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**ACTION PLAN  
TO DEVELOP A NATIONAL STRATEGY FOR  
MANAGING THE ENVIRONMENT AND  
NATURAL RESOURCES IN EL SALVADOR**

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## LIST OF ACRONYMS

A.I.D.	Agency for International Development
CATIE	Tropical Agronomy Center for Research and Education
CEL	Comisión Ejecutiva Hidroeléctrica del Río Lempa (National Power Utility)
CIPMA	Centro de Investigación y Planificación de Medio Ambiente
FESA	Fundación Ecológica Salvadoreña Activo 20-30
IUCN	International Union for the Conservation of Nature and Natural Resources
NESCO	National Environmental Strategy Coordinating Office
NGO	non-government organization
SETEFE	Secretaría Técnica del Financiamiento Externo
USAID	United States Agency for International Development

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## **ACTION PLAN**

### **Purpose**

This Action Plan is designed to assist USAID/El Salvador in developing a National Strategy for Natural Resource Management for El Salvador in collaboration with existing ecological non-government organizations (NGO) and the Government of El Salvador (GOES). The Action Plan provides a step-by-step blueprint to arrive at a comprehensive National Strategy within two years from the release of funds. The present document is based in part on work done previously by Howard Dougherty and Daniel Sherill, "Toward a National Strategy for Resource Management in El Salvador: A Concept Paper," DESFIL, April 1990.

### **Introduction**

The disastrous state of the environment and natural resources in El Salvador is well-known; less than 5% of the original forests remain with firewood still supplying over 80% of the country's energy needs. The population density is the highest in Latin America and continues to grow at 2.4% per year placing intense pressure on the agricultural system. With approximately 95% of El Salvador's land area in hillsides and highlands, the watersheds supplying the hydroelectric facilities are eroding quantities of silt into the reservoirs. Numerous wildlife species are endangered. In short, the ecosystem has been severely damaged and this seriously affects the economic production system and the well-being of the El Salvadoran people.

The direct antecedent to the Action Plan for developing a National Strategy for Managing the Environment and Natural Resources in El Salvador was a meeting of the five Central American presidents in Costa Rica in December, 1989. The meeting established a Central American Commission for the Environment and Sustainable Development. Each country was to develop its own strategy within a regional framework. In June of 1990 a Presidential Commission for Environmental Strategy (hereafter referred to as the Presidential Commission) was created in El Salvador along with a Technical Secretariat. The precedent for creating the Presidential Commission was set in 1974 with a law forming a National Committee to Protect the Environment.

In the private sector of El Salvador, NGOs have been active in a variety of environmental projects. One of these organizations, the Fundación Ecológica Salvadoreña Activo 20-30 (FESA), has not only a strong membership of natural resource technicians, but a solid funding base provided by annual telethons. (See Appendix C for a listing of the Technical Committee of FESA).

The implementation of the Action Plan requires the establishment of a National Technical Team which will be in charge of initiating and coordinating all action plan activities. (Figure 1.) FESA, in coordination with other environmental groups, should begin to identify the members of the technical team as soon as funding is secured for the Action Plan. (See Appendix D for a listing of environmental NGOs active in El Salvador.) The National Coordinator of the strategy should be a well-respected natural resource specialist with experience in managing a national campaign involving diverse tasks. The National Coordinator will be assisted by a small staff and contracted technicians (both local and international) who will provide services of various duration.

While the National Technical Team is being recruited, an international counterpart must be identified and hired to assist in launching and directing the activities to be carried out under the plan. The counterpart should be experienced in working on national strategies and have a broad knowledge of natural resource issues. The external counterpart will be hired for the duration of the project to oversee the Action Plan and ensure that activities proceed according to schedule.

The counterpart, along with the National Coordinator, will have the responsibility of supervising all activities necessary for the timely completion of the National Strategy. Other external consultants will be hired for specific activities including data management, environmental education, alternative energy, and resource economics.

Throughout the formation of the strategy, FESA and the National Environmental Strategy Coordinating Office (NESCO) will interact with other environmental NGOs in the country through monthly round-table meetings and other means. In addition, NESCO will maintain active contact with the Presidential Commission, keeping it apprised of the progress of the strategy on a regular basis. The Presidential Commission will be the main policy body for implementing the National Strategy and will be assisted by a Technical Secretariat in coordinating GOES activities in various ministries regarding environmental policies and programs.

During the course of the development of the National Strategy, FESA, NGC, government and private sector representatives along with NESCO will analyze how environmental policy can be institutionalized at the national level. Another activity of NESCO will be to identify training needs for Salvadoran technicians to be able to formulate and implement the National Strategy.

The Action Plan was prepared in collaboration with the Technical Committee of FESA, representatives of the Presidential Commission, representatives of seven ecological NGOs and international donor agencies, as well as the Rural Development Office of USAID/El Salvador.

## **ACTION STEPS TO BE TAKEN TO DEVELOP A NATIONAL STRATEGY FOR THE ENVIRONMENT AND NATURAL RESOURCES IN EL SALVADOR**

### **1. Creation of a Presidential Commission for the Management of Natural Resources and the Environment**

As part of the agreement by the five Central American presidents in December 1989 to set up a Central American Commission for the Environment and Sustainable Development, a Presidential Commission was created in El Salvador in June 1990.

Time Frame: June 1990

Product: The Presidential Commission for the Management of Natural Resources and the Environment was approved

### **2. Appointment of the Technical Secretariat for the Presidential Commission**

A decree establishing the Technical Secretariat comprised of a representative from each ministry of the government should be drafted and approved.

Time Frame: June 1990

Product: Technical Secretariat appointed and established

### **3. Approval and Funding of the Action Plan**

FESA, NGOs, A.I.D, and appropriate members of the GOES should approve the Action Plan and prepare the detailed documentation required for local currency funding by Secretaria Técnica del Financiamiento Externo (SETEFE). Once approved by the participating groups, the Plan should be submitted to the SETEFE for financing. Requests for non-local currency funding should be made to USAID/El Salvador.

