MASTER PLAN FOR THE INTEGRAL AND SUSTAINED
DEVELOPMENT OF THE RÍO PAZ BINATIONAL BASIN

1. Objectives

1.1 General Objectives

1.2 Specific Objectives

Achieving maximum economical profitability in the use of natural resources, through sustainable use.

Using soil resources in an adequate, sustainable manner, according to their actual productive capabilities and based on agro-ecological criteria.

Minimizing and optimizing the use of non-renewable resources.

Enhancing the quality of life (actual and observed).

Protecting and preserving the Environment, by reducing the vulnerability to and risk of natural events.

Incrementing the participation of all actors involved in territorial management.

Identifying priority areas and related priority projects, and assessing their technical, economical, and institutional feasibility.

2. Background

In 1971, the Governments of El Salvador and Guatemala set up the International Waters and Borders Committee (CILA), whose main task is to advice and assist the governments of both countries on border issues, while enabled to carry out research and studies, as well as to execute works previously approved by the Governments. CILA’s tasks include: providing an opinion on any construction projects intended to be executed in the terrestrial boundaries, or in the basins of
international rivers and lakes, and supervising their construction, to guarantee the rights of any of the countries are not jeopardized. All matters and issues related to defense works, and to the use of international waters shall be dealt with on the basis of the rules and principles recognized by International Law, which international organizations have promoted, and which allow for the greater benefit of the population and interest of both countries.

A Presidents summit was held at the Las Chinamas border site, on July 19, 1985, during which a Joint Statements was issued, as follows:

"The Chief of State of Guatemala, and the President of El Salvador, have considered the best interest of both countries, and the convenience of performing studies related to the global, rational, and equal use of the Río Paz Basin, in the benefit of both countries, while guaranteeing the sovereignty, territorial integrity, and interests of each of them;” and proceeded to instruct CILA to perform the necessary studies, with the cooperation and advice of the specific agencies of each country, so that both Governments may adopt the measures they consider adequate.

In November, 1995, in the occasion of the XXV Meeting of Central American Vice Presidents, in San José, Costa Rica, the international community was presented with the document entitled: "Sustainable Boundaries Development in Central America," which sets the guidelines for a sustainable boundaries development, and a program comprising fourteen (14) projects, several of which are related to integrated management of hydrographical basins, such as the Río Paz Basin Integrated Management Plan.

During the last ten years, at the request of both Governments, the General Secretariat of the AOS has been providing assistance to the countries in the Central American Isthmus, through projects aimed at integrated management of basins. The Río Paz Basin Integrated Management (El
Salvador and Guatemala) begun with cooperation in the integrated management and sustainable development of hydrological basins in 1997/98.

Initially, the Río Paz Basin Integrated Management was analyzed and formulated during the Central American Projects Formulation workshop, held at El Zamorano, Honduras, with support of UDSMA-OEA, where an application was prepared by the Central American Vice Presidents Forum to request financing from CIDI-OEA, which approved funds to cover activities to be developed along 1998.

In February of the same year, an orientation and coordination meeting for all Central American Isthmus regional projects was held in San Salvador, at which the operational basis for the integrated execution of the above Project were established.

In April 1998, the General Diagnostic of the Río Paz Binational Basin was presented. Such Diagnostic is the basis for the preparation of the Basin’s Sustainable Development Plan.

The Río Paz Binational Basin Integrated and Sustainable Development Master Plan was prepared, with AOS support, during the period October, 1997 through August, 2000. The Plan contemplates two components: Agricultural-livestock Development, and Hydrological Resources Management.

3. Activities and Tasks

The foreseen integrated scenario, the demands posed by the population interviewed during the first Rapid Rural Appraisal (RRA), and the General Strategy and Intervention Areas have been used as reference points to define the actions and instruments required to prepare the first scheme of the Master Plan. The General Structure, or logical model for the Plan (see graph) is made up by two main components:

3.1 Agricultural-livestock Development Component
The sub-components of the Agricultural-livestock Development Plan, were defined on the basis of the existing resource base, and the zoning study performed, through which an analysis was made of the current use of land in the basin, and the correct uses defined, in order to carry out natural and social benefit interventions (see zoning map).

The sub-components of the Agricultural-livestock Development Plan, defined on the basis of the analysis performed, are:

- The Forestry Resources Management Program
- The Agricultural Development Program
- The Livestock Development Program
- The Soils Management and Preservation Program

Each of the programs shall be integrated in accordance to its sub-programs, as shown in the corresponding graph.

