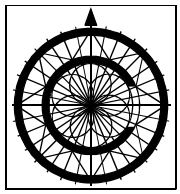


CHEMONICS INTERNATIONAL INC.

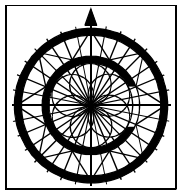
EL SALVADOR: BIODIVERSITY, TROPICAL FORESTRY AND WATER RESOURCES ASSESSMENT

A Task Order Report Under the BIOFOR IQC
Contract No. LAG-I-00-99-00014-00, Task Order # 821

Submitted to:
USAID/El Salvador

Submitted by:
Chemonics International Inc.
and
Virginia Polytechnic Institute and State University

January 16, 2004



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Submitted to:
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January 16, 2004

CONTENTS

ACRONYMS

ADESCO	Asociación de Desarrollo Comunal
AECI	Spanish Agency for International Cooperation
AGUA	Access, Management and Rational Use of Water Project
AMAR	Asociación Amigos del Árbol
ANDA	Administración Nacional de Acueductos y Alcantarillados
ANP	Área Natural Protegida
ASACMA	Asociación Salvadoreña para la Conservación del Medio Ambiente
BID	Inter-American Development Bank
BIOFOR	Biodiversity and Forestry Indefinite Quantity Contract
CAM	Central America and México
CATIE	Centro Agronómico Tropical de Investigación e Enseñanza
CCAD	Comisión Centroamericana de Ambiente y Desarrollo
CBD	Convention on Biodiversity
CEL	Comisión Ejecutiva Hidroeléctrica del Río Lempa
CENTA	Centro Nacional de Tecnología Agrícola y Forestal
CEPRODE	Centro de Protección Contra Desastres
CITES	Convention on International Trade in Endangered Species
CONCAUSA	Declaración Conjunta Centroamérica – Estados Unidos de America
CONCULTURA	Consejo Nacional para la Cultura y el Arte
CORSATUR	Corporación Salvadoreña de Turismo
CND	Comisión Nacional de Desarrollo
CSP	Country Strategy Plan
DANIDA	Danish International Development Agency
FAA	Foreign Assistance Act
FAO	Food and Agriculture Organization of the United Nations
FIAES	Fondo para las Iniciativas de las Américas-El Salvador
FIS	Social Investment Fund
FORGAES	Project to Strengthen Environmental Management in El Salvador
FONAES	Fondo Nacional Ambiental de El Salvador
FOPRAS	Environmental NGO Institutional Strengthening Project
FUNDAMUNI	Fundación de Apoyo a Municipios de El Salvador
FUNEDES	Fundación Empresarial para el Desarrollo en El Salvador
FUNZEL	Fundación Zoológica de El Salvador
FUSADES	Salvadoran Foundation for Socio-Economic Development
FUTECMA	Fundación Técnica Pro Medio Ambiente
FY	Fiscal Year
GEF	Global Environment Facility
GOES	Government of El Salvador
GTZ	German Agency for Technical Cooperation
HAS	Hectares
IEE	Initial Environmental Evaluation
IQC	Indefinite Quantity Contract

IR	Intermediate Result
ISTA	Instituto Salvadoreño de Transformación Agraria
ISTU	Instituto Salvadoreño de Turismo
IUCN	International Union for the Conservation of Nature
MAG	Ministerio de Agricultura y Ganadería
MARN	Ministerio del Medio Ambiente y Recursos Naturales
MCA	Millennium Challenge Account
MOP	Ministerio de Obras Públicas
NGO	Non-Governmental Organization
ORMA	Oficina Regional para Mesoamérica
PRISMA	Programa Salvadoreño de Investigación sobre Desarrollo y Medio Ambiente
PROARCA-CAPAS	Programa Ambiental Regional para Centroamerica-Central American Protected Areas System
PROARCA-Costas	Programa Ambiental Regional para Centroamerica-Costas (coasts)
PROMESA	Programa de Medio Ambiente de El Salvador
PSA	Pago por Servicios Ambientales
RAMSAR	Convención Ramsar para la Conservación de los Humedales
SACDEL	Sistema de Asesoría y Capacitación para el Desarrollo Comunal
SANP	Sistema de Áreas Naturales Protegidas
SEMA	Secretaría del Medio Ambiente
SICAP	Central American System of Protected Areas
SISAP	Salvadoran System of Protected Areas (now SANP)
SME	Small and Medium-sized Enterprises
SNET	Servicio Nacional de Estudios Territoriales
SO	Strategic Objective
SOW	Scope of Work
TFCA	Tropical Forest Conservation Act
UNDP	United Nations Development Programme
USAID	United States Agency for International Development
WWF	Worldwide Fund for Nature

Executive Summary

This report for the Section 118/119 Assessment on Tropical Forestry, Biodiversity and Water Resources Conservation examines the new Strategic Plan (2005-2008) for the USAID/El Salvador Bilateral Program.

Accordingly, and as part of its ongoing efforts to design and program a new assistance strategy for the country, USAID/El Salvador has contracted the services of a tropical forestry/biodiversity/water resources assessment team under the BIOFOR IQC with Chemonics International Inc. This Assessment is an early environmental review of the Mission's new multi-year strategy aimed at ensuring that:

- The activities and investments under the overall strategy are not likely to lead to adverse environmental impacts on tropical forestry, biodiversity or water resources;

- Opportunities for program synergy among the strategic objectives that could contribute to the conservation of tropical forests, biodiversity and water resource assets are identified; and,

- The needs and opportunities for USAID assistance in these areas that may fit well with the overall strategic thrust of the Mission's program in El Salvador are considered.

The activities of the Section 118/119 Assessment Team are expected to assist USAID in defining to what extent its actions and investments as part of the upcoming country strategy will meet the needs in El Salvador for addressing tropical forestry and biodiversity conservation, and in this particular case, because of the inherent linkages, for water resources management and conservation. In effect, the Assessment will help USAID to justify its role and support in these areas by looking at the needs and opportunities, ongoing Government-funded priorities and programs, those of other donors/multilateral organizations and considering the fit within the planned program and resource levels.

The New Strategy for the USAID/El Salvador Program

- USAID has approved a Central American and Mexico (CAM) Regional Strategy for the period FY2003-2008 that provides the overall framework for country-specific programming. The new regional strategy will focus USAID investments within the three performance "arenas" foreseen under the Millennium Challenge Account (MCA), to wit:
- Ruling justly: more responsive, transparent governance.
- Economic freedom: open, diversified, expanding economies.
- Investing in people: healthier, better-educated people.

USAID/El Salvador has indicated that it sees its contributions related to the tropical forest, biodiversity and water resources conservation occurring mainly in the context of the CAM SO 2:

economic freedom: open, diversified, expanding economies, and more specifically under IR 4: improved management and conservation of critical watersheds.

Major Findings of the Assessment

First and foremost, the Assessment Team can report that its understanding of the planned activities for the next strategic program period suggests that:

- There will be little likelihood of adverse environmental impacts on tropical forestry, biodiversity and water resources; and

- Results in the area of wise use of water resources and in particular improved watershed management – a cross-cutting theme for the new strategy – will in the Salvadoran context lead to achievements related to tropical forest and biodiversity conservation.

More Specific Recommendations

Furthermore, and as a result of this assessment study, the Team recommends that USAID consider the following as it moves forward with its strategic planning and programming:

The Ministry of Environment and Natural Resources (MARN) would benefit from enhanced analytical and planning skills that would facilitate a more strategic and prioritized approach to the needs and opportunities of the sector. The Assessment Team would recommend the following responses for the consideration of USAID:

- Strengthening the relationship between its environmental programs, particularly in water supply and watershed management, and the nascent national efforts to adopt a system of compensation for environmental services.

- Provide targeted support for awareness raising and training for the political elite.

- Greater attention be given to the opportunities for using Fondo para las Iniciativas de las Américas – El Salvador (FIAES) resources allocated for the applied research thematic area.

The Central American Free Trade Agreement (CAFTA) and its programming implications – a unique opportunity and challenge for the environment sector and accordingly it is recommended that:

- USAID/El Salvador should consider a range of new or renewed activities in a series of areas related to the regional context for environmental management and sustainable development.

- Efforts be made to reconstitute the working relationships between SICA-CCAD, PROARCA (or similar USAID regional programs) and the bilateral USAID programs.

- Significant opportunities to move forward with the concept of "pago por servicios ambientales" is another of the issues that lends itself to both a regional approach and increased program synergies.

Consolidating the experiences and applying the lessons learned from an extensive array of field-oriented investments and activities may be of even more strategic importance than physical achievements on the ground. The Team would suggest that USAID/El Salvador consider the following needs and opportunities:

- The very evident need for more strategic targeting of field programs (FIAES, FONAES and others).

- An enhanced understanding of the watershed management paradigm and approach.

- A more strategic approach to strengthening the Protected Area System.

- A more targeted and better coordinated approach to endangered species conservation.

- Proactive recognition and efforts to linking governance and environmental management objectives.

- The importance of environmental regulations and permitting systems in a small and medium enterprise (SME)-oriented industrial development strategy.

SECTION I

Introduction to the Assessment

Background on the USAID Program in El Salvador

The U.S. Government has a long history of assistance to El Salvador. Some would argue that "there are few examples in the world where the aid of one country has been so intimately linked with the policies, economy and institutions of the other, as in the case of the cooperation of the United States to El Salvador" (authors' translation from Barry 1993). During the long years of civil war, U.S. support for El Salvador amounted to the very significant sum of US$4.5 billion, including both economic and military assistance. Among the achievements of that period was setting up the network of private sector NGOs, led by the Salvadoran Foundation for Socio-Economic Development (FUSADES), which served to transform, reform and modernize the more economically powerful elements of society in ways that were essential steps toward resolving the basic social conflicts behind the war (ibid). USAID assistance has remained critical in many ways as a guarantor of the ambitious economic and social sector reforms that were the result of negotiated peace process.

USAID/El Salvador Current Strategic Plan

USAID/El Salvador's current strategic plan was extended for two additional years as a result of the two massive earthquakes that occurred early in calendar year 2001. With the addition of a Special Objective for earthquake reconstruction, the four program areas supported in the present Strategic Plan covered the following:

- Expanded Access and Economic Opportunities for Rural Poor Families
- More Inclusive and Effective Democratic Processes
- Sustainable Improvements in the Health of Women and Children Achieved
- Increased Access by Rural Households to Clean Water
- Lives of Targeted Earthquake Victims Improved

USAID's support for the environment sector in El Salvador that presently focuses on the cross-cutting theme of water is of relatively recent vintage especially in comparison to other areas within its program portfolio. Despite its newness on the environment scene, USAID is now recognized as the largest bilateral donor supporting the sector in the country. The present project portfolio of USAID/El Salvador includes the following environment sector related projects and activities:

Access, Management and Rational Use of Water (AGUA) Project: This project was originally approved in 1998 as a four-year project valued at approximately US$15.6 million to "increase access to clean water for rural Salvadorans in an environmentally sustainable way" (ARD 2002). It is being implemented by a consortium led by CARE and including three local NGOs: SalvaNATURA, FUNDAMUNI and SACDEL. The project was expected to carry out its activities in 18 municipalities located within three major watersheds (El Imposible - Barra de Santiago, Bahía de Jiquilisco and Rio Torola) in the Departments of Ahuachapán, Usulután and

Morazán. Additional funding was approved to increase the total value to US$24.7 million in 2001 and the original activity completion date extended to September 2003. Among its achievements during Phase I of the AGUA Project are: 200 local community organizations involved in integrated water management; 87 potable water supply systems being local managed, including the collection of water user fees; and improved soil and water conservation practices extended to 6,800 farms covering almost 17 thousand hectares.

As a result of a relatively positive evaluation in mid-2002, a second phase of the AGUA Project was approved by USAID for the period 2003-2005 aimed at consolidating the approach on the basis of lessons learned in Phase I. The major results expected during Phase II are as follows: increased institutional and legal framework for the integrated management of water resources; increased conservation of natural resources in conjunction with sustainable agricultural productivity in watersheds; and increased access to potable water and improved management of solid and liquid waste in watersheds. Enhanced land use interventions that the Project will continue to promote include agroforestry packages for improved environmental sustainability combined with farming diversification to increase productivity, irrigation systems, reservoirs, producers trading associations, and risk management.

In addition to the USAID-funded bilateral support for environment related activities discussed above, the Fund for the Initiative for the Americas El Salvador (FIAES) sponsors a large number of projects in the sector. FIAES is the result of a bilateral debt reduction agreement between the Governments of the United States and El Salvador that began operations in 1994. The fund has working capital in the amount of more than US$40 million to be drawn down over, tentatively, a 20-year period. Additionally in 2001, FIAES was chosen as the manager for another US$14 million from a Tropical Forest Conservation Act (TFCA) agreement destined to financing protected areas project activities. Its mission is to "manage and administer financial resources to support citizen participation through projects that contribute to protection and recovery of natural resources and the environment for the better development of the present and future generations of El Salvador" (FIAES 2003).

In its 2002 Report, FIAES reported that it had funded over 480 projects valued at approximately US$33 million with over 200 different NGOs and community-based groups (ADESCO). These projects sustain both development and environmental objectives in fields such as reforestation, management of protected areas, soil and water conservation and environmental education. There is also a strong component aimed at child survival development objectives.

Hurricane Mitch Recovery Program: Although not strictly an environment program, it is clear that the degraded condition of the upper watersheds of the Rio Lempa gave rise to the flooding as a result of Hurricane Mitch in 1998 that was to have such a dramatic impact downstream. The recovery program included activities aimed at economic revitalization, rehabilitation of community infrastructure, disaster preparedness and environmental management.

Rationale for the Tropical Forestry, Biodiversity and Water Resources Assessment

In 1987, the U.S. Congress amended the Foreign Assistance Act (FAA) to add Sections 118- Tropical Forest Conservation and 119- Biodiversity Conservation. The following are overviews of the specific requirements associated with these mandates:

Section 118- Tropical Forests: Each country development strategy statement or other country plan prepared by USAID shall include an analysis of (1) the actions necessary in that country to achieve conservation and sustainable management of tropical forests, and (2) the extent to which the actions proposed for support by USAID meet the needs thus identified.

Section 119- Biodiversity: Each country development strategy statement or other country plan prepared by USAID shall include an analysis of (1) the actions necessary in that country to conserve biological diversity, and (2) the extent to which the actions proposed for support by USAID meet the needs thus identified.

Accordingly, and as part of its ongoing efforts to design and program a new assistance strategy for El Salvador for the period 2005-2008, USAID/El Salvador has contracted the services of a tropical forestry/biodiversity/water resources assessment team under the BIOFOR IQC mechanism with Chemonics International Inc.

It is important to note that the tropical forestry, biodiversity and water resources assessment exercise is not specifically a programming or sector-wise design effort. Rather, it is an early environmental review of the Mission's new multi-year strategy for the country aimed at ensuring that:

- On the one hand, that the activities and investments foreseen under the overall strategy including all of its strategic objectives are not likely to lead to adverse environmental impacts on tropical forestry, biodiversity or water resources;

- Secondly, to identify opportunities for program synergy among the strategic objectives that could contribute to the conservation of tropical forests, biodiversity and water resource assets; and,

- Finally, to consider other needs and opportunities for USAID assistance in these areas that may fit well with the overall strategic thrust of the Mission's program in El Salvador.

The activities of the Section 118/119 Assessment Team are expected to assist USAID in defining to what extent its actions and investments as part of the upcoming country strategy will meet the needs in El Salvador for addressing tropical forestry and biodiversity conservation and, in this particular case, because of the inherent linkages, for water resources management and conservation. In effect, the Assessment will help USAID to justify its role and support in these areas by looking at the needs and opportunities, considering ongoing Government-funded priorities and programs, those of other donors or multilateral agencies and organizations and considering the fit for tropical forestry, biodiversity and water resources conservation within the

planned program and resource levels, and in line with USAID's comparative advantages in these areas.

Following the procedures customary with these Section 118/119 Assessments, the overall findings and recommendations contained herein will be incorporated by the Mission in the ongoing development of its strategy. The complete parent document – Tropical Forestry, Biodiversity and Water Resources Assessment – will be in the master Mission Country Strategy Plan files and available on request.

It should be further noted that this assessment does not substitute for the Initial Environmental Examination (IEE) of activities identified in the new strategy required by Reg. 216. Each Strategic Objective (SO) Team will be responsible for ensuring that an IEE or a Request for Categorical Exclusion is conducted at the SO level for all activities funded by USAID/El Salvador.

