Integrated and Sustainable Management of Transboundary Water Resources in the Amazon River Basin Considering Climate Variability and Climate Change

GEF Full Size Project Document

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1. PROJECT SUMMARY

Project Rationale, Objectives, Outcomes/Outputs, and Activities

Introduction

For decades the countries of the Amazon River Basin—Bolivia, Brazil, Colombia, Ecuador, Guyana, Peru, Suriname, and Venezuela—and numerous local, national and international partners have undertaken significant research efforts in the Basin. These research programs have focused on the unique ecological, hydrological, anthropological, biological, and geographic characteristics of specific areas within this vast landscape. Other stakeholders have worked to develop the vast economic potentials of the Basin. Most of these efforts however, have taken place with little reference to the fact that the Basin forms a single hydrological system crossing national boundaries and forming an essential element of the global water circulation, and without considering the need for a coordinated multilateral framework for the sustainable development of the Basin's resources. In recognition of the hydrographical unity of the Amazon Basin, and in order to address the need for coordinated action, the Basin countries signed the Amazon Cooperation Treaty, creating the Amazon Cooperation Treaty Organization (ACTO). In 2003, following an initiative introduced by the Brazilian National Water Agency, and based on the results of a meeting of national focal points of the Inter-American Water Resources Network, ACTO, on behalf of the Amazon Basin countries, and in collaboration with the Organization of American States, sought the support of the GEF to help develop a project proposal aimed at strengthening the institutional framework to effectively initiate integrated water resources management within the world's largest hydrographic basin, in the context of climate variability and change. This proposal is the result of that request by the Basin governments.

The project outlined below seeks to strengthen the institutional framework for planning and executing, in a coordinated and coherent manner, activities for the protection and sustainable management of the land and water resources of the Amazon River Basin. The project will employ an innovative participatory mechanism as the basis for understanding current and expected IWRM challenges and issues. . Such an understanding is the foundation upon which a sustainable and responsive program of capacity building, institutional strengthening, application of feasible economic instruments, and meaningful social and economic advancement can be developed. From this foundation, the proposed project will meet the GEF strategic objectives of resolving transboundary resource use conflicts during a period of climatic change, and stimulate action by the Basin countries to manage the resources of the Basin in a sustainable manner.

Background

The Amazon River Basin covers close to one-half of the South American continent, extending over more than 6.2 million km², from the eastern part of the Andes Mountains in the west to the Atlantic Ocean in the east. The eastern portion of the north Brazilian plateau forms the coastline through which the Amazon discharges to the South West Atlantic Ocean Large

Marine Ecosystem (LME). The Amazon Basin comprises parts of Bolivia, Brazil, Colombia, Ecuador, Guyana, Peru, Suriname, and Venezuela, with the greater portions of the national territories of some of these countries, such as Brazil and Peru, being included within the Basin. The Amazon Basin is composed of a wide range of landscapes with specific climatic and topographic characteristics, and having elevations ranging from sea level to 6,500 meters. The majority of the countries (Bolivia, Ecuador, Colombia and Peru) form the headwater areas of this vast drainage system.

The Amazon River Basin has been defined in various ways. The hydrographic basin is the geographic basis for the interventions to be developed under this proposed Strategic Action Program (SAP). Beyond this catchment area, the Amazon Basin is defined by a characteristic biogeography that extends beyond the hydrographic basin. Superimposed upon both of these delineations of Amazon Basin (*Amazonia)* is the political geography of the eight Basin countries, which have created the Amazon Cooperation Treaty Organization (ACTO) to encourage and promote cooperation within this Basin of global importance. These political jurisdictions form the legal basis for the implementation of the actions to be developed during this proposed Project.

To date, the flow regime of the Amazon River system is still relatively un-impacted by human activities, but is subject to important inter-annual and long-term variability in tropical precipitation, which produces large variations of river water levels. The entire Amazon River System discharges an average of 6,300 km^3/per year (approximately 210,000 m^3 per second) into the Atlantic Ocean. This volume of water is equal to more than 15% of annual global river runoff, exceeding the combined discharge of the world's nine next largest rivers.

The Amazon River with a length of approximately 7,100 km—from its source (a small Peruvian river, the *Apurimac*, located about 5,700 m above sea level) to the Atlantic Coast of Brazil—is the world's longest, widest, and deepest river. Sixty-five percent of the Basin's total flow comes from only two sub-basins, the Solimões and Madeira. A further approximately 15% of the flow is provided by the Rio Negro sub-basin, a so-called *black water* system, which joins the *white water* system of the Rio Solimões at the famous "Meeting of the Waters" (*encontro das águas*) near Manaus, Brazil.

Precipitation levels range from 200 mm per year in the Andes to more than 6,000 mm per year in some parts of the foothills and plains of the Basin. Seasonal variations in rainfall are the result of movements in the *inter-tropical convergence zone* (ITCZ), with periods of maximum precipitation occurring during the months of March through June in the northern hemisphere, and December through March in the southern hemisphere.

The enormous volume of precipitation (over 15 trillion m^3 per year) in this hot and humid tropical climate generates a movement of huge volumes of warm superficial water circulating throughout an extensive drainage network covered by dense vegetation, and recharges a widespread and complex groundwater and aquifer system, the Amazon Aquifer (*Aquifer Amazonas)*. While there is little scientific knowledge of its full extent, geological data suggest that the aquifer covers an area of nearly 4 million km^2 in Brazil, Bolivia, Colombia, Ecuador, Peru and Venezuela.

As a result of this combination of factors, the Amazon Basin is an important contributor to the global hydrological cycle, and plays an important role in the global climate. By affecting this regional tropical circulation system, anthropogenic interventions constitute an important potential contribution to modifying and influencing global climate change. The impacts of these changes also affect the Basin. Risks are due not only to projected climate change at the global level, but also to complex interactions with already existing threats, such as land clearance, forest fragmentation and fire. Over the next several decades there are significant possibilities for large-scale loss of biomass with a concomitant loss of biodiversity and livelihoods for people in the Basin.

Specifically, the World Wildlife Fund (WWF) has identified four serious threats to the Amazon Basin as a consequence of climate change.[1] These threats include: 1) warming water temperatures that could impact temperature dependent species, reduce dissolved oxygen concentrations in the water, and potentially lead to increased success amongst exotic species; 2) decreased precipitation during dry months that could affect many Amazonian streams, habitats, and spawning activities of fishes; 3) changes in terrestrial organic matter and nutrient inputs into streams and rivers that could greatly affect aquatic organisms, stream biota, and the interconnected land and water ecosystems; and, 4) increased incidences of a more variable climate and extremes events such as those that produce lethal conditions for short periods of time, depleting stocks of adult fish and other biota, disrupting ecological processes, and modifying the food web.

