ecosystems and for fisheries and other resource uses. In relation to development of this zoning plan, it is suggested that this not be a top-down process. On the one hand, information of the distribution of the resources of the Gulf from scientific surveys, mapping and other means of collection and analyzing such data will normally be a fairly centralized process and decisions about the wisest plan will come from experts. This is normally the case in large scale coastal projects and also one of the reasons why many fail to achieve their most basic objectives. This is because the planning does not involve the stakeholders in a meaningful way.

The process that is suggested to be incorporated into the project proposal would be to center the mapping and zoning process in each municipality through the involvement of the communities in a participatory manner whereby they map the resource distribution, the issues, their use patterns and possible management zones. This participatory map can then be superimposed over a more centralized, and scientifically generated map so that the potential conflicts of interest between management authorities and resource users can be seen.

This is then the starting point for more intense local municipal government planning together with stakeholders who, in the end, will determine how effective the implementation of the zones and user regulations will be. Examples of this approach have been well documented in the various integrated coastal management projects in the Philippines. Publications that highlight this process are located on the websites: [www.oneocean.org](http://www.oneocean.org) and [www.coast.ph](http://www.coast.ph).

Another technology related to management of habitat and zoning is how the mangroves will be protected from recurring encroachment and harvesting of wood among other uses. The proposal is quite clear on how this will be approached and indicates that full engagement of the resource users will be essential to change their use patterns. Also, alternative livelihood projects are targeted for areas of heavy mangrove depletion. These make sense but will need to be locally designed and implemented to be effective. It is also suggested that some form of land (mangrove) tenure instrument be adopted so that resource users can be organized and have a legal identity that allows them limited access to the resource in return for stewardship and maintenance over the mangrove area of concern. Such approaches are working well in Asia where national governments often award 25 year leases to legal organizations formed by communities to manage mangrove and their associated fisheries resources.

Similarly, methods to be used for monitoring the coastal and marine environment should be specified. A standard marine data collection system should be employed that is both scientifically rigorous as well as applicable for community and/or volunteer groups to apply. The sustainability of a localized effort over time will depend on how easy it is to replicate monitoring over many years beyond the project support. Methods that are used in the Philippine context have been adapted for local use as a national standard and can be seen in the book, “Coral Reef Monitoring for Management” by Uychiaoco et al. (2001) and through the MPA Report Guide of the Coastal Conservation and Education Foundation ([www.coast.ph](http://www.coast.ph)).

Engaging NGOs and academic partners will tend to solve this problem of adequate monitoring capacity. In addition is necessary to create ‘systems’ for information management, ICM and MPA evaluation and reporting, etc. so that these systems become embedded into the managing organizations and take a life of their own.

Indicators are needed to measure progress towards the objectives but they need to be quite simple so that project participants and local stakeholders can understand and endorse them. The indicators can provide benchmarks of success that will help to push the project along knowing that the ultimate goal and objectives will take time and long term investment. The indicators are as specified in the project logical framework are quite appropriate while they are oriented to the “project” and not the stakeholder governments as such. It would be useful to review indicators of the Coastal Resource Management Projects (CRMP) supported by USAID in the Philippines that had indicators that were essentially the same as those ultimately adopted by the local governments for their own CRM or ICM programs. This convergence of indicators helped build ownership of the project through local institutions (CRMP 2004: [www.oneocean.org](http://www.oneocean.org)). A prototype of this system of indicators is available in a book: “Monitoring and Evaluating Municipal/City Plans and Program for Coastal Resource Management (DENR-CMMO 2003).

The project does not seem controversial in any way and gaps that might exist revolve around the ability of the project to become sustainable. There are no easy short cuts to building sustainability at the local levels in the Gulf of Fonseca. The project thus needs to be fully sensitive to the local government systems and to the culture of the communities involved from the fishers to the aquaculture operators to understand what will constitute long term and sustainable actions.

Other “technology” used in this project is mostly related to communication tools and dissemination of information and in the conduct of training and planning workshops of various kinds. It also pertains to the methods used in bringing people together and in soliciting the support of policy makers and key government officials as well as those from the private sector. The methods used in accomplishing these tasks are quite dependent on the personalities and skills of the project personnel to be successful. In this regard, it is suggested that state of art techniques are used to stimulate community and local government participation through various forms of engagement that are well documented in the literature.

### **Questions related to institutional arrangements**

The Project proposes the development and institutionalization of a tri-national regional body to oversee the implementation of the Project in the three countries. This body is already tentatively formed with commitments in place. A concern in relation to the formation and capacity building needed for such a regional body is that it could take a significant portion of the Project resources to make it functional and sustainable. It is suggested that the value of investing in this regional body with its broad goals be carefully weighed with the value of providing more focused technical assistance to particular countries in need. In this regard, it is prudent to keep aspirations for the regional body practical. It is also suggested that this body be connected or linked to other already existing regional bodies in Central America as appropriate.

The institutional arrangements of most urgent concern are those within nations and down to sub-national levels. It is at this level that most Gulf management concerns will be implemented and where most assistance is needed to ensure that ICM can be more widely implemented.

The project might also consider developing “demonstration” sites where ongoing and successful management can be displayed. This has proved useful in many ICM projects to share lessons with others as a learning tool. This could also be useful in the context of the 3 nations whereby each one has at least one demonstration project area to display and show off its work, so to speak. This will ensure that each country tries its best to implement a successful project site.

### **Identification of the global environmental benefits**

The project clearly identifies global environmental issues and benefits linked to the Gulf of Fonseca and the larger context of the Central American Pacific and Atlantic coastal areas. These are well articulated in the project proposal with respect to mangroves and the estuarine environment they depend on together with the fisheries and rich biodiversity associated with these ecosystems. The potential global environmental benefits from the project are large and these potential benefits are relatively easy to measure within the project monitoring framework. Positive outcomes will primarily be through improved management and protection of the ecosystems and their respective habitats in the Gulf. And, to the extent that good baseline data exists on these habitats, changes can be measured and quantified in terms of biodiversity conservation and economic returns as well. ICM demonstration sites will play a key role in this.

A question to address is to what extent the benefits of ecological and habitat management will be eroded by increasing sedimentation and pollution in the Gulf. Although, it is not entirely clear how dependent the Gulf ecosystems are on clear and clean water or their relative degree of tolerance for sediments, but in the long term, the Gulf will only withstand limited amounts of sediment before the entire system changes dramatically from its historical state.

The link to the terrestrial ecosystems and watersheds makes the project area diverse, dynamic and complex. If this integrated system can be managed well, it will represent a significant step forward for integrated approaches to coastal and marine conservation from a global perspective. No negative environmental effects can be anticipated from the project as designed.

### **How does the project fit within the context of the goals of GEF?**

The project fits well within the overall strategic thrust of the GEF-funded International Waters (IW) initiatives. As proposed it should assist the three countries to better understand the environmental concerns of their IWs and work collaboratively to address them. It will also build the capacity of existing institutions both regionally and nationally and it intends to implement measures that address selected trans-boundary environmental concerns, which is a major thrust of the project as designed. Given these intents, the project with its broad focus can achieve these outcomes more or less depending on many decisions yet to be made. The outcomes in this realm depend in part on points raised elsewhere in this review.

### **Regional context**

The regional scope is certainly present in the project through the three nations. Based on almost 30 years working in Southeast Asia, I know the difficulties of building meaningful regional partnerships that last and that accomplish tangible outcomes. There are examples of adoption of standard data collection and processing protocols, use of data for management design across borders and more. But, the regional collaboration among countries through top levels of government in the field of environmental management is still weak in central and Latin America. Yet, the existing tri-national agreements and commitments signed by these three countries certainly bode well for a positive outcome as a regional entity that will work effectively.

### **Replicability and sustainability of the project**

The Project as proposed is unique and depends on the buy in and support of the member countries and the various partner agencies. If the project works as planned, it will replicate itself since it has to become self-sustained to succeed. The proposed regional mechanism should provide focus and means for coordinating national efforts, thereby enhancing the efficiency and effectiveness of individual country undertakings. Involvement of the private sector, inter-governmental financial institutions, investors and commercial banks are all important for sustainability. The project design emphasizes the need for the involvement and investment of these agencies. But to be realistic, the history of multi-country institutional arrangements working efficiently and ensuring financial sustainability for its own operation are few. Partnerships are difficult to form and thus need to be very carefully developed and nurtured over several years to make them viable.

### **Linkages to other focal areas, programs and action plans at regional or sub regional levels**

The project has various natural links to other GEF focal areas and programs at regional and sub-regional levels. A comment is that the project needs to focus on those focal areas and programs that will be mutually beneficial to communicate and cooperate with. Various international

conventions, treaties and agreements exist among the countries of Central America while few are strictly implemented or adhered to. The potential for this project to improve on that is substantial given the ground work done in preparation for the tri-national effort.

### **Degree of involvement of stakeholders in the project**

“Stakeholders” in the proposed Project can have many different meanings. This is because stakeholders range from nations to local fishers and private sector aquaculture operators. In ICM demonstration sites that involve area-wide interventions, community involvement and stakeholder participation are especially important for success. The project design includes a good understanding of the need for stakeholder involvement and indicates that the Project will follow this path. Comments above add some ideas on how this can be improved through the full engagement of municipal governments in co-management arrangements with the communities under their jurisdictions. Another question is whether the project has the resources for adequate stakeholder involvement. National and local government and private institutions will need to play major roles to assist with stakeholder involvement in a facilitated process with sufficient resources to support this activity.

### **Capacity building aspects**

The project is geared towards building capacity at the local, national and tri-national levels. The balance of effort at these levels, as discussed, still needs to be determined in more exact terms. Implementing ICM demonstration sites requires capacity building at local government levels as noted. The intensity of efforts at this level can be quite high. It is at this level that the project needs to bring in partners as much as possible in various collaborative agreements to work together. The project design does incorporate these kinds of agreements while those that might make the most difference at the local levels will not be determined until activities begin through national planning of project implementation. Successful local level interventions require consistency over time using familiar technical assistance and consultants that can integrate well with the local decision makers and managers. Sporadic and variable technical assistance does not lead to measurable results in local projects. In this regard, the investments needed are often larger than anticipated, especially in lesser developed countries. In the existing design, the project may be underestimating the resources needed to fully develop and implement Gulf wide management to produce tangible outcomes.

### **Innovativeness**

The Project design is innovative in that it packages a proposal that will address multiple issues in an integrated framework. This is never an easy undertaking. The design also carefully includes an economic and livelihood development program that will complement the resource management efforts to lessen the dependency of the resource users on the Gulf’s natural resource base. The strategies proposed to implement the four project components are relatively innovative while these strategies are dependent on having good leaders within the Project team and framework to make them work. The project needs to build a strong and dynamic team that encourages leadership and autonomy in its management system so that innovative actions can occur at multi levels and in different contexts and areas. Project management should avoid being too rigid and hierarchical so that the team will take their own initiatives. Also, by adopting a “rolling design” that builds on the principles of adaptive management, the project may be more efficient and innovative.

### **Specific comments on the Proposal**

1. *Project context.* This section is substantially complete. Nevertheless, it could benefit from several graphs that depict change over time as the data permits to give an indication of what the future will look like if the trends are left unchecked. Also, the maps, as presented, are small and would be more useful if presented in a larger format.
2. *Project context.* The discussion on aquaculture would benefit from more detail on the extent of the shrimp farming activities and how this has impacted the mangrove areas since this appears to be the single most important development trend affecting mangrove and estuarine ecosystems in the Gulf. Also, the level of shrimp exports from Honduras is large. This industry could be a major stakeholder in the management of the area, if interested and engaged to do so. More information on this would be useful.
3. *Project context.* The section that covers legal and institutional is informative. A table that summarizes the laws and what they cover would be extremely useful for project implementers and could be an early product of the project.
4. *Issues and their causes.* This concise summary is very helpful. It would be useful to emphasize the transnational nature of pollution. The section that covers the decline of mangroves should differentiate a bit more between the problems of cutting for wood and conversion to shrimp ponds. The solutions to these two causes are very different.
5. *Lessons learned.* This section could include a few of the ideas suggested in the introduction as appropriate. In general, the few lessons noted are extremely relevant. Of these, a lesson to emphasize is the need to coordinate among donor projects in the area and to coordinate vertically through the various levels of government. Also, the co-management of protected areas is an important lesson that can be refined through project implementation as work plans develop with local cooperators.
6. *Project Strategy.* This paragraph is a bit long and wordy. It is suggested to state the strategy first in more concise terms in a shorter paragraph and then introduce the components as part of the strategy and other details supporting the general strategy.
7. *Concurrence of regional and national plans.* This section sets the tone for how the three countries will concur on approaches through a standard framework under the tri-national body guidance. It is suggested that a simple benchmark system be introduced here that would link the three country efforts in a technical way to guide management of Gulf resources. Such a system was explained in the introduction and is referenced.
8. *Project objectives.* The log frame seems quite doable with objectives and means of verification that are achievable and measurable for the most part. Nevertheless, in light of comments in this review, several minor clarifications might be considered that would help the project to better align across the 3 countries in relation to the actual development of management plans and benchmarks for this process.
9. *Component I—Institutional building.* The main comment on this important component is that it will need to evolve with the project in relation to the needs of the institutions. In Philippine ICM projects, it worked well to train national agency personnel as resource persons for local municipal government training and capacity building. Also, having indicators for improved governance in relation to environmental management gives the

agencies, national and local, goals to strive for in improving their ability to manage coastal resources. I suggest that referring to the series of eight guidebooks titled: “Philippine Coastal Management Guidebook Series” to assist with institutional development legal frameworks that have been tested over time. Capacity building for local and national government will need extensive training. Some training materials that are already packaged and ready for use, albeit in English, are available through the website: [www.oneocean.org](http://www.oneocean.org). A series of training courses were developed to support ICM in the Philippines that include all aspects of ICM and MPA management.

10. *Component II—Ecosystem management.* This component to manage ecosystems and fisheries needs to apply an adaptive management approach as much as possible. The solutions to these issues may vary among the countries and be quite site specific. Although it is clear that integrated management plans will be developed, it is not obvious whether these will be implemented throughout the area or in pilot sites. It was suggested that pilot areas might be more effective to more quickly start field level implementation. This is also where the municipal governments must play a major role in planning and implementation. Linking the alternative income projects to the field level work will help speed changing the behavior of communities towards fisheries and mangrove wood extraction. For fisheries management, a few pointers include:
  - It is important to not reward illegal fishers with alternative livelihoods;
  - There is no easy replacement for coastal law enforcement to curb serious offenses of illegal fishing, effective coastal law enforcement must be pursued as needed;
  - Baseline assessments need to be fairly simple and easy to replicate using local technology, otherwise monitoring will lapse and the value of showing trends based on the baseline will not occur;
  - Fishery reserves (no-take areas) should be inside of core protected areas and not different to simplify management;
  - It is important to feedback baseline assessments and trends to fishers and other resource users in a timely manner to keep their interest and so they can learn; and,
  - Fishers and other resource users’ participation in the assessments is preferable.
11. *Component III--Pollution.* This component is very well planned and has an achievable outcome. A question is whether demonstration sites are needed to start to implement strategies that emerge from the research, monitoring and modeling efforts.
12. *Component IV.* This complementary and supportive component will need to be very responsive to what is practical in terms of supporting alternative livelihoods and income generation. The potential for creativity is high in this component while the bottom line is that economic development should be as environment friendly as possible. It also needs to be profitable and have good business plans to back up potential projects. The various livelihood projects for fishers and those involving aquaculture seem appropriate but one caveat is that these are all experimental and could take considerable resources and time to operate successfully. It might be best to focus on only one or two projects and make sure that they succeed. Most such projects tend to fail once the donor project ends. In addition, experience has shown that mechanisms that collect and manage funds locally tend to be more effective and tend to build incentives for local stakeholders. Collecting user fees that are tied to particular site visits is a good means for engaging local stakeholders who are involved in protecting and managing the sites.

- Component IV could also include selected cost-benefit analysis to guide policy development, especially as a tool to question development of shrimp ponds in mangrove areas. This conversion of mangrove habitat has been shown to produce negative economic returns when full valuation of ecosystem services is factored into the analysis. Such studies have been done in Thailand, Malaysia and Philippines that have guided national policy towards improved protection of mangrove ecosystems in recent years.
13. *Information, education and communication (IEC).* It is noted that IEC is included in each project component. The IEC tool, if used wisely, can really enhance the effectiveness of the project. At the same time it can be expensive, time consuming and not address the right issues with the right audiences. Thus, some good planning should be invested in the design of an IEC strategy that is project wide. It might be better to include this set of activities in a separate component or at least to clearly link the various IEC activities across the components. Websites are useful depositories for all the project information and can serve as a functional library and way of organizing much information. Nevertheless, local stakeholders do not normally use these means of obtaining information so there is a need for other means of disseminating important documents.
  14. *Project administration.* The three country arrangement will add to the complexity of project management. At the same time a transparent project management system can help make it efficient by having a very systematic process in place for administration in the central office. One note of caution is that organizational structure could bog down if the Consultative Forum and Regional Technical Committee are not streamlined in function and mandates. Also, the use of small grants to NGOs is an effective means to engage local stakeholders. At the same time, they will require technical assistance and guidance to work effectively within the project framework. A dedicated support system for the small grants will help make this doable.
  15. *Disbursement schedule.* Year one is shown to have the highest rate of disbursement, presumably because of capital purchases and since more consultants will be employed in this year. But, from lessons learned in other projects, the first year should be used more for planning and setting up systems and making sure that right personnel are involved. And, often spending is less than projected in the first year but peaks in the 2<sup>nd</sup> or 3<sup>rd</sup> year of the project.
  16. *Financial Viability.* The overall amount of funding is not too large for this scale of project. This highlights the need for counterpart support and leveraging other donor projects together with the need for substantial investments of the national governments. These concerns have been addressed in the proposal for the most part.
  17. *Project risks.* It appears that the largest risk is the relative lack of stability among the 3 countries at the borders. Yet, the 3 countries have signed agreements to manage the Gulf and have committed resources to this endeavor. During the project implementation, these transnational conflicts could be a delicate issue and in this regard, it will be necessary to continually highlight the larger good and shared problems of the 3 countries, so that bilateral issues do not take the center stage. This will require good leadership on the part of the GEF project team.
  18. *Project challenges.* Working in 3 countries simultaneously will require having similar approaches to coastal management in each country. In this regard, the concept of “scaling up ICM” from local to national and then to international might be a way to unify

the overall framework and approach of the project. In the Philippines, for example, the evolving ICM certification system is responsive to local governments, their capacities and their jurisdictions under national law while it is not too restrictive on what local governments can and cannot do. This could easily be applied in the Gulf of Fonseca, given its relatively small size and common issues to be addressed.