Current Programming Efforts

USAID has approved a Central American and Mexico (CAM) Regional Strategy for the period FY 2003-2008 that provides the overall framework for country-specific programming.[1] Like its sister Missions throughout the CAM Region, USAID/El Salvador's program is expected to contribute to the realization of the regional goal of "more democratic and prosperous Central America and Mexico, sharing the benefits of trade-led growth broadly among their citizens." (USAID 2003).

The new regional strategy will focus USAID investments within the three performance "arenas" foreseen under the Millennium Challenge Account (MCA), to wit:

- Ruling justly: more responsive, transparent governance.
- Economic freedom: open, diversified, expanding economies.
- Investing in people: healthier, better educated people.

In its brief to the Assessment Team, USAID/El Salvador has indicated that it sees its contributions related to the tropical forest, biodiversity and water resources conservation occurring mainly in the context of SO 2: Economic Freedom: Open, Diversified, Expanding Economies, and more specifically under IR 4: Improved Management and Conservation of Critical Watersheds. The range of illustrative activities foreseen under this CAM Intermediate Result (IR) 4 include:

- Technical assistance for sustainable tropical forestry activities to help certify and market legally sourced timber and non-timber products;

- Protected areas management interventions targeting sustainable economic alternatives in critical watersheds;

[1] Because of the serious earthquakes in El Salvador in 2001 and 2002 and the considerable disruption to development activities, USAID/El Salvador has had its ongoing country strategy extended for two years. Accordingly, its current programming efforts, of which this assessment is part, are expected to cover the period FY 2004-2008.

- Targeted policy interventions to facilitate civil society and local government participation in cultural and natural resource management;

- Technical assistance to promote more sustainable agricultural practices and improve systems for reducing contamination of industrial and human wastewater, increasing sanitation;

- Expert counsel to improve land use policies and their implementation, including regulations to provide for the valuation of environmental services required to sustain economic development;

- Technical assistance to develop and manage environmentally friendly economic activities, including major tourism sites, in priority watersheds;

- Technical assistance for more effective oversight of water resource use (including drinking water) and management (e.g., private user associations/municipalities);

- Development of watershed management plans that include community and private lands;

- Strengthened environment agencies at federal, state and local levels to more effectively implement policies particularly those that reduce water pollution and agricultural expansion in key watersheds; and,

- Activities that promote biodiversity conservation, carbon capture and sequestration. (USAID 2003).

Context and Background for the Assessment in El Salvador

With a total area of approximately 21,000 square kilometers and a population of well over six million, El Salvador is the smallest and most densely populated country in the Americas. Although there is a major transformation taking place in the country, leading to land use changes and abandonment of marginal rural farms, and with it, growing urbanization, the condition of the country's natural resources base has been a concern of the Government and its donor partners for more than 30 years. The situation – a large portion of the country deforested and converted to traditional agriculture, extensive areas of degraded watersheds with high sediment loads in surface waters – has been exacerbated in recent years as a result of urban industrial sector growth that is adding untreated effluents and solid waste to the challenges facing the environment sector in El Salvador.

The challenges of small size and high population density are further aggravated from an agro-ecological perspective by inherent land capability constraints. The topography is generally hilly and a very high portion of the total land mass has slopes over 15 percent (MARN 2003). Less than 18 percent of the total land can be characterized in Categories I to III of the USDA Land Capability Classification System, which are soils suitable for some form of conventional agriculture. Although the soils are mainly of volcanic origin and thus relatively fertile, they are also easily erodible, witness the very high erosion rates often found in hillside farming areas.

The occurrence of occasional severe tropical rain events from the Pacific or edge effects from Atlantic-based hurricanes frequently cause high rainfall run-off and intense erosion. Because the

country lies in an earthquake zone, many areas are prone to landslides that add to the clogging of the river courses and eventual flooding downstream. Adding to these circumstances is the fact that the short run of many rivers in El Salvador militates against the natural processes of siltation and sedimentation within the rivers and make it difficult for them to recover from contamination from pollution entering the stream. Indeed, the short run of many of the rivers in El Salvador magnifies the cumulative nature of adverse environmental impacts along their courses and underscores the all important and undeniable linkages between what happens in the uplands and the lowlands – something called the "ridge-to-reef" phenomena elsewhere but certainly extremely applicable in El Salvador.

Overall, and this is important for the conduct of an assessment of this nature, owing to decades of attention to the issue, there is a fair amount of data and information available that allows for sectoral analysis. The following table, extracted from the 2000 and 2003 (draft) versions of the National Report on the State of the Environment in El Salvador, provides a synthesis of some of the most pertinent data and information on the socio-economic and environmental situation of the country and in particular on the status of the tropical forests, biodiversity and water resources sector in the country. As the reader will note, however, the data and information contained in this report is something of a mixture of statistics and estimates that are in some cases inconsistent or even contradictory, making it difficult to use the data base analytically.

Table No. 1- Basic Data/Information on the State of the Environment in El Salvador

Soil Resources: - Percentage of total area being used inappropriately- > 50% - Lands with slopes greater than 15% - 49% - Estimated annual erosion rate - 59 million tons	Water Resources: - Potable water supply coverage - urban area - 91.8% - Potable water supply coverage - rural areas - 31.6% - Sanitation services available - urban areas - 86.67% - Sanitation services (latrines) available - rural areas- 53.6% - Economic activities that generate effluents without treatment - 70%
Protected Areas: - Proposed number of protected areas (SANP)- 118 - Existing officially recognized protected areas - 3 - Total area proposed for protection under SANP- ?	Forest Resources: - Total forested area - 26.49% - Total forested area with closed forest cover - 7% - Total forested area with open forest formations - 19% - Total area of mangroves - 38,038 hectares
Solid Waste: - Generation of solid waste at the national level - 2,347 tons/day - Number of municipalities that provide garbage collection - 183 (69%) - Number of municipalities with sanitary landfills - 19 (7.2%)	Air Quality: - Percentage of air pollution thought to emanate from vehicular emissions - 70%
Socio-Environmental Indicators: - Population Growth Rate - 2.0% - Average population density - 287 people/km2 - Average age of the population - 20 years - Life expectancy - 69 years - Infant Mortality Rate - 32/1000 birth	- Present Unemployment Rate - 7.3% - Illiteracy Rate - 19.5% - Population under the Poverty Line - 44.6% - Households in Extreme Poverty - 18.9%

Source: Informe Nacional — Estado del Medio Ambiente 2000 e Informe Nacional del Estado del Medio Ambiente — GEO 2002 — El Salvador Centroamérica (draft).

Assessment Methodology and Implementation Activities

This assessment has been carried out over the period December 2003 to January 2004 by a three-person team including an international Team Leader/Biodiversity-Forestry Specialist and two Salvadoran Biodiversity-Forestry Specialists. The complete scope of work (SOW) for the team may be seen as Annex A to this report. Brief biographical sketches of the team members can be found in Annex B. The methodology for the assessment was very straightforward and dependent primarily on secondary sources of information including a review of the existing literature (see Annex C) and extensive consultation, as is common in the U.S. approach to environmental review, through interviews with persons and institutions in the country active in and knowledgeable about tropical forests, biodiversity and water resources conservation (see Annex D for the List of Persons Consulted).

Additional annexes to this report include a list of environmental NGOs registered with MARN, found in Annex E; Annex F contains a list of bilateral and multilateral contributors to the environmental sector; an illustrated map of protected natural areas is found in Annex G; and a listing of these areas is contained in Annex H.

SECTION II

Policy, Regulatory and Institutional Framework

The Policy Context for Forest, Biodiversity and Water Conservation

There are a host of official policy statements albeit some of which are still under consideration, related to biodiversity, forest and water resources in El Salvador. The following table provides a summary of the most salient policy statements and their present status.

Table No. 2 - Policies related to Biodiversity, Forest and Water Resources in El Salvador and their Corresponding Status

Policy	Status
National Environment Policy	Approved by the Council of Ministers, Sept. 2000. The Law for Environment has been approved.
National Solid Wastes Policy	Issued as Agreement No. 50 of the Executive Body of MARN in the Diario Oficial No. 353 of 21 Nov. 2001. This policy has influenced the elaboration and benefited the approval of regulations at the municipal level (municipal ordinances).
National Policy for the Fight against Desertification	Approved as Agreement No. 55 by the Executive Body of MARN and published in the Diario Oficial No. 59, Volume 355, May 17, 2002. No regulations as yet.
National Protected Natural Areas Policy	Approved by Executive Agreement No. 69 and published in the Diario Oficial, No. 129, Volume 356 of July 12, 2002. The Law for Natural Protected Areas is awaiting to be approved in order to implement this policy.
National Policy for the Sustainability of Hydrological Resources	Currently in process of being signed by MARN.
Forest Policy	Approved by MAG in 2001; still awaiting official approval by the Technical Secretariat of the Presidency. No regulations as yet.
National Policy for the Management of Residual Waters	Currently at the level of a proposal.
Policy for the Ordering of Use of the Coastal Marine Resources	Currently at the level of a proposal.
Policy Guidelines for the Inventory and Monitoring of Biodiversity	This document represents basic inputs for the elaboration of a policy in this area.
Policy Guidelines for Access to Genetic Resources	This document represents basic inputs for the elaboration of a policy in this area.

The latter five of the above are under revision. Nevertheless, all of them are based on the principles of the Constitution of the Republic, the Environment Law and three macro principles established by the National Environment Policy, of Dynamic Equilibrium, Shared Responsibilities and Social Interest. The Constitution of the Republic mandates that it is the responsibility of the State to provide public services.

The New Alliance: Program of Government 1999-2004, a document that represents the explicit policy approach of the country contains the Alliance for the Future, which in its Institutional Program 135, is oriented to the establishment of the System of Protected Natural Areas and their Buffer Zones. Its focus promotes community participation in the management of the environment through support, overall orientation and the integration of efforts between the State and the communities so that the latter are able to resolve their environmental problems (República de El Salvador 1999).

The above approach is highly congruent with the approach established under the Biodiversity Convention (UNEP/CBD 2000) ratified by El Salvador by means of Legislative Decree in 1994 that promotes State-civil society participation in the management of biodiversity.

As related to the strengthening of networks for human development, the Comisión Nacional de Desarrollo (CND) considers that the NGOs and other entities of organized civil society are a valuable resource that offer development opportunities for a modernizing State. This decentralization strategy fits well with the general thrust of the programs promoted by USAID that focus their radius of action on the establishment of the structures of civil society for the management of development and environment programs (Rosa 1993, Barry 1993).

According to Article 144 of the Constitution of the Republic, international treaties approved by El Salvador become national laws of the land and enter into vigor once they have been ratified and published in the National Gazette ("*Diario Oficial*"). El Salvador has signed 11 international and six regional conventions related to the environment that directly or indirectly address the themes of biodiversity, forest and water resources (see Table 2).

Although there is still no law that deals directly with water as a resource (a draft law was widely debated without reaching political agreement and is currently in abeyance), there are a considerable quantity of laws that address the themes of biodiversity and forest resources. They include:

- Environment Law and its Regulations
- Wildlife Conservation Law
- Proposal for a Protected Natural Areas Law and its regulation
- Forestry Law
- Fishing and Aquaculture Promotion and Use Law
- Special Law for the Protection of the Cultural Heritage of El Salvador
- Municipal Code of 1986

Municipal Ordinances are legal norms prepared by each municipality in accordance with the Municipal Code of 1986 giving the municipal authorities the right to set standards and regulate themes related to the environment including biodiversity, forest and water resources. These Ordinances offer the opportunity to establish local norms that promote conservation and a more rational use of forest and water resources and biodiversity in general.

GOES Institutional Framework

In order to fully understand the institutional reality of the country as related to biodiversity and forest and water resources, one must understand that the institutional nature of government has been subject to significant changes since the negotiated end of the Civil War (1980-1992) reached under the Peace Agreement in 1992. Despite the decentralization of the State and the growth of the NGO sector at the end of the 1980s and beginning of the 1990s (see below), it was the Ministry of Agriculture and Livestock (MAG) that was the principal entity responsible for establishing the norms related to biodiversity, water and forest resources. The General Directorate of Renewable Natural Resources included the Watershed Service, the Soils Service, the Forestry and Fauna Service (1974), and the National Parks and Wildlife Service (1976).

As these services were established and became operational, the State itself initiated a wide range of projects from watershed management to protected area management. Many people remark on this period as the "Golden Era" for the State in these fields because the State actively participated as a primary protagonist in the development of in situ actions (personal communication, F. Serrano & H. Rosa, 2003).

At present, however, various governmental entities are involved in the management of biodiversity, forest and water resources; the principal organizations are: the Ministry of Environment and Natural Resources (MARN), the Ministry of Agriculture and Livestock (MAG) and the National Administration of Aqueducts and Drainage (ANDA).

Ministry of Environment and Natural Resources: The MARN, created by Presidential Decree No. 27 of 1999, is the principal Entity for environmental matters. Its mission is to guide effective environmental management through participatory and transparent policies and norms that facilitate the sustainable development of the Salvadoran Society (www.marn.org.sv). The MARN was the product of the strategy to modernize the State organizations, in this case through the transformation of the older Executive Secretariat of the Environment (SEMA), dating from 1991, and the absorption of the functions of the National Park and Wildlife Service (once a dependency of the Ministry of Agriculture and Livestock). See page 13 for the organigram of MARN.

At the operational level, there are three Directorates within MARN: Natural Heritage (Patrimonio Natural), Citizen Participation (Participación Ciudadana) and Environmental Management (Gestión Ambiental).

General Directorate of Natural Heritage: This Directorate includes four management areas:

- Protected Natural Areas and the Biological Corredor that is in charge of the management of the protected natural areas and the elaboration and implementation of norms in agreement with international conventions.

- Biological Resources, expected to promote the study and knowledge of biological diversity with the aim of achieving its conservation and rational use.

- Physical Resources, contributing to and monitoring the normative, institutional and coordination processes for the use and protection of physical resources (water, soils, air and climate of the country. As concerns soils, a policy and Soils Law is under preparation while for water, a Water Law and a Watershed Law are under preparation.

- Environmental Systems and Mangroves provides basic guidance on the use and protection of the natural resources of the environmental systems such as watersheds, interior valleys, wetlands, marine coastal zone and the priority geographical development areas. As concerns the marine coastal environment, MARN is specifically assigned responsibility for the management of oil spills and solid waste contamination and in guiding and managing natural protected areas and mangrove forests along the coast.

Together these four management areas are expected to manage the normative framework and processes for the conservation of biodiversity, forest resources and watersheds.

National Service for Territorial Studies (SNET): The SNET, also a part of MARN, is attached directly and operating under the Minister's Office, and has the prevention and reduction of the risk of natural disasters as its specific objective. It is the competent organization for the investigation of the phenomena, processes and dynamics of nature, the environment and society that are directly or indirectly related with the probability of occurrences of disasters and as such of the resulting economic, social and environmental losses and damages. The SNET is expected to promote and facilitate the incorporation of risk management in the policies, strategies, programs and projects that favor and stimulate the choice of interventions that public and private entities carry out for development purposes.

It is worth mentioning, however, that despite the Presidential Decree that led to its establishment and that defines its functions as the "formulation, planning and execution of policies related to the environment and natural resources," it also focuses its range of actions on guiding and establishing strategic alliances with the non-governmental sector so that these organizations implement field actions. For that purpose, the MARN has formulated a procedural manual for the participation of society in the management of protected natural areas (ANP) with the aim of ensuring the orderly implementation of co-management activities for these protected areas and their forest resources (MARN/PNUD/GEF 2002f).

The MARN also functions as the responsible government focal point for the series of related international treaties such as the Biodiversity Convention and the Ramsar Convention. Similarly, it is in charge of the application of the Environment Law, the Wildlife Conservation Law (joint application with MAG) and it is working for the approval of the Protected Natural Areas Law. The CITES Convention, administered in the past by the National Parks and Wildlife Service was

not transferred to MARN and continues to be administered by MAG because of its commercial implications.

The MARN also maintains an indirect institutional home for the two "debt-for-nature" swaps, FIAES (discussed above) sponsored by the United States whose Board of Directors is chaired by the Minister, and FONAES, a similar arrangement with the Government of Canada wherein MARN is part of its Governing Council.

Ministry of Agriculture and Livestock: The MAG maintains its mission of facilitating and fomenting the dynamics of sustainable agricultural, livestock, forestry, fisheries and rural area development by promoting profitable, competitive and sustainable businesses. At present, its major efforts are dedicated to the re-activation of the agriculture sector (coffee, sugar, basic grains, livestock and non-traditional crops) and to fisheries development (personal communication J. E. Suadi, 2003).

The MAG includes the following operational units: General Directorate of Plant and Animal Health, the General Directorate of Agricultural Economics, the General Directorate of Fisheries and Aquaculture, and the General Directorate of Forestry, Watershed and Irrigation Management.