The WWF notes that recreational and commercial fisheries are particularly at risk. They cite the example of the Tocantins River fishing communities that have chosen capture strategies specific to seasonal variations in fish behaviour and reproduction that could be seriously disrupted if seasonal and other climate fluctuations change the migratory pattern and ecology of fish species, leading to changes in fish catches. This link between Amazonian society, natural resources, and socio-economic responses to climatic (and consequent hydrologic) changes is a central theme of this proposed project, emphasizing the connectivity between the GEF IW and climate change focal areas within this basin of global importance.

Current research confirms that human activities trigger changes in precipitation, evaporation and discharge patterns all over the Basin, causing significant impacts on regional economic development and development opportunities, and increasing the vulnerability of the population to extreme hydrological and climatic events. Extreme climatic events have become more frequent and intense during the past decade. For example, the “El Niño” event of 1997 caused a very intense drought in the region, while the recent drought during 2005 affected large sections of the central and western Amazon Basin. This latter event was the most severe and intense of the past 100 years, and has shown the vulnerability of the population in the Basin to extreme climate events. The drought dried up entire lagoons, triggered large-scale forest fires, resulted in fish kills, crop failures and losses of protected species, isolated villages, dried up rivers, exacerbated disease, and contributed to severe economic losses. However, the scientific

[1] Michael Case, *Climate Change Impacts in the Amazon: Review of scientific literature*, World Wildlife Fund white paper, s.d.

knowledge on the occurrence and effects of these extreme events is still limited and urgently requires a better understanding of the complex interactions between the different factors, which control the ITCZ and affect global precipitation patterns.

Human activities on the landscape have led to a process of rapid deforestation; however, most of the Basin remains covered by tropical rainforest. This large ecosystem is characterized by great biodiversity of global importance. The Amazon Basin accounts for more than 56% of all broad leaf forest in the world, with more than 30,000 plant species, nearly 2,000 fish species, 60 reptile species, 35 mammal families, and approximately 1,800 bird species currently being recorded. The biotechnological possibilities and the consequent economic potentials of this great reservoir of plant and animal species are still underestimated and poorly understood.

The Amazon River Basin is not only the planet's largest, most biologically diverse watershed, but the ocean's largest single source of continental water, nutrients and other elements. In addition to forming the world's largest single source of flowing freshwater (15% of the total global river flow), the Basin contains the world's largest known reserves of bauxite (nearly 15% of the world total), and significant reserves of oil and other minerals that form the basis of a large-scale extractive industry. The region also continues to support large-scale extraction of timber, agro-industrial production of soybeans, and extensive cattle-raising, which exercise increasing pressure on the tropical ecosystems. Few of these activities support secondary industries within the Basin, contributing to a significant gap in the Basin's economic development potential, and suggesting that development pressures will continue to increase substantially in the foreseeable future.

Today the population of the Amazon Basin is estimated at approximately 28 million inhabitants, mostly concentrated in relatively few urban areas (Belém, Manaus, Río Branco, Porto Velho, Boa Vista, Iquitos, Leticia and Macapá, among others), and mainly living in the Brazilian portion of the Basin. The urban centers are all located along the main river and its tributaries. In the upper, Andean part of the Basin, a high percentage of the total population consists of indigenous communities. In the Brazilian lowlands of the Basin, the indigenous population is relatively small compared with the population of *Caboclos* and immigrants (especially from the dry northeast regions of Brazil). The indigenous Amazonian nations belong mainly to the following ethno-linguistic groups: *Quichua, Inga, Secoya, Huitoto, Andoque, Ynomami, Waimiri, Atroari, Matis, Mayorum,* and *Ticuna*. All of these people groups are considered to be historically disadvantaged groups who should benefit from the protection and environmentally sound management of the Amazon River system.

In part, this situation is the result of historic settlement patterns that moved inland from the oceanic coasts, only to be limited by the geographic barrier created by the Andes, which, until recently, has constrained movement from the coastal areas into the Amazon Basin. However, during the last two decades, the population of the Amazon Basin has increased dramatically, due in large part to high levels of immigration into the Basin and extensive transboundary migrations. In fact, the population growth rates range between 5.2% and 7.2%, well above the national averages of the Amazon Basin countries. Even so, the population density of the Amazon Basin is still very low when compared to the national averages.

Development efforts in recent decades have led to significant changes in the Amazonian environment. The proliferation of roads and highways, the increasing demands of international markets for agricultural and forest products, new waves of immigration and settlement, and oil and gas exploration has contributed to the rapid growth of cities and towns in the region's interior, and are expected to increase in the coming years. As a result, problems of deforestation, erosion, sedimentation, and water pollution, with concomitant impacts on human health and welfare, can be expected to worsen. The resulting alteration of water, energy, carbon, and nutrient cycles from changes in, *inter alia*, plant cover can lead to and exacerbate local, regional, and global climatic and environmental consequences.

To mitigate the negative environmental and social impacts of the ongoing development process, a great number of local, regional and international initiatives have been launched, realized by hundreds of NGOs, regional and international organizations, and research institutions. There are thousands of intervention projects and experiences dealing with environmental, social and economic issues, mostly independently executed and isolated from each other. The organization of this enormous quantity of disconnected and dispersed information and data, generated by these activities, in accessible information systems and data banks is one of the important future challenges facing regional stakeholders and decision makers. Assembling, analysing, and synthesizing this information into an agreed regional strategy for the management of the Amazon Basin and its resources is critical to defining and implementing a regional approach to integrated resource management for the benefit of all.

In this context, the ACTO was assigned the role of enhancing the political, economic and social integration of the Amazon River Basin, essential to mitigate and avoid the increasing process of exploitation of the Basin's resources, destruction of its biodiversity, and degradation of the quality of life of its fast growing population. Despite all the difficulties and obstacles in the complex process of creating a multinational agency, the political will of the Amazonian countries in establishing a mechanism for the common management of the resources of this important region is a clear statement and important first step toward identifying and implementing sustainable solutions to these urgent issues.

Rationale

The need for a framework for joint action of a preventive nature, as well as in guiding the development process, is increasingly evident given the global importance of this hydrographic basin and the growing threats to a biome that, to date, has been relatively unaffected by human settlement. The current institutional dynamic, with the creation and operationalization of the Amazon Cooperation Treaty Organization (ACTO) provides an excellent opportunity to strengthen and support the movement by the Amazon countries toward the integrated management of their shared water resources. Institutional development and strengthening, the coordination of policies and activities within the Basin, the generation and exchange of technical and scientific knowledge and information, the development of shared and harmonious legal regimes, the effective coordination of projects and initiatives in the region, and the identification of the principal current and emerging problems and joint solutions to those problems, are some of the aspects that could be addressed on a coordinated and coherent

basis, laying the groundwork for the sustainable management and development of the planet's largest watershed.

Another important consideration is the large number of studies and activities being conducted by countries and research centers on environmental problems affecting the Amazon River Basin. There are numerous projects and initiatives, with both national and international financing (underway and programmed) that, though important in terms of their specific impact, remain isolated and generally national in scope. The efforts do not realistically allow for the joint preventive action needed to protect or sustainably utilize the Basin's water resources, which are of decisive importance for the survival of a key biome sustained by the world's largest watershed. The aim of this project is to develop a framework for joint action among the eight countries of the Amazon River Basin so as to integrate and rationalize these current efforts and find joint solutions to the principal transboundary problems affecting the water resources of the region.