### **Summary and final points**

The comments included in this review are intended to help improve the project proposal. My main message is that given the level of funding of this project, which is relatively small, I think that some fine tuning of the proposal could help make it a little more efficient and easy to follow as a guiding document. The project intends to implement tangible projects to build institutions, to improve management the coastal resources in the Gulf, plan for improvement of water quality and strategically implement an economic development package to support effective investments in management. Measuring the potentially positive changes through local monitoring and evaluation activities will help make the project more visible and sustainable since it will increase the buy in of local and national organizations. At the same time, these measurable successes will rest on the strategic balance of local actions versus national and regional activities and how they contribute to progress at these three levels of implementation. Several final points:

- The role of local governments can be highlighted more to ensure a local government base for the regulations being planned and implemented.
- The need for an integrated planning and implementation process at the local government level should be promoted so that a broader and more sustainable impact results.
- Consider adopting a variation of the ‘CRM or ICM benchmark system’ being applied in the Philippines as a framework to guide local and national government ICM
- Consider the MPA rating and evaluation system or a variation for protected areas.
- Ensure that coastal and marine (mangrove, estuarine, etc.) assessment methods are both standardized over time and that they can be utilized by local organizations with scientific guidance to ensure participation in the process to build sustainability.
- Analyze and test national policy vis-à-vis the need to support for ICM at the local level to make it effective.
- Use maps in helping understand geographical oriented sets of activities. Engage stakeholders in mapping resources uses and issues to augment more scientifically derived maps. Geographic information systems should be used as possible to complement various participatory processes in planning.

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Submitted by A. White  
February 8, 2007—draft  
February 21, 2007—final

## ANNEX C1 – IDB RESPONSE TO STAP REVIEW

### Integrated Management of the Ecosystems of the Gulf of Fonseca (RS-X1019)

#### A. Comments in Introduction

STAP Comment 1: *“what integrated means for this project in practical terms, could benefit from a short paragraph in the proposal that guides implementers as to the main thrust of “integration”. A key concept to convey is the need for full horizontal and vertical integration among the institutions that will implement and sustain the project. Also, the links between land and sea should be emphasized given the important role land-use practices play in the Gulf water quality and its improvement. These points are emphasized in the proposal while an explicit statement would be beneficial”.*

IDB Response 1: A definition of integration has been added to the section entitled “Project Strategy” (paragraph 1.40).

STAP Comment 2: *In presentation of the issues to be addressed in the project proposal, it is important that for the issues to be fully understood and addressed, the project design needs to get to the point quickly as to the known causes of the issues facing the Gulf. To the extent possible, issues need to be quantified and possible implications of not addressing them noted. [...] In this regard, a graphical analysis of the issues and their underlying causes is essential to make the project rationale understandable.*

IDB Response 2: Quantitative information on threats and root causes has been added in project document. Explanatory tables are included in section B. Description of the Gulf. Additionally, full graphical information appears in the Transboundary Diagnostic Analysis.

STAP Comment 3: *Development of a more detailed work plan that is focused more from the bottom (local) up to national and transnational could be an important undertaking of the early stages of project implementation. This exercise with local stakeholders would have the effect of engaging all the important participants in a planning process that would encourage buy in and make them feel part of the decision process from the beginning. Since, large GEF supported projects are sometimes seen as more top down when more than one country is concerned; a participatory planning process would help to mitigate this perception early in the project implementation.*

IDB Response 3: The notion of a ‘bottom-up’ participatory planning process was used in the formulation of the project particularly with the involvement of focus groups representing various resource users and a distinct process involving the 19 municipalities of the Gulf Region (see section C. entitled ‘Consultation and Participation’ in paragraphs 5.12 to 5.14). The concept is to continue using this approach through the implementation of the project through the Trinational Advisory Forum and the network of local committees that will engage in specific activities such as the design of the coastal management plan, fisheries co-management, and restoration of mangroves. See more details in sub-sections of Project Strategy such as paragraph 1.40, numeral (a) (ii) and (b), cost-effectiveness (paragraph 1.43), innovation (paragraph 1.44); Component 1 (a) and (c) (paragraphs 2.4 and 2.6); Component 2 (a) (paragraph 2.9); and Component 4 (a) (paragraph 2.20).

STAP Comment 4: *Overall, the proposal is well prepared and very thorough in its coverage of the outcomes and the activities to accomplish the outcomes. The threats analysis also leads*

*logically into the outcomes and activities so that the proposal is comprehensive and seems to cover its bases without any major gaps. But, because the project is quite broad in nature and addressing a range of issues spread over a wide geographical area, I encourage the implementers to try to be more specific in some cases and to give the main emphasis or focus of work for the project. This can be done by articulating the issues as noted and linking these directly to the strategies and activities.*

IDB Response 4: Links between threats, issues and activities have been clarified in the project document. See these links for example in Component 1 (a) and (b) (paragraphs 2.4 and 2.5); Component 2 (b) and (c) (paragraphs 2.10 and 2.11); Component 3 (e) (paragraph 2.18); Component 4 (b) (paragraph 2.22).

STAP Comment 5: *In the Philippines, a factor contributing to the increasing awareness about coastal resources management (CRM) or integrated coastal management (ICM) is that many local municipal and city governments are engaged in the planning for and management of their coastal areas and resources. More than 100 coastal municipalities and cities (covering 3500 km of coastline) have CRM plans that are being implemented with their own budgets and personnel and with such best practices in place as: improved coastal law enforcement, marine protected areas (MPAs), zoning schemes for marine uses including tourism and aquaculture, licensing of selected activities.*

IDB Response 5: As indicated in the legal analysis of the TDA, El Salvador, Honduras and Nicaragua are at distinct stages of devolution of environmental and natural resources management responsibilities to local governments. In most cases, municipal responsibilities in coastal resource management (CRM) in the Gulf of Fonseca are incipient. One of the challenges is to develop local capacities in step with the decentralization process currently in progress in each of the three countries. The other challenge is to promote this increased local responsibility in CRM while respecting considerations that are of national interest (see section on 'Root Causes', paragraphs 1.30 to 1.35).

STAP Comment 6: *This point regarding the local government role needs to be fully reflected in the Gulf of Fonseca. Past projects that were too heavily controlled by the national government (including national marine protected areas) in the Philippines have failed in many areas because of poor or unenthusiastic participation of the communities or local governments.*

IDB Response 6: The project strategy has been adjusted to emphasize the role of local governments in line while remaining in line with national legal framework of the three countries. (see paragraph 1.40). See also IDB response 3 above.

STAP Comment 7: *Another analogy that could help in the design of Gulf of Fonseca project is the recently adopted coastal resource management benchmark system for local governments in the Philippines. This "CRM benchmark system" is a relatively simple and yet robust system by which local governments and national government can set targets and measure advances in the development of CRM or ICM within local governments around the country. In the case of the Gulf, such a system could be designed and tested for the project area that would need to be adopted by each of the three countries.*

IDB Response 7: The notion of a CRM benchmark system has been added to Component 2 (a) (paragraph 2.9).

STAP Comment 8: *The role of local governments could be strengthened to assist to sustain and institutionalize the project at the local level, monitor the more strictly protected areas and to integrate with the municipal or city development plans.*

IDB Response 8: See IDB Responses 3, 5 and 6 above.

STAP Comment 9: *The CRM or ICM planning process could be incorporated into the initial stage of the local area management to ensure proper baseline assessment to planning and implementation so that the local government builds on addressing all their CRM needs. The CRM benchmark system can be adjusted and adopted to make larger project wide interventions more consistent and to help to institutionalize the project objectives within the local government system up to national and tri-national level.*

IDB Response 9: See IDB Response 7 above.

STAP Comment 10: *The MPA rating system being initiated in the Philippines can assist to guide the protected area planning and development process of the project. The various protection zones could be monitored and evaluated as separate MPAs so that local stakeholders could begin to identify with the management regime for areas that affect their traditional uses and practices. In this regard, the MPA management and rating system could help standardize the localized management efforts and to engage more closely the stakeholders for a particular place. All titles could be determined locally.*

IDB Response 10: In keeping with the requirements of GEF IW SP and in order to avoid overlaps with GEF BD Focal Area, the decision was made to reduce the emphasis on MPAs and to focus on fisheries and mangrove co-management areas.

STAP Comment 11: *The need for improved national policy can partly be addressed by linking lessons being learned through the management of the protected areas within the Gulf and the evolving policy of integrated coastal management (and fisheries) so that it is part of whole management process. The three national governments can improve their ICM policies by beginning to integrate fisheries and aquaculture management from this process.*

IDB Response 11: We agree. This is consistent with the project strategy proposed (see paragraph 1.40) and Component 2 (b) (see paragraph 2.10).

STAP Comment 12: *Appropriate and participatory CRM plans can help set the trend within project areas and local governments for effective implementation of MPAs and associated management plans. The implication is that stakeholder involvement is essential and to fully address the problems of illegal and over fishing and destruction of mangroves, stakeholders to the smallest community must be involved and feel some benefit from the project.*

IDB Response 12: See IDB Response 3 above.

STAP Comment 13: [...] *the balance of funds used for Component 3, versus 1, 2 and 4 needs to be carefully evaluated. Being strategic in the implementation of some planned “regional” interactions could save resources for the essential needs of effectively assisting coastal resources management in the three countries. A balance is needed between actions in the present that make a measurable difference and those that build institutional sustainability at the national and tri-national scales that are often time consuming, expensive and may not pan out over time.*

IDB Response 13: We agree. The balance of funds has been adjusted with a reduction in Component 3 in relation to 1, 2, and 3 thus placing more emphasis on actions that can have an immediate and measurable difference within the time frame of the project (see detailed budget in Appendix I).

## **B. Key issues**

### **B (a) Scientific and technical soundness of the project**

STAP Comment 14: *The project will need to carefully design a monitoring program that builds on the existing baseline information so that changes and trends are measured.*

IDB Response 14: Much of the work undertaken during the preparation of the TDA was to assemble the existing baseline information. The intent of the activities described in Component 1(d) and 3(a) and (b) (see paragraphs 2.7, 2.14 and 2.15 respectively) is to consolidate existing monitoring networks rather than establish new ones. Additionally, the M&E System also considers this approach (see paragraphs 4.18 and 4.19, as well as Annex E).

STAP Comment 15: *The approaches for collecting relevant information for management of resource uses and their impacts, local economic activities, water management are implied to be scientific and done, for the most part, by national agencies and research organizations. A question to ask is at what scale can more participatory approaches be applied? It is known that the more contact stakeholders have with a resource area or to the extent they are dependent on a particular resource base, they will generate more responsive and effective management plans. To this extent, the project will need to engender site-specific management in appropriate areas of concern working through local governments and stakeholders. It is not clear to what extent this will be possible given the broad focus of the project and the key role of national agencies without a significant role for local municipalities and in some cases community groups in the monitoring process.*

IDB Response 15: We agree with this observation and have strengthened the role of local municipalities and resource users groups in data collection and monitoring. This strengthened role is evident in the use of the participatory mapping process for the formulation of the coastal management plan for the Gulf of Fonseca (Component 2 (a); see paragraph 2.9), the fisheries co-management (Component 2 (b): see paragraph 2.10), mangrove restoration (Component 2 (d): see paragraph 2.12) and the inventory of point sources for the hydrological modeling (Component 3 (c); see paragraph 2.16).

STAP Comment 16: *The proposed modeling efforts to better understand the dynamics of the watershed and main sources of sediment and other pollution, are a significant and well planned start on the process of designing an effective management plan. It is to the credit of the project designers that this incremental and scientifically based type of analysis is proposed. If good monitoring data can indeed be collected and analyzed in a consistent manner, it will provide essential information to policy makers in each government responsible for making decisions that will assist in addressing these issues. It will also be important that this research and modeling data be presented in a format that is easily understood by policy makers and the general public as well. This will lead to more buy in from each country and the various stakeholders affecting and using Gulf waters. Such a hydrological modeling approach can also emphasize the common threats to the Gulf waters and its mutually shared resources. This should support the ecosystem basis for management.*

IDB Response 16: We agree with this observation. To ensure effective use of the modeling for policy making and priority setting purposes, the proposed approach is to provide training to municipal environmental units and national government representatives on watersheds, sedimentation and pollution processes (Component 1(a); see paragraph 2.4), to involve them in characterizing their own watersheds draining into the Gulf to ensure an understanding of the data used for the modeling (Component 3 (c); see paragraph 2.16), and to generate modeling results (maps and time series) that can be easily interpreted by national and local governments and organizations participating in the Trinational Advisory Forum (see paragraph 4.11).

STAP Comment 17: *The work on watershed and hydrological modeling raises the question of boundaries to the project since in theory full watersheds should be management areas of concern. Although it is implied that full watersheds will be considered in the analysis, it is not clear that full data sets will be readily available for this analysis. Small projects typically cannot provide meaningful technical assistance in such broad fields of environmental management where watersheds are large and complex.*

IDB Response 17: The overall boundaries of the project are the full tributary watersheds and the Gulf of Fonseca. However, the intensity of activities varies across this study area. For example, the activities of Component 2 (resource management) are limited to the boundaries of the 19 coastal municipalities and adjacent coastal waters. The hydrological modeling covers entire watersheds in that it will be based on data from satellite imagery and detailed land use and topographical maps for instance.

STAP Comment 18: *It will be necessary to carefully integrate the four components so that they complement each other. The manner that these can most easily complement each other is by working through the municipal and national governments and by having common pilot field projects that are supported by each component. This line of thought leads to another suggestion that the municipal governments become an important focus of the program in general as discussed earlier. This is suggested because the level of government together with community that will most probably have the largest impact on the creation of tangible benefits that can be measured and witnessed by local stakeholders will be the municipalities. Municipalities will most easily work with coastal communities and interface with non-government organizations that work directly at the community level.*

IDB Response 18: We agree. This is stressed in section “Project Strategy” numeral (b) (paragraph 1.40). The notion of common field pilot projects supported by each component has been incorporated in the design of Component 2 and Component 4 (a) (see paragraph 2.20). See also IDB Responses 5, 6 and 15.

STAP Comment 19: *The broad scope of the project necessitates that the issues described in the background information and baseline are focused and match the overall objectives and strategies of the Project. A careful matching of the management issues to be addressed with the proposed objectives and strategies will ensure that the project has a tangible and doable framework.*

IDB Response 19: The linkages between the issues in the background section and strategies of the project have been clarified throughout part II “Project objectives and description” (see paragraphs 2.1 to 2.22).

## **B (2) Questions related to the use of technology**

STAP Comment 20: *The process that is suggested to be incorporated into the project proposal would be to center the mapping and zoning process in each municipality through the involvement of the communities in a participatory manner whereby they map the resource distribution, the issues, their use patterns and possible management zones. This participatory map can then be superimposed over a more centralized, and scientifically generated map so that the potential conflicts of interest between management authorities and resource users can be seen.*

IDB Response 20: This approach has been incorporated in Component 2 (a) (see paragraph 2.9).

STAP Comment 21: *It is [...] suggested that some form of land (mangrove) tenure instrument be adopted so that resource users can be organized and have a legal identity that allows them limited access to the resource in return for stewardship and maintenance over the mangrove area of concern.*

IDB Response 21: This approach has been incorporated in Component 2(d) (see paragraph 2.12).

STAP Comment 22: *Similarly, methods to be used for monitoring the coastal and marine environment should be specified. A standard marine data collection system should be employed that is both scientifically rigorous as well as applicable for community and/or volunteer groups to apply. [...] Engaging NGOs and academic partners will tend to solve this problem of adequate monitoring capacity. In addition is necessary to create 'systems' for information management, ICM and MPA evaluation and reporting, etc. so that these systems become embedded into the managing organizations and take a life of their own.*

IDB Response 22: Details in monitoring protocols are included in the draft terms of reference available for these activities. Engagement of local governments, NGOs and community organizations has been planned for (see also IDB Response 15).

STAP Comment 23: *The indicators as specified in the project logical framework are quite appropriate while they are oriented to the "project" and not the stakeholder governments as such. It would be useful to review indicators of the Coastal Resource Management Projects (CRMP) supported by USAID in the Philippines that had indicators that were essentially the same as those ultimately adopted by the local governments for their own CRM or ICM programs.*

IDB Response 23: CRM benchmark system has been incorporated into Component 2(a) (see paragraph 2.9). See also IDB response 7.

## **B c. Questions related to institutional arrangements**

STAP Comment 23: *It is suggested that the value of investing in this regional body [Trinational Commission] with its broad goals be carefully weighed with the value of providing more focused technical assistance to particular countries in need. In this regard, it is prudent to keep aspirations for the regional body practical. It is also suggested that this body be connected or linked to other already existing regional bodies in Central America as appropriate.*

IDB Response 23: We agree in both cases. The basic commitment to a regional cooperation framework rests on the Declaration of Amapala where CCAD has been identified as the coordinating entity as an existing regional body in Central America (see paragraph 1.1). Nonetheless, all three countries agree that the establishment of the Trinational Commission and

its functions must be the result of a systematic drafting and negotiation process involving all responsible parties including each country's Ministry of External Affairs (see paragraph 4.1).