There are also a number of autonomous official institutions that operate under the aegis of the Ministry, including: National Center for Agricultural Technology (CENTA), National Agriculture School, Salvadoran Institute for Agricultural Transformation (ISTA) and the Agricultural Development Bank.

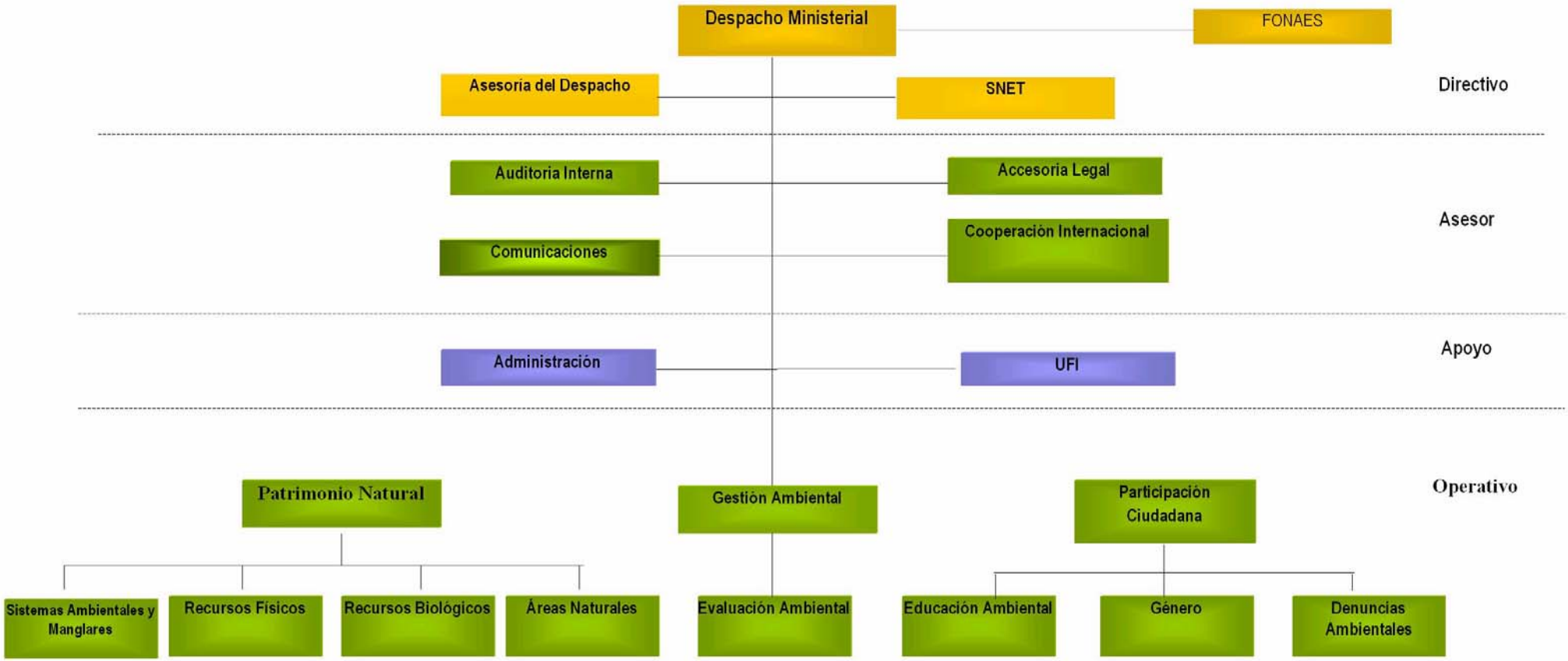
As concerns biodiversity, the MAG is both the administrative and scientific authority for the CITES Convention; the General Directorate of Plant and Animal Health is responsible as the administrative authority and the scientific authority is vested in the General Directorates of Fisheries and Aquaculture and Forestry, Watersheds and Irrigation. MAG is also the responsible entity for ensuring that the Forestry Law as well as the Fisheries and Aquaculture Use and Promotion Law are applied (personal communication, J. Olano, 2003).

National Administration of Aqueducts and Drainage: ANDA is specifically charged with the distribution of water resources and does not develop projects for the conservation and management of forests or aquifers. The Mission of ANDA is to provide (and help to provide) potable water supply for human consumption and to carry out the treatment of wastewater. For 2004, ANDA is planning a major integrated institutional change intended to improve the water supply and wastewater treatment services by applying a model of decentralized management.

Other Related Governmental Entities

The Ministry of Education through the Natural History Museum and the National Zoological Park of the National Council for Culture and Art (CONCULTURA) and the Salvadoran Tourism Corporation (CORSATUR) and the Salvadoran Institute of Tourism (ISTU) are also carrying out activities directly related to biodiversity themes.

Ministerio de Medio Ambiente y Recursos Naturales



On the one hand, the Zoological Park and the Natural History Museum are developing environmental education activities and carrying out research on native species that not only strengthen the data base on biodiversity in the country, but also lead to participation in joint conservation efforts with other governmental entities and the NGO community.

Similarly, CORSATUR and ISTU not only administer protected natural areas (Walter T. Deininger and Cerro Verde Parks) but also have some influence through their national and international tourism policies and programs.

Non-Governmental Organizations

In El Salvador, the participation and involvement of civil society in environmental activities is officially sanctioned by Article 10 of the Environment Law, as follows: "the Ministry of the Environment and other organizations of the State as they may be concerned, will adopt policies and programs intended to promote community participation in activities and works destined to prevent environmental deterioration." Although this law dates from 1998, non-governmental organizations, environmental NGOs, other civil society organizations such as the Associations for Communal Development (ADESCOS) as well as the academic-scientific community have been active in different environment programs and projects since the 1980s and even more so in the 1990s.

USAID financed the Environmental NGO Institutional Strengthening Project (FOPRAS) during the period 1993-1995 working directly with 19 NGOs that concentrated their work on environmental themes. To date, only seven of the 19 NGOs still exist and continue their environmental works, including: SalvaNATURA, CEPRODE, Montecristo, ASACMA, FUTECMA, FUNZEL, and AMAR. Environmental NGOs, including the 19 associated with FOPRAS, took on proactive roles in the management of protected natural areas during the period 1985-1994. At present, however, the environmental NGOs are less represented (only six) among those managing protected areas; social development NGOs (16), ADESCOS (three) and academic institutions participate more actively in this sector.

During 1993-1994, a series of different financing mechanisms were established to support citizen participation in natural resources and environmental protection and rehabilitation projects. These included: the Fund for the Initiative for the Americas (FIAES), the Environmental Fund of El Salvador (FONAES), and the Social Investment Fund (FIS), the latter only financing reforestation projects. These funds have provided numerous opportunities for the NGOs to implement environmental projects, but only a few of them have been able to consolidate their work in natural areas and biodiversity and achieve any kind of continuity because of the tendency to fund only short-term and very explicit projects.

The availability of funding led to a proliferation of more NGOs, many of which were unprepared for the activities required by these projects. Many also lacked a long-term organizational vision that would have allowed them to plan for both the present and the future and thereby assure some continuity in the geographical area where they were working. These funding programs also led to a rise in the capabilities of the ADESCOS that initially had been beneficiaries of the NGO environmental projects. Some of these ADESCOS were strengthened by their NGO partners to the point where they are now able to undertake their own independent programs of protected area

and wildlife management. On the other hand, the sources of funding have not maintained programs focused on specific geographic areas nor have they ensured the continuity of efforts initiated by the NGOs and the ADESCOS, preferring instead to focus on quantity of projects rather than quality and continuity.

At present, MARN has a register of 70 NGOs that carry out projects and/or activities in the environment sector that include reforestation, management of natural areas, wildlife conservation and management of solid wastes (see Annex E).

In the arena of management of protected natural areas, the participation of civil society first became operational in 1991, with the signing of the first agreement for co-management of El Imposible National Park with SalvaNATURA. Later in 1994, four additional agreements were established: the San Marcelino Protected Area by ASACMA, the Barra de Santiago by AMAR, the San Diego-La Barra by the Asociación ProHumedales, and the La Laguna by the Jardín Botánico. During the period 1995-2001, this process of participation by civil society organizations with the Government as the supervising entity in charge of natural areas continued and a series of different mechanisms were set up including technical cooperation agreements, letters of understanding, agreements for the development of protected area and wildlife management projects. The number of organized civil society groups participating in the management of protected natural areas and biodiversity increased from five NGOs in 1994 to 31 in 2003, carrying out activities in 40 different areas during the decade.

MARN undertook an intensive analysis of NGO performance in the sector based on consultation with and active participation of the different sectors of civil society over the last two years. Among the weaknesses identified during this process of diagnosis of NGO participation were:

- development of activities without an initial legal agreement that limited the continuity of the signed agreements;

- some of the activities of the NGOs were being developed without appropriate criteria to define their physical or thematic limits;

- in delegating responsibility to the NGOs, the institutional role of the central Government agencies became unclear and the sporadic presence or total absence of the technical staff of the Government became more notable; and

- there was a lack of effective coordination among government entities and the NGOs thereby leading to less continuity (MARN/PNUD/GEF 2002d).

Based on this growing experience with civil society participation in the management of natural areas and biodiversity and as an outcome of this analysis, MARN was able to establish a series of new guidelines, procedures and strategies for carrying out a more orderly approach to these joint efforts (see MARN/PNUD/GEF 2002e).

Bilateral and Multilateral Donors Engaged in the Sector

International cooperation in the environment arena took on a much higher profile in El Salvador after the Rio Summit in 1992. USAID designed and implemented the "Programa de Medio Ambiente de El Salvador" (the El Salvador Environment Program), known initially as "PROMESA" from 1992 to1996 and later as the Green Project that funded focused efforts on formal and informal environmental education, the development of hillside agricultural practices in the Barra de Santiago-El Imposible watershed, and the strengthening of the national policy and legal framework for the environment.

Similarly, in June 1993, two "debt for nature swaps" were formalized with the United States and Canada. They began their activities in 1994 through the Fund for the Initiative for the Americas of El Salvador (FIAES) with an amount of over US$40 million to be disbursed over a tentative period of 20 years, and the Environmental Fund of El Salvador (FONAES) with an amount of approximately Canadian $8 million to be disbursed over three years. Additionally, in 2001, FIAES was entrusted with another US$14.0 million under the Tropical Forest Conservation Act (TFCA) to be used to finance activities in protected areas, tentatively, until 2026.

According to its Annual Report for 2002, FIAES has financed 436 projects valued at more than US$30.6 million with 202 different NGOs and ADESCOS. For its part, FONAES has to date administered 406 projects worth about US$5.9 million at the country level in areas of conservation and use of water resources, reforestation, soil conservation, conservation and increase of biodiversity, environmental education and institutional strengthening.

In 1994, when El Salvador signed the Convention on Biological Diversity and the Framework Convention on Climate Change, the country became eligible for financial assistance from the Global Environment Facility (GEF) in order to assist in filling its contractual obligations under these international environment agreements. The GEF funds, administered by the United Nations Development Programme (UNDP) and implemented by MARN were used to produce a series of key biodiversity reports: the National Strategy for Biodiversity, the Biodiversity Plan of Action, the First and Second Country Reports on the Status of Biodiversity in El Salvador, and the First Communication on Climate Change (1997-2002).

A great deal of the international cooperation that reaches El Salvador comes through bilateral cooperation agreements that the country maintains with a variety of countries and multilateral organizations; the most noteworthy are: USAID, GTZ, the Spanish Agency for International Cooperation (AECI), and the Inter-American Development Bank (BID), the World Bank, UNDP, and the European Union. The Ministry of Environment and Natural Resources presently has a portfolio of bilateral and multilateral cooperation involving more than 40 projects under implementation or being negotiated for themes as diverse as direct sector investments to strengthening of the institutional, policy and legal framework, with a total grant amount of approximately US$21.6 million (see Annex F).

As part of regional initiatives El Salvador has also been the recipient of international cooperation in the form of programs and projects that have played an important role in the management of biological resources and natural areas both locally and for the region. Under the agreement

between the United States and the Central American Region known as CONCAUSA there were opportunities to carry out projects financed by USAID through the Regional Environmental Program for Central America (PROARCA). Under the aegis of the Central American System of Protected Areas Program (PROARCA-CAPAS) projects in this field were carried out for five years (1996-2000) while the coastal component, PROACRCA-COSTAS, got involved in the management of marine coastal areas with local communities.

DANIDA is also supporting regional projects such as the Coastal Ecosystems Conservation in the Gulf of Fonseca Project being implemented by Honduras, Nicaragua and El Salvador. This project is promoting the sustainable development of the Gulf of Fonseca shared by the three countries and in particular on the rational utilization of the marine floristic and faunal resources of the Zone. Similarly, DANIDA is in the process of launching its support for a regional project targeting transfrontier watersheds.

Recently, the present trends in external cooperation in the water sector has been catalogued on an interactive CD-ROM prepared by the Project to Strengthen Environmental Management in El Salvador (FORGAES), funded by the European Union and implemented by MARN. As a result there is a record of 24 cooperating organizations that have contributed approximately US$114 million in recent (1996-2004) years, 85 percent of which went for infrastructure (potable water systems) and the remaining 15 percent to investments related to legal, social and information dimensions.

The interventions can be grouped into four categories:

- studies and research providing information and documentation on diagnosis of water supply systems and the evaluation of pollution;

- social programs aimed at the creation of support mechanisms and the processes of strengthening people in the management of water resources, creation of administrative boards for water resources management, environmental education, training, etc.;

- infrastructure including building or repair of structures for potable water supply systems and waste water treatment plants; and

- legal aspects including equipping the sector with the foundations for water law, formulation of municipal ordinances and drafting proposed sector laws.

According to the 96 “action-intervention files” recording the activities of these 24 organizations, the largest number of organizations concentrate their work in the social area (20 different organizations with a total project value of approximately US$11.7 million) followed by those focusing their activities in infrastructure –18 organizations with a total project value of approximately US$100 million (see MARN Web site for more information on these activities).

Role of the Commercial Private Sector

Natural ecosystems provide valuable environmental services that need safeguarding. One measure considered has been to seek innovative solutions that would aid in resolving the

problem of the loss of these services. Since March 2002, the MARN began an EcoServices Project, financed by the World Bank and the GEF and with technical assistance from UNDP/FAO.

The aim of the project is to contribute to the reality that in El Salvador hillside ecosystems can be managed sustainably using market instruments. The project is expected to facilitate joint private-public participation in environmental management by using these market mechanisms through a system of costs and payments for environmental services. The project falls within the framework of the Mesoamerican Biological Corridor and also coincides with national proposals put forward in the "Plan de Nación" and in the findings of the National Encounters of Private Enterprise (ENADE 2002 & 2003).

The project has moved forward gradually developing a critical mass in favor of market-based economic instruments. It has also been organizing and/or participating in events with the Permanent Roundtable on Payment for Environmental Services made up of different national institutions, representatives of FUSADES, CONACYT, PRISMA, the National Development Commission, ANEP and has also presented the initiative to representatives of the private sector in ENADE.

To date, MARN has put in perspective the creation of alliances with the private sector through the establishment of a environmental services compensation trust fund. A first Salvadoran private enterprise – La Constancia (the local brewery) – has signaled its willingness to participate by initiating the first agreement. MARN is in discussions with other important private sector companies (i.e., Coca Cola) and has also been discussing the approach with ANDA and CEL.

The model that MARN is designing views the protected natural areas that provide environmental services as the priority zones for the program. A survey of the baseline for two conservation areas – Los Volcanes and Jiquilisco-Jaltepeque – is being carried out. The management interventions for which payment for environmental services are being considered include sustainable agriculture, reforestation, agroforestry and soil and water conservation, all emphasizing the importance of water resources.

SECTION III

Status and Management of Protected Area System

The process of identification and evaluation of natural areas and their potential for the establishment of conservation units got under way in 1974 with the creation of the Forestry and Fauna Service and its National Parks and Wildlife Unit within the Ministry of Agriculture and Livestock (MAG). The first natural areas to be brought under management were Montecristo, El Imposible, Laguna El Jocotal, Barra de Santiago and Los Andes (see Annex G, Map of Protected Areas).

In 1980, the agrarian reform process promoted by the Government of that period led to the expropriation by the State of the larger farms over 500 hectares. This opened the possibility of adding some of the larger forest relicts found on these larger farms to the system of protected natural areas (Reyna et al, 1996, in MARN/PNUD/GEF 2002d). The "first wave" of the Agrarian Reform affected farms on which there were 90 of these forested areas. During the 1990s, the strategic planning process for the national system of protected areas continued with support from IUCN and culminated in the proposal to create the Salvadoran System of Protected Areas (SISAP). This brought the total of areas under the system to over 120 (SEMA 1994, in MARN/PNUD/GEF 2002d).