Time Frame: Early Fall 1990

Products: Funding plan document for SETEFE; Action Plan approved and funded

### **4. Establishment of a National Technical Team**

A National Coordinator will be identified and hired by FESA immediately upon funding approval. The National Coordinator, in conjunction with FESA staff, will then hire the

other members of the National Technical Team. Other full-time team members of the National Technical Team should include a data management specialist, an education coordinator, a secretary, an accountant, and an administrative assistant/information specialist to organize and manage the library and assist the National Coordinator. The National Coordinator should also be a member of the Technical Secretariat.

The National Technical Team should host monthly round table meetings with all interested NGOs keeping them involved in the strategy development process.

Time Frame: One month after approval of funds

Products: NESCO established and the National Technical Team recruited and hired

## **5. Contracting of an External Advisor**

In conjunction with the hiring of the National Technical Team, the long-term international or external advisor should be recruited. Additional short-term technicians with the required expertise in specific fields such as coastal zone management, both Salvadoran and international, will be hired as needed. See Appendix A for a list of potential specialty fields that may be required. The long-term external advisor and other international advisors will be paid with non-local currency.

Time Frame: By the end of Month 2

Product: External advisor hired

## **6. Donors Meeting**

A meeting of the National Technical Team, GOES representatives, and international donors should be held in El Salvador to discuss the Action Plan. The meeting would serve as a forum for discussion of the National Strategy and a solicitation of support for the Action Plan and/or future activities as identified. Present and potential donor groups active in the country including national governments, NGO's, and representatives of international organizations such as the Canadian International Development Agency (CIDA), the Tropical Agronomy Center for Research and Education (CATIE), etc. should be invited to attend. (See Appendix B for a list of international donors active in El Salvador.)

Time Frame: By the end of Month 5

Product: Donors meeting held and linkages established

As a follow-up to the donors meeting, a quarterly newsletter should be prepared to report on progress on the National Strategy. The mailing list should include all donor groups in the country in addition to international groups such as the A.I.D., World Bank, World Wildlife Fund, etc.

When the Action Plan is well underway, the National Coordinator should plan a trip with the FESA director to the United States in order to visit organizations and foundations which fund environmental and natural resources projects. The trip would serve to inform such organizations regarding the development of the National Strategy in El Salvador and to solicit their support.

Time Frame: During the first year of the project

Product: Linkages established with international agencies

## **7. Seminar for the Legislative Assembly**

On May 31, 1990 the Legislative Assembly created a Sub-Commission for Environmental Affairs. A seminar for this sub-commission and other interested legislators should be developed to inform them on the progress of the National Strategy and significant environmental and natural resource problems in El Salvador. The National Coordinator should maintain a liaison with the Legislative Assembly through meetings, newsletters, and regular communications.

Time Frame: During Month 5

Product: Seminar held and linkages established with the National Legislative Assembly

## **8. Sectoral Diagnostic Study**

Due to the impact of economic activity on the environment, various sectoral analyses must be carried out to gather data for the development of the strategy. A starting point would be to update the Salvadoran Environmental Profile published in 1985 incorporating other data available in the country. Analyses should be conducted to assess the resource situation since the Profile study was completed and then provide an "Environmental Status of El Salvador in 1990" diagnostic report. The studies should specifically focus on sectoral problems (agriculture, energy/mining, manufacturing, and municipal), their impact on resources (air, water, soil, forests, wildlife, coasts, fisheries, and human populations), and how those impacts affect economic development and well-being, and recommend solutions for the problems identified. In addition to detailing the traditional negative impacts which various sector activities have on the environment e.g. water pollution, the studies should

- **Soil Resources:** An inventory of soil classifications on a national level should be made along with primary land uses. The deterioration of the soil resource should also be included. (Two national technicians)
- **Forests and Forest Resources:** The present location of forests should be examined, as well as their destruction, programs for reforestation, and the identification of untouched natural forests which should be protected. (One national technician)
- **Protected Areas and Wildlife:** Evaluate the characteristics of protected natural areas including their potential for supporting a balanced increase in wildlife by improving the buffer capacity of the surrounding areas. (Two national technicians)
- **Coastal Resources and Aquaculture:** Evaluate the status of current marine resources as well as those that could potentially increase wildlife in coastal areas. Identify areas that should be protected and areas which can support sustainable use. (One national technician and one international technician)
- **Agriculture:** Various methods of agriculture production and the environmental impacts should be considered. Traditional cultivation practices should be evaluated to see if patterns can be modified. Alternative methods of intensive production and proper management of pesticides should be examined. An analysis of land tenure and its impact on land use should also be conducted. (Three national technicians)
- **Fisheries:** An evaluation of the progress of projects to develop fisheries should be made. In addition, an inventory of potential fish culture in freshwater and saltwater, possibilities of sustainable technologies, identification of species in danger of extinction, and a plan for allowing those species to recuperate should be made. (One national technician)
- **Energy/mining:** The interaction of energy development and the utilization of natural resources including water power and fuelwood should be discussed. The potential for stabilizing the hydro-electric and bio-energy ecosystems to ensure sustainable growth should be considered in addition to energy conservation and solar alternatives. Important mining deposits must be identified along with current and future environmental impacts of exploitation. (Two national technicians)
- **Population:** A study should be conducted to estimate population by geographic region by counting housing units on recent aerial photographs and combining this data with estimates of people per housing unit. The population data could be verified through a field

survey and a statistical estimate of population and environmental impact could then be determined. Although not as accurate as a census, this process will allow for better analysis, prioritization and planning than the out-dated data now provides. The next census for El Salvador is not scheduled until 1992, with possible support from the United Nations. (Three national technicians)