STAP Comment 24: *The project might also consider developing “demonstration” sites where ongoing and successful management can be displayed. This has proved useful in many ICM projects to share lessons with others as a learning tool. This could also be useful in the context of the 3 nations whereby each one has at least one demonstration project area to display and show off its work, so to speak. This will ensure that each country tries its best to implement a successful project site.*

IDB Response 24: See IDB response 18.

**B d. Identification of the global environmental benefits**

STAP Comment 25: *The project clearly identifies global environmental issues and benefits linked to the Gulf of Fonseca and the larger context of the Central American Pacific and Atlantic coastal areas. [...] A question to address is to what extent the benefits of ecological and habitat management will be eroded by increasing sedimentation and pollution in the Gulf. Although, it is not entirely clear how dependent the Gulf ecosystems are on clear and clean water or their relative degree of tolerance for sediments, but in the long term, the Gulf will only withstand limited amounts of sediment before the entire system changes dramatically from its historical state.*

IDB Response 25: We agree. Some research has been undertaken on the potential impacts of contaminants on selected estuaries of the Gulf, which indicates that increasing contaminants discharges could affect indicators of health. Limited evidence exists on the impacts of sedimentation on Gulf ecosystems although research in similar circumstances has shown that accelerated sediment accumulation can lead to nearshore seagrass and even mangrove die-off.

**B e. How does the project fit within the context of the goals of GEF?**

STAP Comment 26: *The project fits well within the overall strategic thrust of the GEF-funded International Waters (IW) initiatives. As proposed it should assist the three countries to better understand the environmental concerns of their IWs and work collaboratively to address them. It will also build the capacity of existing institutions both regionally and nationally and it intends to implement measures that address selected trans-boundary environmental concerns, which is a major thrust of the project as designed. Given these intents, the project with its broad focus can achieve these outcomes more or less depending on many decisions yet to be made. The outcomes in this realm depend in part on points raised elsewhere in this review.*

IDB Response: None.

**B f. Regional context**

STAP Comment 27: *[...] the regional collaboration among countries through top levels of government in the field of environmental management is still weak in central and Latin America. Yet, the existing tri-national agreements and commitments signed by these three countries certainly bode well for a positive outcome as a regional entity that will work effectively.*

IDB Response: We agree.

**B g. Replicability and sustainability of the project**

STAP Comment 28: *The proposed regional mechanism should provide focus and means for coordinating national efforts, thereby enhancing the efficiency and effectiveness of individual country undertakings. Involvement of the private sector, inter-governmental financial institutions, investors and commercial banks are all important for sustainability. The project design emphasizes the need for the involvement and investment of these agencies. But to be realistic, the history of multi-country institutional arrangements working efficiently and ensuring financial sustainability for its own operation are few. Partnerships are difficult to form and thus need to be very carefully developed and nurtured over several years to make them viable.*

IDB Response 28: For these reasons, financial sustainability of the project was subject to a specific analysis where a survey was conducted of lessons learned from other GEF IW projects (see Annex F). See also Component 2 (c) (paragraph 2.11).

**B h. Linkages to other focal areas, programs and action plans at regional or sub regional levels**

STAP Comment 29: *The project has various natural links to other GEF focal areas and programs at regional and sub-regional levels. A comment is that the project needs to focus on those focal areas and programs that will be mutually beneficial to communicate and cooperate with. Various international conventions, treaties and agreements exist among the countries of Central America while few are strictly implemented or adhered to. The potential for this project to improve on that is substantial given the ground work done in preparation for the tri-national effort.*

IDB response 29: Linkages with other GEF focal areas have been clarified (see Section G, paragraph 1.41).

**B i. Degree of involvement of stakeholders in the project**

STAP Comment 30: *The project design includes a good understanding of the need for stakeholder involvement and indicates that the Project will follow this path. Comments above add some ideas on how this can be improved through the full engagement of municipal governments in co-management arrangements with the communities under their jurisdictions. Another question is whether the project has the resources for adequate stakeholder involvement. National and local government and private institutions will need to play major roles to assist with stakeholder involvement in a facilitated process with sufficient resources to support this activity.*

IDB Response 30. See IDB responses 5, 6, 15, 16.

**B j. Capacity building aspects**

STAP Comment 31: *Sporadic and variable technical assistance does not lead to measurable results in local projects. In this regard, the investments needed are often larger than anticipated, especially in lesser developed countries. In the existing design, the project may be underestimating the resources needed to fully develop and implement Gulf wide management to produce tangible outcomes.*

IDB response 31: We agree. The intent is to rely on local providers of technical assistance such as Zamorano in Honduras in order to ensure sustainability.

## **B k. Innovativeness**

STAP Comment 32: *The strategies proposed to implement the four project components are relatively innovative while these strategies are dependent on having good leaders within the Project team and framework to make them work. Project management should avoid being too rigid and hierarchical so that the team will take their own initiatives. Also, by adopting a “rolling design” that builds on the principles of adaptive management, the project may be more efficient and innovative.*

IDB Response 32: The project adopts a flexible adaptive management approach in execution. See Chapter 3. Execution. See also innovation in “Project Strategy” (paragraph 1.44).

## **C. Specific comments on the Proposal**

STAP Comment 33: *Project context. This section is substantially complete. Nevertheless, it could benefit from several graphs that depict change over time as the data permits to give an indication of what the future will look like if the trends are left unchecked. Also, the maps, as presented, are small and would be more useful if presented in a larger format.*

IDB Response 33: See TDA (Annex G).

STAP Comment 34: *Project context. The discussion on aquaculture would benefit from more detail on the extent of the shrimp farming activities and how this has impacted the mangrove areas since this appears to be the single most important development trend affecting mangrove and estuarine ecosystems in the Gulf. Also, the level of shrimp exports from Honduras is large. This industry could be a major stakeholder in the management of the area, if interested and engaged to do so. More information on this would be useful.*

IDB Response 34: More information has been provided (see paragraph 1.11). The industry is included as a major stakeholder through ANDA.

STAP Comment 35: *Project context. The section that covers legal and institutional is informative. A table that summarizes the laws and what they cover would be extremely useful for project implementers and could be an early product of the project.*

IDB Response 35: See Section D entitled Regional and National Policies and Institutional Framework (see paragraphs 1.14 to 1.23).

STAP Comment 36: *Issues and their causes. This concise summary is very helpful. It would be useful to emphasize the transnational nature of pollution. The section that covers the decline of mangroves should differentiate a bit more between the problems of cutting for wood and conversion to shrimp ponds. The solutions to these two causes are very different.*

IDB Response 36: This has been clarified. Summary of root causes is in paragraphs 1.37 to 1.39, whereas section about decline of mangroves is in paragraph 1.35 and Tables I-7 and I-8.

STAP Comment 37: *Lessons learned. This section could include a few of the ideas suggested in the introduction as appropriate. In general, the few lessons noted are extremely relevant. Of these, a lesson to emphasize is the need to coordinate among donor projects in the area and to coordinate vertically through the various levels of government. Also, the co-management of*

*protected areas is an important lesson that can be refined through project implementation as work plans develop with local cooperators.*

IDB Response 37: This has been incorporated in the lessons learned section (see paragraph 1.51). Also donor coordination is included as a specific activity of the project. See Component 1 (b) (paragraph 2.5).

*STAP Comment 38: Project Strategy. This paragraph is a bit long and wordy. It is suggested to state the strategy first in more concise terms in a shorter paragraph and then introduce the components as part of the strategy and other details supporting the general strategy.*

IDB Response 38: Our decision was to keep the strategy more explicit as it was the result of an intense consultation with all three countries.

*STAP Comment 39: Concurrence of regional and national plans. This section sets the tone for how the 3 countries will concur on approaches through a standard framework under the tri-national body guidance. It is suggested that a simple benchmark system be introduced here that would link the three country efforts in a technical way to guide management of Gulf resources. Such a system was explained in the introduction and is referenced.*

IDB Response 39: This has been incorporated. See IDB response 7.

*STAP Comment 40: Project objectives. The log frame seems quite doable with objectives and means of verification that are achievable and measurable for the most part. Nevertheless, in light of comments in this review, several minor clarifications might be considered that would help the project to better align across the 3 countries in relation to the actual development of management plans and benchmarks for this process.*

IDB Response 40: Adjustments to the log frame have been made to correspond to the responses above.

*STAP Comment 41: Component I—Institutional building. The main comment on this important component is that it will need to evolve with the project in relation to the needs of the institutions. In Philippine ICM projects, it worked well to train national agency personnel as resource persons for local municipal government training and capacity building. Also, having indicators for improved governance in relation to environmental management gives the agencies, national and local, goals to strive for in improving their ability to manage coastal resources. I suggest that referring to the series of eight guidebooks titled: “Philippine Coastal Management Guidebook Series” to assist with institutional development legal frameworks that have been tested over time. Capacity building for local and national government will need extensive training. Some training materials that are already packaged and ready for use, albeit in English, are available through the website: [www.oneocean.org](http://www.oneocean.org). A series of training courses were developed to support ICM in the Philippines that include all aspects of ICM and MPA management.*

IDB Response 41: We agree. See Component 1, paragraph 2.3 (a) and footnote 40.

*STAP Comment 42: Component II—Ecosystem management. [...] It was suggested that pilot areas might be more effective to more quickly start field level implementation. This is also where the municipal governments must play a major role in planning and implementation. Linking the*

*alternative income projects to the field level work will help speed changing the behavior of communities towards fisheries and mangrove wood extraction.*

IDB Response 42: We agree and this is consistent with the co-management approach proposed in Component 2 (c).

*STAP Comment 43 : Component III--Pollution. This component is very well planned and has an achievable outcome. A question is whether demonstration sites are needed to start to implement strategies that emerge from the research, monitoring and modeling efforts.*

IDB Comment 43: The proposal is to include the activities promoting cleaner production in Component 4 (b) in demonstration sites (see paragraph 2.22).

*STAP Comment 44: Component IV. The potential for creativity is high in this component while the bottom line is that economic development should be as environment friendly as possible. It also needs to be profitable and have good business plans to back up potential projects. It might be best to focus on only one or two projects and make sure that they succeed. Most such projects tend to fail once the donor project ends.*

IDB Response 44: Environmental, economic and financial viability are three of the key eligibility criteria for the selection of the projects in Component 4 (a) (see paragraphs 2.20 and 2.21). Business plans will be required to ensure sustainability and technical assistance will be provided for the preparation of these business plans. Successful experience exists in the management of these types of activities by specialized NGOs in Honduras, El Salvador and Nicaragua.

*STAP Comment 45: Information, education and communication (IEC). It might be better to include this set of activities in a separate component or at least to clearly link the various IEC activities across the components. Websites are useful depositories for all the project information and can serve as a functional library and way of organizing much information. Nevertheless, local stakeholders do not normally use these means of obtaining information so there is a need for other means of disseminating important documents.*

IDB Response 45: Linkages between IEC strategy and other components have been clarified See component 1 (c) (paragraph 2.6).

*STAP Comment 46: Project administration. The three country arrangement will add to the complexity of project management. At the same time a transparent project management system can help make it efficient by having a very systematic process in place for administration in the central office. One note of caution is that organizational structure could bog down if the Consultative Forum and Regional Technical Committee are not streamlined in function and mandates.*

IDB Response 46: Streamlined, transparent Operating Regulations for the project will be in place prior to its initiation. The IDB has used such regulations effectively in other GEF IW projects.

*STAP Comment 47: Disbursement schedule. Year one is shown to have the highest rate of disbursement, presumably because of capital purchases and since more consultants will be employed in this year. But, from lessons learned in other projects, the first year should be used more for planning and setting up systems and making sure that right personnel are involved.*

*And, often spending is less than projected in the first year but peaks in the 2<sup>nd</sup> or 3<sup>rd</sup> year of the project.*

IDB Response 47: We agree and received a similar comment in our internal management review. Corresponding adjustments have been made to the disbursement schedule (see paragraph 4.17 and Table IV-2).

*STAP Comment 48: Financial Viability. The overall amount of funding is not too large for this scale of project. This highlights the need for counterpart support and leveraging other donor projects together with the need for substantial investments of the national governments. These concerns have been addressed in the proposal for the most part.*

IDB Response 48: We agree. Counterpart and leveraging of other donor projects have been firmed up.

*STAP Comment 49: Project risks. It appears that the largest risk is the relative lack of stability among the 3 countries at the borders. Yet, the 3 countries have signed agreements to manage the Gulf and have committed resources to this endeavor. During the project implementation, these transnational conflicts could be a delicate issue and in this regard, it will be necessary to continually highlight the larger good and shared problems of the 3 countries, so that bilateral issues do not take the center stage. This will require good leadership on the part of the GEF project team.*

IDB Response 49: We agree. The commitment has also been to: (a) ensure that the negotiation of all formal agreements involve relevant parties including the Ministries of External Affairs of each respective country; and (b) limit the scope of the project to issues that do not entail boundary considerations.

*STAP Comment 50: Project challenges. Working in 3 countries simultaneously will require having similar approaches to coastal management in each country. In this regard, the concept of “scaling up ICM” from local to national and then to international might be a way to unify the overall framework and approach of the project. In the Philippines, for example, the evolving ICM certification system is responsive to local governments, their capacities and their jurisdictions under national law while it is not too restrictive on what local governments can and cannot do. This could easily be applied in the Gulf of Fonseca, given its relatively small size and common issues to be addressed.*

IDB Response 50: See responses 5,6 and 7 above.

### **Summary and final points**

IDB Response: These have all been addressed in the responses above.

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Submitted by A. White  
February 8, 2007—draft  
February 21, 2007—final

#### **ANNEX D. LETTERS OF ENDORSEMENT**

- 1.) Letter of Endorsement (El Salvador)
- 2.) Letter of Endorsement (Nicaragua)
- 3.) Letter of Endorsement + Official Communication (Honduras)



MINISTERIO DE MEDIO AMBIENTE Y  
RECURSOS NATURALES

*Sybilli*

MARN/DGCAIA/028/2007.

San Salvador, 22 de enero de 2007.

Ref: Gestión Integrada de los Ecosistemas  
en el Golfo de Fonseca, (El Salvador,  
Honduras y Nicaragua).

Ingeniero  
German Cruz  
Representante a.i.  
Banco Interamericano de Desarrollo  
Presente.

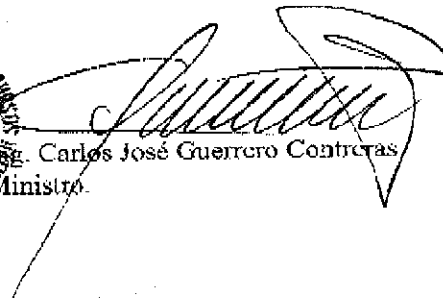
Estimado ingeniero Cruz:

En mi calidad de Ministro de Medio Ambiente y Recursos Naturales y Punto Focal Operacional ante el Global Environment Facility, GEF, me complace avalar y endosar el proyecto trinacional "*Gestión Integrada de Ecosistemas del Golfo de Fonseca BID-RS-X1015*" (El Salvador, Honduras y Nicaragua) que a la fecha se encuentra en proceso de formulación final, financiado por el GEF a través del Banco Interamericano de Desarrollo.

Cabe mencionar que este Ministerio ha estado activo en el desarrollo de la programación de dicho proyecto durante el 2006, participando en los talleres regionales que se convocaron en los tres países por la firma consultora contratada por el Banco.

Estamos interesados en que el proyecto se ejecute con fondos de donación del GEF hasta por la suma de US \$5.000.000.00; los cuales, junto con otras donaciones serían administrados por el BID.

Con toda consideración.

  
Ing. Carlos José Guerrero Contreras  
Ministro.

c.c: Dr. Marco Antonio González, CCAD  
Sra. Michelle Lemay, BID/Washington

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Managua, 5 de enero de 2007  
Ref.: DM-CSG-007-01-07

Ref.: Gestión Integrada de Ecosistemas en el Golfo de  
Fonseca (EL SALVADOR, HONDURAS Y NICARAGUA)

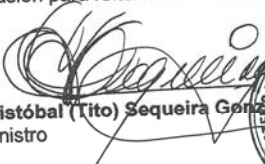
Señora  
**Mirna Liévano de Marques**  
Representante  
Banco Interamericano de Desarrollo  
Apartado Postal N° 2512  
Managua, Nicaragua

Estimada Señora Liévano:

Como Ministro de Medio Ambiente y Recursos Naturales de Nicaragua, me complace avalar y endosar el Proyecto: GESTIÓN INTEGRADA DEL ECOSISTEMA DEL GOLFO DE FONSECA-Banco Interamericano de Desarrollo BID-RS-X1015-Fondo Mundial del Ambiente (GEF) que actualmente se encuentra en proceso de formulación final.

Cabe mencionar que nuestro Ministerio ha estado activo en el desarrollo del programa de dicho proyecto durante el año 2006 participando en los talleres regionales que fueron convocados en los tres países por la firma consultora contratada por el Banco para apoyar la preparación del Proyecto. Estamos interesados que el Proyecto se ejecute con fondos de donación del GEF hasta por la suma de US\$5,000,000. Estos fondos junto con otras donaciones, serán administrados por el Banco Interamericano de Desarrollo.

Sin otro particular, agradezco su atención a la presente y hago propia la ocasión para reiterarle muestras de mi consideración y aprecio.

  
**Cristóbal (Tito) Sequeira González**  
Ministro



CC.: Sr. Marco Antonio González - Secretario Ejecutivo  
Sr. Michele Lemay - BID  
Sra. Liliam Osejo - Viceministra MARENA  
Archivo & Cronológico.