Objectives

Development Goal: The water and land resources of the Amazon Basin will be effectively protected and used in a sustainable manner, and the effects of climate change managed by Amazonian communities in a coordinated and coherent manner. This will be accomplished by the eight signatory countries of the Amazon Cooperation Treaty, within the framework of the Amazon Cooperation Treaty Organization (ACTO), through a program of strategic interventions,

Project Objective: The project aims to develop a Strategic Action Program (SAP) for the Amazon Basin and create the necessary enabling environment for the future implementation of the SAP.

The Strategic Action Program is a key element in achieving the sustainable utilization and integrated management of water resources, and promoting adaptation to climate change, through the execution of a program of enabling activities.

Outputs/Outcomes

The main outputs of the project are:

- A shared vision for the Amazon River Basin
- A Transboundary Diagnostic Analysis (TDA)
- A Strategic Action Program (SAP)
- Basin-wide networks to enhance inter country cooperation, information sharing and integrated basin management.

The development of appropriate and relevant planning tools, strengthening of national relevant institutions and the ACTO, harmonization of legal frameworks, and the national agreement and publication of a basin-wide strategy, are additional and relevant outputs of the project, in support of its objective.

The outcomes of the proposed project are:

- Implemented and effectively integrated water resources management and climate change adaptation responses, supported and based on a shared vision for the Amazon River Basin.
- Integrated strategies adopted into the institutional framework within the multi-country basin;
- Groundwater considerations integrated into land and water management;
- Competing water uses optimized on the basis of a Strategic Action Program—including policy, legal and institutional reforms and investments—needed to address transboundary concerns, inclusive of adaptation measures; and,
- Climate variability and change considerations introduced into Basin management policies and practices, thus reducing the vulnerability of peoples and ecosystems to extreme events.

Due to its enormous extent and natural and environmental complexity, the Amazon Basin is an essential element of the global environment, with an important role in both the regional and global climate and ecosystem equilibrium. The prevention of water pollution and mitigation of ecosystem degradation, caused by unregulated anthropogenic activities, will result in the protection and maintenance of a globally significant ecosystem. The project will contribute to biodiversity and habitat protection, ecosystem conservation, erosion prevention, water quality protection, and maintenance of a global carbon dioxide (CO_2) sink, while providing a sustainable basis for human economic development within the Basin.

Beyond the efforts to manage the water resources of this mega-basin, the innovative elements of this project can be summarized as follows:

a) The needs and objectives of Amazonian society are documented and effectively introduced into the planning and management of this globally important Basin;
b) One of the first times that a GEF project attempts to integrate climate change-related variability into natural resources management in a major transboundary basin;
c) The project will contribute to the *protection* of one of the most significant ecosystems on the planet—in contrast to other projects that contribute to the *remediation* of human economic and ecosystem losses;
d) The project will foster the joint management and conjunctive use of surface and groundwater in the Amazon Aquifer, one of the world's largest aquifers;
e) The project will strive to create an effective, basin-wide alliance between the academic communities of the riparian countries (like the Association of Amazonian Universities—UNAMAZ), governmental natural resources management and policy institutions (through the ACTO), and local communities for the integrated management of the land and water resources of the Amazon Basin.

2. COMPONENTS AND ACTIVITIES

The project has four components: (i) understanding the Amazonian society by documenting the governance structures, the needs and goals of the regional stakeholders as well as the institutional and legal arrangements within this transboundary basin; (ii) understanding the

natural resource base, through the consolidation of scientific efforts, leading to the preparation of a Transboundary Diagnostic Analysis (TDA) of the Amazon River Basin; (iii) development of consistent response strategies to unsustainable management practices related to the use of natural resources in the Amazon Basin, utilizing the principles of Integrated Water Resources Management (IWRM) and responding to the demands of Amazonian society and their governance needs in a manner consistent with the carrying capacity of the Basin, leading to the preparation of a SAP and the correspondent implementation plan; and, (iv) managing the activities necessary for the successful completion of the project, monitoring, and evaluation.

Component I focuses on the needs, goals and interests of Basin stakeholders and on the institutions tasked with IWRM and the governance of the Amazon region. This component identifies gaps in knowledge that need to be bridged in order that Amazonian society is brought closer to the sustainable utilization of the natural resources. The focus of this component is water resources that support human activities. The shared vision developed through Component I will inform numerous elements of Component III, which focus on response strategies.

Component II focuses on data gathering and analysis and through scientific assessments and data synthesis defines the ability of the natural system to support human activities.

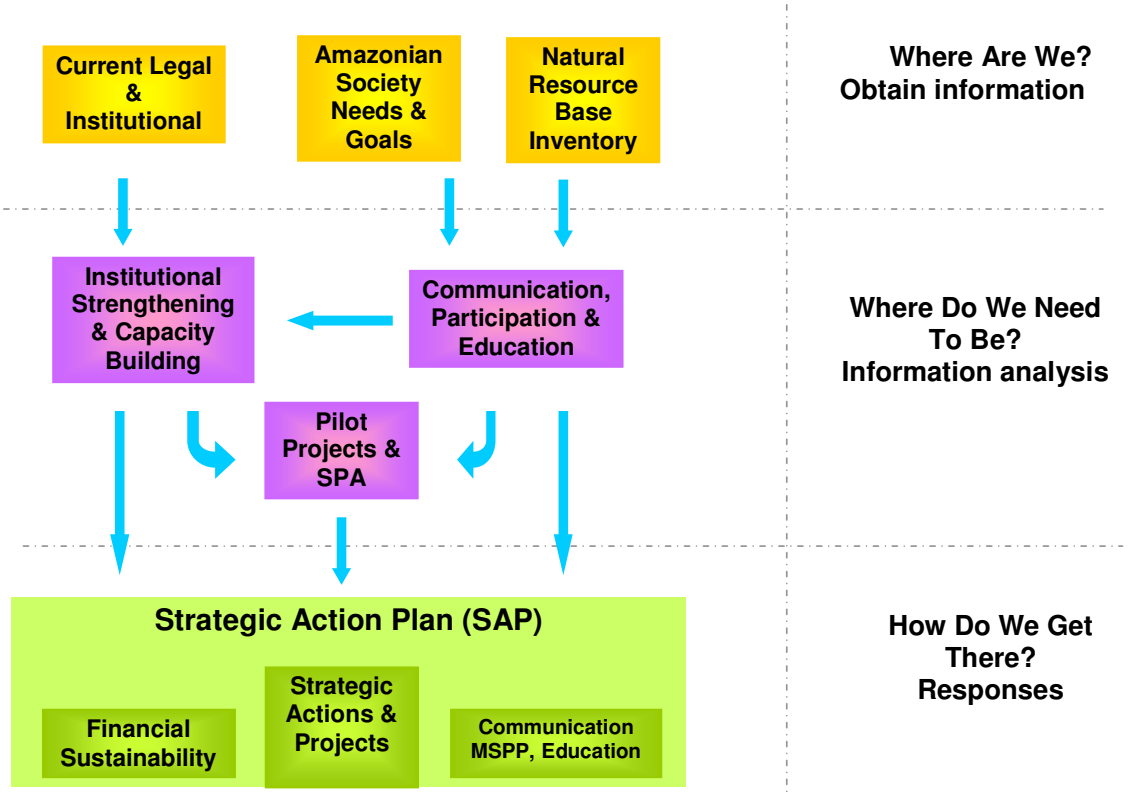
Together, Component I and Component II create the basis for strategic interventions (Component III) that will link the human activities and the natural resource base. The outputs of these components will be used in the formulation of the SAP.