- **Health, Nutrition and Education:** This section should include analyses of environmental contamination including pesticide misuse in the country and its effect on human health. In the education sector, specific attention should be focused on a review of the present environmental curriculum and suggestions made to improve the curriculum at all levels of education. Materials from other countries should be reviewed to assess their adaptability for use in El Salvador. Attention should also be given to the possibility of developing university curricula to meet the demand for natural resource and environmental health professionals. (Two national technicians and one international technician)
- **Legal, Institutional and Political:** An analysis of present policies and the constraints to effective environmental programming should be made. The study should analyze the need for an environmental law and how it could be harmonized with similar national laws in the region. This section should also analyze the types of economic analysis used to approve projects and make recommendations on ways to include environmental analyses. Ultimately, there will be a need to define the future role of the Presidential Commission once the strategy is completed to ensure that environmental and resource policies are institutionalized and enforced in the country. Much of the information required for this section will be available from the A.I.D. study on natural resource policy carried out in June, 1990. (One national technician)
- **Air Pollution:** The existence of air pollution in El Salvador is acknowledged, but additional studies should be done to document the actual extent of the problem. (One national technician)

**Time Frame:** These studies should be completed by teams of technical advisors by the end of Month 11 of the project. The technical consultants should meet regularly with the National Technical Team to ensure that all studies will provide the necessary data to develop issue papers for presentation to the National Congress. Upon completion of the studies, the National Technical Team will coordinate with the technical committee of

FESA to edit the papers for presentation at the National Congress scheduled to meet during Month 15 of the strategy process.

Product: An updated diagnostic report of the state of the environment in El Salvador in 1990

In the process of updating the national profile, some gaps in data will be identified and studies proposed to fill them. NESCO will contract appropriate individuals from NGOs, GOES, and the private sector to prepare these studies for the profile update. The technicians implementing the sectoral analysis will also review some of the action projects undertaken to address specific environmental problems in El Salvador and analyze them for their impact, reasons for success or failure, and make recommendations for the successful implementation of future projects.

The institutional and political analyses should focus on the constraints in these areas for developing effective environmental policy. Many of these analyses were performed by a team sponsored by USAID/El Salvador in June 1990. The legal climate should be assessed and recommendations then made for actions (eg. passage of an environmental law). Specific attention should be given to the institutionalization of the cross-ministerial body (eg. the Presidential Commission) for the establishment of effective environmental policy. In addition, attention should be given to harmonizing the Salvadoran environmental law within the regional context.

Throughout the process of data review and implementation of the sectoral studies, the National Technical Team should be identifying areas where short-term training is necessary for the country to have personnel available with the skills demanded by a rigorous environmental strategy.

## **9. Inventory of Natural Resource Projects**

An inventory should be taken of projects currently underway or proposed for El Salvador designed to respond to the myriad environmental problems facing the country. The inventory should include the identification of project types, funding institutions, implementing institutions, funding amounts, time-frames and project locations. In addition, an assessment of reasons for the success or failure of projects should be included so that past mistakes are not repeated. The inventory should include both large and small scale projects funded by multi-lateral, bi-lateral, regional and private organizations in the country and should attempt to identify model activities that have potential for replication throughout the country. All information collected should be included in a data base to be managed by FESA. NESCO will contract appropriate individuals from NGOs, GOES, and the private sector to conduct the inventory. Participating agencies should be assured that their cooperation will be rewarded with access to NESCO's data base and information services.

An effort to document all environmental projects, governmental and non-governmental, is currently underway in the Ministry of Planning. (One national technician.)

Time Frame: By the end of Month 6 of the project

Product: A catalog of all current environmental projects

#### **10. Inventory of Educational Efforts in the Country**

The status of formal and non-formal environmental education in schools and the media must be assessed to provide a basis for the educational programs that FESA will sponsor. Broadcast and print advertising campaigns should be reviewed to appraise the status of public information on environmental problems in the country. The educational specialist of NESCO will conduct the inventory with assistance from a short term technician. (One national technician.)

Time Frame: By the end of Month 6 of the project

Product: A complete report on the status of formal and non-formal environmental education activities

#### **11. Master Matrix**

The product of the inventories and initial sectoral studies will be the preparation of a master matrix which delineates the environmental problems in the country in specific categories and by geographic area with a priority assigned. Under each problem area would be listed the studies or data which are available or needed to address the problem, and the action projects which have been completed, are now in progress, or are needed, with a priority code assigned. This master matrix would then allow the identification of priority actions for project development by NGO's, GOES, etc. The National Power Utility (CEL) uses one matrix model which may be adapted for use by NESCO.

Time Frame: By the end of Month 8 of the project

Product: A decision process for assigning priorities to needed studies and action projects with objective priority

#### **12. Identification of Action Projects**

As work on the diagnostic studies proceeds, the National Technical Team, in conjunction with other environmental groups, should begin to identify projects that address urgent

environmental problems in the country and which could be initiated in the near future. These projects, including educational efforts, should be presented to the Technical Committee of FESA and the Presidential Commission or its Technical Secretariat for discussion and assignment for implementation to an NGO or an agency of the GOES.

Time Frame: From Month 3 to the end of the project

Product: A list of high priority projects, implemented while the National Strategy is being formulated

### **13. Meeting of Data Managers**

A national meeting will be held with all agencies and organizations which have data on environmental issues. The result of this meeting will be a better understanding of the data bases that exist in the country, the units of analysis, and the computer format. An action item for NESCO will be to determine the need for, specifications of, and the appropriate home base for a national environmental data base.

Time Frame: By the end of Month 4 of the project

Product: Establishment of linkages among institutions handling data

### **14. Information Collection and Data Retrieval**

**Establishment of a Centralized Environmental Library.** NESCO should begin to collect books and periodicals for the establishment of a library on the natural resource situation in the country. This library would be open to students and researchers wanting information on El Salvador. FESA may also want to subscribe to relevant periodicals in Spanish. CIPMA of Chile publishes a quarterly called "Desarrollo y Medio Ambiente" including articles both on Chilean and international environment and development issues. FESA should also contact various non-profit and governmental groups to receive their publications (e.g. Fundación Natura from Ecuador). Appropriate publications are available from USAID, World Resources Institute, World Wildlife Fund, CATIE, International Union for the Conservation of Nature and Natural Resources (IUCN), etc.

Time Frame: During the first eight months, NESCO should collect and catalogue all important documentation available in the country regarding natural resource use and input this information in a computer data base. The collection and gathering of information for the library will be an on-going activity throughout the life of the project.