REPUBLICA DE HONDURAS

Secretaría de Estado en los Despachos de  
Recursos Naturales y Ambiente  
Despacho de la señora Ministra

Reg. N° 00366 Fecha: 2-NOV-04

Clasificación de Archivo

AD-S-1079-2004

1 de noviembre de 2004

Señor Andrés Marchant  
Representante Residente  
Banco Interamericano de Desarrollo

Distinguido señor Marchant:

Adjunto al presente envío a usted el Oficio CHO 3794/2004, debidamente firmado, referente a la no objeción para el financiamiento no reembolsable del Fondo Mundial del Medio Ambiente, proyecto *Manejo Integrado de Ecosistemas en el Golfo de Fonseca*, lamentando el atraso en la remisión del mismo.

Durante la reciente XXIV Reunión Extraordinaria del Consejo de Ministros de la CCAD, realizada en San Salvador el 14 de este mes, el proyecto en mención fue presentado dentro de la cartera de proyectos de la Iniciativa Mesoamericana para el Desarrollo Sostenible del Plan Puebla Panamá. Asimismo, estamos enterados del apoyo que el JICA del Japón y el BCIE están otorgando a las actividades relacionadas con este componente.

Sin otro particular a que hacer referencia, reitero a usted las muestras de mi mayor consideración y estima.

  
Patricia Panting G.

C: Dr. Marco González, Secretario Ejecutivo de la CCAD

Jecm.



Colibri Esmeralda (Amazilia Luriae)

-----Original Message-----

**From:** carolina bocanegra [mailto:carolabocanegra@yahoo.com]

**Sent:** Thursday, March 22, 2007 9:42 AM

**To:** Weitnauer Z., Emelie B.

**Cc:** Cooperacion Externa SERNA; sdespacho@serna.gob.hn

**Subject:** PROYECTO GOLFO

Estimada Emilie:

Esperando que te encuentres bien, el motivo del presente es para informarte sobre el Proyecto Golfo de Fonseca. Hemos estado dando seguimiento y sabemos que el tiempo es corto para la presentación de este proyecto. Al respecto quiero reiterarte el interés de la Secretaría en desarrollar el mismo.

En ese sentido estamos anuentes con el contenido técnico del proyecto, sin embargo les solicitamos un poco de tiempo pues el proyecto esta siendo analizado por la Cancillería ya que aún cuando el proyecto no tiene ninguna intención de intervenir en aspectos políticos, la zona misma del golfo es altamente sensible en este aspecto, por lo que para el País es de suma importancia poder asegurar prevalezca el Derecho Internacional que garantice la paz y soberanía de los 3 Estados que son parte del proyecto y por ello, ante la nota enviada por ustedes sugieriendo la inclusion de un parrafo que aclare esta situación en el documento, la Ministra ha solicitado que sea Cancillería que dictamine si es válido o no este aspecto.

Creemos que el BID puede avanzar con la presentación del proyecto ante el GEF pues en su parte técnica y alcance no tenemos ningún problema, solamente que necesitamos analizar otros aspectos de índole mas que todo político, que realmente no creo que cambien en si la estructura del mismo. La nota de endoso se dará una vez que la Ministra sepa el dictamen de cancillería y me autorize darles la nota.

Atentamente

Carolina Bocanegra

Directora

Cooperación Externa y Movilización de Recursos SERNA

Punto Focal Operativo del GEF en Honduras.

## ANNEX E - MONITORING AND EVALUATION PLAN

### A. Monitoring and reporting structures

- 1.1 The following periodic reports will facilitate the monitoring and evaluation of Project results and impacts, as well as facilitate the adaptive management on behalf of the Regional Project Coordination Unit (UCPR) and provide guidance to the planning and management decisions of the Trinational Commission for the Integrated Management of the Ecosystems of Gulf of Fonseca.
- 1.2 **Day-to-day monitoring.** The Project will operate based on detailed Annual Work Plans developed at the beginning of each project year with the support from the Regional Technical Committee and through a participatory process involving local organizations, user groups, and government as represented in the Advisory Forum and the local committees. The Annual Work Plans will be approved by the Regional Executive Committee for the Integrated Management of the Ecosystems of Gulf of Fonseca established in accordance with the Operating Regulations and by the Trinational Commission once created. The work plan will define activities to be carried out and results to be generated throughout the year. The work plan will have a series of short-term process indicators linked to milestone events and products. The UCPR will coordinate the day-to-day monitoring of these indicators to ensure that the project intervention is on-track and delivers the expected results. In this context, partners in the execution, including co-administrators and users of ecosystems and natural resources, government institutions, NGOs and others will help collect the data needed for day-to-day monitoring. The IDB Country Office that is selected, as having lead responsibility for Bank supervision, will conduct periodic inspection visits to the Project site and maintain a Project Performance Monitoring Report (PPMR), the Bank's main system tool for monitoring of projects.
- 1.3 **Mid-year Progress Reports.** Half-way through each Project year, the UCPR will prepare a summary report to IDB/GEF and the Regional Executive Committee (or the Trinational Commission once created) in order to inform on the progress made during the first six months execution of the Annual Work Plan. The Mid-year Progress Report will focus on short-term results and challenges, and will be less detailed than the Annual Project Report.
- 1.4 **Annual Reviews.** At the end of each Project year, the UCPR will elaborate an *Annual Project Report* to summarize project results. The preparation of each Annual Project Report will be preceded by a consultation workshop in the Advisory Forum to solicit feedback from local stakeholders in the ecosystems management on the project's performance with a focus on those project activities with a strong participatory element (i.e., Component 2 and 4). The annual report should include considerations on: (i) project performance over the past year, including key results produced and, where possible, information on the progress towards Project objectives, (ii) identification of constraints and unforeseen barriers to execution including those that could affect the achievement of objectives, the reasons for these constraints, and what is being done to overcome them, (iii) expenditure reports, (iv) lessons learned, and (v) recommendations for adaptive management of the Project strategy to optimize impact of the intervention. The Annual Project Report will be shared with the Advisory Forum and approved by the Regional Executive Committee (or the Trinational Commission once created). The designated IDB task manager, in collaboration with the IDB Country Office selected as having lead responsibility for Bank supervision, will conduct an annual administration mission to the site to discuss the main findings of the Annual Project Report and discuss its implications for the subsequent Annual Work Plan.
- 1.5 **GEF Project Implementation Review.** In addition to the Annual Project Report, the UCPR will prepare the mandatory *GEF Project Implementation Review (PIR)*, in collaboration with the

designated IDB task manager. The PIR will be reviewed and analyzed by the IDB before sent it to the GEF Secretariat.

- 1.6 **Reports and publications.** To document the lessons learned and knowledge generated by the Project, the UCPR will prepare, consolidate and disseminate technical reports on a variety of thematic areas related to management effectiveness and the sustainable use of the ecosystems of the Gulf of Fonseca (i.e., conservation impacts of local co-management schemes, trilateral pollution control strategy and characterization of water quality, innovative sustainable livelihoods, among others). These reports will: (i) hold the Project team accountable with regard to its responsibility to generate technical results at the highest level, (b) help summarize and document the Project's results, and (c) serve to disseminate and replicate the Project's lessons learned and knowledge to interested parties in the participating countries, in the wider region, as well as world-wide. Technical reports will be made available through the Project's web site.
- 1.7 Results which are deemed particularly important and that are of interest beyond the Gulf of Fonseca will be disseminated through project publications. An independent peer review mechanism involving experts from the organizations conducting research in the Gulf of Fonseca area will be used to ensure the quality of the published material. Collaboration will also be sought with international and regional institutions and national universities (i.e. the University of Zamorano, the University of Central America, the Centre for Aquatic Ecosystem Research, CATIE, NOAA, CI, TNC, among others) in terms of dissemination of best practices and involving students and researchers in matters relating to the integrated management of the Gulf. The Project's dissemination strategy will be determined in collaboration with the IDB and executing partner institutions. A Project web-site will also facilitate dissemination of results. Socialization of Project results will also be ensured at both formal and informal local events and meetings (for example, amongst local communities through schools and public venues).

## **B. Independent evaluations**

- 1.8. **Mid-term Review.** A mid-term review<sup>1</sup> will be carried out when 35%<sup>2</sup> of the GEF resources have been disbursed or after 24 months after the Project contract goes into effect, whichever comes first. The review will determine if the project strategy is generating the desired impact, or if adjustments are necessary to ensure the achievement of Project objectives. The review team will include a representative from the Bank's Office of Evaluation and Oversight (OVE), will focus on the effectiveness, efficiency and timeliness of project implementation and will solicit feedback from stakeholders participating in execution such as the co-management partners and other local actors. The review will highlight issues affecting the execution of each component that require decision and action, and it will provide preliminary lessons learned about Project design, implementation and management. Particular attention will be paid to whether the involved institutions are internalizing and mainstreaming Project results into their work, as well as progress in implementation of the Business Plan for the integrated management of the ecosystems of Gulf of Fonseca. Recommendation of the Mid-term Review will be an important input for the UCPR as well as for IDB and the implementing partners, in assessing progress, as well as possible needs for change during the second half of the Project's lifespan.
- 1.9. **Final Evaluation.** By the end of the Project, a Final Evaluation will be performed to determine if the Project indeed reached its objectives. An independent team of experienced expert(s) commissioned by the IDB will perform the evaluation. The evaluation team will evaluate the Project's results both in terms of ensuring global environmental benefits, as well as local and

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<sup>1</sup> The Mid-term and final evaluations will be performed by a team of consultants contracted by the IDB, using the fee resources provided by the GEF.

<sup>2</sup> The 35% target is considered as an appropriate timing to allow consideration of adjustments in sufficient time for implementation.

trinational benefits. The evaluation team will identify lessons learned and particular successful Project results, and these will be disseminated broadly in the three countries and to other IDB and GEF financed projects in the region. The team will moreover evaluate the sustainability of Project results, and recommend to the involved parties how they could further enhance sustainability. The Bank, including a representative of OVE, will conduct a final administration mission to discuss the results of the final evaluation with the Trinational Commission for the Integrated Management of the Ecosystems of Gulf of Fonseca.

- 1.10. *Other evaluations.* In addition to the compulsory independent Mid-term Review and Final Evaluation, the Project may participate in program-specific or thematic evaluations performed by the GEF Evaluation Office, or by the GEF Secretariat to determine effectiveness and impact of the overall GEF portfolio. The Project may also participate in evaluations of country programs to determine effectiveness of the Project portfolios of participating institutions.

### **C. Learning and knowledge sharing**

- 1.11. In addition to publications and reports mentioned above, the lessons learned and knowledge generated throughout the project intervention will be shared widely through networking with interested parties outside the area of the Gulf of Fonseca. To increase dialogue, the project will participate in information exchange and learning networks, such as those promoted by GEF, CCAD, TNC, IW/LEARN, the Global Water Partnership and other technical forums.

### **D. Monitoring Plan**

- 1.12. *Monitoring Strategy.* Building on existing initiatives, the UCPR will coordinate the collaborative development of a permanent, integrated and cost-effective monitoring and evaluation system. The system will facilitate trinational decision-making processes and adaptive management by the stakeholders through monitoring progress in achieving the Project's objectives and provide an integrated overview of the status of the ecosystems of the Gulf of Fonseca (see Project Components 1 and 3). The monitoring and evaluation system will be internalized in existing institutions such as INETER in Nicaragua, SNET and CENDEPESCA in El Salvador and the Center for Studies and Control of Pollutants in Honduras through agreements clearly identifying responsibilities and involving staff and local stakeholders, in order to insure continuity after the life of the project. This system will not only provide valuable information on the state of the ecosystems of the Gulf of Fonseca linked to some of the Project indicators at the Goal and Purpose level defined in the log frame matrix (Annex E to the GEF Executive Summary), but will also be used for the continuous monitoring of Project effects (results). Within the first year, the UCPR will ensure the consolidation of the baseline information for all indicators in the log-frame. The total estimated costs for monitoring and evaluation are US\$400,000<sup>3</sup> (See Table 1).
- 1.13. As per IDB guidance, monitoring and evaluation at the Project level will be oriented by the following key questions: (1) how effective are the cooperation agreements and the process of designing and implementing the coastal-management plan and the regional pollution control strategy, for bringing about a consensus among the three countries on the strategic guidelines for the integrated management of the Gulf?; (2) have the capacities for management and co-management of coastal-marine resources been improving in the Gulf area?; (3) to what extent have the industries adopted clean production technologies, and the communities internalized / diversified the sustainable use of the ecosystems of Gulf of Fonseca and good practices in their productive activities, and what types of socioeconomic benefits are being generated?; (4) has there been an improvement in the dissemination of information, awareness-raising, and scientific knowledge of the Gulf of Fonseca as a regional ecosystem, so that management decisions are

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<sup>3</sup> These costs include US\$80,000 for the Mid-term Review and Final Evaluation which will be covered by the GEF fee to the IDB (in other words they are not charged to the GEF grant of the Full Size Project)

being made on the basis of the best available and accurate information?; (5) what are the trends observed in the ecological integrity of the ecosystems of Gulf of Fonseca and how is the Project contributing to maintaining them?

- 1.14. *Data Collection and Analysis.* Some monitoring activities can be done through desk-study of written documents, such as reports, work plans, and meeting minutes. Other information related to process indicators (i.e. the effectiveness and efficiency of the trilateral institutional set-up and co-management arrangements), will be done mainly through evaluations and interviews with institutional actors and stakeholders, as well as the review of meeting reports, minutes and agreements of the Trilateral Commission for the Integrated Management of the Ecosystems of Gulf of Fonseca. In terms of stress reduction indicators, (i.e. the extent to which the regional strategy for pollution control with a phased investment plan by watershed is agreed upon and implemented) will be assessed using both direct (i.e. # of production plants with effluents into the Gulf of Fonseca watersheds applying effluent treatment and pollution control technologies or # fishing boats participating in sustainable co-management schemes) and indirect (i.e. amount of resources invested in pollution control measures ) indicators. Finally, environmental indicators (i.e. mangrove cover, water quality, sedimentation burden) will be measured through a combination of cost-effective methodologies, including inventories, satellite imagery, and participatory methods (i.e. water quality measurements, stock fishing registers involving fisher's participation), and measurements of ecological integrity.
- 1.15. Table 1 below summarizes the monitoring plan for the **outcome** indicators at the Project Goal and Purpose level, indicating: (a) definition of the outcome indicator, (b) indication of the type of indicator<sup>4</sup>, (c) baseline value and target, (d) method/means of verification, (e) periodicity, (f) responsible party, (g) an indication of the expenditure category (component # or administrative costs), and (h) the estimated costs associated with the monitoring of each indicator.

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<sup>4</sup> Process indicators related to the sustainability, trilateral and participatory nature of management decisions; stress indicators related to pollution phased out and improved regulation; and environmental indicators related to changes in water quality and ecological integrity.

Table 1: Tentative monitoring plan of indicators at the goal and purpose level

Impact Indicator	Type of Indicator (see footnote 4 above)	Responding to key IDB question (see paragraph 1.13 above)	Baseline value and target	Method/Mean of verification	Periodicity	Responsible Party	Charged to Component or Administrative Costs?	Cost US \$
<b>GOAL LEVEL</b>								
Three years after the end of the Project, the area of mangrove in the Gulf's coastal zones is maintained or improved compared to the level at the end of year 1.	Environmental	5	<u>Baseline</u> : Mangroves coverage: 57,400 ha <u>Target</u> : Mangroves coverage is maintained or expanded 10%	Aerial photography  Satellite images	Every 2 years	UCPR  Local governments	Component 2	40,000
Three years after the end of the Project, the land-based pollution is reduced compared to the level at the end of year 1.	Stress reduction	3	<u>Baseline</u> : Estimated total BOD 170,000 kg/day at the mouths of the watersheds based on TDA <u>Target</u> : Total estimated BDO is reduced 15%.	Monitoring reports of BDO	Every year	UCPR  National Agencies  Local governments	Component 3 - 4	70,000
Three years after the end of the Project, the sedimentation is controlled or reduced compared to the level at the end of year 1.	Stress reduction	2 and 3	<u>Baseline</u> : Estimated total sediment discharges 23,000 – 116,000 tons/day at the mouths of the watersheds <u>Target</u> : Estimated total sediment discharges at the mouth of the watersheds is reduced 10%	Monitoring reports of sediment discharges	Every year	UCPR  National Agencies  Local governments	Component 3	70,000

Table 1: Tentative monitoring plan of indicators at the goal and purpose level

Impact Indicator	Type of Indicator (see footnote 4 above)	Responding to key IDB question (see paragraph 1.13 above)	Baseline value and target	Method/Mean of verification	Periodicity	Responsible Party	Charged to Component or Administrative Costs?	Cost US \$
Three years after the end of the Project, the number of inhabitants living in the Gulf's area deriving at least 50% of their income from environmentally sustainable activities and / or alternative livelihoods linked to the use of marine and coastal resources has increased by 10%, compared to a baseline to be updated through a survey in Year 1	Stress reduction	2, 3 and 5	<u>Baseline:</u> 20,000 artisanal fishers; 53,000 persons dedicated to aquaculture. Percentage of fishers and persons dedicated to aquaculture using sustainable practices will be updated in Year 1 <u>Target:</u> 10% of increase of fishers and persons dedicated to aquaculture using sustainable practices	Socioeconomic surveys / statistics  Oral reports of beneficiaries	Every 2 years	UCPR  Municipalities	Component 4	30,000
<b>PURPOSE LEVEL</b>								
At the end of the Project, the Trinational Commission for managing the ecosystems of the Gulf of Fonseca is operating efficiently as a participatory and representative regional cooperation structure	Regional process	1 and 4	<u>Baseline:</u> Amapala Agreement of 1993 calling for the establishment of a Trinational Commission is not implemented <u>Target:</u> Commission established, working efficiently and making decisions based in accurate information	Review of meeting minutes and agreements of the Trinational Commission of the Basin	Yearly	UCPR	Component 1	15,000

**Table 1: Tentative monitoring plan of indicators at the goal and purpose level**

Impact Indicator	Type of Indicator (see footnote 4 above)	Responding to key IDB question (see paragraph 1.13 above)	Baseline value and target	Method/Mean of verification	Periodicity	Responsible Party	Charged to Component or Administrative Costs?	Cost US \$
By the end of the project, the countries share systematically scientific information on the environmental status and trends of the Gulf's tributary watersheds as well as its waterbody, so as to make it possible to agree upon strategies/actions for pollution and sediment control prevention and adaptive ecosystem.	Regional process / stress reduction	4	<u>Baseline:</u> There is no harmonized monitoring network or systematic exchange of data on water quality and sedimentation processes in the Gulf or its tributaries, and existing information systems have limited coverage. <u>Target:</u> An information node of the Gulf of Fonseca by linking in the local and national information systems with a Regional one is established.	Agreements signed between institutions.  Reports of monitoring and evaluation	Every 2 years	UCPR	Component 1	20,000

**Table 1: Tentative monitoring plan of indicators at the goal and purpose level**[illegible]

## ANNEX F - FINANCIAL SUSTAINABILITY ANALYSIS

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## 1. Introduction

The Gulf of Fonseca is situated in the Central American Pacific Ocean, and is shared by El Salvador, Honduras, and Nicaragua. The IDB-GEF project Integrated Ecosystem Management of the Gulf of Fonseca seeks to prevent degradation and maintain the integrity of its ecosystems by implementing integrated management of marine and terrestrial resources, and fostering their sustainable use. The project's area of influence is encompassed by the three countries' 19 coastal municipalities.<sup>1</sup> The project includes the following components: (1) institutional strengthening for regional management of the Gulf, (2) coastal and marine ecosystem management, (3) pollution prevention and control, and (4) support for generating regional environmental goods and services. GEF financing is foreseen for five years, and therefore after this time horizon it is expected that the resources for continuing the project activities will be reduced considerably. Hence the importance of having a financial sustainability strategy that proactively anticipates these needs for financing in the post-GEF project stage, and that designs mechanisms that make it possible to sustain the project impacts in the long run.