Component III develops a portfolio of strategies for specific actions, together with financial mechanisms to support and sustain these actions, a related education strategy, communications strategy, multi-stakeholder participation plan (MSPP) and financial strategy
.
Component IV supports the management system necessary for successful project implementation.

Each component is composed of several subprojects, based on specific activities that are described in detail in the annexed Subproject Documents to the Full Size Project Document.

Information flow between the project components is based on three questions: where are we? [*Obtain baseline information*]; where do we need to be? [*Information analysis and scenario building*]; and how do we get there? [*Responses*] as illustrated in Figure 1.

Fig. 1 Project Implementation Information Flow



Component I: Understanding Amazonian Society[2]

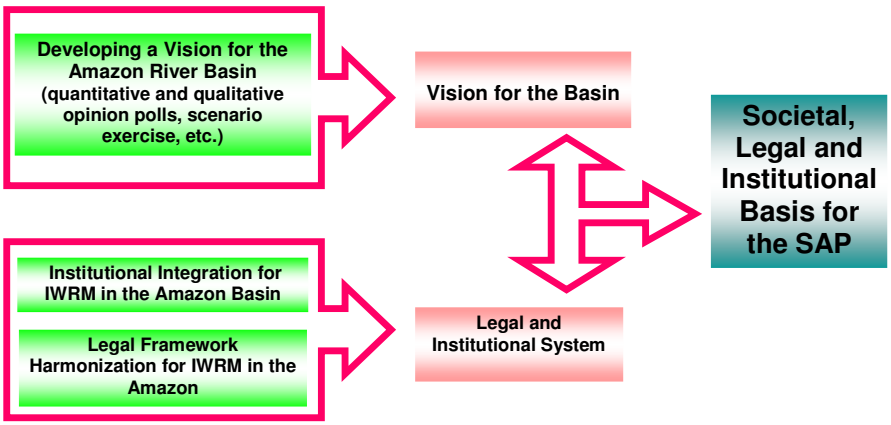
Component I is composed of two subprojects.

Subproject I.1 uses quantitative and qualitative opinion research methods and an innovative participatory scenario-development process to understand the challenges and issues with respect to the land and water resources and climate change in the region, and define IWRM development priorities. Subproject I.1 will lead finally to the development of a shared vision for the Amazon River Basin, based on realistic scenarios, with emphasis on integrated water resource management in the Basin and necessary climate change adaptation measures.

Subproject I.2 focuses on the current organizational and regulatory framework of the national institutions that are responsible for IWRM issues of the Amazon Basin. To the extent necessary, the subproject includes regional and local government units with authority over the management of the natural resource base. To date, there has never been a comprehensive analysis of the societal and governmental structure within the Amazon Basin at the regional scale, integrating all eight Basin countries. An understanding of this structure is essential in order to construct a strategy of relevant interventions, especially with respect to the creation of an integrated water resource management system for the entire Basin.

Subprojects I.1 and I.2 together constitutes the societal, legal and institutional bases for the Strategic Action Program. The relationship between these two subprojects is shown in Figure 2.

Fig. 2 Component I
Understanding Amazonian Society



[2] *For purposes of this project, the term Amazonian society describes all stakeholders, corporations, governments, and NGOs with influence and interest in the region with respect to the sustainable use of hydrological resources and the mitigation of impacts of climate change. (Council meeting November 2007)*

Subproject I.1. A Vision for the Amazon River Basin

This subproject is designed to deepen the understanding of the Basin's IWRM development priorities as was revealed by the preliminary vision process initiated during the PDF-B phase[3]. By engaging the Basin's constituency in a more comprehensive visioning process, this activity will help (i) understand the common problems, needs and goals of Amazon society with respect to the land and water resources and climate change issues in the region, (ii) define the key forces shaping future development scenarios for the Amazon Basin, and (iii) formulate a vision for IWRM of the Amazon Basin. The results of this subproject will provide the basis for the preparation of Subproject II.3.1Transboundary Diagnostic Analysis (TDA) and Subproject III.5.1: Strategic Action Program (SAP), as well as inputs for Subproject III.4: Communication, Outreach and Finance.

The outputs include (i) a set of quantitative and qualitative interviews and an assessment reflecting the basin stakeholders aggregated perspectives on IWRM challenges and issues in the Basin; (ii) a documented set of possible future development scenarios relevant to the integrated water resources management and possible impacts of climate change in the Amazon Basin; (iii) a shared vision for IWRM in the Amazon region based on a sound documented set of analyzed and shared development scenarios. The shared vision will be the main result of this subproject, to be used as an essential input to Component III (the SAP), for the formulation of the financial, information and education strategies, communications strategy, and multi-stakeholder participation plan. This vision articulates the goal toward which the strategies developed under the SAP will be targeted.

The outcome of this subproject will be the environment required to engage Basin stakeholders in a sustainable utilization of the Basin's shared water resources and support the implementation of an integrated transboundary Basin management. The knowledge and understanding gained through this subproject will contribute to the development of effective plans, practices, and policies for the maintenance of the natural resource base of the Amazon Basin.

Subproject I.1 will be executed during a period of 28 months and at the end of the project, the results of the activities will provide the required inputs for SAP formulation.

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[3] Alberto Crespo: *Visión Boliviana de la cuenca Amazónica;* Anthony Cumming: Vision *for the Basin and Transboundary Diagnostic Analysis;* Fausto Maldonado; *Visión Nacional para la gestión integrada de los recursos hídricos en la cuenca del Río Amazonas;* Humberto Gonçalves : *Visão estratégica para planejamento e gerenciamento dos recursos hídricos e do solo, frente às mudanças climáticas e para o desenvolvimento sustentável da Bacia Hidrográfica do Rio Amazonas.*
José Américo Canto: *Preparação do Documento de Projeto GEF Amazonas: Definição do Orçamento e do Cronograma da Atividade "Validação de uma Visão para a Bacia" / Input para a Visão;* Jorge Benítez: *Visión de la Cuenca Amazónica / Bases para una Visión común de desarrollo de la Amazonia Peruana;* Karen Regenass: *Developing a Vision for the Amazon/ Transboundary Integrated Basin Management in the Amazon Regions of Putumayo/Sucumbios and MAP.*
Martha García: *Bases para una visión del papel de los sistemas hídricos en el desarrollo sostenible de la cuenca amazónica en Colombia considerando la variabilidad y cambio climático;*

Proposed partners in the execution include the ACTO, the national and local governments, national statistical institutions, as well as the Amazonian society as a whole: local communities, NGOs and the private sector, among others.