3.2 The Hydrological Resources Management Component

The Hydrological Resources Sustainable Development Plan shall be made up by the following programs:

- Superficial and Underground Water Sanitation Program
- Hydrological Resources Protection Program
- Hydrological Resources Usage Program
- Program of Defense and Protection against Natural Disasters

4. Project Rationale

In November 1998, Hurricane Mitch devastated a large part of Central America, leaving an approximate 18,000 casualties, some 2.3 million homeless people, and losses amounting to more than 5,000 million dollars. Large areas of already eroded land were deprived of surface soil
required for agricultural activities, and the social and economical infrastructure were rendered even more vulnerable to natural risks. This natural phenomenon dramatically affected the Río Paz basin and the neighboring population.

The catastrophic results of “Mitch,” due to the magnitude of the phenomenon, confirm the need for Natural Resources and Hydrological Basins Integrated Management Plans to be available.

The investment made in great flood control and prevention works, bridges, and highways is not very useful if the high, middle, and low areas of the basin continue to deteriorate, and human settlements are allowed in highly vulnerable areas.

Those results, catastrophic due to the magnitude of the phenomenon, confirm the need for hydrographical basins natural resources integral management plans to be available, as investing in great flood control and prevention works, bridges, and highways designed for such a type of event will be worthless if, due to deterioration of the natural resources in the upper, middle and lower basin, human settlements in highly vulnerable areas, etc., the effects of a given event continue to grow out of control.

The rationale for the Plan is base on:

- **Need** for a new manner administration for the area and all of its components, to effectively face the accelerated natural resources degradation process which, in turn, is the cause of a deep social-environmental crisis.

- **Development** of a new integrated natural resources management policy framework, by creating and enforcing specific instruments, as an unavoidable manner to face the growing demand for environmental services (soil, water, forest, air, etc.)

- **Control and reduction** of vulnerability when facing the each time more frequent catastrophic events.
• **Need** for a global and integrated management of the binational hydrographical basins, to achieve actual control of the sustainable use and protection of natural resources.

Therefore, the **Río Paz Basin Sustainable and Integrated Management Master Plan** is, doubtlessly, the most important instrument for a territorial order oriented policy, and for an actual integration among the different components dealing with the sustainable use, defense, protection and y management of natural resources.

Also, this instrument becomes indispensable to coordinate the efforts and interventions of the central and local governments, and thus avoid undesired effects due to redundancy or inadequate intervention proposals.

The governments of both countries have stated their political will and have signed agreements and resolutions to develop joint actions for the management of this basin.

5. **Results expected**

The main results expected are:

• Reverting the *accelerated deforestation* process in the 3 areas of the basin, the greatest consequence of which are the floods in the lower basin.

• Reducing the *severe water pollution*, generated by wastewater effluents from the cities and industrial facilities.

• Curbing the *accelerated loss process of base inter-related natural resources* (forest-soil-water), and the conflict on the use of same.

• *Reducing the vulnerability* of the areas under environmental or atmosperical risk, or exposed to natural disasters.

Particularly expected is:
• **Generating conditions for the correct use of the soil** according to its type, and agro-ecological criteria, by substituting cattling with more profitable harvests on agriculturally adequate land, and promoting soil conservation measures in overused areas due to intensive cultivation of a single harvest.

• **Reducing the agricultural frontier pressure on the forests** while reestablishing the importance of the hydrological cycle and its derivative effects.

• **Reducing the demand for firewood** through education and the use of an appropriate technology (Finland type stove).

• **Generating an incentive system** to preserve and manage natural forests, as well as interest in recovering forestry coverage lost by way of multiple use forestry plantations.

• **Facilitating access to rural credit** to a greater number of affected population.

• **Strengthening the productive and commercial capabilities** of small and medium scale producers.

• **Creating a decentralized and participative management structure** for integral management of natural resources.