The financing requirements after the period of project implementation may be divided between funds needed for project coordination and management per se, and funds needed for project activities such as taking water quality measurements in the Gulf and pilot projects, among other possibilities. The precise nature of the project activities once the implementation period concludes is difficult to determine at this time. Some activities begun during the project period may be absolutely self-sufficient when the project ends.

It is anticipated that there will be some activities that will not be completely finished by the end of the project, and that others will still be in the planning phase. Nonetheless, it is possible that the funds available for the activities will be significantly lower than the levels of funds during the years of project implementation. This possibility should be considered carefully during the development of the activities in the period of project implementation, so that there can be an adequate transition between the project implementation and post-project stages.

This document discusses how the project can attain an adequate transition between the project implementation and post-project stages. In particular, this document focuses on the financial resources necessary that may be available for paying for activities in the post-project stage. This is a broad definition of "financial sustainability." To add greater precision, one could see financial sustainability as "the ability to secure stable and sufficient long-term financial resources, and to allocate them in a timely manner and appropriate form."<sup>2</sup>

This definition takes into account two important concepts. First, the project needs sources of money in the post-project stage. Second, over the life of the project, it is crucial that financial decisions be made that are carefully considered, as well as effective and transparent – which are the sign of a well-managed organization. The project needs a strong business plan as a key aspect of its operation from the beginning and that takes into account the activities in the post-project stage.

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<sup>1</sup> The municipalities of Conchagua, La Unión, San Alejo, Meanguera del Golfo, and Pasaquina, in the department of La Unión, in El Salvador; the municipalities of Goascorán, Alianza, Nacaome, San Lorenzo, and Amapala in the department of Valle, and Choluteca, Marcovia, Namasigue, and El Triunfo in the department of Choluteca, both in Honduras; and the municipalities of Somotillo, Villanueva, Chinandega, El Viejo, and Puerto Morazán in the department of Chinandega, in Nicaragua.

<sup>2</sup> Emerton, L., Bishop, J. and Thomas, L. (2006). Sustainable Financing of Protected Areas: A global review of challenges and options. IUCN, Gland, Switzerland and Cambridge, UK, p. 24.

Developing a business plan should be one of the priorities upon initiation of the project. This business plan should include a description of the costs, benefits, and long-term sustainability of each activity. The activities with low costs, high benefits, and solid prospects in the long term should clearly be the most desirable. In addition, the activities that are financed in part or in full by some group of interested actors are particularly interesting, for it is likely that they will be viable in the long run. For example, organic agriculture is a potentially profitable activity, with good prospects in the long run, if adequately developed. This is only one of the many possibilities that may be considered.

To date a large number of GEF international waters projects have begun operations. To learn from these prior projects and identify the lessons learned that may be applicable to the activities in the Gulf of Fonseca, the project directors of a number of GEF international waters projects currently under way were contacted and several published reports were obtained on evaluations of already-completed GEF projects. The next section reviews the information that was collected. One clear conclusion from this exercise is that attaining financial sustainability is extremely difficult and that the needs for funds should be considered in early stages of the process of project planning, and should not be left for the end of the project.

After the section that reviews some lessons learned from other projects, we analyze some of the sources of resources that could be considered for covering recurrent expenditures in the post-project stage, such as administrative costs and resources for project activities. After describing some of the financing mechanisms that could be considered, we evaluate them using a variety of criteria, including their potential for generating income, their political viability, and their stability, among others.

This document addresses some of the types of financing mechanisms that could be considered. Nonetheless, the analysis developed here is preliminary, and it is expected that during the course of the project a significant effort will be made to evaluate more carefully the different prospects for financing, to develop the institutional mechanisms necessary for their implementation, and to implement the actions identified as necessary.

Finally, another important consideration is to decide how to share the recurrent expenses in the post-project stage among the three countries that surround the Gulf of Fonseca. One possibility is to divide these expenses into equal parts, as is currently done among the member countries of the Central American Maritime Transport Commission (COCATRAM).<sup>3</sup> Another possibility is to share the expenses among the member countries based on payment capacity, as is done, for example, in the International Commission for the Protection of the Danube River (ICPDR), which finances its operations with funds from the 13 member countries. Of these countries, Austria and Germany contribute 50% of the ICPDR's budget, while the other 11 countries cover the other 50%.<sup>4</sup> One can also use some other mechanisms that lead to contributions of varying amounts. The choice as to how to divide up expenses is another decision that is probably best made in early stages of project implementation, instead of leaving it for the end of the project. In addition, it is important to consider that some of the mechanisms discussed here may work better in some countries than others.

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<sup>3</sup> López, Juan Antonio (2003). "Informe Sobre la Tarifa Portuaria para el Financiamiento de la COCATRAM." Prepared for Abt Associates.

<sup>4</sup> Source: Email communication with Andrew Hudson, principal technical adviser to International Waters, UNDP-GEF. August 2006.

## 2. Some Experiences with Financial Sustainability in other GEF International Waters Programs

Considering that the GEF's International Waters program started operations in 1991, in preparing this diagnostic document, earlier documents prepared by the GEF Evaluation Unit for it were consulted, focusing on the different aspects of financial sustainability and on those projects that developed mechanisms to attain it. In addition, personnel were contacted from some of the international waters projects based on recommendations of experts on major experiences with financial sustainability that could be useful for designing the project in the Gulf of Fonseca.<sup>5</sup> The main criterion for identifying these projects was their degree of innovation in terms of use of mechanisms of financial stability to continue developing their activities beyond the horizon for implementation of the GEF project. It is important to note that the sample of projects presented here is not exhaustive.

The questions asked of the project personnel contacted included: (i) "What are the key aspects in the design of your operations that could ensure financial sustainability?"; (ii) "What is the scale of these operations and where would the funds come from once the GEF project has concluded?"; and (iii) "Do you know of any other international waters project that was successful in attaining financial sustainability for some of its operations?" Following are the experiences of financial sustainability for three of these projects: Partnerships in Environmental Management of the Seas of East Asia (PEMSEA), Implementation of the Strategic Action Plan for the Red Sea and Gulf of Aden (PERSGA), and Reversing environmental degradation trends in the South China Sea and the Gulf of Thailand (SCS). In addition, some ideas are outlined as to how the financial sustainability arrangements used in these projects could be useful in the context of the Gulf of Fonseca.

The main conclusions from this analysis include: (i) Attaining financial sustainability in international waters projects is a difficult task that should be addressed from the early stages of designing the GEF project. (ii) No financial sustainability strategy can be applied without considering the particular context of the countries in which it is undertaken, and in this regard it is vital to be mindful that alternatives that work in certain countries may not work in others. (iii) Any project that seeks to attain financial stability should generate incentives for the inhabitants of its area of influence to sustainably manage and use the ecosystems, in particular among the members of the communities whose ability to make a living is linked to natural resources and the environment. (iv) The different interest groups at every level should be involved and should be familiar with the project and its benefits, thus the project team should make an effort to communicate and act transparently. At the local level, the support and active participation of the community is needed to attain sustainability in the long run. For this reason, if the project actions have a negative impact on the possibilities of persons having access to their means of subsistence, the project must offer alternatives for income generation. Otherwise, the project's impact will not be sustainable in the long run. At the national level the leaders should be informed of the project objectives, to ensure there is commitment and support, and to have funds earmarked from the national budget to support its activities. This can be accomplished by establishing good communication with high-level members of the government and showing them the economic and environmental benefits that stem from the project actions. At the regional level there should be periodic regional meetings to identify and focus on regional benefits, and thereby pave the way for subsequent actions by each government. In terms of international donors it is important to establish, in the early stages of project implementation, a list of potential donors and a strategy for contacting them in order to explore financing opportunities and to secure their participation in donors' meetings. (v) There should be a website to facilitate communication to discuss

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<sup>5</sup> The persons consulted to define the sample of projects to be contacted were: Juha Uitto, expert in monitoring and evaluation with GEF/UNDP, and Andrew Hudson, principal technical adviser for International Waters, GEF/UNDP.

potential pilot projects and to share information with the interested actors who have access to the Internet. Additionally, tools of this type increase the transparency of the project actions.

### **2.1. Partnerships in Environmental Management of the Seas of East Asia (PEMSEA)<sup>6</sup>**

PEMSEA is considered one of the model international waters projects in relation to its use of public-private partnerships. Establishing such partnerships has made it possible to guarantee the financial sustainability of activities important for attaining the project objectives that entail promoting better environmental management of the seas of East Asia. Although a recent evaluation of GEF's International Waters Program notes that most of the PEMSEA partnerships generate local benefits, it also recognizes that they make it possible to guarantee baseline investments, without which transboundary and global benefits are not possible. Among the advantages of such partnerships mentioned are: minimal GEF funds are required, they are highly replicable, and they foster competitive and transparent processes for awarding contracts for the work involved.<sup>7</sup>

Some examples of such partnerships that PEMSEA has developed are summarized as follows:

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<sup>6</sup> Participating countries: Brunei Darussalam, Cambodia, Philippines, Indonesia, Japan, Malaysia, Democratic Republic of Korea, People's Republic of China, Republic of Korea, Singapore, Thailand, and Vietnam. Date of approval of by GEF: January 11, 1998. Implementing agency: UNDP. Executed by the International Maritime Organization. Funds: GEF6: \$16,220,200. Co-financing: \$12,320,000.

<sup>7</sup> Communication with Maria Corazón M. Evarbia. Technical Officer for Environmental Investments. GEF-UNDP-IMO. PEMSEA Philippines, and Mee et al., Program Study on International Waters. 2005, p. 32.

**Table 1. Some Pilot Partnerships in PEMSEA<sup>8</sup>**

<b>Location</b>	<b>Project</b>
Philippines San Fernando City	<ul style="list-style-type: none"> <li>- Integrated solid waste management system</li> <li>- Municipal authority offered the land for sanitary landfill</li> <li>- 8 companies submitted bids <ul style="list-style-type: none"> <li>- Bidder selected in May 2004</li> <li>- Amount: US \$5 million</li> </ul> </li> </ul>
Philippines Province of Bataan	<ul style="list-style-type: none"> <li>- Integrated solid waste management system</li> <li>- Project presented to 30 potential investors</li> <li>- Government offered the land for sanitary landfill</li> <li>- Government offered to contribute 30% of the capital costs</li> <li>- Profits distributed based on percentage of capital contributed</li> <li>- 7 companies submitted bids <ul style="list-style-type: none"> <li>- Is in adjudication process</li> <li>- Amount: US \$7 million</li> </ul> </li> </ul>
Vietnam Danang	Integrated industrial wastewater and hazardous waste treatment system Amount: US \$10 million
Philippines Province of Bataan	Bataan Coastal Care Foundation finances 50% of the local coastal zone management projects and the provincial government finances the other 50%
Gulf of Thailand, Manila Bay, Bohai Sea	Training in emergency response to oil pollution is financed by the shipping and insurance industries.
Regional	GEF Project Marine Electronic Highway in the Malacca Strait has a component financed by the private sector

In the case of the Gulf of Fonseca many of the coastal municipalities face serious problems of lack of environmental and basic sanitation infrastructure for which existing public funds are insufficient. One particularly critical case is the town of Puerto Morazán (municipality of Puerto Morazán, Chinandega, Nicaragua), where the lack of a sewage system means that the waste generated by this population is disposed with no treatment whatsoever into the Estero Real.<sup>9</sup> It is precisely in such situations that establishing partnerships between the public and private sectors would make it possible to guarantee investments in infrastructure that are urgently needed. Nonetheless, it is important to consider that establishing such arrangements requires at least the following elements:

- i) The municipal governments involved have the economic capacity or can access resources of other organizations to subsidize the project, either by providing basic infrastructure or through funds to make the project attractive to potential investors.<sup>10</sup>
- ii) The order of magnitude of the projects provides a critical mass to ensure their profitability after including the subsidy from the public sector.
- iii) There is a private sector that is at least somewhat developed that may have interest in this type of investment.

<sup>8</sup> Adapted from Mee et al., Program Study on International Waters. 2005. Global Environment Facility Monitoring and Evaluation Unit, p. 31.

<sup>9</sup> Office of the Mayor of Puerto Morazán, Data Ficha Perfil de Proyecto Sistema de Aguas Servidas para el Poblado de Puerto Morazán. 2005. This project has an estimated budget of US\$ 75,000.

<sup>10</sup> The profitability of this type of project *per se* is not attractive for private investors. Hence the need to incorporate public capital to attract potential investors.

- iv) The regulatory framework allows establishing such arrangements involving private participation in the provision of sanitation services.
- v) The project has an investment support structure that takes charge of designing projects and holding meetings of potential private investors and donors.

In this regard, it is likely that in the context of the Gulf of Fonseca such alternatives are financially viable only in projects for urban centers with larger populations, such as La Unión, Choluteca, and Chinandega. One possibility that could be explored for the rural areas that face perhaps the most serious basic sanitation problems is including the developments needed in those areas in projects designed for the large urban centers. In this way, private participation would have to accept providing the service in less profitable areas if private actors wish to have access to the investment opportunity with better prospects, i.e. the one in the urban centers.

## **2.2. Strategic Action Plan for the Red Sea and Gulf of Aden (PERSGA)<sup>11</sup>**

PERSGA is governed by a Council that includes the ministries of environment of the member countries, and which defines annually the technical and financial policies that govern the organization's activities. The member countries contribute funds for the operation of PERSGA, and its projects and activities are financed mainly with funds from international donors, though in recent months the project has developed a strategy for seeking funds from the private sector in the context of corporate social responsibility initiatives.

This full-scale GEF project included, from its design, a subcomponent for “developing a financial sustainability and resource mobilization strategy” that includes, among other aspects:

- i) “Reviewing the opportunities for self-financing of the different components of the SAP at the regional and national levels;
- ii) Assessing the feasibility of establishing the proposed Red Sea and Gulf of Aden Environmental Fund;
- iii) Evaluating existing economic instruments within the PERSGA member countries and
- iv) Seeking funds from bilateral and multilateral donors.”<sup>12</sup>

The final evaluation of this GEF project emphasizes that although the project has had conversations with the World Bank and other donors to secure support for setting up the Red Sea Environmental Fund, it has not been possible to establish this fund. This project's experience highlights the importance of striking a balance in the portfolio of options for generating long-term resources between sources external to and sources internal to the project, so as to diversify the risk of financial unsustainability.

Although the instruments included in PERSGA's 2004 business plan have not been fully implemented, the Terminal Evaluation Mission for this project emphasizes, with respect to the development of a Business Strategy and Plan for PERSGA, that such an approach facilitates an adequate transition between the GEF-funded stage and subsequent stages. Members of the regional PERSGA team<sup>13</sup> consider that the

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<sup>11</sup> The Regional Organization for the Conservation of the Environment of the Red Sea and Gulf of Aden (PERSGA) Participating countries: Saudi Arabia, Djibouti, Egypt, Jordan, Somalia, Sudan, and Yemen. Date of approval by GEF: January 11, 1997. Implementing agencies: UNDP, UNEP, World Bank. GEF funds: \$19,340,000. Co-financing: \$25,650,000.

<sup>12</sup> PERSGA/GEF. Terminal Evaluation Report of the GEF Supported Project for the Implementation of the Strategic Action Programme (SAP) for the Red Sea and the Gulf of Aden. 2004, p. 13.