Four activities are planned for Subproject I.1:

Activity I.1.1 - Preparation and Exploration
Activity I.1.2 - Scenario Development
Activity I.1.3 - Scenario Publication and Dissemination
Activity I.1.4 - Vision Formulation Phase

Detailed information about these activities provided in subproject documents.

The total cost of this subproject: US $ 2,680,468 (GEF: US $ 850,000; counterpart: US $ 140,468; co-financing: US $ 1,690,000).

Subproject I.2
Strengthening the Legal and Institutional System of the Amazon River Basin

The overall objectives of this subproject are (i) to strengthen national water management institutions, enhancing their ability to implement common basin-wide IWRM programs and projects; (ii) to strengthen ACTO as a basin-wide cooperation mechanism, facilitating the creation and implementation of an inter-institutional network of organizations dealing with land and water management issues in the basin. (iii) to identify and analyze the gaps and inconsistencies in the existing legal frameworks related to the management of water resources within the eight Amazonian countries and provide a common framework to enable the integrated and sustainable management of the transboundary water resources of the Amazon Basin, and (iv) provide an input for the formulation of the Strategic Action Program.

The outputs of this subproject will be an inventory of legislative instruments and institutional capacities within the Basin related to the practice of integrated water resources management (IWRM). These outputs will be used, in part, to formulate proposed legislation, and develop terms of reference for capacity building and institutional strengthening actions necessary, to achieve the development objectives proposed by the SAP. This subproject will be conducted at regional and national levels, including, as necessary, local governmental units with responsibility of land and water resources management. The results of this subproject will be embodied in the Strategic Action Program (SAP) for the Amazon Basin as strategies for inter- and intra-national cooperation and harmonization between laws and organizations within the region.

The outcome will enhance integration between the laws, regulations and institutional capacities of the Basin countries, supported by appropriate regional and country institutions and local governments adequately staffed and funded, to implement policies and programs for integrated water resources management (IWRM) defined in the SAP.

Subproject I.2 will be executed during the 18 months of the project period. The results of this subproject's activities will provide inputs for SAP formulation. The activities of Subproject I.2 will incorporate information and activities already proposed during the PDF-B process or being carried out in the Amazon Basin. Proposed partners in the execution include the ACTO, national water resources institutions SENAMHI (Bolivia); ANA (Brazil), IDEAM (Colombia), CNRH (Ecuador), GWA/HRD (Guyana), INRENA (Peru), MPW/HRD (Suriname) and DGCH/MARN (Venezuela), University networks (UNAMAZ), CEBDS (WBCSD affiliate), and local governments. Agreements are being established between ACTO and the Latin American Intermediate Governments Organization (OLAGI), the Amazonian Parliament (PARLAMAZ) and other relevant regional and local organizations, to support the execution of these activities.

Two activities are planned for Subproject I.2:

Activity I.2.1 - Institutional Integration in the Amazon Basin
Activity I.2.2 - Harmonization of the Legal Framework

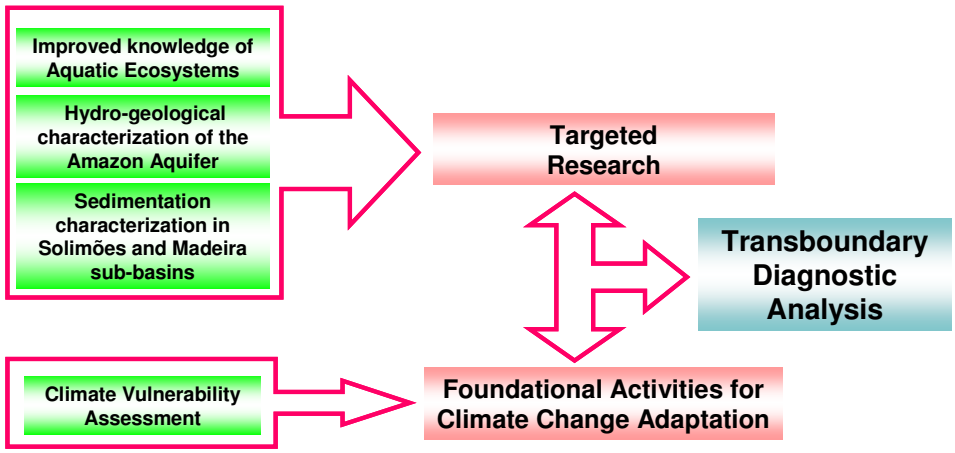
Detailed information about these activities provided in subproject documents.

Total cost of this subproject: US $ 3,722,674 (GEF: US $ 300,000; counterpart: US $ 3,302,674; co-financing: US $120,000)

Component II:
Understanding the Natural Resource Base of the Amazon River Basin

The objective of this component is to create a comprehensive Transboundary Diagnostic Analysis (TDA) of the Amazon Basin, based on targeted research activities of the transboundary water resources of the Amazon Basin (Subproject II.1) and hydro-climate vulnerability assessment (Subproject II.2). The TDA (Subproject II.3) provides the scientific and technical foundation for the strategic actions required for desired outcomes of the project. The relationships between these three subprojects are shown in Figure 3.

Fig.3 Component II
Understanding the Natural Resource Base



Subproject II.1 Targeted Research

The objective of targeted research is to fill gaps in knowledge specifically related to groundwater, aquatic ecosystems, and riverine sedimentation in transboundary areas.

The outputs of this subproject will be reports on specific topics necessary for the formulation of the TDA, as well as published scientific papers and presentations at technical seminars, etc.

The outcome will be improved knowledge on targeted issues providing insight into the areas identified during the PDF-B phase. Comprehensive research will contribute to the sustainability of the project.

Actions proposed to be carried out within the context of this subproject include:

- Conduct of targeted research to improve the knowledge of aquatic ecosystems within the Amazon Basin (e.g., the artisan/subsistence, recreational, and commercial fisheries);
- Compilation and review of hydro-geological data and other information on the substrata composition of the Amazon Basin to characterize the extent and nature of the Amazon Aquifer system; and,
- Compilation and review of geological, geochemical data and other information on soils and sediments of the Amazon Basin to characterize the type, origin and input rates of sediments in the two major rivers of the Amazon Basin, the Solimões and Madeira rivers.