6. **Project Budget**

6.1 Global Investment Plan (Detailed Project Budget by line item).

**GLOBAL INVESTMENT PLAN (IN US$ THOUSANDS)**

<table>
<thead>
<tr>
<th>PROGRAMS AND SUB-PROGRAMS</th>
<th>TOTAL</th>
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<td>1. HYDROLOGICAL RESOURCES MANAGEMENT PLAN</td>
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<td>1.1 PROGRAM FOR DEFENSE AND PROTECTION AGAINST NATURAL DISASTERS</td>
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<td>Construction of Temporary Dwellings</td>
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<td>Construction of Drainage Systems</td>
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<td>Construction of Protection Works</td>
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<tr>
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<td>Hydraulic Model Formulation</td>
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<tr>
<td>Basin Soil Usage Map Updating</td>
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**1.2 WATER SANITATION PROGRAM**  
27,129.0

* **Wastewater Treatment Plants Sub-program**  
  Treatment Plants Design  
  City of Ahuachapán Treatment Plant  
  Chalchuapa Treatment Plant  
  Atiquizaya Treatment Plant  
  Tacuba Treatment Plant  
  Ataco Treatment Plant  
  Apaneca Treatment Plant  

* **Latrines Sub-program**  
  Rural Latrines Design Sub-program  
  Construction of Latrines (2,000 units)  

**1.3 HYDROLOGICAL RESOURCES USE PROGRAM**  
161,743.2

* **Rural aqueducts**  
* **Rainfall collection**  
* **Irrigation Projects Design**  
* **Omoa Irrigation Project**  
* **Chalchuapa-Atiquizaya Irrigation Project**
* Paz-Rosario Irrigation Project 56,949.0
* Montúfar Irrigation Project 68,328.0

2. AGRICULTURAL-LIVESTOCK DEVELOPMENT PLAN 163,931.6

2.1 FORESTRY RESOURCES PRESERVATION AND MANAGEMENT PROGRAM 74,559.9

* Forestry Preservation and Management Sub-program 1,250.8
Upper Basin 781.8
Middle Basin 281.4
Lower Basin 187.6

* Reforestation Sub-program 16,033.3
Upper Basin 8,633.3
Middle Basin 4,933.3
Lower Basin 2,466.7

* New Coffee Plantations Management Sub-program 11,645.8
Upper Basin 8,923.3
Middle Basin 2,722.5
Lower Basin -

* Coffee Plantations Maintenance Sub-program 45,630.0
Upper Basin 34,866.0
Middle Basin 10,764.0
Lower Basin -

2.2 AGRICULTURAL DEVELOPMENT PROGRAM 31,379.1

* Agricultural Subsistance Support Sub-program 11,586.9
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<th>Lower Basin</th>
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<td><strong>Lower Basin</strong></td>
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<td>2.5 COMMERCIALIZATION SUPPORT PROGRAM</td>
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<td>2.6 LOANS MANAGEMENT PROGRAM</td>
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<td>3. ORGANIZATIONAL TRAINING AND STRENGTHENING PROGRAM</td>
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<td>4. BINATIONAL COORDINATION COMMITTEE</td>
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<td>5. PRE-INVESTMENT STUDIES</td>
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<td><strong>TOTAL INVESTMENT</strong></td>
<td><strong>394,333.8</strong></td>
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### Financing required (In US$ thousands)

- Local: $39,433.38
  - Governmental inputs: $39,433.38
- External: $354,900.42
  - Non-reimbursable cooperation: $117,764.82
  - Reimbursable cooperation (Loan): $237,135.6

The non-reimbursable external cooperation is composed by:

1. **HYDROLOGICAL RESOURCES MANAGEMENT PLAN**
   1.1 **PROGRAM FOR DEFENSE AND PROTECTION AGAINST NATURAL DISASTERS**
      - Construction of Temporary Dwellings
      - Construction of Protection Works
Hydro-meteorological Forecasting Systems Set-up
Hydraulic Model Formulation
Basin Soil Usage Map Updating

1.2 WATER SANITATION PROGRAM
* Wastewater Treatment Plants Sub-program
  Treatment Plants Design
* Latrines Sub-program
  Rural Latrines Design Sub-program
  Construction of Latrines (2,000 units)

1.3 HYDROLOGICAL RESOURCES USE PROGRAM
* Rainfall collection
* Irrigation projects design

2. AGRICULTURAL-LIVESTOCK DEVELOPMENT PLAN

2.1 FORESTRY RESOURCES PRESERVATION AND MANAGEMENT PROGRAM
* Forestry Preservation and Management Sub-program
* Reforestation Sub-program