Table No. 3 - Natural Areas with potential to be incorporated into the System of Protected Natural Areas - SANP (MARN/PNUD/GEF 2002d)

Natural Areas	No. of Areas	Total Area (hectares)	% of SANP
In the process of being transferred	43	11,300.1	26.5%
Transferred to the State for assignment under MARN	57	10,635.3	25.%
State (Ministry of Agriculture and Livestock)	7	7,773.4	18.2%
State (Salvadoran Institute of Tourism)	2	769.7	1.8%
Municipal Areas	7	1,123.9	2.5%
Private Areas	12	10,955.	26.%
Total SANP	128	42,557.4	100.%

In 1998, with the promulgation of the Environment Law, the System of Protected Natural Areas (SANP) was officialized (Title IX, Article 78) and those areas previously legally established were included in it, namely, Montecristo National Park, El Imposible National Park, and the Protected Natural Area La Laguna El Jocotal. The SANP included six management categories, five which were derived from the IUCN classification system and one country-specific category (Reyna et al, 1996, in MARN/PNUD/GEF 2002d). Said categories were as follows:

1- National Parks – Category II-IUCN
2- Natural Monuments – Category III-IUCN
3- Habitat/Species Management Area – Category IV-IUCN
4- Protected Marine and Terrestrial Landscapes – Category V-IUCN
5- Protected Area with Managed Resources – Category VI-IUCN
6- Restoration and Protection Area

The functions and personnel of the National Parks and Wildlife Service (of MAG) were subsequently relocated and became part of the Ministry of the Environment and Natural Resources. The process of consolidating the System of Protected Natural Areas (SANP) was also identified as a priority activity within the Government Program 1999-2004, in line with the recommendations of the National Strategy for Biological Diversity (MARN/PNUD 2000).

The majority of the areas with potential for inclusion in the SANP are forested areas with relatively little human intervention re identified during the Agrarian Reform process that began in the 1980s. The most up-to-date compilation identifies 128 proposed areas (see SANP Map in Table 4 on the next page) with a total area of 42,557 hectares (MARN 2002).[1] This figure includes the three officially established (and cited above); the rest are currently being analyzed and reorganized from the territorial perspective, especially those that were part of the agrarian reform sector presently under the auspices of the Salvadoran Institute for Agrarian Transformation (ISTA) and that are expected to be handed over to MARN for their management. (See Tables H-1 and H-2 in Annex H).

Management plans have been prepared for nine of these areas, however, none of them have been validated or made official by MARN.[2] Similarly, there are other management plans formulated more than two years ago, however, observations made by MARN have yet to be incorporated so plans remain incomplete. In some cases, certain areas have more than one management plan prepared by different consultants or organizations. Hence there has been a certain lack of validation that hampers the implementation of these management plans and suggests that they have not yet been fully consolidated as protected areas.

For the major part of the areas, the management category of "Restoration and Protection Area" has been suggested because this represents a transitory management category. This category is defined as follows: "a protected area being managed principally for protection, recuperation and restoration of the ecosystems. It should demonstrate signs of being or having been subjected to strong pressures, both real and potential, of over-exploitation of the resources it contains. In general, these areas present low priority for recreation or tourism. They should offer opportunities for nearby communities through well planned development of the area and orientations for their future use" (Proposal for the Protected Natural Areas Law, MARN 2003a).

[1] The figure of 128 natural areas varies according to the document being cited. GEO 2002 uses the figure of 118 because some of the areas were considered parts of larger complexes thereby reducing the total number.
[2] Those with management plans include: El Imposible (López Zepeda 1995a, Moore et al. 1997), Laguna El Jocotal (Benítez 2000), Conchagua (López Zepeda 1995c), Los Farallones (FUNEDES 2001), San Juan Buena Vista (ASISTEDCOS 2000), Nancuchiname (López Zepeda 1995b), Barra de Santiago (GreenProject 1994), Parque Nacional Montecristo (CATIE 2002) y San Diego y La Barra (CATIE 2002).

The principal pressures on the natural areas under consideration are the advance of the agricultural frontier, poverty and the conflicts with local communities, settlements and illegal colonization, erosion and soil degradation, burning and forest fires, unregulated extraction of resources, and the destruction of marine and coastal ecosystems. These pressures lead to the following impacts: loss of wildlife and biodiversity resources and the loss of environmental goods and services that limit their eventual possibilities for socio-economic development.

In response to these pressures, different international organizations are directly or indirectly supporting the process of management of the System of Protected Natural Areas. The Spanish Agency for International Cooperation is providing technical assistance for Montecristo National Park and La Laguna El Jocotal. An agreement has also been established with the Autonomous National Park Organization of Spain as part of a regional initiative that is focused on Central American System of Protected Areas (SICAP), and more specifically as concerns El Salvador, on Montecristo and the San Diego–La Barra in the west and the Conchagua Complex (Maquigue III, El Faro Yologual y Suravaya) in the east and related to the Gulf of Fonseca.

Similarly, USAID through PROARCA-CAPAS is providing assistance for the management of areas related to the Gulf of Fonseca. The Danish Agency for International Development (DANIDA) has been supporting a project involving five neighboring municipalities of the Gulf of Fonseca since 1997. Furthermore, with funds from the RAMSAR Convention for the Conservation of Wetlands, a project coordinated by MARN has been initiated for the Restoration of the Wetland Habitats of the Cerron Grande reservoir. This same project has also elaborated technical profiles for the wetlands related to the San Diego–La Barra Natural Area in Santa Ana and the Barra de Santiago Natural Area in Ahuachapán.

Table No. 4 - Description of the Situation of the Protected Natural Areas in El Salvador (MARN/PNUD/GEF 2002d)

Description	Figures
Total Area of the Country	2,104,079. has.
Total Area of the System of Protected Natural Areas (SANP) - 128 terrestrial areas.	42,557.4 has.
Percentage of the National Territory covered by the SANP	2.02%
Total Area of the SANP for which there is an institutional presence of the State - 7 areas	11,217. has.
Percent of the SANP for which there is an institutional presence of the State - 7 areas	26.3%
Total Area of the SANP for which there is an institutional presence of civil society (NGO or ADESCO) - 22 areas	13,393. has.
Percent of the SANP for which there is an institutional presence of civil society (NGO or ADESCO) - 22 areas	31.4%
Percent of the SANP for which there is no institutional presence	42.2%
Average number of hectares per terrestrial natural area	346. has.
Projected Marine Area to be brought under Protection	15,795. has.

The proposed Protected Natural Areas Law formulated by MARN is ready to be approved by the Legislative Assembly. However, there is only limited institutional capacity within the Ministry to effectively apply this law. Considering this situation and the ongoing efforts at decentralization by the State, the co-management model establishing the modalities for joint administration Civil Society–Government takes on greater importance for the natural areas. This process of co-management is currently being financed with local funds from entities such as FIAES, FONAES and the Small Donations Program of UNDP.

SECTION V

Status and Protection of Endangered Species

Information about wild species in El Salvador is mainly limited to lists citing the occurrence of given species in specific geographic areas. For only a few groups or species is there any information on their biology, ecology or conservation status. Research on the biodiversity of flora and fauna in El Salvador has been concentrated mainly on trees, orchids, farm weeds and terrestrial vertebrate fauna, although there are also a few studies on macro-invertebrates, marine fish and other aquatic organisms. This lack of information has limited the preparation of the definitive list of threatened or endangered species in El Salvador (MARN/PNUD/GEF 2002a).

The institutions that have contributed to research on the biodiversity of the country are: the Natural History Museum, the La Laguna Botanical Garden, the National Center for Agricultural and Forestry Technology (CENTA), the University of El Salvador and the Ministry of Environment and Natural Resources. Despite these efforts, the published record on biodiversity in El Salvador remains dispersed and found in collections abroad. The country does not have a biodiversity information and monitoring center.

The former National Park and Wildlife Service and the Autonomous Authority for CITES (1976-1997) prepared lists of threatened and endangered species following the biological classification criteria of IUCN (see UICN/ORMA/WWF 1999). These lists not only considered the species found in Appendices I, II, and III of CITES, but also took into account data reported in the scientific literature, in academic studies or by logical inference based on determining factors such as the status of habitat conservation, geographic distribution, human pressures for use and commercialization, among others.

MARN has been in the process of updating these lists with the aim of making them official (personal communication, E. Lopez Zepeda 2003). There is an expectation that these official lists could be useful as a mechanism for applying the new Wildlife Conservation Law (República de El Salvador 2001a).

Status of Flora

A total of 6,594 species of plants have been recorded in El Salvador (2.58 percent of all those described worldwide). The botanical families most commonly described in the country are: Leguminosas (*n*=633), Orquídeas (*n*=521), Compositas (*n*=520), Gramíneas (*n*=403), Rubiaceas (*n*=214), Ciperáceas (*n*=173), Euphorbiaceas (*n*=162, Solanaceas (*n*=142) and Bromelias (*n*=127).

The number of endemic plant species is about 30, represented principally by bromeliads, orchids, ferns, herbs, shrubs and trees. These occur in the Montecristo and El Imposible National Parks and on the Cacahuatique and El Pital Hills. At least 240 plant species are thought to be threatened or in danger of becoming extinct, representing about four percent of the total number of plants found in the country. This relatively low number may not faithfully reflect the real conservation status of plants because relatively little is known about plant populations and their

dynamics. It is, however, notable that the species under the most pressure are the orchids which constitute 40 percent of all the threatened species (see Table No. 5).

Table No. 5 - Threatened Species of Flora by Group

Groups	No. of Threatened Species	Percentage of Total Threatened Species
Ferns	14	5.8%
Herbs	26	10.8%
Shrubs	23	9.6%
Trees	65	27%
Palms	4	1.7%
Bromeliads	12	5.%
Orchids	97	40.%
Total	240	100.%

Source: MARN/MOP 2003a.

In the current legislation, there are no legal mechanisms that regulate the extraction and sale within the country of wild plants such as orchids, bromeliads and cacti. Only the Forestry Law regulates the cutting and exploitation of trees (República de El Salvador 2002b).

Status of Vertebrate Fauna

Despite its small size and the degradation of its natural areas, a total of 1,539 vertebrate species have been recorded in El Salvador, which represents 3.7 percent of the species on the planet (MARN/MOP 2003a). Some species such as the Jaguar, the Tapir, the Giant Anteater, the Scarlet Macaw and the Crested Eagle have been extirpated in El Salvador. Actually, 391 vertebrate species are listed as threatened or in danger of extinction, which represents 25 percent of the total number of species recorded in the country (see Table No.6).

Table No. 6 - Threatened or Endangered Species by Faunal Groups in El Salvador

Group	Total Species	Threatened	Endangered	Percentage
Fish (marine and continental)	742	2	3	0.7%
Amphibians	30	23	3	86.7%
Reptiles	97	43	21	66.%
Birds	528	141	112	48.%
Mammals (marine and terrestrial)	142	23	20	30.%
Total	1,539	232	159	25.%

Source: Interviews with MARN staff, 2003; there are other sources that provide similar figures (see MARN/PNUD/GEF 2002a), however, MARN/MOP 2003a is the most up-to-date.

The regulations associated with the Wildlife Conservation Law are presently being formulated and are expected to bring greater power to the application of the law. At present, only the

regulations related to the establishment and management of captive breeding of wildlife species for ex situ reproduction exists. Hunting is managed by means of licenses authorized by MARN. As yet, however, there is neither an official calendar of hunting seasons nor any legal instrument for regulating hunting activities. The General Law for the Regulation and Promotion of Fishing and Aquaculture, although it is largely focused on productivity rather than protection, represents a legal instrument that provides opportunities to establish mechanisms tending to the conservation of threatened or endangered species (República de El Salvador 2001a).

SECTION V

Status of Forest Resources in El Salvador

El Salvador, because of its climatic and soils conditions, was once without doubt completely covered by forests, from the mangroves along the coast to the pine and fir forests of the northern highlands. Conventional wisdom suggests that because of its small size, relatively large population and a succession of commercially oriented agricultural schemes, that the country has all but been denuded and that the remaining forest area is minimal. Indeed, Terbourgh in his 1999 work "Requiem for Nature," indicated that "In El Salvador, nature has been extinguished" (Terbourgh, 1999 as quoted in Hecht & Rosa 2002). This somewhat somber viewpoint belies the real situation as any reasonable observer would note in visiting El Salvador and its countryside. The real status, however, of the forest resources in the country is presently difficult to ascertain. Table No. 7 provides a synopsis of the available data on the forest cover situation in El Salvador.

Table No. 7 - Forest Cover Estimates for El Salvador (hectares)

Forest Type	DGRNR 1978	Núñez et al 1990	Cruz & Gómez 1996	MARN 2000	Uso del Suelo 2002	FAO 2003
Conifer	48,500	25,000	25,000	48,500	76,400	
Broadleaf	90,700	52,000	52,000	90,800	77,400	
Mangrove	45,300	45,000	39,200	35,800	41,500	121,000
Plantation	5,800	7,000	4,800	5,800	6,500	14,000
Sub-Total	190,300	129,000	121,000	180,900	202,000	134,000
Coffee Shade	187,200	164,900	164,900	195,000	160,900	na
Total	377,500	29,3900	285,900	375,900	362,900	134,000
Percent Forest Cover	18.2%	14.2%	13.8%	18.1%	17.5%	6.5%

Sources: The first five columns are a verbatim transcript of "Cuadro 1 - El Salvador: Estimaciones de superficie forestal por tipo, 1978-2002", taken from Cuellar et al 2003; the last column is from the FAO Forestry Department publication: State of the World's Forests 2003. The final row is a simple calculation by the authors of percentage forest cover based on a total country area of 2,072,000 hectares. na = not available.

The variability of this data prompts *a series of observations* about tropical forestry sector development in the country, including:

- It should be noted that these figures include all the forest cover presently found in protected natural areas and those areas whose candidacy for inclusion in the System of Protected Natural Areas is still under consideration.

- There are presently too many contradictions in the available data and information to allow for any degree of confidence in the present figures. Clearly, the issue of how much forest cover there is in El Salvador can only be resolved with a new forest inventory.

- Shade-grown coffee is an agroforestry system of considerable extent and importance to the country. In addition to the significant amount of firewood harvested as a result of pruning to manage the shade, the tree cover helps to protect some of the better but highly erodible soils of volcanic origin and adds a measure of watershed stability and biodiversity conservation of vital importance. There is some concern that the present low prices for coffee will prompt farmers to tear out the coffee plants and replace them with basic grain crops, along with the shade trees that nurture them. The Assessment Team believes that it is highly unlikely that the coffee crisis will lead to such a radical reaction on the part of the farmers. The coffee farmers of El Salvador have lived with uncertainty about coffee prices for decades. One way of keeping coffee shade would be to look at some sort of incentive to coffee farmers, beyond the marketplace that would encourage them to maintain shade coffee and with it the trees, such as a *pago por servicios ambientales* approach and/or to continue to promote "boutique" coffee targeting environmentally sustainable, high quality coffee production and marketing.

- Changing land use patterns as a result of "a complex blend of remittances, wage labor, migration and shifts in the national economy" are probably leading to an increase in the area under forest in El Salvador (Hecht, Rosa & Kandel 2002a). The natural successional processes on abandoned farm lands will in most cases restore the vegetative (and later forest) cover that in turn will have a positive impact on the functions of soil protection, soil fertility and permeability enhancement essential for watershed integrity.

- Although the overall percent of forest cover is an important indicator figure for any country, it is the rate of loss of forest cover that merits the greater attention. FAO reports an annual rate of forest cover loss for El Salvador of 4.6 percent in the period 1990-2000 (FAO 2003, cited in Hecht, Rosa & Kandel 2002a). The same circumstances mentioned above give reason to believe that the all-important deforestation rate has been sharply attenuated and perhaps even reversed.[1]

- The changing land use patterns and the microeconomics of production on marginal lands in the hilly areas of El Salvador suggest an opportunity to regroup and reactivate a modest program of reforestation. Tree crops whether for wood, non-wood forest products or fruit represents an attractive, perennial land use option enabling local people to maintain the productivity of land taken out of traditional farming. As El Salvador imports the majority of the wood products it presently uses, there is some reason to believe that there would be a viable marketplace for home grown wood products. The keys to success with such an endeavor, however, will depend on the effectiveness (appropriate siting and species choice, good survival and plantation maintenance) and efficiency (reasonable

[1] A comprehensive discussion of the present status of forest cover in El Salvador is beyond the scope of the present study. The interested reader should refer to the well documented paper prepared by PRISMA, as follows: *Globalization, Forest Resurgence and Environmental Politics in El Salvador* by Hecht, S., Rosa, H. and Kandel, S., 2002.

costs incurred to establish and maintain plantations), which are challenges that should not be taken for granted by either Government or its donor partners considering this option.