These data will be used to evaluate the anthropogenic impact on the aquatic ecosystems. With respect to groundwater, data will be accessed from well logs, petrological logs, geophysical investigations, and other geological sources to refine knowledge of the transboundary Amazon Aquifer system. This subproject will examine both the Andean and in-stream sources of sediment in the two major Amazonian rivers. All of this information will contribute to an overall evaluation of the causes, impacts and hazards, from past to present, arising from anthropogenic activities within the Amazon Basin in support of the foregoing actions.

Subproject II.1 will be executed during the first three years of project period. During the fourth year of project, the results of this subproject's activities will provide inputs for SAP formulation. Proposed partners in the execution include the ACTO, the governmental water resources and meteorological institutions of the eight ACTO member countries; educational organizations, national and local governments, Amazonian universities and research institutions of the UNAMAZ network. The establishment of a common framework for studies and research on water resources management at a regional level is an important complementary element contributing to the preparation of the water resources professionals in the Amazon Basin. Currently, the Brazilian government is considering the creation of a

fund, based on public and private contributions, to develop a specific call for Amazonian water projects: the so-called CT-Hydro program will finance Master and PhD scholarships to support the execution of research projects focused on specific issues related to this project. This subproject will be supported in part by the ACTO science and technology review

Three activities are envisioned under Subproject II.1

Activity II.1.1 - Improved Knowledge of Aquatic Ecosystems
Activity II.1.2 - Hydro-geological Characterization of the Amazon Aquifer
Activity II.1.3 - Characterization of the Sediment Load of the Madeira and Amazonas-Solimões Rivers

Detailed information about these activities provided in subproject documents.

The total cost of this subproject: US $ 2,640,932 (GEF: US $ 550,000; counterpart: US $ 2,090,932).

Subproject II.2
Hydro-climate Vulnerability Assessment of the Amazon River Basin

The activity under this subproject will develop a Hydro-climate Vulnerability Atlas of the Amazon Basin at a scale of 1:1,000,000, identifying areas most vulnerable to extreme hydro-climatic events, such as floods and droughts. This subproject, based in the PDF-B proposal II.1 ([4]), will provide input for the implementation of the Integrated Information System (forecasting system) as well as for the formulation of the Transboundary Diagnostic Analysis and the Strategic Action Program (SAP).

The outputs will be: i) a documented GIS-based water resources and climate vulnerability data and metadata set, (ii) a vulnerability atlas of the Amazon Basin, and (iii) a documented basis for the development of response and adaptation strategies, which will provide input for the Subproject III.3: Integrated Information System and the SAP.

Subproject II.2 will be executed during the first three years of the project implementation period. During the fourth year of project, the results of this subproject's activities will provide inputs for SAP formulation.

Proposed partners in the execution include the ACTO, country water resources, meteorological and educational organizations, non-governmental organizations (NGOs) and local governments. This subproject will be supported in part by the ACTO science and technology review.

One activity is envisioned under Subproject II.2:

[4] Marcos Freitas, *Sistema de Informação Geográfico Básico das Águas da Bacia Amazônica na escala 1:1.000.000* (Activity II.1)

Activity: II.2.1 Hydro-climate Vulnerability Atlas

Detailed information about this activity provided in subproject document.

The total cost of this subproject: US$ 890,466 (GEF: US$ 500,000; counterpart: US$ 140,466; co-financing US$ 250,000).

Subproject II.3 Transboundary Diagnostic Analysis

The objective of the Transboundary Diagnostic Analysis (TDA) is to synthesize the available knowledge on the water resources and climate of the Basin, necessary for the formulation of scientifically sound strategic responses for the IWRM of the Amazon River Basin.

The TDA is the output of this subproject, which, together with additional deliverables produced through other project components and activities, will be included and used in formulating the SAP.

The outcome of Subproject II.3 will be the documented scientific and technical knowledge necessary to create an agenda of issues needing to be addressed in preparing the SAP.

The activity, TDA Formulation proposed to be carried out within the context of this subproject include the utilization of information generated by the targeted research and foundational activities undertaken under Subprojects II.1 and II.2, as well as the acquisition of additional data gathered from scientific literature, publications, and other existing sources.

Subproject II.3 will be executed during the third year of the project and in the fourth year it will provide inputs for SAP formulation. Proposed partners in the execution include the ACTO, national water resources management organizations, local governments, and the Amazonian university network, UNAMAZ.

One activity is envisioned under Subproject III.3:

Activity II.3.1: TDA Formulation

Detailed information about this activity provided in subproject document.

The total cost of this subproject: US $ 540,466 (GEF: US $ 100,000; counterpart: US $ 140,466; co-financing: US $ 300,000).

Component III: Response Strategies

The objective of this component is to create a comprehensive Strategic Action Program (SAP) for the Amazon Basin, based on five subprojects: (i) pilot projects in IWRM, (ii) Special Priorities on Adaptation (SPA), (iii) creation of an Integrated Information System, (iv) an overarching project for communication, outreach and financial strategies and, finally the (iv) formulation of the Strategic Action Program (SAP).

The SAP will be based on three essential pillars: (i) strategic actions and projects, (ii) financial sustainability, and (iii) an effective communication and outreach strategy.

Fig. 4 Component III Response Strategies

The SAP will be negotiated and endorsed at the country level through the national inter-ministerial committees, and endorsed and promoted at the regional level through the ACTO.

Subproject III.1 Pilot Projects in IWRM in the Amazon River Basin

The subproject seeks to develop experience and evaluate the practicability and the costs of specific interventions, which are required to address specific water resources management issues within the Basin. This subproject is focused on activities related to the development of consistent response strategies to unsustainable management practices related to the use of natural resources in the Amazon Basin, utilizing the principles of Integrated Water Resources Management (IWRM), including (i) management of aquatic ecosystems in critical hotspots, (ii) sustainable management of natural resources in transboundary floodplain forests (*varzeas*), (iii) groundwater use in Amazon Basin urban centers, and (iv) transboundary basin management experience in two specific Amazonian regions.

These activities address a number of concerns, identified during the project preparation process (PDF-B - Activities IV.6, II.2.4 III.1.2) [5], for which specific information about the societal and economic feasibility of potential interventions in the Basin is required. Based

[5] Patricia Chaves, (III.1.2) Proposal for a Sustainable Management of Transboundary Amazonian Floodplain ForestsYolanda Guzmán, (IV.6) Preparación de la base conceptual y términos de referencia para estudios sobre ecosistemas acuáticos y biodiversidad
Michella Mileto (II.2.4)., Groundwater in urban areas of the Amazon Basin: the case of Manaus / Proyecto-piloto en un área definida en la cuenca (zona de Manaus o Belém) para el manejo conjunto de las aguas subterráneas y superficiales en un área urbana (II.2.4).

upon the outcomes of these activities, specific actions and interventions elsewhere within the Amazon Basin will be recommended within the IWRM SAP.

The outputs of this subproject will be documented experiences and pilot-scale interventions that identify the feasibility and costs of specific practices that could be considered for inclusion in the SAP. These interventions address actions that support the practice of IWRM in the Basin and form, in part, the basis for the formulation of the strategic actions, which are a fundamental part of the SAP formulation process.