2.2 AGRICULTURAL DEVELOPMENT PROGRAM
* Agricultural Subsistance Support Sub-program

2.4 SOIL PRESERVATION PROGRAM

2.5 COMMERCIALIZATION SUPPORT PROGRAM

2.6 LOANS MANAGEMENT PROGRAM

3. ORGANIZATIONAL TRAINING AND STRENGTHENING PROGRAM
4. BINATIONAL COORDINATION COMMITTEE

5. PRE-INVESTMENT STUDIES

The reimbursable external cooperation includes:

1. HYDROLOGICAL RESOURCES MANAGEMENT PLAN

1.1 PROGRAM FOR DEFENSE AND PROTECTION AGAINST NATURAL DISASTERS

Construction of Drainage Systems

1.2 WATER SANITATION PROGRAM

* Wastewater Treatment Plants Sub-program

City of Ahuachapán Treatment Plant
Chalchuapa Treatment Plant
Atiquizaya Treatment Plant
Tacuba Treatment Plant
Ataco Treatment Plant
Apaneca Treatment Plant

1.3 HYDROLOGICAL RESOURCES USAGE PROGRAM

* Rural aqueducts
* Omoa Irrigation Project
* Chalchuapa-Atiquizaya Irrigation Project
* Paz-Rosario Irrigation Project
* Montúfar Irrigation Project

2. AGRICULTURAL-LIVESTOCK DEVELOPMENT PLAN

2.1 FORESTRY RESOURCES PRESERVATION AND MANAGEMENT
PROGRAM

* New Coffee Plantations Management Sub-program
* Coffee Plantations Maintenance Sub-program

2.2 AGRICULTURAL DEVELOPMENT PROGRAM

* Irrigation Crops Development Sub-program (Infrastructure)
* Irrigation Crops Development Sub-program (Working Capital – Production Costs Financing)
* Fruit Plantations Development Sub-program

2.3 LIVESTOCK DEVELOPMENT PROGRAM

8. Project Execution:

- Status of the Project

The Governments have prepared a Master Plan for the development of the binational basin, which contemplates a series of pre-investment studies that may be developed as part of the next stage. The Plan has been presented to the Government of Japan by the Government of El Salvador, in an attempt to obtain financing for the actions it contemplates. Actions are being taken, with CARE INTERNATIONAL support, towards defining a Binational Basin Management Model.

- Expected duration

The horizon of the Plan spans along a 10-year period as from the start-up date.

- Possible start-up date

Upon approval of the first disbursement

- Execution agencies

  - At the regional level
A Binational Executing Unit, made up by Representatives, the Vice Presidencies, and the Ministries of Agriculture shall be created, for the execution of the Project, at the level of the two countries.

* At the national level

The National Executing Unit shall be responsible for national level execution, with support of the Vice Presidencies of both countries, the Ministry of Agriculture of El Salvador, and the Ministry of Agriculture, Livestock, and Food Supply of Guatemala, and with local Governments and beneficiaries participation.

9. Schedule of activities to be developed

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<tr>
<th>Activity</th>
<th>Year 1</th>
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10. Financial Programming (In US$ thousands)

<table>
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<tr>
<th>YEAR</th>
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<th>AGRICULTURAL-LIVESTOCK DEVELOPMENT PLAN</th>
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1. 8,503.1  61,055.2
2  34,705.1  22,700.5
3  62,693.0  18,568.5
4  47,568.0  13,168.1
5  44,096.0  10,972.7
6  1,197.0  7,311.0
7  1,140.0  7,299.0
8  0.0  7,429.5
9  0.0  7,560.1
10  0.0  7,847.0

11. **Special comments**

The Plan shall be an integral part of the actions of the Boundaries Corridor of the Central American Northern Triangle (Guatemala, Honduras and El Salvador).

12. **References**

The Vice Presidencies of Guatemala and El Salvador, as well as the Ministries of Agriculture, Representatives of the bordering Local Governments, and Social Organizations in both countries, have entered into a series of meetings for the joint development of this area.

To that end, a Territorial Boundaries Agreement has been signed, for the use of hydrological resources.

Also, an Agreement allowing Free Mobilization along the Borders has been signed, to facilitate the mobilization and development of activities among inhabitants of both countries.
Initiatives have been promoted lately, with CARE International support, to define a binational model for the sustainable management of the Río Paz Basin.

An initiative has been prepared in coordination with the Hydrological Resources Regional Committee (CRRH), aimed at furthering the procedures to obtain pre-investment and basin related actions financing.