SECTION VI

Status of Conservation Outside Protected Areas

In addition to its System of Protected Natural Areas that presently protects only a small fraction of the national territory, tiny El Salvador has a series of other critical ecosystems in which there are needs and opportunities for natural resources conservation and sustainable development. They include: the mangroves, the marine coastal environment, the wetlands and the semi-arid zones. Furthermore, because of the generally hilly topography and fragile soils, soil and water conservation is an important imperative on the farms and agricultural lands of the country.

Mangrove Ecosystems

These mangrove ecosystems, the estuaries they protect and adjacent nearshore wetlands are of great importance for both their ecological values and for their economic contributions. These mangrove forests provide habitat for a large number of plant, animal, fish and crustacean species adapted to the special conditions of the saltwater-freshwater interface. Their ecological value is enhanced by the fact that the mangrove ecosystems provide nursery areas for many species of sea life important to the adjacent Pacific Ocean ecosystems, including many commercial species such as: shrimp, crabs, finfish, and a wide variety of shellfish.

In addition, these mangrove formations provide an important buffer protecting the coast against the ravages of offshore hurricanes and storm surges in the Pacific. Like much of the rest of Central America, good reliable data on the condition and change patterns within the mangrove ecosystems is lacking (Windevoxhel & Imbach 2000).

There are four important areas of mangrove ecosystems along the coast of El Salvador: Golfo de Fonseca, Jaltepeque Estuary, Jiquilisco Bay and the Barra de Santiago. Jiquilisco Bay, located in Usulután Department, is the largest estuary in the country and includes almost 23,000 of the approximately 40,000 total hectares of mangroves. The Bay includes 27 islands inhabited by many communities whose livelihoods are based on the marine coastal resources.

Over the years, the mangrove ecosystems have been much affected by inappropriate resource use patterns for both tree-based and fisheries resources. They are also typically quite sensitive to and act as an accumulation point for contamination by solid wastes as well as being affected by domestic, industrial and agricultural pollution sources. The mangrove ecosystems of El Salvador has also been adversely impacted by the high sediment loads carried to them by rivers flowing out of degraded upstream watersheds. Fortunately, in many of the mangrove areas, there are incipient natural resource management projects being undertaken by ADESCOS and NGOs with funding from the Government and the international community. It is worth noting that all mangrove systems in El Salvador are set to receive the status of protected natural areas under the newly proposed but not yet ratified Protected Areas Law.

Marine Coastal Ecosystems

El Salvador's coastline extends 321 km along the Pacific Ocean shore. To the northeast of the country and in neighboring Guatemala and southern Mexico, long sandy beaches predominate. To the southeast of El Salvador and in Nicaragua and Costa Rica, the coast presents a series of gulfs, peninsulas, rocky shores and cliffs (Gierloff-Emden, 1976). Because of its geographic location, El Salvador's coast is characterized by a transition between these two coastline types; it contains both extensive sandy beaches and estuaries as well as rocky shores and cliffs, and an important rocky reef systems with coral growth (Ministerio de Cultura y Comunicaciones, 1986).

These rocky reefs are considered to be the most species-diverse marine systems in the country (i.e., Los Cobanos; see Serrano, et al, 1996) where growing evidence is suggesting that the number of undescribed species may be high (Garcia-Rios et al 2003).

Sandy beaches are nesting grounds for four of the eight endangered species of sea turtles in the world (Hasbun and Vasquez 1999). However, the rapid proliferation of beach houses (most of the coastline has been developed) and the artificial light produced at night by these beach homes threatens their nesting grounds. This situation can become aggravated by the introduction of large tourism consortiums and shrimp farms especially in the Jiquilisco Bay area (personal communication, Garciaguirre, A., 2003).

Even though both sandy and rocky shores have representative areas that have been considered as part of the country's protected areas (i.e., Barra de Santiago, Isla San Sebastián, Isla Martín Pérez), more than 95 percent of the coastline remains unprotected (see Annex G, Map of Protected Areas).

Wetland Ecosystems

Wetlands in any country are typically among the most productive and often most diverse ecosystems because the combination of water resources and the primary productivity of the large numbers of plant and animal species found therein. Their role in mitigating the extremes of the hydrological cycle is increasing in importance given the degradation in the upland watersheds that feed them. Wetlands, of course, also provide neighboring communities with sources of production and income during the long dry season typical of certain parts of El Salvador.

La Laguna El Jocotal was the first wetland officially registered by the Government as part of its agreed obligations under the Ramsar Convention. El Jocotal, now part of the Protected Natural Area System, is located in the San Miguel Department and has a total area of approximately 1,500 hectares of which 900 is the area of open water of the lagoon itself. This site is considered especially important as habitat for birdlife, in particular for migratory waterfowl. People from adjacent communities fish in the lagoon and use other natural components of the ecosystem, especially fringe areas for dry season grazing.

There are a number of other important wetland sites identified as potential areas for inclusion under Ramsar by the Government; they include: Guija Lake, the Barra de Santiago, the Olomega Lagoon, and the wetlands around the margins of the Carrón Grande Reservoir. This latter area is considered especially strategic because of its potential for agricultural production and as an area

for the development of outdoor recreation and tourism. A draft plan for environmental and socio-economic development of the Carrón Grande wetlands and reservoir margins has been prepared anticipating joint actions among Government agencies, civil society, and international assistance in support of these efforts by the 11 municipalities that surround it.

In general, however, the wetland ecosystems of El Salvador have not received the attention they deserve from an environmental perspective; witness the scarce discussion and analysis of their situation in the principal sector documentation.

Semi-Arid Ecosystems

El Salvador ratified the United Nations Convention for the Fight against Drought and Desertification in 1997 and has embarked on a modest program to implement the obligations assumed in this agreement. There are some indications that the process of desertification is manifesting itself in certain areas of the country, for example, around Lake Guija and other parts of Morazán Department and in certain municipalities of La Unión Department (Aguilar, Y. 2002). In a report prepared for the United Nations as part of the Convention, it was noted that there is great need for further study and research on the extent of the phenomena of desertification and on its rate of spread and severity in El Salvador (ibid).

Several special circumstances motivate this concern for the phenomenon of desertification in El Salvador. For example, there is some evidence to suggest that the impacts of the now recognized El Niño climatic events in the Pacific, known to delay the onset of the rainy season and diminish its intensity overall, will have even greater impacts on the degraded soils of the lower rainfall zones of the country thus severely affecting agricultural productivity and food security among the population of these areas. Degraded, overworked soils, poor in organic matter content – one of the indicators of localized desertification – will also be more highly affected if the phenomena of the "canícula" – short periods without rainfall in the early part of the rainy season – are prolonged as a result of El Niño. A severe "canícula," particularly in the eastern part of the country, can cause young crops to wither and die in a farmer's field and radically undermine the harvest on which household food security depends.

Farming Systems and Agroecology

While the desertification dilemma alluded to above is a rather severe example of environmental impacts on managed natural systems, there has long been much more concern about the overall environmental sustainability of farming and the agroecology on which El Salvador depends, even in the better watered Humid Sub-Tropical Zone (according to Holdridge's1975 life zones). The dearth of lands suitable for conventional open furrow agriculture because of soils and slope constraints (less than 18 percent of the total land area or 350,000 hectares, according to the USDA Land Classification System, GEO 2002, MARN 2003), as compared to the area actually under cultivation, shows why there has been so much attention to soil and water conservation practices in El Salvador over the years.[1]

[1] A full study of the actual and potential land use in El Salvador is something beyond the scope of the present assessment. It is another area where the current data sets defy easy interpretation given wide-ranging values over the years and/or changing classification systems that cannot be easily explained. However, several useful and historical publications can be consulted by

Historical data suggests that as much as 650,000 hectares were under agriculture and almost 600,000 in grazing lands (OEA 1974, cited in MAG/MARN/FAO 2002. Foro Nacional: Sequía y Desarrollo Sostenible, San Salvador, 18-20 de septiembre 2002). A more recent study suggests that by 2002, the total area cultivated for basic grain crops (corn, rice and beans) had been reduced to 348,700 hectares or approximately 16.5 percent of the total land area of the country (ibid).

These changes dramatize the reality that there is no way for rural people to eke out a living as subsistence farmers on marginal lands. Off-farm employment and income opportunities, remittances, migration to the towns and cities or beyond the country's borders and the long years of internal strife have led people to leave their small farms. Over the years, however, a great deal of damage has been done to the watersheds of El Salvador. Millions of tons of soils have been washed off the hills into the watercourses and surface waters of the country. Because the infiltration capacity has been affected, the rivers have become more torrential in nature, with higher floods during the rainy season and leaner flows during the dry season, a situation that is completely inimical to the future development prospects of El Salvador.

Although there is some reason to believe that the agricultural frontier is no longer expanding and that natural revegetation is re-establishing forest cover on previously deforested lands, there is still cause for concern about soil and water conservation on the farms and grazing lands of the country. The Assessment Team concludes that watershed degradation, both what happened in the past and what is ongoing, remains the most important environmental problem in El Salvador. These impacts on water supply and the hydrological regime become of even greater concern with the rise in water contamination from industrial and urban effluents and solid waste getting into surface waters.

Agriculture was also once responsible for the largest non-point source pollution issue in the country – the run-off of pesticide residues from cotton production into the surface waters. This has abated with the decline of cotton production, some of which has been replaced by sugar cane production that brings its own particular environmental issue – that of large-scale burning of cane fields that contributes to air pollution and global warming. The Assessment Team must comment that although there is wide-ranging understanding and concern for watersheds in the environmental agenda of the Nation, the linkages, both programmatic and institutional with agriculture could be improved.

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the interested reader, including: *El Salvador: La Tierra y El Hombre,* by David Browning, Ministerio de Educación, San Salvador, 1975 (originally published in English in 1971), or *El Salvador–Zonificación Agrícola*, Departamento de Desarrollo Regional, Secretaría Ejecutiva de la Organización de los Estados Americanos (OEA), Washington, 1974.

SECTION VII

Major Issues (Needs and Opportunities) and Recommendations

As the introduction to this report explains, this Assessment of the new Country Plan (FY2004-2008) for USAID/El Salvador was carried out with a number of objectives in mind, namely: to ensure that activities and investments foreseen are not likely to lead to adverse environmental impacts on tropical forestry, biodiversity or water resources; to identify opportunities for synergistic support for tropical forestry, biodiversity and water resources within the new overall portfolio; and to consider other needs and opportunities for USAID assistance in these areas that might be considered by the Mission as it goes forward with its program planning. In effect, the Assessment is expected to assist USAID/El Salvador to justify its role and support for tropical forestry, biodiversity and water resources conservation.

Overall Findings

First, the Assessment Team can report that its understanding of the planned activities for the next strategic program period, based on the menu of options identified in the CAM Strategy, suggests that:

- There will be little likelihood of adverse environmental impacts on tropical forestry, biodiversity and water resources.

Furthermore, the Assessment Team shares USAID's conviction that:

- Results in the area of wise use of water resources and in particular improved watershed management – a cross-cutting theme for the new strategy – will in the Salvadoran context also lead to achievements related to tropical forest and biodiversity conservation.

Indeed, it is readily apparent that the eventual achievement of almost all of the future development scenarios for El Salvador – industrialization, urbanization, agricultural improvement and diversification, expansion of the tourism industry – will be highly dependent on a reliable supply of clean water.

The Team also believes that *there can be important linkages to the other two Strategic Objectives of CAM.* USAID's programs across the globe have highlighted the fundamental importance of the governance dimension for effective natural resources management. The wise use and just sharing of natural resources often constitute a first echelon of collective decision-making, in particular as concerns drinking water, and as such, a *prima facie* example of governance issues facing decentralized local governments (municipalities in the case of El Salvador). Understanding and agreements at the community level related to safeguarding the water supply and watershed management can be a model and a stimulus for addressing other dimensions of the local governance equation. Similarly, the provision of stable supplies of clean water for human consumption can lead to significant improvements in the health of local people

thereby reinforcing the sometimes difficult decisions that must be made to achieve water resources and watershed conservation with direct and tangible benefits for all concerned.

Specific Needs and Opportunities and Recommended Actions to Address Them

The remaining sections of this report present a series of issues (needs and opportunities) identified by the Assessment Team and make recommendations for consideration of USAID/El Salvador as it moves forward with program planning for the next five-year strategic plan.

Institutional Capacity, Strategic Policy and Environmental Economics

- *An improved analytical framework for environmental programming*: There is an impressive array of literature concerned with the environment sector in El Salvador as well as many existing policies, legislation and strategy documents. However, despite 30 plus years of concern for the problems of deforestation, watershed degradation and declining agricultural productivity, data and information, although relatively abundant, remains inconsistent, occasionally unreliable and often lacking in critical quantifiable and/or financial/economic parameters.

- *Opportunities for strengthening the policy, strategic and operational capabilities of the Government of El Salvador (GOES)* will include examining the combination of policy incongruencies, limited institutional capabilities and inadequate institutional coordination. There has been too much emphasis on NGOs and a dispersion of capabilities for environmental management that is proving difficult to sustain. The NGO community, however, also needs its own development strategy in order to continue to evolve its role in the environment sector.

- *Limited political profile for environment issues* is demonstrated by the low level of attention to the environment in the present platforms of the political parties and the modest level of budgetary support for MARN. This situation reflects a low level of awareness and concern among the general public who are more preoccupied with day-to-day issues of security, employment and the rising cost of living. This is surprising for a country which by any standard of analysis is facing the limits of its environment. There is a continuing need to build a citizen-based constituency for environmental action.

Recommended Action Response: Each of the three issues identified above suggests the need for support to the official environment sector organizations of the Government of El Salvador. Clearly, the GOES and in particular, its Ministry of Environment and Natural Resources would benefit from enhanced analytical and planning skills that would facilitate a more strategic and prioritized approach to the needs and opportunities of the sector. The Assessment Team would recommend the following responses for the consideration of USAID:

- *Strengthening the relationship between its environmental programs, particularly in water supply and watershed management and the nascent national efforts to adopt a system of compensation for environmental services* is recommended through the provision of additional technical assistance and support in the area of environmental economics. At the national level, there is also interest and movement within the private commercial sector and a

recognition of the need to address the issue with ANDA and CEL. This is an area of U.S. comparative advantage and one that can strengthen governmental institutional capacity for sector-oriented strategic program planning and implementation. It would also, in the view of the Team, lead to achievements related to SO 1 of the CAM Strategy focused on greater transparency and accountability of governments by providing the rationale that can lead to furthering "the devolution of authorities and resources to the local level...improve the municipal tax and revenue base...and promote more cost-effective service provision and cost recovery" (USAID CAM Strategy 2003).

- *Provide targeted support for awareness raising and training for the political elite* so as to raise the profile of environmental management on the policy agenda of the country and its leaders. Here again, such an approach would be responsive to SO 1 of the CAM Strategy that identifies improved "linkages and accountability between elected representatives and their constituents" (ibid). There is a potential for synergy with the above recommendation in that a greater understanding of the macroeconomics of environmental management in El Salvador, possibly in the form of "white papers" on key policy issues could provide the substance for such a training and awareness raising program.

- The Assessment Team would also recommend that *greater attention be given to the opportunities for using FIAES resources allocated for the applied research thematic area* to develop the skills and capabilities of both the Government agencies and the NGO community in the area of environmental economics.

Reinforcing the Regional Approach to Environmental Management in Central America

The Central American Free Trade Agreement (CAFTA) and its programming implications is a unique opportunity and challenge for the environment sector: programming imperatives for the bilateral USAID programs as a result of CAFTA are as yet unclear.

Recommended Action Response: The recent approval of CAFTA between the United States and four countries of the Region (with Costa Rica expected to join the agreement later) will doubtless lead to greater attention to continuing and strengthening the capabilities to address environmental issues as well as new challenges from the regional perspective that will arise as a result of the agreement.

- Although the overall regional program and its implications are beyond the scope of the present assessment exercise, the Team believes that USAID should consider *a range of new or renewed activities in a series of areas* related to the following:

    - environmental degradation as a driver of illegal immigration;

    - water resource imperatives for continued agricultural and industrial growth;

    - clean and green production prerequisites, particularly for SMEs, in the global marketplace;

- crop protection and phyto-zoo-sanitary requirements related to agricultural production and export;

- cross-border environmental opportunities: Corredor Biológico Mesoamericano, trans-frontier watershed management (Rio Lempa), Gulf of Fonseca, and others.

- These themes provide opportunities and challenges for USAID/El Salvador (and the other bilateral USAID Missions of the Region) to *reconstitute the working relationships between SICA-CCAD, PROARCA (or similar USAID regional programs) and the bilateral USAID programs*.