The outcome will be a menu of strategic responses to the major transboundary issues of concern identified within the Amazon Basin.

The actions of the pilot projects in IWRM should identify and elaborate specific interventions, initially targeted toward the resolution of water resources management issues, that:

- Mitigate the impacts of human activities on the aquatic ecosystem, specifically on high-value fishes in selected transboundary hotspots;
- Demonstrate and implement sustainable management practices in selected transboundary hotspots of riparian floodplain forests;
- Demonstrate the principles of sustainable groundwater use in great Amazonian urban centers;
- Implement river basin management practices in two local transboundary sub-basins; in the Napo (Ecuador/Peru) and Madre de Dios –Acre - Pando (MAP) regions (Bolivia/Brazil/Peru).

Subproject III.1 will be executed during a three-year period, starting with the beginning of the project and producing the necessary inputs for the SAP from the third year on.

Proposed partners in the execution include the ACTO, national water resources management institutions, OLAGI, NGOs, local governments, Universities (UFPA/Brazil, UFRA/Brazil, UAP/Bolivia, UFAM/Brazil, UNAMA/Brazil, UNICAMP/Brazil, USP/Brazil), INRENA/Peru, IIAP/Peru, SINCHI/Colombia, INPA/Brazil, INPE/Brazil, NHS/Bolivia,

Subproject III.1 is based on four activities:

Activity III.1.1 - Management of Aquatic Ecosystems Hotspots
Activity III.1.2 - Sustainable Management of Transboundary Floodplain Forests in the Amazon River Basin
Activity III.1.3 - Sustainable Groundwater Use in Amazon Urban Centers: the Case of Manaus (Brazil)
Activity III.1.4 - Transboundary Integrated Basin Management in the Amazon Regions of Napo and MAP

Detailed information about these activities provided in subproject documents.

The total cost of this subproject: US $ 4,878,658 (GEF: US $ 905,000; counterpart: US $ 1,453,658; co-financing: US $ 2,520,000).

Subproject III.2 Special Priorities on Adaptation

The overall goal of this subproject is to develop strategic adaptation and response strategies to climate change in selected areas of the Amazon Basin.

The subproject will execute four activities related to this goal, utilizing the principles of Integrated Water Resources Management (IWRM), addressing specific concerns within the Basin, identified during the PDF-B project preparation process.[6] Based upon the outcomes of these activities, replicable specific interventions elsewhere within the Amazon Basin will be recommended in the SAP.

This subproject seeks to (i) develop experience and evaluate the practicality and cost of specific interventions and related governance capacities addressing critical climate change issues within the transboundary Purus Basin (Brazil, Bolivia, Peru); (ii) focus on ecosystem services and IWRM plans affected by climate change in the MAP (Madre de Dios-Acre-Pando) region, (iii) develop adaptation measures to sea level rise, causing massive land loss (Amazon Delta Island Marajó), and (iv) develop proposals for public policies and regulations concerning the distribution of drinking water in the urban area of the Tres Fronteras region, where Brazil, Peru and Columbia meet.

The experiences and knowledge gained during the execution of these adaptation activities under this subproject will provide input for the formulation of the Strategic Action Program (SAP), as well as to the Integrated Information System.

The overall outcome will be documented and demonstrated measures and approaches to climate change adaptation in the Basin that address priority transboundary concerns shared by the Basin countries. The replication of these measures and practices elsewhere in the Basin will form an important and integral part of the policies, plans, and programs for integrated water resources management as defined in the SAP

Subproject III.2 is based on four major activities.

Activity III.2.1 - Ecosystem Services and Governance in the Transboundary Purus River Sub-basin
Activity III.2.2 - Adaptation to Climate Change in the Transboundary MAP Region
Activity III.2.3 - Adaptation to Sea Level Rise in the Amazon Delta
Activity III.2.4 - Conjunctive use of Ground- and SurfaceWaters in the Tres Fronteras Region

Detailed information about these activities provided in subproject documents.

[6] PDF-inputs: (i) Ecosystem services and governance in the Transboundary Purus sub-basin; (ii) Adaptation to sea level rise in the coastal zone of the Amazon Delta (Marajó Island); (iii) Public policies concerning the domestic water supply in the urban Transboundary *Três Fronteras* Region

The total costs of this subproject: US $ 7,762,990 (GEF: US $ 1,500,000; counterpart: US $ 225,000; co-financing US $ 6,037,990).

Subproject III.3 Integrated Information System

The subproject has been designed based on the inputs from PDF-reports V.3, IV.2, and IV.5 and aims to create the Integrated Information System (IIS) consisting of (i) a Resource Center, (ii) a forecasting system module, and (iii) specific training programs for users of the IIS. The subproject will design and implement the IIS and will develop a thematic database of water quality and inventory of current and potential pollution sources of the Amazon Basin.

The Resource Center, the core part of the IIS, consists of (i) a management structure and organizational tools to store, organize and classify all incoming data and information in different thematic databases, (ii) a platform linking thematic databases, metadata catalogues, models and user interfaces within a Geographic Information System (GIS), and (iii) a user friendly gateway for decision-makers, stakeholders, governments, private institutions and the public in general to access all available data and information of the IIS. It will ultimately be linked to the forecasting tools.

The forecasting system module will incorporate the results of Subproject II.2 (Climate Vulnerability Atlas) and consists of a set of specific tools to facilitate political decision-making, public policies concerning changes in hydrological cycles, responses to climatic changes, anthropogenic perturbations and prevention of extreme climatic events like droughts and floods.

The IIS will be structured as a network of eight national nodes (bases) linked to the regional Resource Center (based at the ACTO) and will support IWRM measures and activities in the Amazon Basin. The IIS will not only embrace IWRM issues, but also should be designed to support the management of all relevant geographical and thematic information (biodiversity, economy, land use, population, society, etc.) regarding the Amazon Basin and according to the needs of the ACTO. The IIS will be linked to all major sources of data and information of the Amazon Basin, such as universities, research institutions, governments and private databases.

The outputs of this subproject are: (i) A functional, documented Internet- accessible Integrated Information System including tools for a forecasting system, available to stakeholders and decision-makers and the Amazonian society in general and (ii) an operational multilingual and interactive database providing data and information about all aspects of water pollution and contamination in the Amazon Basin that will be part of the IIS (developed under Activity III.3.1), this way linked to all relevant authorities, organizations and institutions.

The outcomes of such a system are: (i) Increased know how and capacity of local, regional and national governments to implement sustainable IWRM policies. Improved access to information of the Amazonian society and (ii) an informed policy and intervention choices at the local, country and regional levels for tackling water quality concerns and the implementation of standardized and comparable measures for controlling and monitoring

water quality in critical locations throughout the Amazon Basin; and (iii) the increased ability of the ACTO to foster integration processes of the Amazon Basin.