**Product:** The establishment of a national library of environmental and natural resource management materials

**Establishment of a Data Library.** NESCO will take the lead in assembling a library cataloging the types and location of data available in the country for the analysis of natural resource issues. The library would also include an environmental skills inventory of persons in the country and a list of environmental project activities that have been carried out in the country in the last ten years. During Month 1, NESCO will inventory those institutions that manage data on soils, cartography, remote sensing and aerial photographs, infrastructure, hydrology, meteorology, geology, biological resources, general environment, legislation and demography. Once completed, a one-week seminar will be held for all institutions to analyze the data problems and make recommendations for improving data collection and standardizing formats. FESA will undertake the task of helping to establish a national data base. Outside assistance will be needed to carry out this task. (One international technician.)

**Time Frame:** For the duration of the project

**Product:** A National Environmental Data Catalog

## **15. Environmental Education**

During the development of the strategy, NESCO should hold meetings with interested groups to facilitate a program educating the people of El Salvador on environmental issues. Specific action projects could then be identified and included with Action Step 12. Two distinct types of efforts should be investigated:

- NESCO should see that appropriate groups develop a national program to raise people's consciousness regarding the environment and to establish the connection between the wise use of resources in order to have sustainable economic development. Media campaigns must be developed using local advertising companies, newspapers, and radio and television stations interested in assisting in this endeavor. People throughout the country should be made aware of the development of the National Strategy. (One national technician and one international technician)

**Time Frame:** Throughout the life of the project

**Product:** Increased national awareness of the importance of protecting the environment

- The second major area of focus would be both the formal and non-formal educational systems. The systems would be studied and recommendations made regarding techniques and policies that should be introduced. Present curricula would be reviewed and a suggested national curriculum could be designed as an action project based on materials presently used in the country enriched with elements from other countries with strong environmental movements such as Ecuador and Costa Rica. (The same technicians in step one of Action Step 15 will work on this process)

Time Frame: To be completed by the end of the first year of the project

Product: An accurate assessment of the present situation on which to base an educational campaign

#### **16. "Cabildos Abiertos" on the National Level**

In an effort to reach out to a larger number of Salvadorans and learn first hand about the resource and economic problems affecting people in various regions and economic activity sectors, NESCO should form "Cabildos Abiertos". The purpose of these meetings would be to solicit from rural leaders their views on economic development and the environment and include this information in the studies that will be presented at the National Congress. In this way, Salvadorans throughout the country will learn first hand about the National Strategy and have an opportunity to have input into the process. The goal will be to hold two one-day meetings in each department to describe the strategy and solicit inputs. This process should continue for seven months resulting in twenty-eight meetings.

Time Frame: To be completed by the end of Month 12

Product: Local participation at the national level in the strategy development process

#### **17. Preparation of Issue Papers for the National Congress**

The National Coordinator will hold meetings of various technical groups that have researched the topics outlined above. From that information, in addition to the information gathered from the "Cabildos Abiertos," the National Coordinator will assign preparation of issue papers to members of the technical committee and to researchers. The issue papers will be presented at the National Congress on the environment to promote discussion. Through workshop groups at the Congress, the issues will be discussed and specific proposals should be made to resolve the issues in consideration.

**Time Frame:** During Months 12 and 13 of the project

**Product:** Specific issue papers on the most important environmental and natural resource problems facing the country

#### **18. Convening of the National Congress Regarding the Environment**

The National Congress would be the forum to present the findings from the studies and inventories implemented by FESA and to solicit opinions and action priorities based on the workshops on the issues papers. Delegates from the government, private sector, NGOs, community leaders, and international experts should be invited to attend. The goal of the Congress would be to arrive at a consensus on priorities and actions for resolving national environmental problems.

**Time Frame:** During Month 15 of the project

**Product:** The information and participatory basis for preparation of the National Strategy

#### **19. Development of the Environmental Strategy Draft for El Salvador**

The National Congress should have specific recommendations for action and the establishment of priorities allowing El Salvador to respond to urgent environmental needs. Groups of technicians should take the final recommendations and proposed actions and form a coherent plan of action which may require external technical assistance. Specific issues and priority areas must be identified, with preliminary descriptions and budgets. Implementing agencies, whether governmental or non-governmental, should be identified and the sequence of activities spelled out. Several months will be needed to write the final document for presentation to the NGO's, the Technical Secretariat, and the Presidential Commission for review.

**Time Frame:** By Month 22 of the project. The Presidential Commission should be given two months to make any suggestions for the revision of the final document

**Product:** A draft document -- the National Strategy for Management of the Environment and Natural Resources in El Salvador