- *Significant opportunities to move forward with the concept of "pago por servicios ambientales"*: Another of the issues that lends itself to both a regional approach and increased program synergies is the matter of compensation for environmental services mentioned above. The present discussions sometimes seem to be more about costs and who pays them (and thus a difficult issue) than about values and benefits (here again, the need for more economic valuation within the environment sector in ELS...and elsewhere). Some concern that existing programs may be setting precedents (high costs per unit area treated, inculcating the notion that the State will pay for environmental rehabilitation), which may undermine the basis for future arrangements by *pago por servicios ambientales*.

Building on Program Experience and the Lessons Learned

Consolidating the experiences and applying the lessons learned from an extensive array of field-oriented investments and activities. Some of the most important results of the present program, of even more strategic importance than physical achievements on the ground, may be the lessons learned in recent years, in particular as concerns what it takes to put in place effective (widespread replicability and farmer acceptance) and efficient (least cost approaches to production that will be acceptable to the marketplace) programs of environmental management.

Recommended Action Response: The Assessment Team could not help but get the impression that at present environmental sustainability and the programs to achieve it in El Salvador had lost impetus on the national agenda and/or in some cases were going through the motions. USAID's role as the leading bilateral donor in the sector suggests that it has a lot invested and a lot to learn from its environmental programs of recent years, both in the country itself and as an international agency with wide-ranging experiences that are starting to accrue important guidance for how best to proceed in the sector. The Team would suggest that USAID/El Salvador consider the following needs and opportunities:

- *The very evident need for more strategic targeting of field programs (FIAES, FONAES and others)* in line with: the watershed paradigm (the need to reach a certain threshold of action or percentage of coverage in a watershed or sub-watershed to have meaningful impact); the need to avoid the ephemeral nature of many projects attempting to deal with long-term development needs and opportunities on a short-term basis; more understanding of the micro-economic and financial aspects of environmental amelioration and restoration interventions

and their implications (adding costs to the production equation that must be passed on to an increasingly competitive marketplace) for a macro-economic vision of the sector (the justification for an eventual conservation incentives program that takes marginal land out of farming); and the distinct possibility that short-sighted efforts that do not recognize and remedy the reality that small-scale conventional agriculture on marginal lands may in effect be seeking to institutionalize subsistence agriculture thereby prolonging and worsening the social and ecological damage.

- *An enhanced understanding of the watershed management paradigm and approach*: watershed management planning is about making choices for a prioritized strategic approach (not just more inclusive lists); the "ridge to reef" phenomena in ELS; who pays/who gains and how to address the equation; avoiding a strictly soil and water conservation-oriented intervention approach where more radical diversification of farming systems or even land use is what is required (examples, fostering perennial crops such as fruit trees instead of basic grain crops or promoting fodder banks as the basis for cut and carry approaches to livestock husbandry); less cost or labor intensive technical approaches to conservation that recognize the marketplace imperatives (financial profitability of improved cropping systems); enhancing the productivity of the soil and water that is being conserved; recognizing the limits of options for marginal lands and programs that inadvertently maintain the status quo.

- *A more strategic approach to strengthening the Protected Area System* to include concentration on priority areas; a strategic approach involving protected areas, the agro-ecosystems around them and the opportunities for national biodiversity corridors; the role of the State organizations responsible for the SANP; a long-term strategy for financial sustainability; associated opportunities for outdoor recreation cum environmental education for amenity and awareness-raising suited to the country's increasingly urbanized population.

- *Endangered species conservation* requires the promotion of research, management, and education initiatives considering GOES institutional capacity building and development of joint efforts GOES/NGO. There is an evident need for a better coordinated regulatory framework for the wildlife conservation law and the implementation of the CITES convention.

- *Linking governance and environmental management objectives*: Continued support to developing the capabilities of municipal governments to provide potable water supply and sanitation services as a base case example of environmental management and collective decision-making (governance) at the local level.

- *The importance of environmental regulations and permitting systems in a small and medium enterprise (SME)-oriented industrial development strategy*: SMEs can and are having significant cumulative adverse environmental impacts but will argue about the impact of regulation on their marginal productivity and profitability in the face of global competition. Indeed, there is some concern about the rigor with which the environmental permitting system is presently being applied. The SMEs of El Salvador should specifically target environmental amelioration and clean production as a growth sector and attempt to develop comparative advantages within the Region. Embracing clean technology approaches to

industrial production will reduce production costs and help to make local industries both more competitive and more attractive as private enterprises in the global marketplace – an abiding strategic objective (SO 2) of the CAM Strategy.

ANNEX A

Statement of Work for Preparation of a Section 118/119 Background Assessment Study for USAID/El Salvador

1. Purpose:

The purpose of this request is to obtain a background assessment of biodiversity, tropical forests, and water resources in El Salvador. The biodiversity and tropical forests analysis is pursuant to requirements of the Foreign Assistance Act (FAA) Sections 118 and 119 and related USAID guidance. A focus on water resources is required because of the emphasis on water in the current environmental program for El Salvador as well as in the Central America and Mexico (CAM) Regional Strategy. The assessment shall be presented in a report to be completed no later than January 16, 2004

2. Background

In development of a new Country Plan (FY 2004-2008), USAID/El Salvador (ES) is required to conduct a background assessment to ensure that its new plan is concordant with the conservation of the country's biological diversity and forest resources. This assessment is mandated under Sections 118 and 119 of the Foreign Assistance Act (FAA) that require:

> **Section 118** - Each country development strategy statement or other country plan prepared by the Agency for International Development shall include an analysis of (1) the actions necessary in that country to achieve conservation and sustainable management of tropical forests, and (2) the extent to which the actions proposed for support by the Agency meet the needs thus identified;
>
> **Section 119** - Each country development strategy statement or other country plan prepared by the Agency for International Development shall include an analysis of (1) the actions necessary in that country to conserve biological diversity, and (2) the extent to which the actions proposed for support by the Agency meet the needs thus identified.

To respond to these FAA requirements, USAID/ES has developed more specific guidance for the conduct of such assessments, which is set forth in a cable with the subject "Guidance For Preparation Of Background Assessments On Biological Diversity And Tropical Forests For Use In CDSS Or Other Country Plans," found in full at www.usaid.gov, ADS Series 200-2003 References, Additional Help: 200-203, File Name: 200sbh_070201_cd24, and attached hereto. (http://www.usaid.gov/policy/ads/200/200mao.pdf)

Forestry

In El Salvador the rate of soil erosion, resulting from an extensive deforestation process, is the highest in all Central America. The situation is critical in the Lempa watershed, where the dams for the hydro electrical power generation are located. These plants have been evaluated since

1999, when it was identified that the erosion rate for the watershed varied by country: 48 percent from Honduras, 13 percent from Guatemala, and 39 percent directly from El Salvador. That study established the urgent need to have a regional agreement to manage that watershed.

A recent study of the Ministry of Environment and Natural Resources (MARN) concluded that El Salvador still has 26 percent of natural forest spread over the territory, but a good part of this percentage is coffee plantation that is being threatened by the current coffee crises.

Water
In the area of potable water, the relationship between demand and availability presents a growing deficit in many areas. The coverage of water services in the urban area is around 96 percent between the National Water Association (ANDA), municipalities and others. In the rural area the situation is different, with an estimated only 30 percent of rural inhabitants with access to clean water.

The main sources of water are seriously endangered by the growing contamination. In El Salvador the largest source of contamination comes from sewage, while chemicals from agriculture and industrial waste are fewer but in many ways more damaging. There is a lack of sewage and waste water treatment making the rivers and creeks the disposal sites for waste.

In the same area of the Lempa watershed, a study conducted by the Ministry of Environment concluded that the water contains high levels of copper in the sediments of the river. Copper and nickel are also present in the sediments of the dam. This study could not identify a single fauna species to serve as a monitor of the heavy metals situation along the river.

The deterioration of the natural resources and the high levels of contamination threaten the basis for economic and social growth.

3. Detailed Statement of Work

The study should result in a written report that follows relevant USAID guidance on Section 118-119 analysis, which is attached to this SOW. This report will provide an overview that will follow the illustrative outline presented in the attachment, and will synthesize existing data and information on the status of biodiversity, tropical forests, and water resources in El Salvador. It will provide an overall description of El Salvador's biodiversity, tropical forestry, and water resources assets, evaluate their current status and identify the pressures and threats affecting those resources. This will primarily involve synthesis and presentation of data and analyses already done by major non-governmental organizations active in the country (International Union for Nature Conservancy –IUCN–, USAID/AGUA), other donors (such as IDB, World Bank, Canadian Development Agency) and the Government of El Salvador itself (particularly the Ministry of Environment and Natural Resources (MARN), National Service for Territorial Studies (SNET), and others). Of particular interest will be information from other sector programs that impact biodiversity forestry management, and water resources options and outcomes, such as tourism, energy and agriculture. More specifically, and with reference to the Agency-wide guidance in the attachment, the assessment will compile available information on the following major themes:

- A description of the **Current Status of Biodiversity, Tropical Forests, and Water Resources** in El Salvador based on current and available information. This description will give a clear indication of whether these natural resources bases are being degraded and to what extent, causes of these degradations, and should establish a general baseline from which the effectiveness of other interventions, both government, non-government, and international donor, can be judged.

- The **Policy, Regulatory and Institutional Framework** for biodiversity, tropical forest, and water resources including: a review of the policy and legislative basis, with attention to decentralization, for the protection of biodiversity and tropical forest resources; El Salvador's participation in international treaties and agreements related to conservation; provide a description and overview of the governmental institutions involved in the sector (MARN, National Association of Aqueducts and Sewers, or ANDA) or whose programs directly impact this sector, such as the Ministry of Agriculture; and, an overview of current national level plans to address policy issues related to biodiversity and tropical forest resource and water resource conservation.

- An overview of the **Non-Governmental Organization** (NGO) community involved in biodiversity and tropical forest and water management activities including a list of the major organizations, the highlights of their program priorities and an approximate level of finance of their programs.

- A description of the biodiversity and tropical forest and water conservation activities and commitments as well as descriptions of other major efforts that will impact these resources by other **Donors and Multilateral Organizations** operating in El Salvador, the highlights of their program priorities and an approximate level of finance of their programs. This section will also list and briefly describe programs related to or impacting biodiversity and tropical forests that are supported by other USG programs such as Environmental Regional Programs for Central America (PROARCA).

- Provide an overview of the major biodiversity and tropical forest and water conservation activities of the **Commercial Private Sector** to help identify ways to better foster private sector alliances. Of interest are the norms and standards followed by those commercial entities most engaged in management and use of El Salvador's tropical forests and tracts near protected areas, including, tourism developers, and coffee producers. Consideration of policies promoted by the Minister of Agriculture, the Minister of Economy and other key relevant GOES ministries should also be included.

- Provide an overview table and map of the **Status and Management of Protected Area System** in El Salvador including: an inventory of all declared and proposed areas (national parks, wildlife reserves and refuges, forest reserves, marine reserves, sanctuaries, hunting preserves and other protected areas) including marine and coastal areas. The inventory will identify the institution responsible for the protection and management of each decreed area, its date of establishment, area, and the protection status of each (i.e., staff in place, management plan published, etc.). In addition to this

summary of the current protection and management status of each park, an overview of the major threats and challenges facing protected areas in El Salvador, including vulnerability of areas to predicted changes in climate, and a brief summary of any recognized economic potential of these areas (including productive assets, environmental services and recreation and tourism opportunities) should be provided.

- An overview of the **Status and Protection of Endangered Species** in El Salvador, including its coastal zones. This section should not emphasize species counts, but look at the relation of endangered species and important habitat conservation areas and issues, and evaluate the pressures on those areas, including vulnerability to predicted changes in climate, and current efforts to mitigate pressures, including the participation and compliance with CITIES and other international efforts.

- An overview of the **Status of Conservation outside the Protected Area System**, focused on the different natural resources ecosystems common to El Salvador, including forest resources, rangeland resources, arid/semi-arid resources, coastal/marine ecosystems, wetlands and the sustainability of the agricultural landscape. Particular attention should be given to critical environmental services and non-commercial services they provide (watershed protection, erosion control, soil, fuel wood, and water conservation and amenity and recreation). Emphasis will be placed on the status of wetlands, arid and forested lands in El Salvador and any threats affecting them, including vulnerability to climate change. It will also summarize how current land tenure arrangements affect conservation in El Salvador.

- Identify particular issues affecting the protected area system and natural resources protection and management in general. The Consultant(s) will include recommendations regarding USAID's future role if any, in conservation in El Salvador and where U.S. comparative advantages and capabilities are likely to have the greatest impact. As possible, these issues and recommendations should be prioritized to identify those requiring the most immediate attention.

- Recent, current and potential future *primary* threats to biodiversity whether they are ecological (i.e., fire, pests), related to human use (i.e., agriculture, contamination), or institutional (i.e., failed policy) or transboundary issues as appropriate. These should emerge from a general assessment of national policies and strategies and their effectiveness, and issues related to institutional capacity, trade, private sector growth, the status of financing for conservation, participation in international treaties, the country's protected area system and monitoring systems, and the role of civil society.

On the basis of the activities specified above, the Contractors will prepare a final report. This assessment will follow the attached Agency guidance and include an analysis of the needs for building national capacity, both public and private, and an aware and informed public constituency for biodiversity and tropical forest and water conservation.

4. Timing

The Biodiversity, Tropical Forest and Water Background Assessment Study will be carried out to inform the final USAID/El Salvador Country Plan to be developed in December therefore should be completed no later than January 16, 2004.

5. Illustrative Level of Effort

USAID anticipates that the assessment can be completed in approximately 4 weeks by a team (the practice is to authorize the contractor up to six-day workweek in the field with no premium pay) of three people, one International/Regional Biodiversity/Forestry Expert who will be the Team Leader and two Salvadorian Biodiversity/Forestry/Water Experts. All shall have extensive prior technical related experience in the field and in the development of assessment.

6. Relationships and Responsibilities

The Contractor(s) shall report to the USAID/El Salvador Water and Environment Office Director or his designee. The Contractor will be responsible for identifying and obtaining the majority of the reference materials needed for this study with only minimal interventions on the part of the USAID/El Salvador.

7. Deliverables

There shall be three Deliverables under this contract:

1 – Preliminary Workplan and Schedule: The Contractor shall provide USAID with a Workplan and Schedule within 3 days of contract inception. The Workplan and Schedule shall also a list of those individuals and agencies that are to be interviewed, and a list of reports, evaluations, etc., to be reviewed.

2 – Draft Report: The Contractor shall submit a Draft Report to the Water and Environment Office no later than January 9, 2004. The Draft Report shall follow the generic outline provided in the attachment to this SOW, as refined during the course of the contract in consultation with USAID. The Report shall not exceed thirty pages, in English, excluding suitable annexes and pertinent figures (maps, institutional charts, tables) and references. Among the expected appendices is a briefly annotated bibliography of the most important current reference materials related to the topic and a contact list for each of the organizations discussed in the Report.

3 – Final Report: The Final Report no later than January 16, 2004

The Contractor will furnish both electronic file versions of all submissions (first draft and final report) and five copies in English, including one photocopy ready version of the Final Report.

ANNEX B

Brief Biographical Sketches of Assessment Team Members

Thomas M. Catterson holds a M. Sc. in International Forestry from SUNY College of Environmental Science and Forestry. He has more than 30 years of experience in international forestry and natural resources management for developing countries. Beginning as a Peace Corps Volunteer in the late 60s (Chile 1967), he has worked for FAO (Community Forestry Officer at FAO HQ in Rome), USAID (Senior Forestry Advisor for the Africa Bureau) and a development consulting company. Since 1991, he has been working as an independent international consultant in community management of forests and natural resources, forestry sector policy and institutional development and environmental review issues. His work has taken him to more than 74 countries in Latin America, Africa, Asia, and the Middle East where his clients have included a wide range of the major bilateral and multilateral development agencies, the private consulting sector and the international NGO/PVO community. His mother tongue is English but he also speaks fluent Spanish and good French.

Carlos Roberto Hasbun is an American/Salvadoran biologist dedicated to the conservation of biodiversity. He has over 18 years of experience in the administration of both governmental and NGO programs geared to the conservation of wildlife and protected areas in several countries mainly in Latin America and in the Middle East. Educated in the United States (B. Sc.) and in England (M. Sc., Ph. D.), became a Global 500 Laureate from the United Nations Environmental Program for developed initiatives in favor of Central American Wildlife and Wildlands. He is a member of the Marine Turtle Specialist Group and the World Commission on Protected Areas, both from the UICN. Mr. Hasbun is founder and president of the Zoological Foundation of El Salvador, Central America and its Wildlife Rescue and Rehabilitation Center (mainly primates, felines, psittacine birds and reptiles). Research interests include phylogeography, marine invertebrate ecology and sea turtle conservation biology. He is bilingual in Spanish and English and is currently an independent biodiversity consultant.