<sup>13</sup> Telephone interview with Khulod Tubaishat, Regional Policy Adviser to the GEF project Implementation of a Strategic Action Program for the Red Sea and the Gulf of Aden. September 2006.

implementing the business plan met with difficulties because its design was entrusted to persons external to the project. The person interviewed considers that the decisive factor in designing a successful business plan is the active participation of the entire project team and of the relevant regional actors. This is how PERSGA recently revisited the business plan prepared by external consultants and developed a participatory process for obtaining ideas from members of the regional team on options for the financial sustainability of this project. One of the results of this process was a document that goes back to the project's logical framework and translates each objective into specific activities that private-sector donors may be interested in financing as part of their corporate social responsibility strategies. This document has been used successfully to obtain financing from commercial banks and private firms in Saudi Arabia for some project activities. PERSGA keeps its current and potential donors informed of its progress through high-level forums and a bulletin with project news.

The importance of PERSGA's experience for the IDB-GEF Gulf of Fonseca project lies in: (i) the need to have the active participation of the relevant actors and the project team in designing the project's business plan, and (ii) the use of the business plan as a tool for seeking funds from private donors. In the context of the Gulf of Fonseca the strategy of seeking funds from the private sector has greater potential in those industries with a solid presence in the region and a large volume of operations. In this regard aquaculture, particularly in Honduras, is a sector with which the GEF project could explore partnerships, for in principle it is interested in preserving the Gulf's water quality to ensure the long-term sustainability of its operations. Another sector that the project should consider is ports, particularly with the related developments of industry in the Port of la Unión. For example, in 2005, the Comisión Ejecutiva Portuaria Autónoma de El Salvador (CEPA) awarded a contract to the company Cutuco Energy to generate energy for the port's operations for \$1.0 billion dollars. If the GEF project is able to establish partnerships with CEPA, it might be possible to include clauses in the concession contracts for activities associated with the port developments that guarantee the commitment of the private concessionaire to finance some of the activities that benefit both the operation of the port and the ecosystems of the Gulf of Fonseca, for example, activities to reduce sedimentation. There are positive precedents in the region of successful partnerships between port enterprises and NGOs for implementing plans to mitigate the environmental impact of port operations for example between the Empresa Nacional Portuaria de Honduras (ENP) and CODDEFFAGOLF<sup>14</sup> to implement the project Social and Environmental Compensation for the Dredging of the Port of Henecán in the city of San Lorenzo, for an amount of \$4,558,000. Though a voluntary approach to corporate social responsibility such as that used by PERSGA may be more sustainable in the long run and be looked on more favorably in the region, it could also be more difficult to implement.

### **2.3. Reversing Environmental Degradation Trends in the South China Sea and the Gulf of Thailand (SCS)<sup>15</sup>**

The study on GEF's International Waters Program (Mee et al., 2005) highlights this project as having an innovative management structure that has made it possible to adequately prioritize actions, striking a balance between attaining regional objectives and developing local strategies for action. In this way, the project has developed a series of pilot projects for conservation of mangroves, wetlands, and non-oceanic coral reefs that respond to regional conservation goals, but which take account of the differences in pressures on ecosystems, government structures, and human capacity available (Mee et al., 2005, p. 48).

In terms of financial sustainability, the team for this project has worked through three strategies<sup>16</sup>: seeking funds from national budgets, seeking funds from international donors, and generating self-reliance with

<sup>14</sup> Comité para la Defensa y Desarrollo de la Flora y Fauna del Golfo de Fonseca.

<sup>15</sup> Reversing Environmental Degradation Trends in the South China Sea and the Gulf of Thailand.

Participating countries: Cambodia, China, Indonesia, Malaysia, Philippines, Thailand, Vietnam. Date of approval by GEF: December 12, 2001. Implementing agency: UNEP. GEF funds: \$16,750,000. Co-financing: \$16,400,000.

activities internal to the project. Although the project recognizes that the first two sources are unsustainable in the long run, it has been successful in securing funds from the national budgets by promoting the participation of members of the national and local government in the process of choosing the pilot projects. For example, in China all the pilot projects have been designated nature reserves, so they will automatically continue receiving resources from the national budget that will remain when the GEF project has concluded. In addition, the project has organized donors' forums to explore opportunities for financing; among the concrete results of these activities the project secured a commitment from GEF to finance seven additional projects that have stemmed from the South China Sea project.

As for financial self-reliance at the local level, this project is exploring arrangements for co-management of the pilot projects that involve different interested actors and seek to develop business plans that identify potential sources of alternative income for the local population and assign a value to the environmental services provided by the ecosystems. Examples of these projects include establishing apiaries in mangrove zones, projects for making crafts, and ecotourism, among others.<sup>17</sup> Although the impacts of these local pilot projects and their degree of success generating financial sustainability cannot be evaluated yet, as they are being implemented, recent studies from the GEF Evaluation Office note: "The experiences of the international waters projects indicate that addressing local causes of transboundary environmental degradation through a range of financial and nonfinancial incentives can in fact produce global environmental benefits."<sup>18</sup> Hence the importance of this approach, which seeks to generate benefits for offsetting costs incurred at the local level to protect the environment.

In the context of the Gulf of Fonseca this project's experience is important because it shows the need to produce local benefits as a prerequisite to obtaining transboundary and global benefits. Most of the population in the Gulf lives in poverty, and unless they are compensated for preserving the environmental services of the ecosystems or have another alternative for subsistence, it is very difficult to achieve integrated ecosystem management. In addition, in the Gulf of Fonseca there is a presence of strong civil society organizations in the three countries, through which one can channel pilot projects, create partnerships, and organize actions that yield local benefits. It is important to note that the NGOs in the three countries are actively carrying out different projects that are detailed below, and which demonstrate their capacity for implementing initiatives to improve environmental and social conditions and to establish intersectoral partnerships. For example, in Honduras the NGO CODDEFFAGOLF has an agreement with SERNA for co-managing the country's protected areas, and is implementing the project Social and Environmental Compensation for the Dredging of the Port of Henecán in the city of San Lorenzo, for the Empresa Nacional Portuaria de Honduras (ENP); in El Salvador, the NGO CODECA<sup>19</sup> co-manages the priority area of the Conchagua volcano and implements the Environmental Management Plan of the Bay of La Unión; in Nicaragua, MARN has agreements for the co-management of protected areas with SELVA<sup>20</sup> and LIDER<sup>21</sup> for the Estero Padre Ramos and the Cosiguina volcano, respectively. For these reasons, establishing pilot projects for generating alternative sources of income

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<sup>16</sup> Email correspondence with Sulan Chen, Ph.D. Associate Expert of the UNEP-GEF Project Coordination Unit for the South China Sea. July 2006.

<sup>17</sup> A complete list with detailed information on this type of pilot project can be found at [http://www.unepscs.org/index.php?option=com\\_content&task=view&id=17&Itemid=34](http://www.unepscs.org/index.php?option=com_content&task=view&id=17&Itemid=34)

<sup>18</sup> Todd et al. The Role of Local Benefits in Global Environmental Programs. Global Environment Facility, Evaluation Office. 2006, p. 130. Available at: <http://www.gefweb.org/MonitoringandEvaluation/MEOngoingEvaluations/MEOLocalBenefits/meolocalbenefits.html>

<sup>19</sup> Asociación Coordinadora de Comunidades para el Desarrollo del Cacahuatique

<sup>20</sup> Asociación Somos Ecologistas en Lucha por la Vida y el Ambiente.

<sup>21</sup> Fundación Luchadores Integrados para el Desarrollo Rural.

that are designed with a business perspective could be a promising area for assuring the long-term sustainability of the project's impacts in the Gulf of Fonseca.

#### **2.4. Some conclusions on financial sustainability experiences of other GEF international waters projects**

Consulting GEF's monitoring and evaluation documents and interaction with personnel from the projects described above suggest the following conclusions:

- i) Achieving financial sustainability for this type of project is difficult. Nonetheless, there are some alternatives that have yielded results in other GEF international waters projects and that are worth exploring.
- ii) The fact that certain models have been successful in these projects does not mean that they can be so in all contexts. Several of the persons interviewed agreed on the need to critically evaluate the viability of these models and to consider the perspectives of the project team and the relevant actors for constructing a financial sustainability strategy that provides answers to the specific realities of each region.
- iii) The financial sustainability strategy is closely related to the project's institutional sustainability, represented in the countries' strong commitment to cooperate for carrying out joint actions to achieve the project objectives. As part of the institutional structure, it is especially important that the project have personnel and resources to foster investment in its activities and to create intersectoral partnerships that facilitate the long-term sustainability of its impacts.
- iv) The diversification of different options reduces the project's risk of financial unsustainability.
- v) The concept of financial sustainability has two dimensions. The first refers to generating funds so that the operating structure of the project can continue functioning once the GEF resources have terminated. The second refers to generating resources to compensate the local residents for the benefits they lose when sustainable use is made of environmental resources. This second dimension is more geared to seeking alternatives to ensure that the project impacts are sustainable in the long run, but not necessarily its operating structure. Some of the ways in which this second dimension of financial sustainability is observed include intersectoral partnerships and fostering the creation of financially sustainable businesses and/or projects, among others. The international waters projects that have been successful in generating financial sustainability for some of their components are adopting both concepts of financial sustainability.

### 3. Description of the Financing Mechanism

Although a group of international donors may have interest in financing activities involving the integrated management of coastal-marine zones, and these resources may be critical, at least in the early stages of the project, it is important to develop stable mechanisms within the region that generate sufficient funds to maintain conservation activities with a solid financial basis. A variety of perspectives should be considered for financing activities, and it is important to bear in mind that some sources, such as ports, apply more to certain countries in the context of the Gulf of Fonseca. The sources that may have the greatest potential to generate significant sums of money are the following:

- National budget resources;
- Port fees;
- Tariffs on shrimp exports;
- Institutional contributions (international agencies, foreign donors, and private sector);
- Fees levied on airport arrivals.

Other mechanisms, with perhaps less potential to generate large sums of money, include:

- Higher entrance fees to natural parks and protected areas;
- Hotel taxes;
- Taxes on the extraction of renewable resources, such as artisanal fisheries;
- Payment for environmental services, such as the protection of watersheds and carbon sequestration.

Following is a brief description of these sources. After that, these different alternatives are evaluated using a variety of criteria, such as their potential for generating resources, their political viability, and the transaction costs associated with collecting the money.

#### 3.1. National Budget

National budget resources potentially constitute a major source of revenues used to give funds to several organizations that work in the region. For example, Honduras pays for its participation in COCATRAM with national budget resources. Nonetheless, the national budget has the problem of lack of stability, since different sectors compete to meet their budget needs. This alternative requires a commitment by the governments of El Salvador, Honduras, and Nicaragua to the integrated management of the Gulf of Fonseca ecosystems and to going forward in the processes of public decentralization in each country.

### 3.2. Port Fees

Levying special fees at ports that would be earmarked to the project activities and collected from the boats that use the ports in the Gulf of Fonseca have the potential to generate a moderate sum of money. These resources could come from a simple fee for each boat. The fee could also be based on the amount of freight transported by the boat. Alternatively, the fee could be based both on the amount of freight transported and on its potential risk to the environment.

A special fee based on the tons imported or exported has a number of variations, and has already been used for different purposes in the region. Several of the COCATRAM member countries use such financing mechanisms.<sup>22</sup> For example, Guatemala charges US\$ 0.05 per ton of imports and exports, including bananas and oil, to generate funds to cover its annual quota for COCATRAM.<sup>23</sup> Additionally, Guatemala collects US\$ 0.09 per tons of imports and exports to pay for its Port Security Program.

At present, the traffic of boats in the Gulf of Fonseca is low compared to other ports of the region, such as Acajutla, Puerto Corinto, and Puerto Cortés. From 2002 to 2004 the port of San Lorenzo (Honduras) received approximately 0.65 to 0.8 million tons of freight; with economic growth, this figure may rise. It is estimated that the port of La Unión in El Salvador received 0.8 million tons in 2005; this is expected to reach 1.9 million tons in 2015. Using these figures, and assuming a fee of \$0.05 per ton, it is estimated that San Lorenzo could generate approximately \$35,000 annually, and the Port of La Unión could generate from \$40,000 to \$95,000 annually.

Concerns about the competitiveness of the ports should be expected with any proposal to increase port fees, therefore an analysis has been done of the amount of the fee relative to the average rate per ton charged in the region. With this perspective, a tariff of \$0.05 per ton, or a similar amount, could represent a small percentage of the cost per ton that the ports typically charge for the use of their facilities. As a result, the impact on the ports would be small. Table 2 shows the typical charges per ton estimated by Gavarrete and Fernández<sup>24</sup> for certain types of freighter vessels in three ports of the region. For most types of freight the fees represent a small percentage, with the exception of bulk liquids at Acajutla and Corinto.

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<sup>22</sup> Gavarrete and Fernández, 2001b.

<sup>23</sup> COCATRAM is the Central American Commission on Maritime Transport (Comisión Centroamericana de Transporte Marítimo). When COCATRAM started up its operations, financing was established that would come from a fee of US\$ 0.05 that would be charged based on the freight handled in the ports, with the exception of oil and bananas. Subsequently, the board of directors of COCATRAM established that a budget would be drawn up and the countries would contribute to it in equal shares. The contribution of each member country to COCATRAM is \$113,333.33 annually. The countries make quarterly payments, until they have paid in this amount. Source: communication with Rosa María Rodríguez, COCATRAM project manager.

<sup>24</sup> Gavarrete and Fernández, 2001.

**Table 2. Typical Charges at Three Ports of the Region (U.S.\$ per ton)**

Type of Freight	Acajutla	San Lorenzo	Corinto
Solid Bulk	\$13.90	\$4.22	\$8.58
Liquid Bulk	\$1.22	\$6.67	\$1.60
Containers	\$21.30	\$16.74	\$10.93
General Freight	\$23.67	\$18.90	\$10.74

Source: Gavarrete and Fernández (2001, Table 10-14).

### 3.3. Aquaculture Industry

The aquaculture industry depends on the Gulf of Fonseca for obtaining shrimp post-larvae and clean water for breeder ponds. At the same time, the industry generates a significant amount of exports, in Honduras and Nicaragua. In 2004, Honduras generated US\$ 152 million, as it became the country's third leading export.<sup>25</sup> In Nicaragua, shrimp farming and shrimp exports have been growing 8% to 10% annually from 1992 to 2003, reaching 14 million pounds, equivalent to US\$ 23 million in 2003.<sup>26</sup> In El Salvador, aquaculture has not seen the same growth as in Honduras and Nicaragua.

The aquaculture industry could generate moderate revenues through a fee on exports that could provide funds for the activities of the post-project stage. Given the high level of production, even a relatively modest fee of \$0.0025 per pound of shrimp exported would generate approximately \$35,000 in Nicaragua and more than \$100,000 per year in Honduras. It is important to note that for example in Honduras, aquaculture enjoys an exemption on the payment of taxes on exports, since it is a non-traditional export. Shrimp exporters pay only a fixed sum that does not depend on the volume exported to obtain an "Export Certificate."<sup>27</sup>

Another way of tapping into the significant resources of the aquaculture industry and at the same time provide incentives for using cleaner production technologies would be to work with the shrimp industry to certify it as organic production, which involves limiting the size of the populations cultivated, not using inorganic fertilizers, systematically monitoring the environment, and other criteria.<sup>28</sup> Organic shrimp farming allows the producers to fetch a comparatively higher price than non-organic shrimp, so in principle they would have an economic incentive to produce using organic methods. In terms of profitability, studies done at organic farms in Brazil shows that organic farming has lower variable costs than conventional farming, but fixed costs are greater since its production is on a lower scale. Nonetheless, if organic shrimp producers diversify the number of species in the ponds, they can distribute their fixed costs and achieve greater profitability thanks to the higher market price they fetch for their products.<sup>29</sup>

<sup>25</sup> Central Bank of Honduras, 2005. Exportaciones de Bienes de Honduras 2000-2004. Available at: [http://www.bch.hn/download/exportaciones\\_2000\\_2004.pdf](http://www.bch.hn/download/exportaciones_2000_2004.pdf)

<sup>26</sup> IICA-JICA. 2004. Cadena Agroindustrial de Mariscos en Nicaragua. Available at: [http://www.iica.int.ni/Estudios\\_PDF/Cadena\\_Marisco.pdf](http://www.iica.int.ni/Estudios_PDF/Cadena_Marisco.pdf)

<sup>27</sup> The fees paid to DIGEPESCA-SAG have an approximate cost of \$40 and include a permit for selling shellfish (\$10), an export certificate (\$8), and a phytosanitary certificate (\$22). These amounts are paid once a year and are independent of the volume exported. Source: ANDAH and DIGEPESCA-SAG.

<sup>28</sup> These criteria are described in greater depth in [www.naturland.de](http://www.naturland.de).

<sup>29</sup> Alter Wainberg, Alexandre. 2005. Shrimp farm strives for success after organic conversion. Available at: <http://www.new-ventures.org/pdf/Wainburg-Apr05.pdf#search=%22organic%20certification%20shrimp%22>

### 3.4. Institutional Contributions

The project's investment support structure should play a leading role in aggressively seeking financial support from a variety of international agencies, foreign donors, non-governmental organizations, foundations, and private-sector contributors.