#### **20. Approval of the National Strategy**

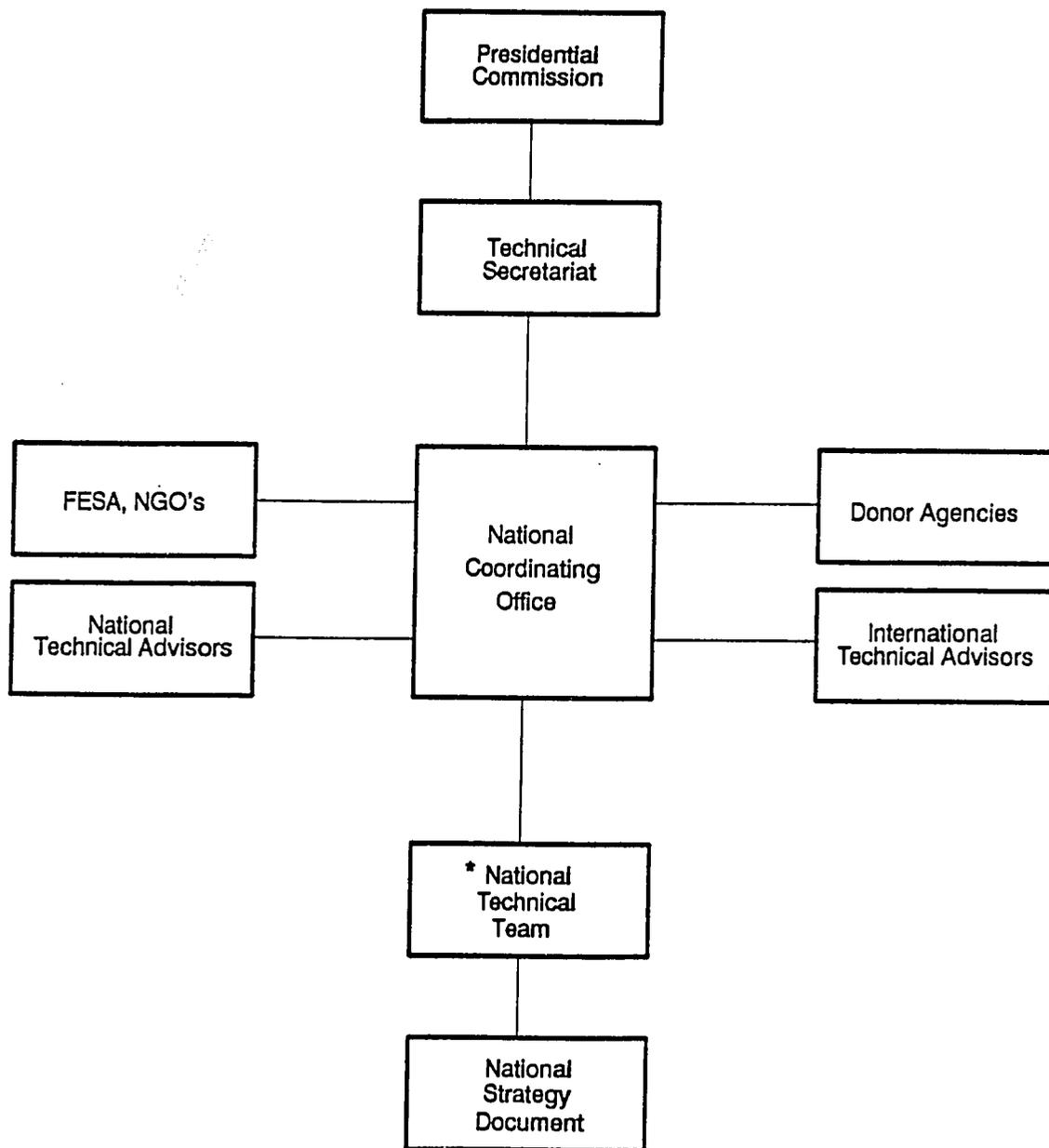
Once revisions are agreed upon by the major parties, the document should be submitted to the Presidential Commission for final approval. Additional approvals will be required by

the President and the National Congress. When the final National Strategy is approved, appropriate ways of publicizing it should be utilized. This could be achieved by publishing a series of articles in the newspapers. The citizens of El Salvador must identify with the National Strategy in order for it to be effective.

Time Frame: By the end of the Month 24 of the project

Product: A final, bound document -- the National Strategy for Management of the Environment and Natural Resources in El Salvador ready for implementation

**Figure 1. Organizational Chart for Development of a Strategy for Natural Resources Management**



\* NOTE: The National Technical Team will include:

- National Coordinator
- Data Management Specialist
- Education Coordinator
- Accountant, Secretary
- Administrative Assistant