Carolina Dreikorn is a natural resource management specialist with more than 15 years of experience in environmental policy development, sustainable development, and natural resources in urban and rural areas in El Salvador. Ms. Dreikorn has an M.S. in policy development from Duke University, and a B.S. in landscape architecture from Texas A & M University. Ms. Dreikorn has planned, developed, managed, implemented, and monitored several environmental projects funded by USAID, IADB, UNDP, PADCO, PADF, CARE and other international agencies. She has organized and presented more that 150 training workshops, seminars, and conferences where more than 3,000 individuals have been trained. She is considered a specialist on institutional strengthening, policy development, strategic planning, gender mainstreaming, risk management, and participatory organizational development. She is a native Spanish speaker and speaks English well.

ANNEX C

Annotated Bibliography

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Ley Forestal (1973) por medio de la cual se regula el establecimiento de salineras y camaroneras en los manglares con el fin de conservar dichos ecosistemas.

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REPUBLICA DE EL SALVADOR 1997a. *Creación del Consejo Nacional para el Desarrollo Sostenible*. Decreto Ejecutivo No. 29. 16 Mayo 1997. Se establece la creación del Consejo Nacional con el fin de promover el dialogo y la participación en consulta con la sociedad civil en el análisis de las políticas económicas, sociales y ambientales.

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la cual tiene por objeto de regular las actividades pesqueras y promover las actividades de acuacultura.

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últimos trabajos hechos en el país con el fin de conseguir datos sobre la cobertura real de los bosques de este país, Ministerio de Ambiente y Recursos Naturales.

Windevoxhel N., Imbach A. 1999. *Uso Sostenible de Manglares en América Central*. UICN. pp.-87. Document describing experiences regarding the sustainable use of mangroves in the Central American region.

ANNEX D

List of Persons and Institutions Consulted

Institution	Name	Position	Contact
USAID	William Patterson	Water and Environment Office	Wpatterson@usaid.gov
USAID	Brad Carr	Water and Environment Office	Bcarr@usaid.gov
USAID	Elizabeth Gonzalez	Water and Environment Office	Egonzalez@usaid.gov
USAID	Ronald Greenberg	Director, Office of Economic Growth and Education	Rgreenberg@usaid.gov
U.S. Embassy	Barbara Thomas	Second Secretary for Economic Affairs	Thomasbm@state.gov
U.S. Embassy	Jessica Webster	Advisor on Economic Affairs	Websterjm@state.gov
Ministerio de Medio Ambiente y Recursos Naturales (MARN)	Orlando Altamirano	Asesor al Ministro	oaltamirano@marn.gob.sv
MARN	Ernesto López Zepeda	Director General de Patrimonio Natural	zepedae@marn.gob.sv 224 6926
MARN	Rafael Gochez	Director, Programa Cobro y Pago por Servicios Ambientales	regochez@hotmail.com 245 0357
MARN	Zulma Ricord de Mendoza	Gerente de Áreas Naturales Protegidas y Corredor Biológico	mricord@integra.com.sv 224 6653
MARN	Hugo Zambrana	Gerente de Recursos Físicos	224 6926
MARN	Guillermo Navarrete	Ordenamiento Territorial	224 6653
MARN	Jorge Quezada	Gerente Recursos Biológicos CDB	jquezada@marn.gov.sv 224 6653
Ministerio de Agricultura y Ganadería (MAG)	José Emilio Suadi	Vice-Ministro	jsuadi@mag.gob.sv 229 9302
MAG	Roosevelt González	Jefe Sec. Fisc. Dir. Gral. San. Animal Vegetal DGSVA-CITES	rgonzalez@mag.gob.sv 288 5220
MAG	Julio Olano	Director, Ordenamiento Forestal, Cuencas, Riego	jolano@mag.gob.sv 241 1715
CORSATUR Corp. Salv. de Turismo	Mauricio Aviles	Presidente	maviles@salnet.net 243 7835
FIAES Fondo de la Iniciativa de las Américas	Rafael Antonio Huezo	Gerente General	fiaes@terra.com.sv 223 6498
CCAD Comisión Centroamericana de Ambiente y Desarrollo	Bruno Busto Brol	Director	bbrol@ccad.ws 278 1050

Institution	Name	Position	Contact
BID Banco Interamericano de Desarrollo	Hernán Romero Chavarría		233 8900; e-mail: hernanc@iadb.org
PNUD Programa de las Naciones Unidas para el Desarrollo	Rene Guzmán	Coordinador, Programa Pequeñas Donaciones	263 0066
Independent Consultant	Carlos León	Environment and Agriculture Consultant	(506) 556 1652 (Costa Rica); e-mail: cleonp@rasca.co.cr
Bioproductores	Francisco Serrano	Independent Consultant	bioproductores-ca @usa.net 260 5158
GEA Desarrollo	Roberto Cabezas	Director and Consultant	270 5603
Prog. Salvadoreño de Investigación sobre Desarrollo y Medio Ambiente (PRISMA)	Hernan Rosa	Director	h.rosa@prisma.org.sv 298 6852
CARE	Ronnie Gutiérrez	Gerente, AGUA	rgutierrez@care.org.sv 273 9661
CARE	Ana Luisa Dueñas	Sub Gerente, AGUA	analuisa@care.org.sv 273 9661
CARE	Mario Francisco López	Coordinador Regional Local, AGUA	flopez@care.org.sv 273 9661
CARE	Selma García	Coordinadora, Manejo de Cuencas y Agroforesteria	selma@care.org.sv 273 9661
CARE	Rómulo Carranza	Supervisor Social, AGUA	rcarranza@care.org.sv 273 9661
CARE	Rodolfo Pacheco	Coordinador, Agua y Saneamiento AGUA	rodpacheco@care.org.sv 273 9661
FUNDEMUNI Fundación de Apoyo a Municipios de El Salvador	Cecilia Gómez	Sub Directora	fundamuni.subdir@integra.com.sv 245 5412
ASPROFA Asoc. Salv. para el Progreso Familiar	Noe Hernández	Coordinador, Proyecto Microcuencas Jujutla y Guaymango	henushenry@hotmail.com 460 9414
SalvaNATURA	Juan Marco Álvarez	Director Ejecutivo	jmalvarez@saltel.net 2791515
SACDEL Sistema de Asesoría y Capacitación para Desarrollo Local	Guillermo Ruiz	Coordinador, AGUA	guillermo@vip.telesal.net 273 5755
SACDEL	Emilio León	Técnico	agua@sacdel.org.sv 662 0810
ADESCOCHAG Chaguantique	Erlinda Lobo	Guía	662 0810
ADESCOCHAG Asociación de Desarrollo Comunal Chaguantique	Exequias Sánchez	Guía	662 0810
Asociación Mangle Isla de Méndez Coordinadora del Bajo Lempa	Álvaro Garciaguirre	Jefe de Proyecto	asoc.mangle@telesal.net 275 7836

Institution	Name	Position	Contact
Asociación Mangle Isla de Méndez	Luis Orellana	Técnico	asoc.mangle@telesal.net 275 7836
ADESCOIM Isla de Méndez	Maria Antonia de Paz Rodríguez	Miembro	275 7836
ADESCOIM y Cooperativa Las Gaviotas Isla de Méndez	Teresa Argueta	Representante Asociación de Mujeres	275 7836

ANNEX E

List of Environmental NGOs Registered with MARN

NOMBRE/ DIRECCION/ REPRESENTANTE	TELEF./ FAX	AREA DE ACCION	ESPECIA-LIDAD
ADHU - Asociación para el Desarrollo Humano Presidente: Licenciado Humberto Rivera Bauz 14 Calle Poniente No. 2423 Col. Flor Blanca, San Salvador	Tel: 298-1904 E-mail: adhusal@salnet.com.sv	Nacional	Desarrollo humano
ADIS Asociación de Desarrollo Integral Sostenido Calle "A" #6, Colonia Campestre, San Salvador Presidente: Ing. Roberto Jiménez	Telefax: 289-8711 893-0142	Nacional	Desarrollo integral
ALFALIT DE EL SALVADOR - Asociación Cristiana de Educación y Desarrollo. Boulevard Universitario Casa 2034 Col. San José por Cines Reforma . Presidente: Rvdo. Alex Tobar	Telefax: 235-8603 226-4144	Nacional	Desarrollo humano
A M A R Asociación Amigos del Arbol Boulevard Constitución Pasaje Francisco No 540 Atrás de Telecom Presidente: Francisco Rivas	Tel: 262-1152 262-4670 850-7977	Nacional	Protección de manglares y tortuga marina
APAMAES Asociación de Profesionales en Agua y Medio de El Salvador. Representante: Esteban Rivera Fagoaga Residencial Villas de Suiza Calle Berna Pol. F casa 8 S.T.	Tel. 288-0158 276-4013 228-8208 322-0144 riverafagoaga@hotmail.com	Nacional	Agua y Medio Ambiente
APRODEMAS Asociación de Profesionales para la Recuperación del Medio Ambiente Calle a los Llanitos block b # 9 Urb. Chavez Galeano Ayutuxtepeque Presidente: Don Julio Américo Rivas Sr. Hugo Hernández	Fax 225-1400 Tel 272-2472	Nacional	Elaboración de proyectos de protección ambiental. Especialización en agua.
APRODEHNI Asociación para la Promoción de los Derechos Humanos de la Niñez. En El Salvador Director Ejecutivo: Lic. Gloria de Rivera Representante: Gil Geremías Pintín. Col. Lisboa Calle San Antonio Abad, Pasaje 2 No 103 S. S.	Telefax: 274-2170	Nacional	Niñez y Medio Ambiente Educación en Derechos Humano Nutric. y Salud
ASPROMA Asociación de Profesionales Pro Medio Ambiente Colonia Dina Pasaje 6 No. 333, San Salvador	Telefax: 242-1551	Nacional	Desechos Sólidos

NOMBRE/ DIRECCION/ REPRESENTANTE	TELEF./ FAX	AREA DE ACCION	ESPECIA-LIDAD
Lic. María Israelita Domínguez			
ASACMA Asociación Salvadoreña de Conservación del Medio Ambiente Calle principal casa No. 1 2do. Piso Colonia la Rosas No. 2, San Salvador. Directora Ejecutiva: Arq. Ana Patricia Vásquez	Telefax: 284-9679	Nacional	Conservación Ambiental.
ASAPROSAR Asociación Salvadoreña Pro Salud Rural Km 62.5 Carretera Panamericana, Colonia El Mora Calle antigua a San Salvador, Santa Ana Dra. Eduviges Auxilidora Guzmán de Luna	Tel.: 447-5978 441-0646 Fax: 447-7216	Regional	Salud y Medio Ambiente
ASCIA Asociación Salvadoreña para la Promoción de la Ciencias Sociales y de la Administración. Director: José Ovidio Hernádez Delgado Primera Calle Poniente No 35-49 Colon Escalón	Telfax 298-1909 298-1908 Tel: 298-8530	Regional	Proyectos de Medio Ambiente
ASECHA Asociación Ecológica de Chalatenango Final 6ª. Aven. Sur Barrio San Antonio Chalatenango Presidente: Ing. Angel Alexander Mejía Navarrete	Tel: 335-2783	Local	Educación ambiental
ASPAGUA Asociación de Profesionales en Agua Presidente: Lic. Rolando Nóchez Arq. Emilia de Quintanilla. Campos Eliseos, Pasaje SENA Casa 7ª frente redondel Constitución, S. S.	Tel. 275-7655 Aspaguaes@hotmail.com	Nacional	Recurso Hídrico
ASISTEDCOS Colonia Flor Blanca Calle El Progreso Psje. Mirasol No 21 Director Ejecutivo: Lic. Mario Antonio Juarez Lic. Blanca Estela Juarez	298-0066 asistedcos@hotmail.com	Nacional	Areas Protegidas
Asociación Agape KM 63 Sonsonate carretera a San Salvador. Hermano Rolando Cabrera	Tel. 451-2667 451 -1234	Departamental	Proyectos de protección ambiental
BIOLOGAS – Asociación Biólogas para la Educación Ambiental y el Desarrollo Sustentable 33ª Avenida Norte, Residencial y Pasaje Decápolis No. 15, Local de AMS	Tel: 260-2590 Email Zoilaperez@telesal.net	Nacional	Educación, capacitación, proyectos agroforestales
ASOCIACIÓN AMIGOS DEL VOLCAN DE SAN SALVADOR Calle Circunvalación No.139 Col. San Benito Lic. Luis López Lindo	Tel. 243-5946 2437501 Fax 243-0407	Regional	Areas Naturales
AMESCO Asociación de Mejoramiento Económico y Social de Comunidades Representante: José Herbert Rodríguez Urbanización Lomas de Altamira, Calzada Guarda Barranco No. 15B San Salvador.	273-1808		
ASOCIACION MONTECRISTO Presidente: Licda. Daysi Estela Dinarte ING. Carlos Roberto Barrientos Final 33 Calle Oriente. Pasaje Rodezno No. 106 Col. Rábida SS.442	Telefax: 286-9891	Nacional	Educación Ambiental
CADECAB	Tel. 382-3068	Departamental	Gestión

NOMBRE/ DIRECCION/ REPRESENTANTE	TELEF./ FAX	AREA DE ACCION	ESPECIA-LIDAD
Presidente: José Arturo Vasquez Machado 5ta. Avenida sur No. 18 Centro de Gobierno Sensuntepeque, Cabañas			Ambiental
CACH Comité Ambiental de Chalatenango C/o ADEL CHALATENANGO Coordinadora: Licda. Sandra Rivera Colonia Santa María, Barrio San Antonio No. 10 Chalatenango	Tel: 301-0903 Fax: 335-2599	Departamental	Desarrollo Ambiental Departamental
CADELL Comité Ambiental de la Libertad Coordinadora: Lic. Carmen Sagrera de Lemus 8ª. 1-3 Santa Tecla	Tel 228-1121 228-1111	Departamental	Desarrollo Ambiental Departamental
CADEM Comité Ambiental de Morazán Coordinador: Santos Argueta 3 Avenida Sur y 2da. Calle Poniente Centro de Gobierno, Morazán.	Tel. 654-0016	Departamental	Desarrollo Ambiental Departamental
CADECU Comité Ambiental de Cuscatlán Coordinador: Salvador Oracio Orellana Final Calle Fco. López Cojutepeque.	Tel. 372-0185	Departamental	Desarrollo Ambiental Departamental
CADU Comité Ambiental de La Unión Coordinador: Jorge Escobar 3 Calle Poniente y 2da. Avenida Norte No. 1-3 La Unión	Tel- 604-4007	Departamental	Desarrollo Ambiental Departamental
CAHUAPAN Comité Ambiental de Ahuachapán Coordinador: Ing. Jorge Santos Suncuan Senda Apaneca No. 77 Ahuachapán	Tel- 413-2757	Departamental	Desarrollo Ambiental Departamental
CATIE Ing. Luis Alonso Silva 1ª. Calle Pte. y 61ª. Ave. Norte, Edif. Bukele, San Salvador.	Tel: 261-2036 261-2039	Local	Proyectos de Medio Ambiente
CARTARO Consejo para la Asistencia en Recursos y Técnicas del Area Rural de Oriente 4ta. Avenida sur casa No. 22 Barrio el Centro San Francisco Javier. Representante: Lic. Marco Vinicio Calderón	Tel: 628-1628	Departamental	Proyectos de Medio Ambiente
CASA Comité Ambiental de Santa Ana Coordinador: Ing. Mario Vásquez Kilmetro 70 Calle a Chalchuapa canton el Protesuelo Ex IRA.	440-4647 4404644	Departamental	Desarrollo Ambiental Departamental
CASAMI Comité Ambiental de San Miguel Coordinador: Martin Zaldivar 4ta. Calle poniente y 1ª. Avenida Norte No. 201	Tel. 661-6090 661-23 11	Departamental	Desarrollo Ambiental Departamental