International agencies such as the Global Environment Facility (GEF), the United Nations Development Program (UNDP), the World Bank, and the Inter-American Development Bank (IDB), and foreign donors such as the United States Agency for International Development (USAID), the European Union, JICA, AECI, GTZ, DANIDA, HIVOS of the Netherlands, the Portuguese International Cooperation Agency, CIDA, the Italian Government, and the Government of Luxembourg, among others, may continue playing a potentially very important role. In addition, international organizations have been supporting the development of projects in the Gulf zone carried out through local NGOs or personnel from the municipal environmental offices that include: reforestation, reduction of the vulnerability of coastal populations, sustainable agricultural development, support for sustainable fishing, co-management and conservation of protected areas, ecotourism, and waste management, among others. The participation of these international agencies may take a variety of forms. For example, some members of the NGO Naturland suggested making contact with GTZ to establish public-private partnerships (PPP) to export organic shrimp.<sup>30</sup> Such a partnership would include a company exporting shrimp in the Gulf area, a company importing shrimp in Germany or the United States, and a third organization to certify the shrimp as organic, such as Naturland or Bio Suisse.<sup>31</sup>

Non-governmental organizations (NGOs) such as CARE International and the Nature Conservancy, and a variety of foundations such as the Goldman Foundation and the Fondo Gallego Amigos de la Tierra xx[?: not entirely clear if this is just one foundation; couldn't find on Internet; 'real' name would probably be in gallego not castellano. These are two separate foundations. I suggest to leave the name in Spanish] can also continue playing important roles. For example, the Nature Conservancy has established a fund called EcoEnterprises that has two components: an investment fund that provides venture capital to profitable businesses that work in sustainable agriculture (including organic agriculture, apiculture, and aquaculture), non-timber products, forestry plantations, and ecotourism; and limited technical assistance funds to provide business consulting services to potential investment projects for the fund. The fund invests in businesses in all stages of development that have a volume of sales no larger than \$3 million. One of the requirements for the businesses that are going to receive funds is to have the cooperation of a non-profit environmental or community organization, such as the Comité para la Defensa y Desarrollo de la Flora y Fauna del Golfo de Fonseca (CODDEFFAGOLF).<sup>32</sup> Other venture capital funds that should be considered include Verde Ventures of UNDP, and New Ventures of the World Resources Institute (WRI).

It is important to acknowledge that one of the major strengths of the Gulf of Fonseca is the presence of numerous civil society organizations through which international donors can channel funds for projects, which can facilitate the flow of funds to the project from institutional contributions. The following table illustrates the order of magnitude of the institutional contributions that the local NGOs and environmental offices of the 19 coastal municipalities have received from international donors.

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<sup>30</sup> Source: telephone interview with Stefan Bergleiter. August 2006.

<sup>31</sup> See: <http://www.bio-suisse.ch>.

<sup>32</sup> See: <http://www.garrobo.org/morazan/cgolf/cgolf-en.html>.

**Table 3. Illustration of amounts of some international donations channeled through NGOs in the Gulf of Fonseca<sup>33</sup>**

Donor	Project	Amount (in US\$ or currency indicated)	Implementing agency
Empresa Nacional Portuaria de Honduras (ENP)	Social and Environmental Compensation due to Dredging of the Port of Henecán in the city of San Lorenzo	\$4,558,000	CODDEFFAGOLF
OIKOS and Portuguese International Cooperation Agency	Reducing the vulnerability of poor families in the Gulf of Fonseca	\$182,590	
HIVOS of Netherlands	Juntos hacia el Desarrollo Sostenible (Together towards Sustainable Development)	\$885,000	
Swedish Society for Nature Conservation	Juntos hacia el Desarrollo Sostenible (Together towards Sustainable Development)	\$192,796	
Inter-American Foundation	Financing of microcredit	\$300,000	CODECA
PRODERE Government of Italy	Restoration of critical areas, sustainable agricultural development, and conservation of the Cacahuatique reserve	\$600,000	
Junta de Galicia	Tourism infrastructure in Conchagua and implementation of environmental management actions for the Bay of La Unión.	\$400,000	
Government of Luxembourg	Water and environmental sanitation projects such as the construction of wood-burning stoves that save firewood, wastewater systems, training, reforestation, soils, and fertilizers.	\$700,000	
AECI	Management of agriculture in the Conchagua buffer zone, small farms, tourism, soil conservation practices, and training with a gender perspective.	500,000 euros	ASIGOLFO <sup>34</sup>
AECI	Integral solid waste management Phases I and II	\$791,720	
AECI	Development of Sustainable Productive Projects	\$264,320	
AECI	Sustainable Tourism Development, Island of Meanguera	\$158,952	
AECI	Food Security	\$264,920	
AECI	Project for Introduction of Drinking Water in Hisquil, La Unión	\$265,208	
AECI	Instruments for Land Use Management, El Carmen Chirilagua	\$72,000	

In addition to seeking contributions from organizations, one should explore collecting personal donations. There was such an experience in Guatemala with the “Amigos de Yaxhá” card, a debit card that allowed its users to make small donations when using it to pay for their purchases in a series of establishments, thereby contributing to the financing of one of the natural parks in the Mayan Biosphere Reserve (MBR), in northern Guatemala. Other alternatives include offering ATM users the opportunity to make donations. Implementing such negotiations would require negotiations with the pertinent banking institutions and commercial establishments. In the case of the Gulf of Fonseca, one could explore similar financing mechanisms for the operation of protected natural areas of the Gulf of Fonseca. There are 10 declared

<sup>33</sup> Source: Informe de Gira de Entrevistas y Cuestionarios Actores Locales– Diagnóstico Socioeconómico Análisis de Diagnóstico Transfronterizo Golfo de Fonseca. 2006.

<sup>34</sup> ASIGOLFO is the Association of Municipalities of the Gulf of Fonseca in El Salvador (Asociación de Municipalidades del Golfo de Fonseca).

protected natural areas in the coastal-marine zone of Honduras and three in the coastal-marine zone of Nicaragua. In El Salvador, there are two areas that have co-management agreements, although they are still proposed for official designation as protected natural areas. In Nicaragua and Honduras there are also agreements for co-management of protected areas with local NGOs (SELVA and LIDER, and CODDEFFAGOLF, respectively), with respect to which arrangements for collecting funds involving the private sector could be put in place.

### 3.5. Tourism

The number of tourists who go to the Gulf of Fonseca is much smaller than in other better-known and more developed areas of Central America. For example, recent studies by PROARCA<sup>35</sup> for the protected areas of Nicaragua indicate that the number of visitors to the Estero Padre Ramos, co-managed by SELVA, has decreased from 363 to 162 from 2004 to 2005, and the tourists visiting the Cosiguina volcano, co-managed by LIDER, has increased from 50 in 2003 and 94 in 2004 to 180 in 2005. Nonetheless, the study notes that the records kept may not be all that reliable; accordingly, the co-manager NGOs were contacted, and they gave estimates of 300 and 250 visitors per year for the Estero Padre Ramos and Cosiguina volcano, respectively. Despite the possible upward trend in the number of visitors, there is not yet a critical mass for generating significant resources. In the case of Honduras the protected areas do not yet have management plans, and there is no budget for keeping a record of the number of visitors in the 10 protected areas.<sup>36</sup> As a result, generating income through these sources, such as imposing higher taxes for hotel guests or entry fees to national parks in the region has little likelihood of success.<sup>37</sup>

Collecting income from all the tourists who visit each country could potentially generate a large sum of money, part of which could be used for activities around the Gulf of Fonseca. In 2005, El Salvador as well as Honduras and Nicaragua experienced an increase in the number of tourists who visited the country and in the amount of resources generated from tourism. In 2005, El Salvador and Honduras received more than one million visitors, and Nicaragua was visited by approximately 700,000 tourists.<sup>38</sup> To ensure that the citizens of El Salvador, Honduras, and Nicaragua are not prejudiced, the fee can be applied only to foreigners, or a merely symbolic fee can be created for citizens. A fee of approximately US \$10 to US \$20 per foreign passenger has the potential to generate millions of dollars a year in each country.

A fee at the airport normally represents a relatively small fraction of the price of a ticket. Air fare from the United States to Central America can easily cost US\$ 500, therefore a fee of \$10 to \$20 would not add more than 4% to the price of the ticket. Although establishing such fees may be seen as a threat to tourism, it is important to bear in mind that the capacity and willingness of foreign tourists to pay exceeds such a charge.

Such fees are currently used in other Central American countries, such as Belize, to generate resources for the Protected Areas Conservation Trust (PACT), established in 1996. When visitors leave the airport, they pay a fee of US\$ 3.75, in addition to the general exit tax of \$11.25. (Visitors receive separate receipts and a note that explains that the \$3.75 charge is earmarked directly to the PACT.) This fee and the resources

<sup>35</sup> PROARCA, July 2005. Plan de Financiamiento a Largo Plazo Área Protegida Volcán Cosiguina y Estero Padre Ramos, El Viejo Chinandega, Nicaragua.

<sup>36</sup> Source: Telephone interview with Jorge Varela, Director of CODDEFFAGOLF, NGO co-managing 10 protected areas in Honduras in the Gulf of Fonseca area.

<sup>37</sup> Similar schemes have been implemented in some hotels in Guatemala to channel voluntary donations to programs such as Habitat for Humanity, a non-governmental organization devoted to financing the construction of low-cost housing. See: [www.habitat.org/lac/donde\\_construimos/guatemala\\_profile.aspx](http://www.habitat.org/lac/donde_construimos/guatemala_profile.aspx).

<sup>38</sup> SGSICA, 2006.

collected from cruisers account for most of PACT's operating budget. In addition to covering the operating costs, 5% of the resources collected are deposited into PACT's trust fund.<sup>39</sup>

The physical action of collecting an additional fee would be relatively easy; however, establishing the legal bases for collecting this fee could require legal action. The political viability of approving a measure such as this is not clear. Even so, and since it is a potentially important and relatively stable source of financing, it is worth exploring the possibilities.

### **3.6. Extraction of Renewable Resources**

Collecting taxes on the use of renewable resources appears to be a reasonable option, given that the money would be used to ensure that these resources are protected and developed sustainably. Nonetheless, it is dubious whether this alternative would be a major source of resources, particularly since a considerable number of those who generate these products live in poverty, and are not in a position to pay much more in taxes than they pay at present. In addition, trying to collect fees from a highly dispersed population, such as the thousands of artisanal fishermen who work in the Gulf of Fonseca, would be quite difficult.

In the case of the largest producers, such as those who are part of the large shrimp industries in Honduras and Nicaragua, collecting new taxes may be hard to implement, given the political impact of these industries due to the number of jobs they create.

Even if there were an arrangement for collecting such a tax, practical problems would arise when it comes to implementing it. For example, in Nicaragua the MIFIC collects a fee from fishermen per pound offloaded, yet many fishing boats offload in places other than the control posts, in order to pay less taxes. An arrangement that could have better results is collecting fees based on the capacity of each fishing boat, but changing the existing regulation to allow for such an arrangement would face strong opposition.

### **3.7. Paying for Environmental Services**

The idea behind payments for environmental services is to compensate the users of ecosystems for the environmental services that they provide, and thereby encourage them to choose this use for such ecosystems, instead of another one.<sup>40</sup> The Gulf of Fonseca offers environmental services such as maintaining ecosystems appropriate for the development of aquaculture and fishing, which includes the presence of mangroves, which are a source of shrimp larvae, as well as conservation of water resources, scenic beauty, and biodiversity conservation in its protected areas. Another service offered by the Gulf is its geographic position, which is strategic for developing marine tourism, using its bays for mooring and protection from storms at sea. These examples show that there is some potential for generating income by using this mechanism. Nonetheless, to date scant resources have been generated by such mechanisms in developing countries. The lack of success appears to be due either to the high transaction costs entailed in developing an agreement between those on the supply side and those on the demand side of environmental services, and/or the difficulty enforcing such an agreement once it is reached.

In the Gulf of Fonseca these mechanisms could be implemented in the aquaculture industry, which is more developed and better organized in Honduras and Nicaragua.<sup>41</sup> Although traditionally there has been a conflict between the conservation organizations and the aquaculture industry over the clearing of

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<sup>39</sup> See: <http://www.pactbelize.org/index.php?option=displaypage&Itemid=50&op=page&SubMenu=>.

<sup>40</sup> Espinoza et al. 1999. El Pago de Servicios Ambientales y el Desarrollo Sostenible en el Medio Rural.

<sup>41</sup> In Honduras aquaculturalists are grouped in the Asociación Nacional de Acuicultores de Honduras (ANDAH), founded in 1986, which at present has 126 members.

mangroves for building shrimp ponds<sup>42</sup>, it is important to bear in mind that the aquaculture industry has some incentives to protect water quality and the mangroves, which provide it with the conditions necessary for the reproduction of shrimp in its breeding ponds and provide shrimp larvae, respectively.

Other environmental services provided by the 1,100 km<sup>2</sup> of mangrove forest in the Gulf of Fonseca<sup>43</sup> include: natural protection against high tides; carbon absorption; maintenance of water quality through sedimentation and absorption of nutrients; and the creation and maintenance of habitats for commercial species of fish and crustaceans, of vital importance for fishing and the collection of shrimp larvae.<sup>44</sup> Although fishing also benefits directly from these environmental services, the transaction costs of collecting these payments would be higher than in the case of aquaculture due to the dispersion of the main users, artisanal fishermen.

In addition, the ecosystems of the Gulf contribute to water conservation through their wetlands, some of which have been declared to be of global importance by the Ramsar Convention, such as, for example, the Wetlands System of Southern Honduras (69,711 hectares, declared on July 10, 1999), and the Estero Real and Llanos de Apacunca deltas in Nicaragua (81,700 hectares, declared on November 8, 2001).<sup>45</sup> In this case, the beneficiaries of water conservation are also dispersed across the watersheds that drain into the Gulf and the coastal zone, and include, among others, farming and ranching. For this reason, implementing a scheme of payment for water conservation is hardly feasible.

The Program for Sustainable Agriculture in the Hillside of Central America (PASOLAC) has supported the development of six pilot experiences in payments for environmental services for water resources in Honduras, Nicaragua, and El Salvador.<sup>46</sup> Although none of these experiences is in the area of influence of the Gulf of Fonseca, its implementation offers important lessons that should be considered. Most of these arrangements are developed through water boards where the users of the service make contributions additional to the price of the service to foster actions to conserve water sources. A recent study by the CCAD<sup>47</sup> indicates that as regards the potential for economic sustainability, only the experiences of Jesús de Otoro in Honduras and Tacaba in El Salvador have average potential, while the other four initiatives have only fair potential. One factor impacting on this situation is that the price does not cover the operating costs. For example, in the case of Jesús de Otoro, the study highlights that the fee in 2003 was 25 lempiras, but in reality to cover the costs of providing the service, it should have been 50 lempiras.

In Nicaragua, schemes have been implemented to pay for similar environmental services in the municipality of Río Blanco, where, at the community's initiative, an additional 2 córdobas fee began to be charged to each household on its water bill for a fund to support the conservation of water sources. This

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<sup>42</sup> Benítez et al. 2000. A platform of action for the sustainable management of mangroves in the Gulf of Fonseca. Centro de Estudios Ambientales y Sociales para el Desarrollo Sostenible (CEASDES), International Center for Research on Women (ICRW), Comité para la Defensa de la Flora y Fauna del Golfo de Fonseca (CODDEFFAGOLF).

<sup>43</sup> 300 km<sup>2</sup> belong to Nicaragua (27%), 575 km<sup>2</sup> to Honduras (52%), and 225 km<sup>2</sup> to El Salvador (21%).

<sup>44</sup> Proffitt, Edward. Twilley, Robert. Integrative Mangrove Management. Hurricane Mitch Program Project. United States Geological Survey (USGS). <http://mitchnts1.cr.usgs.gov/projects/intmangrove.html#summary>

Martínez-Alier, Joan. 2001. Ecological Conflicts and Valuation – Mangrove versus Shrimp in the late 1990s. Department of Economics and Economic History. Universidad Autónoma de Barcelona. Spain.

<sup>45</sup> [http://www.ramsar.org/sitelist\\_order.pdf](http://www.ramsar.org/sitelist_order.pdf)

<sup>46</sup> CCAD, Mesoamerican Biological Corridor. 2004. Sistematización de experiencias de pago por servicios ambientales para los recursos hídricos en el ámbito municipal (Honduras, El Salvador, Nicaragua) These experiences include: Jesús de Otoro and Campamento (Honduras), Tacaba and El Guayabo (El Salvador), El Regadío and San Pedro del Norte (Nicaragua).

<sup>47</sup> Id.

scheme was implemented three years ago and the fee has increased to 12 córdobas, and it has yet to reach a level that guarantees its long-term sustainability.

Nicaragua's experience shows that such initiatives may contribute to obtaining resources for financing the conservation of water sources at the local level. In other words, these schemes for the payment of environmental services could be a type of project to be financed with this GEF project. Nonetheless, Honduras's experiences show that even when the users are dispersed, their willingness to pay may affect the sustainability of a scheme of payment for environmental services of this sort, making it hardly viable in the long run as a mechanism for generating income for other activities of the GEF project.

### **3.8. Corporate Social Responsibility**

Although there are different definitions of the term “corporate social responsibility,” most of them “emphasize the interrelationship between economic, environmental and social aspects and impacts of an organization's activities, and that [social responsibility] ‘is taken to mean a balanced approach for organizations to address economic, social and environmental issues in a way that aims to benefit people, communities and society.’”<sup>48</sup> In the context of the Gulf of Fonseca, there are numerous private companies that generate employment for the inhabitants of the area, use the natural resources available in the zone, and generate positive and negative impacts on the environment. Although the aquaculture industry is one of the most consolidated in Honduras and Nicaragua, there are also other industries such as intensive cultivation of fruits for export that are also found in these two countries. It should be noted that the aquaculturalists in Honduras are grouped in the Asociación Nacional de Acuicultores de Honduras (ANDAH), and that some member companies such as the Grupo Granjas Marinas S.A. of Choluteca already have a corporate social responsibility program, which in 2005 donated a total of \$1,283,688 to the community, \$63,030 of which was earmarked for environmental protection activities. Most of these grants were for education and health activities.

In El Salvador, where aquaculture and intensive agriculture have not been developed, major industrial activity is emerging around the new port at La Unión. Examples of developments include power generating companies such as Cutuco Energy.

All these organized private industries represent opportunities for implementing corporate social responsibility strategies that supplement the initiatives of this GEF project. The GEF project needs to earmark resources and personnel to seek financing in the private sector for activities that could be in the interest of private economic actors to finance. For example, the shrimp industry could be interested in financing activities related to monitoring and recovering water quality, and the insurance industry in pollution prevention and environmental emergencies associated with port operations, to mention just a couple of examples.