**Figure 2. Proposed Action Plan**

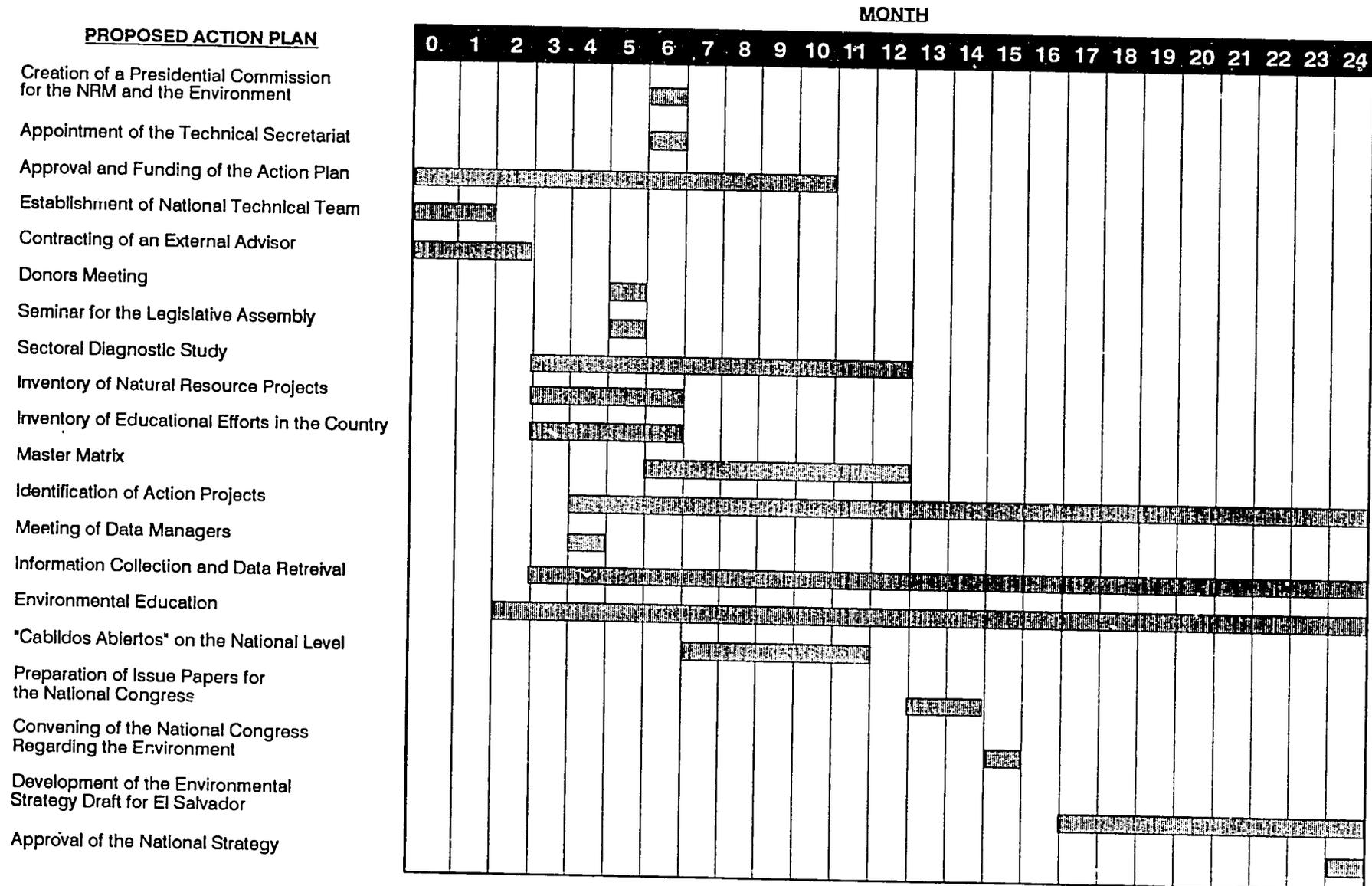
## **PROPOSED ACTION PLAN**

- 1. Creation of a Presidential Commission for a National Strategy for the Management of Natural Resources**  
Time: June 1990 (approved)
- 2. Appointment of a Technical Secretariat**  
Time: June 1990
- 3. Approval of the Action Plan and Funding of Strategy Development**  
Time: By October 1990
- 4. Establishment of a National Technical Team**  
Time: By Month 1 of the project
- 5. Contracting an External Advisor**  
Time: By Month 2 of the project
- 6. Donors Meeting**  
Time: Month 5 of the project
- 7. Seminar for Legislators of the National Assembly**  
Time: Month 5 of the project
- 8. Sectoral Diagnostic Study. "State of El Salvador in 1990"**  
Time: Between Month 3 and Month 12
- 9. Inventory of Natural Resource Projects**  
Time: Between Month 3 and Month 6

- 10. Inventory of Educational Efforts in El Salvador**  
Time: Between Month 3 and Month 6
- 11. Development of a Master Matrix of Natural Resource Problems**  
Time: Between Month 6 and Month 12
- 12. Identification of Action Projects**  
Time: Starting in Month 4 and continuing
- 13. Meeting of Data Managers**  
Time: During Month 4
- 14. Information Collection and Data Retrieval**  
Time: Starting in Month 3 and continuing
- 15. Environmental Education**  
Time: Starting in Month 2 and continuing
- 16. "Cabildos Abiertos" on the National Level**  
Time: Between Month 7 and Month 11
- 17. Preparation of Issues Papers for the National Congress**  
Time: Months 13 and 14
- 18. Convening of a National Congress on the Environment**  
Time: During Month 15
- 19. Development of the Draft Environmental Strategy for El Salvador**  
Time: The eight months after the National Congress
- 20. Approval of the National Strategy**  
Time: By the end of Month 24

Figure 3. Time Schedule for Action Plan Activities

**TIME SCHEDULE**



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Environmental and Natural Resource Management in El Salvador.

## APPENDIX A

### PRELIMINARY LIST OF TECHNICAL STAFF REQUIRED FOR THE ACTION PLAN

#### Long-Term:

##### Salvadoran Nationals

National Coordinator  
Data Management Specialist  
Education Coordinator  
Accountant  
Secretaries - 2  
Administrative Assistant

##### International Position

External Advisor

#### Short-Term:

##### Salvadoran Nationals

Water Resources Technician - 2  
Soil Resources Technician - 2  
Forest Resources Technician  
Protected Areas and Wildlife Technician - 2  
Coastal Resources and Aquaculture Technician  
Agriculture Technician - 3  
Fisheries Technician  
Energy/Mining Technician - 2  
Population impact Technician - 3  
Health, Nutrition, and Education Technician - 2  
Legal, Institutional, and Political Technician  
Air Pollution Technician  
Natural Resource Inventory Technician  
Educational Inventory Technician

##### International Position

Education Advisor  
Data Management Advisor  
Coastal Resources Advisor

NOTE: The actual technician specialties and time allocations may change as the project proceeds.

## APPENDIX B

### INTERNATIONAL DONOR ORGANIZATIONS IN EL SALVADOR (Funds and/or Technical Assistance)

BCIE	Banco Centroamericano de Integración Económica (Central American Bank for Economical Integration)
BID	Banco Interamericano de Desarrollo (Interamerican Development Bank)
CATIE	Centro Agronomico Tropical para la Investigación y la Enseñanza (Tropical Agronomy Center for Research and Education)
CEE	Comunidad Económica Europea (European Economic Community)
ACDI	Agencia Canadiense de Desarrollo Internacional (Canadian International Development Agency; CIDA)
FAO	Organización de las Naciones Unidas para la Agricultura y la alimentación (Food and Agriculture Organization of the United Nations)
GTZ	Agencia Técnica Alemana (German International Cooperation Agency)
IICA	Instituto Interamericano de Cooperación para la Agricultura (Interamerican Institute for Agricultural Cooperation)
INFOPECSA	Servicio de Información Comercial para Productos Pesqueros en la Region Latinoamericano y el Caribe (Commercial Information Service for Fish products in Latin America and the Caribbean)
IUCN	International Union for the Conservation of Nature and Natural Resources
JICA	Japanese International Cooperation Agency
OEA	Organización de Estados Americanos (Organization of American States)
OIEA	Organización Internacional de Energía Atómica (International Atomic Energy Commission)

OLDEPESCA	Organización Latinoamericana de Desarrollo Pesquera (Latin American Organization for Fisheries Development)
OMM	Organización Meteorológica Mundial (World Meteorology Program)
ONUDI	Organización de las Naciones Unidas para Desarrollo Industrial)
OPS	Organización Panamericana de la Salud (Pan American Health Organization. PAHO)
PMA	Programa Mundial de Alimentos (World Food Program)
PNUD	Programa de las Naciones Unidas para el Desarrollo (United Nations Development Program)
PNUMA	Programa de las Naciones Unidas para el Medio Ambiente (United Nations Environmental Program)
UNESCO	Education, Science, and Culture Organization of The United Nations
USAID/El Salvador	A.I.D. Mission in El Salvador.
WB	World Bank