NOMBRE/ DIRECCION/ REPRESENTANTE	TELEF./ FAX	AREA DE ACCION	ESPECIA-LIDAD
CASAVI Comité Ambiental de San Vicente Coordinador: Indalesio Miranda Monterrosa Calle primero de julio No. 4 San Vicente	Tel- 393-0234	Departamental	Desarrollo Ambiental Departamental
CAUS Comité Ambiental de Usulután Coordinador: Lic. Julio César Portillo Vaquedano Final 4ª Avenida sur Centro de Gobierno Usulután	Tel- 662- 0618	Departamental	Desarrollo Ambiental Departamental
CARITAS DE EL SALVADOR Avenida Olímpica y Pasaje 3 #130 Colonia Escalón, San Salvador Director Nacional: Lic. Gilberto Gallegos	Tel: 298-2653 Fax: 298-3037	Nacional	Sistemas agroforestales Agricultura Sostenible.
CARE Director Ejecutivo: Sr. Mario Lima Colonia Lomas de San Francisco Calle 3 No. 20	Fax 273-0939 273-4100	Nacional	
CESTA Centro Salvadoreño de Tecnología Apropiada Carret. A San Marcos, Km. 4½, #392 San Salvador Presidente: Dr. Ricardo Navarro	Tel: 220-0046 Tel. 220-4282 Fax: 220-3313 Email: cesta@es.com.sv	Nacional	Tecnologías limpias
CEPRODE Centro de Protección de Desastres Aven. Palma Soriano y Calle Holguín No. 171, Colonia Yumuri Licda. Lidia Esperanza Castillo	Telefax: 260-1182 260-1998 Fax	Nacional	Protección de desastres naturales y protección áreas.
CHF INTERNACIONAL 63ª ave. Norte N 150, Col. Escalón, San Salvador Director: Peter Loach	Tel: 245-4859 245-4828	Nacional	Proyectos de Desarrollo y Medio Ambiente
CALAPAZ Comité Ambiental de La Paz Coordinador: José Angel Molina 8ª. Calle Pte. Casa No. 6 bis, Barrio el Centro Fte. Colegio Espíritu Santo, Zacatecoluca	334-0554 334-0039		
CIAZO Directora Ejecutiva: Licda María Angélica Paniagua Colonia Buenos Aires, Avenida Alvarado, No. 7 BIS Por las tres torres.	226-0107 226-0189	Nacional	Genero y Medio Ambiente.
CIRES Comité de Investigación y Reestructuración Para El Salvador 12ª Calle Poniente #2137, Colonia Flor Blanca San Salvador, El Salvador Directora Ejecutiva: Lic. Betty de Reyes	Teléfono: 298-9250 Telefax: 298-9410	Nacional	
CODECA Coordinación de Comunidades para el Desarrollo de Cacahuatique José Santos Melara Colonia los Almendros pasaje los Abetos casa No 38, Gotera, Morazán	Teléfono: 654-1387	Departamental	Areas Protegidas
CODEMA Fundación de Cooperación para el Desarrollo Integral de Morazán José Luis Iglesias 3ª. Avenida sur y 2ª. Calle Poniente Centro de Gobierno.	Tel: 667-1172 667-3326 661-6103 Comité Ambiental	Departamental	Proyectos ambientales

NOMBRE/ DIRECCION/ REPRESENTANTE	TELEF./ FAX	AREA DE ACCION	ESPECIA-LIDAD
CODESAL Fundación Salvadoreña para la Cooperación y el Desarrollo Mario Marroquín Mejía Colonia Santa María pasaje Monte Cristo No. 3 Santa Ana.	Tel: 449-0735 447-6954		
CONSTRUAMBIENTE Ing. Guillermo Vargas Paseo General Escalón No. 4834, San Salvador	263-6522 263-6518	Nacional	Proyectos de protección ambiental
CONDECA Representante: Licda. Milagro Cristales 79ª avenida norte No. 717 Col. Escalón San Salvador	263-0214		
CORDES Director Ejecutivo: Sr. Hugo Alexander Flores 27 av. Nte. No 1221B, urb. Buenos Aires, frente al parqueo de Banco de Comercio S. S.	235-8262 235-9262 fax 227-4814 cordes.planes@tele.salnet		
Coordinadora de las Comunidades de la Microregión Alto Lempa. Dimas Mauricio Vanegas Cáceres 12 Calle Pnte. No. 2422 Col. Flor Blanca S.S.	Tel. 223-0453 298-3445 fax 224-2590. Fbc@sal.ebm.net dimasmauricio@yahoo.com	Local	Proyectos de Desarollo y Medio Ambiente
CRC Asociación de Desarrollo Comunal Director Ejecutivo: Manuel Armando Ortega Calle Principal Barrio el Calvario No. 45, Suchitoto	Tel: 335-1138		
CRD Coordinadora para la reconstrucción y el Desarrollo. Calle Principal y Pasaje Peatones No 530 Col. C.A. Ing. Angel Galán, Director Ejecutivo	Tel 274-2420 274-8036 274-8105 crd@netcomsa.com	Nacional	Desarrollo Local Sostenible Medio Ambiente Participación Ciudadana.
CREDHO Director Ejecutivo: Don José Elías Rodríguez 47 ave. Sur y 12 calle poniente. 705 Col. Flor Blanca	TelFax 224-0069	Nacional	Proyectos de desarrollo humano y medio ambiente
EDYTRA Fundación Salvadoreña Educación y Trabajo Director: José María Morataya Avenida Peralta final calle Renovación Comunidad Iberia, S.S	Tel: 293-1511 Fax: 293-7735	Nacional	Proyectos de desarrollo humano. y medio ambiente
FUNDACION ABA Autopista Norte # 4 Col. El Refugio San Salvador. Directora Ejecutiva: Miriam Zamora Rivas	226-0826 225-3624	Nacional	Tratamiento de Desechos Sólidos.
FUDEMCO Fundación para el Desarrollo Empresarial Comunitario Representante: Jorge Alberto Garza Condominio Flor Blanca No. 323 S.S.	Telefax: 260-7063 fudemconsul@telemovil	Nacional	Desarrollo comunal
FUNDA COATEPEQUE Fundación Coatepeque Gerente: Lic. Mario Vásquez	288-2224 288-2225 FAX 288-9359	Local	Recuperación Ambiental del Lago de

NOMBRE/ DIRECCION/ REPRESENTANTE	TELEF./ FAX	AREA DE ACCION	ESPECIA-LIDAD
			Coatepeque.
FUNDALEMPA Fundación Río Lempa Residencial Santa María No.10 Barrio San Antonio Chalatenango Representante: Arq. Ricardo Vásquez	Telefax: 301-0618 Fundalempa@navegante.com.sv	Río Lempa	Reforestación, Educ. Ambiental y cuencas Hidrográficas.
FUNDACION MAQUILISHUATL-Fundación de Desarrollo y Humanismo Col. y Calle Santa Teresa #22 Presidente: Lic. Ana Beatríz Barraza Díaz Dr. José Francisco Román/ Director Ejecutivo	Tel: 284-1266 284-1435 Fax: 274-1434 Email: fuma@netcomsa.com	Nacional	Proyectos de desarrollo.
FUNDE Fundación para el Desarrollo Avenida Bernal, Plaza Bernal, Local 26. Presidente: Licenciado Nelson Israel Juarez	Tel: 284-0856	Nacional	Desarrollo y educación
FUNZEL Fundación Zoológica 75 avenida Norte y 2da. Calle, El Carmen Pasaje 5 de Nov. No 138 San Salvador. Director Ejecutivo: Licda Zulma de Mendoza.	262-1817 funzel@navegante.com.sv	Nacional	Conservación de vida silvestre.
Fundación Segundo Montes Director Ejecutivo: Lic. Miguel Angel Ventura Urb. San Ernesto, Pasaje San Carlos, Casa No. 139 S.S.	Telfax 260-2710 260-8738		
FUNDEMUSA Representante: María Marta Valladares 1ª Calle Pte. No 2904 cond. Monte María Edif. D 3ª Planta, Local 8	Tel 260-5316 260-1426	Nacional	Educación Ambiental
IMU Instituto de Investigación, Capacitación y Desarrollo de la Mujer 27ª Avenida Norte #1141 San Salvador Directora Ejecutiva: Licda. Daysi Cheyne	Tel.: 226-0543 Telefax: 226-3080	Nacional	Proyectos de desarrollo ambiental
MSM Asociación Movimiento Salvadoreño de Mujeres Directora Ejecutiva: Licda Ana Luz Orellana 15ª. Avenida Norte y 27 Calle Poniente No. 915 Colonia Layco S.S.	Fax 235-3756 226-5702		
PRISMA Direrectora: Dra. Ileana Gómez 1ª. Calle Poniente No. 3770 Colonia Escalón	Fax 223-7209		
PCI Project Concert International Representante: John Robert Mcphail Colonia San Francisco Calle Los Castaños No. 2-24 San Salvador.	224-6005	Nacional	Protección del Agua.

NOMBRE/ DIRECCION/ REPRESENTANTE	TELEF./ FAX	AREA DE ACCION	ESPECIA-LIDAD
OEF Organización Empresarial Femenina de El Salvador Representante: Dra. Ildiko de Tesak Calle Dr. Roberto Masferrer y Pasaje Romero Alvergue Colonia Médica San Salavador	226-2706 226-2731 Fax 226-2723	Nacional	
ORMUSA Asociación Organización de Mujeres Salvadoreñas por la Paz. Directora Ejecutiva: Jeanette Urquilla Boulevard Universitario Col. San José Avenida A No. 235 San Salvador.	Tel: 225-5007 226-5829 ormusa@integra.com.sv ormusaelsalvador@hotmail.com	Nacional	Proyectos de Medio Ambiente
PLAN EL SALVADOR Director: Han Dijosselbloem 51ª. Avenida Norte No. 2636 Esquina con Alameda Roosevelt San Salvador	260-9166 260-9167 260-9168	Nacional	Educación ambiental
SALVANATURA Fundación Ecológica Salvadoreña 33ª Av. Sur 640 Col. Flor Blanca San Salvador Presidente José Roberto Castillo Paredes Director Ejecutivo: Lic. Juan Marco Alvarez	Tel. 279-1515 Telefax: 279-0220 Web site: Email: salvanatura@insatelsa.com www.salvanatura.org	Nacional	Protección de áreas de reserva ecológica, desarrollo sostenible.
SIMOC Superación Integral de la Mujer del Obrero y del Campesino. Presidente: Gilberto Flores Chacón Reparto Boquín Sur, Pasaje 4, 66 San Ramón Mejicanos.	Telfax 257-8991	Nacional	Educación Ambiental
UNES Unidad Ecológica Salvadoreña Presidente: Dr. Angel Ibarra Director Ejecutivo: Ing. Mauricio Sermeño Colonia Miramonte Calle Colima No. 22 S.S.	260-1447 260-1675 E-Mail: unes@netcomsa.com	Nacional	Medio Ambiente

Listado ONG actualizado 8 de julio de 2003, Jorge Domínguez

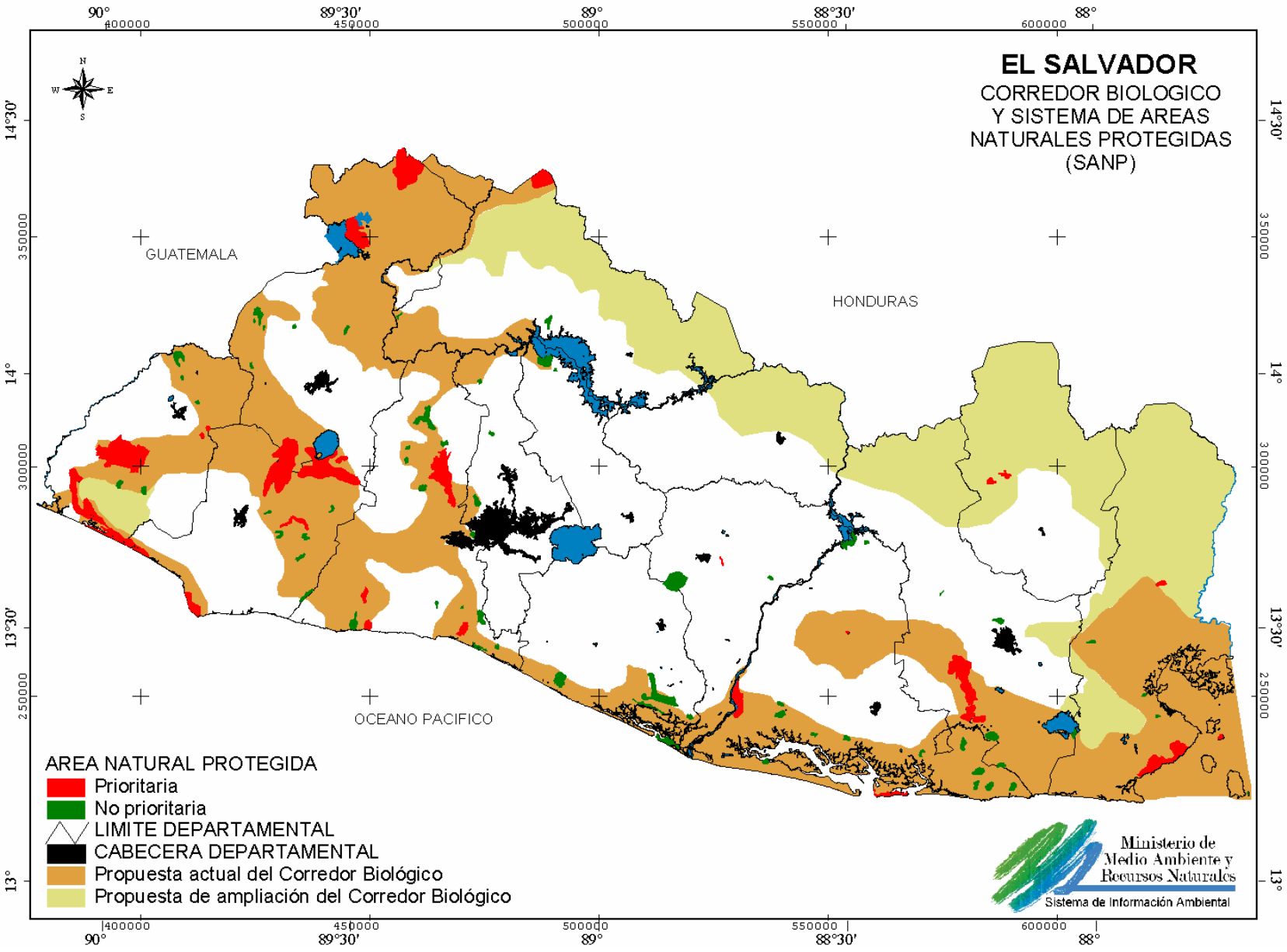
ANNEX F

Bilateral and Multilateral Cooperation in the Environment Sector in El Salvador

Fuente de financiamiento	Monto $US	Areas de atención
Alemania GTZ	2,830,000.	Producción más limpia y gestión de riego
Dinamarca	230,000.	Manejo de sistemas naturales
Espana	949,885.	Manejo de sistemas naturales y gestión de riesgo
Estados Unidos	2,000,000.	Gestión de riesgo
Holanda	164,000.	Producción más limpia, impacto ambiental, Unid. Amb.
Japon/JICA	830,000.	Gestión de riesgo
Noruega	120,000.	Gestión de riesgo
Suiza	5,500.	Gestión ambiental (Evaluacion de impacto ambiental)
BM/GEF	600,000.	Manejo de sistemas naturales
BM/GTZ/GEF/WWF	200,049.	Corredor Biológico Mesoamericano
BID/BM/CEPREDENAC	225,000.	Estudios de multiamenazas del Volcán San Salvador
PNUD/GEF	882,000.	Cambio climático, energias renovables, biodiversidad
PNUMA	12,500.	Elaboración del Informe Nacional del Medio Ambiente
PNUMA/GEF	217,000.	Bioseguridad y especies invasoras
FMPM	109,980.	Dismin de sustancias agotadoras de la capa de ozono
Union Europea	9,600,000.	Fortalecimiento de la gestión ambiental
BID	2,447,650.	Apoyo al SINAMA y gestión de riesgo
UICN	28,000.	Genero y medio ambiente
Convenio de Basilea	116,391.	Fortalecimiento del Centro Regional de Basilea
Convenio de Desertificacion	30,800.	Plan de acción de lucha contra la desertificación y sinergias entre convenciones
RAMSAR/Suiza	26,045.	Rehabilitación humedales de Cerrón Grande
TOTAL	**21,624,800.**	

ANNEX G

Map of Protected Area System in El Salvador


EL SALVADOR
CORREDOR BIOLOGICO
Y SISTEMA DE AREAS
NATURALES PROTEGIDAS
(SANP)
GUATEMALA
HONDURAS
OCEANO PACIFICO
90°
89°30'
89°
88°30'
88°
400000
450000
500000
550000
600000
14°30'
14°
13°30'
13°
350000
300000
250000
AREA NATURAL PROTEGIDA
Prioritaria
No prioritaria
LIMITE DEPARTAMENTAL
CABECERA DEPARTAMENTAL
Propuesta actual del Corredor Biológico
Propuesta de ampliación del Corredor Biológico
Ministerio de
Medio Ambiente y
Recursos Naturales
Sistema de Información Ambiental