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<sup>48</sup> International Organization for Standardization (ISO) Strategic Advisory Group on Corporate Social Responsibility, cited in “Perceptions and Definitions of Social Responsibility.” International Institute for Sustainable Development-IISD, 2004.

## 4. Evaluation of the Financing Mechanism

Financing conservation activities in the Gulf of Fonseca could be a combination of different financing mechanisms. Following is an evaluation of each of the mechanisms based on a series of characteristics, with a summary of this analysis presented in Table 2. This evaluation considers the following criteria:

- Amount of financing. The mechanism would generate a significant amount of the necessary financing.
- Stability of the financing mechanism. Available funds will not fluctuate significantly from one year to the next.
- Exclusivity. The mechanism will generate financing earmarked exclusively for the project to avoid having funds earmarked to other competing needs.
- Efficiency. The financial needs for an institutional mechanism to collect money efficiently.
- Polluter pays principle. The mechanism should link the entities that generate the need for conservation activities with those that ultimately pay for them.
- Political viability. It is important to have the support of the interested parties to ensure the success of the development and implementation of a financing mechanism.

As for the amount of the financing, several of the financing mechanisms have the potential to generate significant sums of money: national budget resources, fees based on the tons of imports and exports at each port, tariffs on shrimp exports, institutional contributions, and resources from airport fees. Nonetheless, the potential of airport fees would depend on how the resources collected are distributed among interests competing with one another (for example in Honduras, Copán, the Bay Islands, and other significant tourism destinations). The other mechanisms have less potential. Hotel taxes and higher park entrance fees do not have much potential to generate income due to the low number of tourists in the region. Taxes on the extraction of renewable resources have little potential due to the relatively small amount of resources generated. Payment for environmental services has been implemented only on a small scale in developing countries, and it is difficult for this to be a source of significant sums of money.

In addition to the ability to generate significant funds, the stability of the sources of financing from one year to the next is an important criterion. The port fees on imports and exports are relatively stable; historically the quantity of freight transported has increased over the years. Similarly, shrimp exports have increased over time, though pests or diseases have the potential to significantly reduce the exports in any given year. Airport fees, park entrance fees, and hotel taxes are reasonably stable, but depend on the willingness of tourists to visit the region. Funds from the national budget are, perhaps, a bit less stable, since the amount of resources depends on the political will at the time the budget is distributed each year. Payments for environmental services are potentially a stable source, nonetheless the experience in this field is limited. Finally, the direct contributions of different institutions should not be seen as a sustainable source of resources, since the availability of funds depends on the resources the institution has and the institution's perception and interest in the project to be financed and its benefits.

The criterion of exclusivity is associated with the stability of the source of financing. It is important that a source of financing dedicated exclusively to a single activity not be used for another activity with competing needs. Any fund shared by many activities has this potential weakness. The financing of conservation activities in the Gulf of Fonseca with resources from the national budget will probably have to compete with an array of needs. In contrast, institutional contributions may be designated so that they are exclusively related to conservation activities. Finally, most of the sources have the potential to be used for activities within the Gulf of Fonseca, depending on how they are established. One concern is that

money collected by government agencies may be earmarked for activities outside the reserve, unless measures are in place to prevent that from happening.

Some of the financing mechanisms already have effective means of collecting money through airports or sea ports. In particular, these two methods are effective because they require a limited number of collection areas. Park entrance fees and hotel taxes are more difficult to implement because they are more dispersed. Taxes on the extraction of renewable resources would be particularly hard to implement due to the large number of persons involved. For example, there are thousands of fishermen working in the Gulf of Fonseca. Payments for environmental services may be the most difficult to implement, since there is no market associated with them, and therefore it must first be created. Significant contributions by different institutions can also be hard to obtain and would require active, creative, and persistent actions on the part of the agency managing the coastal-marine zone of the Gulf, with a view to maximizing the potential of this alternative.

The polluter pays principle is generally cited as a desirable criterion to ensure payment for environmental mitigation measures, and first captured world attention and the United Nations Conference on Environment and Development held in Rio de Janeiro, Brazil, in June 1992. For most of the financing mechanisms described here, there is a close association between the source of the funds and the cause of the environmental problem, especially for aquaculture and port fees, since their infrastructure gives rise to significant environmental impacts. General government funds are an exception, as there is little connection between the need for the activities and the source of the funds.

The political viability of a given financing mechanism is a key factor. In practice, the political viability is hard to specify beforehand, since it depends on various factors. In general, the greater the need for funds, the less the political viability. The closer the financing mechanism is tied to a particular institution or group of institutions, the greater the likelihood that there will be great resistance. The financing of the general budget of the nation will likely face less political resistance, at least in the short term, with respect to shrimp farming.

#### **4.1. Financial Sustainability Strategy**

Based on the foregoing analysis, which is summarized in Table 4, a preliminary prioritization of alternatives for generating resources in the long run was drawn up, mindful of the potential amount of financing that they could generate, their institutional and political viability, and their stability in the long term. This prioritization can be observed in Table 5. First, including different mechanisms with different probabilities of success and expected amounts in the portfolio of options seeks to reduce the project's risk of financial unsustainability. Second, the prioritization of mechanisms is aimed at focusing the limited resources that the project could earmark to seeking alternatives for financial sustainability on those options that can produce the best returns.

These analyses and consultations led to the design of a preliminary financial sustainability strategy that is reflected in subcomponent 4c of the GEF project and that includes the following elements: (i) **Design and implementation of a business plan for the GEF Project** that relates the different components of the project to potential sources of financing. In the context of the development of this business plan, which shall be done with the active participation of the project team and other actors considered relevant, an evaluation will be done of the different economic instruments that already exist or that could be created to collect funds (for example, establishing payments for environmental services, charges for effluent discharges and water uses or environmental funds with contributions from different sectors for a single country or different countries of the region). This plan will seek to reduce the risk of financial unsustainability by diversifying sources to include self-generated funds and funds external to the project, and resources both public and private. In addition, a plan of action will be designed to obtain resources

that prioritizes efforts to make operational those sources that can provide the largest sum of resources with the greatest long-term sustainability; (ii) **Design and operation of an investment support structure** entrusted with structuring projects to resolve environmental problems that require significant investments. The functions of this structure include taking leadership in organizing investor roundtables and donors' forums that would make it possible to establish partnerships and mobilize funds for large-scale projects such as the design, construction, and operation of integrated solid waste management systems, wastewater treatment plants, and drinking water and sanitation systems, among others; (iii) **Advising the productive projects selected to reach financing in activity a. of this component on financial sustainability strategies.** An effort will be made to provide advisory services on issues that could include designing project budgets, accessing soft credit, presenting accounting information and defining collateral to apply for loans, and establishing partnerships for marketing and commercialization. The GEF Project's contacts with international NGOs, donors, and private sector representatives will be tapped to facilitate identifying, creating, and taking advantage of business opportunities.

**Table 4. Financing Mechanisms and their Characteristics**

<b>Financing Mechanism</b>	<b>Additional funds per year</b>	<b>Stability</b>	<b>Exclusivity of the funds</b>	<b>Efficiency of collection</b>	<b>Polluter pays principle</b>	<b>Political viability</b>	<b>Institutional viability/ Agreements required</b>
National budget by country	\$100,000 - \$300,000	Low-Medium	Low	Medium-High	Low	Medium-High	Medium
Port fees	\$50,000 - \$100,000	Medium-High	Medium-High	High	High	Medium	Medium
Tax on shrimp exports	\$50,000 - \$150,000	Medium	Medium-High	Medium-High	High	Low-Medium	Medium
Institutional contributions*	\$100,000 - \$1,000,000	Low-Medium	High	Low-Medium	Low	High	High
Corporate Social Responsibility	\$50,000 – \$150,000	Low-Medium	Low	Low	High	Medium	Low
Extraction of renewable resources	Low	Medium-High	Medium-High	Low	Medium-High	Low-Medium	Low
Payment for Environmental Services	Low	Medium	Medium-High	Low	Medium-High	Medium	Low
Airport fees	\$50,000 - \$250,000	Medium-High	Medium	High	Medium	Low	Baja
Park entrance fees	Low	Medium-High	Medium-High	High	Medium	Medium-High	High
Hotel taxes	Low	Medium-High	Medium	Medium	Medium	Low-Medium	Medium

\* Includes: Grants from NGOs, foundation, other international donors.

**Table 5. Prioritization of Financing Mechanisms<sup>49</sup>**

<div> <div>Difficulty of implementation →</div> </div>	<b>6</b> <ul style="list-style-type: none"> <li>Extraction of renewable resources (H, N, ES)</li> <li>Payment for environmental services (H, ES)</li> <li>National budget (ES)</li> <li>Park entrance fees (N)</li> <li>Fees for extraction of non-renewable resources (N)</li> </ul>	<b>3</b> <ul style="list-style-type: none"> <li>Airport tax (ES<sup>50</sup>, H<sup>51</sup>, N)</li> <li>National budget – Reinvestment of national sectoral funds captured in the region: tourism, forestry, fishing (H)</li> <li>Taxes on shrimp exports (H, N<sup>52</sup>)</li> <li>Corporate social responsibility: NGOs, fishermen, aquaculture, agroindustry, thermo electrical plants, hotels, restaurants (H)</li> </ul>
	<b>5</b> <ul style="list-style-type: none"> <li>Hotel taxes (ES, H, N)</li> </ul>	<b>2</b> <ul style="list-style-type: none"> <li>Port fees (ES, H)<sup>53</sup></li> <li>National Budget – Reinvestment of national sectoral funds captured in the region: tourism, forestry, fishing (N)</li> <li>National Budget (N<sup>54</sup>)</li> </ul>
	<b>4</b> <ul style="list-style-type: none"> <li>Park entrance fees (H, ES)</li> <li>National budget (H)</li> <li>Payment for environmental services (N)</li> </ul>	<b>1</b> <ul style="list-style-type: none"> <li>Institutional contributions: national and international donors (ES, H, and N)</li> </ul>

Magnitude of Financing →

<sup>49</sup> This prioritization was presented to the participants of the third trinational workshop held in La Unión. The consulting team reorganized the initial prioritization, including the participants' comments and the experience of other GEF projects, and suggests using this new version. The prioritization proposed by the participants in the workshop is found in Appendix 1.

<sup>50</sup> In El Salvador there is already an airport fee for tourists, nonetheless it is earmarked to a national fund for the development of tourism and it is hardly feasible to earmark resources from this fund to activities in the Gulf of Fonseca.

<sup>51</sup> In Honduras, the airports have tourism taxes and are also in the process of privatizing their operations

<sup>52</sup> This category is not relevant for El Salvador, since the aquaculture industry has not developed there.

<sup>53</sup> This category is not relevant for Nicaragua since it has no ports in the Gulf of Fonseca.

<sup>54</sup> In Nicaragua, for a project to have access to funds from the national budget, it must be entered in the National System of Public Investment (Law 550). For this reason, this GEF project could begin to receive funds as of 2008.

## 4.2. Priority Mechanisms

As indicated previously, this preliminary analysis notes that some options are more viable since they have the potential to generate resources and sustainability in the long term, whose implementation should be prioritized. In the first place, box 1 from the table above includes a mechanism that offers significant funds that that is the most viable from the institutional standpoint:

Institutional contributions from international donors: It is difficult to estimate the amount of funds that can be obtained after carrying out an aggressive campaign to market the Gulf of Fonseca among international donors and foundations, for such funding depends on the projects which with the Gulf is competing at the time applications are put in for grants, and donors' priorities. For purposes of illustration, one can observe the co-financing considered in the analysis of incremental costs of this GEF project.

Second are the mechanisms that require an average institutional effort for their implementation but which, because of the amounts they could generate, should be accorded priority:

- Port fees, which have the potential to generate \$50,000 to \$100,000 annually, depending on the amount of freight and the amount of the fee. At present freight traffic is not all that great; nonetheless, this situation may change with the development of the Port of La Unión.
- In the case of Nicaragua, contributions from the national budget would appear to be a viable option, according to the procedures established in the Law on the National System of Public Investment (Law 550). Additionally, in Nicaragua the reinvestment of sectoral funds from the national budget, which have been captured in the region through activities of the tourism, forestry, and fisheries sectors, may also be an option that could be implemented. Together these two alternatives could generate from \$100,000 to \$300,000 annually.

Third are those mechanisms that require a high institutional effort but which could potentially generate a large sum of resources:

- Collecting a tax from foreign tourists who enter through the international airports, which could generate \$50,000 to \$250,000.
- Tariffs from shrimp exports, which have the potential to produce \$50,000 to \$150,000 depending on the level of the tariff and total exports.
- Corporate social responsibility activities, though at present they do not appear to be generating much revenue for environmental activities, may be easier to implement than establishing tariffs or fees, and could generate from \$50,000 to \$150,000.
- In Honduras the reinvestment of sectoral funds from the national budget that have been captured in the region through activities of the tourism, forestry, and fisheries sectors.

Based on this prioritization and making an estimate of the different probabilities of successful implementation of each mechanism (70% for those easy to implement, 50% for the mechanisms with average difficulty in their implementation, and 30% for those quite difficult to implement), the following approximations for the amounts to be attained were obtained:

**Table 6. Approximate amounts by mechanism**

<b>Priority</b>	<b>Probability of success</b>	<b>Mechanism</b>	<b>Range (in thousands of dollars)</b>
<b>1</b>	70%	Institutional contributions	70 to 700
<b>2</b>	50%	Port fees	25 to 50
<b>2</b>	50%	Corporate social responsibility	25 to 75
<b>2</b>	50%	National budget (N)	50 to 150
<b>3</b>	30%	Airport fee	15 to 75
<b>3</b>	30%	National budget (H)	30 to 90
<b>3</b>	30%	Tariffs on shrimp exports	15 to 45
<b>Total</b>			<b>230 to 1,185</b>

## 5. Discussion

Financing for the Gulf of Fonseca requires a portfolio of financing mechanisms to provide a secure and stable source of revenues and to diversify the risk of financial unsustainability.

Perhaps the most important characteristic of the mechanisms that have been considered in this preliminary analysis is their capacity to generate sufficient funds. Those sources capable of generating more money appear to be: the general budget of the nation, institutional contributions, airport fees, and park entrance fees. Additional sources such as port fees and tariffs on shrimp exports are also potentially important.

More generally, no matter the type of mechanisms implemented, it is crucial that all aspects of the financing be transparent, so that there are no concerns about how the resources have been spent. The different interest groups should know how the money is collected, how much is received, and also feel that the resources are being spent appropriately. Without the sense that the funds are being well-administered, there will no doubt be a loss of support for the conservation activities in the Gulf of Fonseca.

If the interest groups see value in the activities carried out in the Gulf of Fonseca, then the long-term financing of these activities should not encounter difficulties. The region has the capacity to generate, sustainably and for the long term, the amount of funds required by these activities.

**Appendix 1.**  
**Prioritization of the Financing Mechanisms Suggested in the Consultation<sup>55</sup>**

<b>Difficulty of implementation →</b>	<b>6</b>	<ul style="list-style-type: none"> <li>• Extraction of renewable resources (H, N)</li> <li>• Payment for environmental services (H)</li> <li>• National budget (ES)</li> <li>• Hotel tax (ES, H, N)</li> <li>• Airport fee (ES<sup>56</sup>, H<sup>57</sup>, N)</li> <li>• Tariff on shrimp exports (N)<sup>58</sup></li> <li>• Port fee (N)<sup>59</sup></li> <li>• Park entrance fee (N)</li> <li>• Fees on extraction of non-renewable resources (N)</li> </ul>	<b>3</b>	<ul style="list-style-type: none"> <li>• Airport fee</li> <li>• Extraction of renewable resources (ES)</li> <li>• Payment for environmental services (ES)</li> <li>• Reinvestment of national sectoral funds captured in the region: tourism, forestry, fisheries (H)</li> </ul>
	<b>5</b>		<b>2</b>	<ul style="list-style-type: none"> <li>• Tariffs on exports (H)</li> <li>• Port fees (ES, H)</li> <li>• Tariffs on fuel sales (ES)</li> <li>• Corporate social responsibility: NGOs, fishermen, aquaculture, agroindustry, thermo electrical plants hotels, restaurants (H), gasoline stations (H, ES)</li> <li>• Reinvestment of national sectoral funds captured in the region: tourism, forestry, fisheries (N)</li> </ul>
	<b>4</b>	<ul style="list-style-type: none"> <li>• Park entrance fee (H)</li> <li>• National budget (H)</li> <li>• Payment for environmental services (N)</li> </ul>	<b>1</b>	<ul style="list-style-type: none"> <li>• Institutional contributions: national and international donors (ES, H, and N)</li> <li>• National budget (N<sup>60</sup>)</li> <li>• Park entrance fees (ES)</li> <li>• Extraction of non-renewable resources (mining) (ES)</li> </ul>

**Magnitude of the Financing →**

<sup>55</sup> The consultation on the original proposal for financing mechanisms was carried out in the third trinational workshop held in La Unión (El Salvador). The persons in attendance at the workshop were divided into three groups, by country, and determined a prioritization based on their knowledge.

<sup>56</sup> In El Salvador there is already an airport fee for tourists, yet it is earmarked to a national fund for the development of tourism, and it is hardly feasible that resources from this fund will be earmarked to activities in the Gulf of Fonseca.

<sup>57</sup> In Honduras, the airports already have taxes on tourism; in addition, they are in the process of privatizing.

<sup>58</sup> This category is not relevant for El Salvador, since the aquaculture industry has not been developed there.

<sup>59</sup> This category is not relevant for Nicaragua, as it has no ports in the Gulf of Fonseca.

<sup>60</sup> In Nicaragua, in order for a project to have access to funds from the national budget, it must be entered in the National System of Public Investment (Law 550). For this reason, this GEF project could begin to receive funds as of 2008.