#### REGIONAL ORGANIZATIONS AND COLLABORATING INSTITUTIONS

ASDI	Autoridad Sueca para el Desarrollo Internacional (Swedish International Development Authority)
CARE	Cooperative for American Relief Everywhere
CI	Conservation International
NORAD	Agencia Noruego para el Desarrollo Internacional (Norwegian International Development Agency)
ORCA/UICN	Oficina Regional para Centro America of the UICN (Regional Office for Central America of the International Union for Conservation of Nature and Natural Resources)
TNC	The Nature Conservancy
WCI	Wildlife Conservation International

WWF

World Wildlife Fund

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## APPENDIX C

### TECHNICAL COMMITTEE FUNDACION ECOLOGICA SALVADORAN ACTIVO (FESA) Salvadoran Ecological Foundation

NAME	EXPERIENCE/DISCIPLINE
<u>Chairman:</u>	
Ing. Fidel Antonio Ramos	CEL Energy - Remote Sensing
<u>Members:</u>	
Lic. Zulma Erith de Mendoza	Cultural Heritage, Ministry of Education
Dr. Gelio Guzman	Head of Meteorology Department
Ing. Hugo Guerra y Guerra	Sanitary Engineer
Lic. Manuel Benitez Arias	Head of National Parks, Natural Resources Center; Ministry of Agriculture
Lic. Maria Luisa R. de Aguilar	Ministry of Education
Dr. Rafael Antonio Serrano	Ministry of Agriculture, Legal Department
Dr. Vernon Madrigal	Medical Doctor
Ing. David Escalante Orozco	Ecological Salvadoran Movement Biodiversity
Dr. Francisco Serrano	Ecologist
Ing. Rafael Rubio	Hydrologist, Natural Resources Center. Ministry of Agriculture
Ing. Roberto Dennis	Director, Natural Resources Center. Ministry of Agriculture
Ing. Roberto Figueroa	Businessman
Ing. Francisco Perdomo Lino	Ministry of Agriculture

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## APPENDIX D

### SALVADORAN NON-GOVERNMENTAL ORGANIZATIONS RELATED TO THE ENVIRONMENT

AMBI	Amigos de la Bicicleta (Friends of the Bicycle)*
AMAR	Amigos del Árbol (Friends of the Tree)*
ASACMA	Asociación Salvadoreña pro - Conservación del Medio Ambiente (Salvadoran Association for the Conservation of the Environment)*
ASIA	Asociación Salvadoreña de Ingenieros y Arquitectos (Salvadoran Association of Engineers and Architects)
ASIMEI	Asociación Salvadoreña de Ingenieros Mecánicos, Eléctricos e Industriales (Salvadoran Association of Mechanical, Electrical, and Industrial Engineers)*
ASINQUI	Asociación Salvadoreña de Químicos y Químicos Industriales (Salvadoran Association of Chemists and Industrial Chemists)*
CADES	Colegio de Arquitectos de El Salvador (Salvadoran Association of Architects)*
CESTA	Centro Salvadoreño de Tecnología Apropriada (Salvadoran Center for Appropriate Technology)*
CREMA	Comité para la Recuperación del Medio Ambiente (Committee for Environmental Recuperation)
DBUES	Departamento de Biología de la Universidad de El Salvador (Biology Department of the University of El Salvador)*
FESA	Fundación Ecologica Salvadoreña Activa 20-30 (Salvadoran Ecological Foundation)
FM	Fundación Montecristo para la Conservación del Medio Ambiente y la Naturaleza (Montecristo Foundation for the Environment and Nature) *

FUREMAR	Fundación de Recursos Mineros y Limnológicos (Foundation for Mineral and Water Resources)
FUTECMA	Fundación Teclena pro Medio Ambiente (Teclena Foundation for the Environment)
GEC	Grupo Ecologico Chilamatal (Chilamatal Ecologic Group)
GEJO	Grupo Ecologico del Jocotal del Oriente (Ecologic Group of Jocotal del Oriente)
GEP	Grupo Ecologico Pelicano (The Pelican Ecologic Group)
ITC	Instituto Técnico Cultural Heroes de Brasil (Technical Cultural Institute Heroes of Brazil)*
MES	Movimiento Ecologico Salvadoreño
PNS	Programa de Nutrición y Soya (Nutrition and Soybean Program)*
SAENA	Sociedad de Ingenieros de la escuela Nacional de Agricultura (Agronomy Society of the National School of Agriculture)*
SAS	Sociedad Ambientalista Salvadoreña (Salvadoran Environmental Society)*
SEEUCA	Sociedad de Estudios Ecológicos de la Universidad Jose Simeon Canas (Society of Ecologic Studies of Jose Simeon Cana University)
SIADES	Sociedad de Ingenieros Agrónomos de El Salvador (Salvadoran Society of Agronomists)*
UAE	Universidad Albert Einstein (Albert Einstein University)*
UEES	Universidad Evangélica de El Salvador (Evangelical University of El Salvador)*
UNES	Unidad Ecologica Salvadoreña (Salvadoran Ecological Union)

EPES	Universidad Politécnico de El Salvador (Polytechnic University of El Salvador)*
UTLA	Universidad Técnica Latinoamericano (Latin American Technical University)*
UTAE	Universidad Tomas Edison (Thomas Edison University)*

\* The 19 organizations which are members of the umbrella organization Unidad Ecologica Salvadorena (Salvadoran Ecological Union).

**APPENDIX E**

	<b>ACTION PLAN BUDGET</b>		
<b>ITEM</b>	<b>LOCAL CURRENCY</b>		<b>TOTAL LOCAL</b>
	<b>YEAR 1</b>	<b>YEAR 2</b>	
<b>I. Salaries - Staff</b>			
National Coordinator	¢172,800	¢192,000	¢364,800
Data Base Manager	¢153,600	¢168,000	¢321,600
Education Coordinator	¢115,200	¢126,720	¢241,920
Administrative Asst.	¢76,800	¢86,400	¢163,200
Accountant	¢62,400	¢72,000	¢134,400
3 Secretaries	¢86,400	¢86,400	¢172,800
<b>SUB-TOTAL</b>	<b>¢667,200</b>	<b>¢731,520</b>	<b>¢1,398,720</b>
<b>Salaries - Short Term</b>			
Short Term Technicians	¢1,472,000	¢768,000	¢2,240,000
23 for 5 mo., \$1600/mo			
External Audit	¢14,400	¢14,400	¢28,800
<b>SUB-TOTAL</b>	<b>¢1,486,400</b>	<b>¢782,400</b>	<b>¢2,268,800</b>
<b>TOTAL I</b>	<b>¢2,153,600</b>	<b>¢1,513,920</b>	<b>¢3,667,520</b>

APPENDIX E - continued

<b>II. Social Benefits</b>	₱200,160	₱219,456	₱419,616
<b>TOTAL II</b>	₱200,160	₱219,456	₱419,616
<b>III. Travel and Per Diem</b>			
Local Travel	₱40,000	₱24,000	₱64,000
Local Per Diem	₱165,600	₱76,800	₱242,400
23 x ₱20/days x 45 days			
<b>TOTAL III</b>	₱205,600	₱100,800	₱306,400
<b>IV. Office Expenses</b>			
Rent	₱72,000	₱76,800	₱148,800
Telephone and Mail	₱48,000	₱48,000	₱96,000
Paper and Supplies	₱24,000	₱28,800	₱52,800
Photocopying	₱9,600	₱9,600	₱19,200
Gasoline and Oil	₱48,000	₱48,000	₱96,000
Maintenance	₱5,600	₱8,000	₱13,600
Publication	₱14,400	₱14,400	₱28,800
Insurance	₱12,800	₱12,800	₱25,600
<b>TOTAL IV</b>	₱234,400	₱246,400	₱480,800

**APPENDIX E - continued**

<b>V. Equipment</b>			
2 Computer Stations	¢240,000		¢240,000
1 Overhead Projector	¢3,200		¢3,200
1 Slide Projector	¢4,000		¢4,000
1 Slide Screen	¢800		¢800
1 Color Television	¢4,800		¢4,800
1 VHS Video Recorder	¢3,200		¢3,200
1 Radio System	¢92,000		¢92,000
2 4WD Vehicles	¢360,000		¢360,000
1 Typewriter	¢4,000		¢4,000
<b>TOTAL V</b>	<b>¢712,000</b>		<b>¢712,000</b>
<b>VI. Environmental Education</b>			
Video/TV Programs	¢400,000	¢400,000	¢800,000
Radio Programs	¢240,000	¢240,000	¢480,000
Posters,Pamphlets,etc	¢40,000	¢40,000	¢80,000
Materials	¢28,000	¢28,000	¢56,000
Publications	¢120,000	¢120,000	¢240,000
<b>TOTAL VI.</b>	<b>¢828,000</b>	<b>¢828,000</b>	<b>¢1,656,000</b>

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**APPENDIX E - continued**

<b>VII. Seminars</b>			
Rentals	€16,000		€16,000
Food and Refreshment	€12,000		€12,000
Lodging	€25,600		€25,600
Materials	€16,000		€16,000
Photocopying	€4,800		€4,800
<b>TOTAL VII.</b>	<b>€74,400</b>		<b>€74,400</b>
<b>VIII. National Congress</b>			
Room Rental		€16,000	€16,000
Refreshments		€8,000	€8,000
Visitor Per Diem		€61,600	€61,600
Materials		€20,000	€20,000
Secretarial Support		€4,000	€4,000
Equipment Rental		€4,800	€4,800
<b>TOTAL VIII</b>		<b>€114,400</b>	<b>€114,400</b>

**APPENDIX E - continued**

<b>IX. Project Support Funds</b>			
Satellite Imagery &			
Aerial Photos	¢240,000		¢240,000
Software Acquisition	¢120,000		¢120,000
Data Interpretation	¢16,000		¢16,000
Soil Studies	¢28,000		¢28,000
Other Materials	¢48,000		¢48,000
Action Project Fund	¢400,000	¢400,000	¢800,000
Subscriptions	¢24,000	¢24,000	¢48,000
<b>TOTAL IX</b>	<b>¢876,000</b>	<b>¢424,000</b>	<b>¢1,300,000</b>
<b>X. Final Publication</b>			
<b>TOTAL X</b>		<b>¢200,000</b>	<b>¢200,000</b>

**APPENDIX E - continued**

TOTAL PROJECT COST		₺5,284,160	₺3,646,976		₺8,931,136
(Local Currency)					
	ACTION PLAN DOLLAR BUDGET (US\$)				
		YEAR 1	YEAR 2		TOTAL
<b>I. Consultants</b>					
Int'l Advisor		42,000	42,000		84,000
Education Advisor		16,000	8,000		24,000
Data Mgmt. Advisor		16,000	8,000		24,000
Coastal Resource Adv.		16,000	8,000		24,000
<b>TOTAL I.</b>		90,000	66,000		156,000
<b>II. Benefits</b>					
Long Term (35%)		14,700	14,700		29,400
Housing \$ Furn.		45,000	22,000		67,000
Danger Pay (20% Sals.)		18,000	13,200		31,200
DBA (4.25%)short term		20,400	10,200		30,600
<b>TOTAL II.</b>		38,400	23,400		61,800
<b>III. Travel &amp; Per Diem</b>					
Int'l Airfares		11,900	23,200		35,100
Per Diem		27,720	34,188		61,908

**APPENDIX E - continued**

TOTAL III.		39,620	57,388		97,008
IV. Training					
Regional Training		31,240	31,240		62,480
15, 2 week courses					
TOTAL IV		31,240	31,240		62,480
SUB-TOTAL		199,260	178,028		377,288
V. Overhead					
30% of Sub Total		59,778	53,408		113,186
TOTAL DOLLAR		259,038	231,436		490,474