Subproject III.3 will be executed during the four years of the project and the proposed partners in the execution include the ACTO, national water resources management institutions (Bolivia's SENAMHI, Brazil's ANA, Colombia's IDEAM, Ecuador's CNRH, Guyana's GWA/HRD, Peru's INRENA, Suriname's MPW/HRD and Venezuela's DGCH/MARN), OLAGI, Amazon local communities, educational institutions and local academia, CEBDS and the private sector, local media, local cooperatives, NGOs, and regional and local governments.

Subproject III.3 is based on two activities:

Activity III.3.1 - Design and Implementation of an Integrated Information System
Activity III.3.2 - Water Quality and Pollution Sources Inventory

Detailed information about these activities provided in subproject documents.

The total costs of this subproject: U$ 13.042.864 (GEF: U$ 870.000; counterpart: U$ 11.422.864; co-financing U$ 750.000)

Subproject III.4 Communications, Outreach and Finance

The roles of education and communication are essential to any strategic sustainable management of the Amazon Basin's resources. Unlike natural hazards, the anthropic effects are controllable; education, informational programming, public participation, as well as the correct allocation and utilization of financial resources are key elements for such purposes. Subproject III.4 is composed of three activities that address these aspects and seeks to create a receptive and sustainable environment for the implementation of the SAP.

Subproject I.1, which analyzes the needs and aspirations of Basin stakeholders will provide the necessary input and database to enable the development of a set of strategies for environmental education initiatives, stakeholder participation and allocation of financial resources to support the implementation of the SAP, to be undertaken by Subproject III.5
To this end, Subproject III.4 seeks to develop:

(i) an Education Strategy that employs classroom and extension based educational techniques focused on three specific target audiences: The first is related to the production of appropriate school curricula, courses and syllabi for use at the primary, secondary and university education levels. The second relates to skills development programs for regional, national and local public staff professionals. A third relates to the development of training programs for local and marginalized communities, including training in alternative economic activities.
(ii) a Communications Strategy and a Multi-stakeholder Participation Plan (MSPP) in order to achieve proper dissemination of information to increase community understanding and stakeholder "buy-in" to the project and exchange of information between stakeholders

and to stimulate, orient and engage civil society and create conscience with respect to IWRM

(iii) a Financial Strategy, in order to ensure financial funds for the implementation of the SAP, as well as provision of governmental and NGO support, oversight and investments.

Subproject III.4 will be executed during a four-year period. Proposed partners in the execution include the ACTO, OLAGI, NGOs, local governments and relevant Amazonian formal- and informal education institutions, CEBDS, cooperatives and other related national business councils, and the private sector of the eight Amazonian countries.

Subproject III.4 is composed of three activities:

Activity III.4.1 - Education Strategy
Activity III.4.2 - Communication Strategy and Multi-stakeholder Participation Plan
Activity III.4.3 - Financial Strategy

Detailed information about these activities provided in subproject documents.

The total costs of this subproject: US $ 13.337,468 (GEF: US $ 400,000; counterpart: US $ 12,567,468; co-financing: US $ 370,000).

Subproject III.5 Strategic Action Program

This subproject is designed to formulate the Strategic Action Program (SAP) for the Integrated and Sustainable Management of Transboundary Water Resources in the Amazon River Basin. The SAP provides the societal, political, and scientific basis for the conduct of interventions necessary to support the sustainable utilization of the land and water resources of the Basin in a manner consistent with the principles of integrated water resources management (IWRM), and the potential impacts and consequences of global climate change.

The SAP provides the foundation upon which country-level institutions, local governments, nongovernmental entities, and all stakeholders having interests in a sustainable Amazon Basin can focus their actions and activities, prioritize interventions, and implement common basin wide programs and projects. This subproject generates the principle output of the GEF Amazon Project.

The outcome will be will be an agreed program of strategic actions to address priority transboundary concerns identified and shared by all Basin stakeholders.

The activity to be carried out within the context of this subproject is to compile, analyze and organize the information gathered and produced under Components I and II and Subprojects III.1 through III.4 to formulate the Strategic Action Program for the Management of the Transboundary Water Resources of the Amazon Basin.

Subproject III.5 will be executed during a two-year period, commencing during the third year of the project.

Proposed partners in the execution include the ACTO, PARLAMAZ, country water resources organizations, OLAGI, NGOs, academia, national and local governments, cooperatives, CEBDS and national business councils, and the private sector.

Subproject III.5 has one activity:

Activity III.5.1 - Formulation of the SAP

Detailed information about this activity provided in subproject document.

The total cost of this subproject: US $ 400,000 (GEF: US $ 400,000).

Component IV: Project Management

This component is designed to facilitate preparation of a Strategic Action Program (SAP) for the integrated management of the water resources of the Amazon Basin, by providing for project oversight and management, and for the conduct of project monitoring and evaluation, functions. These functions are required for the overall coordination of the project activities, as set out in Components I through III, leading to the formulation of the SAP for the transboundary waters of the Amazon Basin.

There is one subproject composed of two activities in this component. The project management activities included in Subproject IV.1 of Component IV are designed to support those activities that are related solely to the conduct of the SAP formulation process, and to project support activities such as inter- and intra-governmental coordination as it relates to the project. Specific activities relating to the formulation of the Transboundary Diagnostic Analysis (TDA) or Strategic Action Program (SAP) are fully integrated into those subprojects; project activities that provide specific oversight or contributions to a single subproject or set of activities are considered part of those activities.

The outputs of this component will be periodic financial, progress and evaluation reports, completed by the ATCO and project team in a timely and cost-effective manner. Detailed information about this component including envisaged tools and timelines, indicators and means of verification, responsibilities, and a detailed breakdown of the costs is presented as annex to this document. Development and application of a user-friendly, interactive project management system (PMS) forms an integral part of this component.

The outcome of this component will be a consistant Strategic Action Program for the Integrated Management of the Water Resources of the Amazon Basin, completed in a timely and cost-effective manner, inclusive of stakeholder interests and participation, and appropriately financed and able to be implemented by fully functional administrative and management systems and agencies.

The activities to be carried out include: (i) development and implementation of the M&E plan, supported by a functional and transparent project management system (PMS); and (ii) creation and maintenance of an adequately staffed project management and support team.

Component IV will be executed throughout the four-year project period. The institutions responsible for it will be ACTO, UNEP and the OAS with the Project Technical Unit including the National Project Units.

Component IV is based on Subproject IV.1: Project Management, which composed of two activities:

Activity IV.1.1 - Monitoring and Evaluation
Activity IV.1.2 - Project Oversight

Detailed information about these activities provided in subproject documents.

The total costs: US $ 1,943,104 (GEF: US $ 625,000; counterpart: US $ 1,318,104).

Key Indicators, Assumptions, Risks

Key indicators of project success are:

- the adoption of necessary legislation by governments at all relevant levels to implement the priority actions set forth in the Strategic Action Program (SAP);
- the adoption of the SAP by governmental institutions as the basis for ensuring the sustainability of project outcomes;
- the allocation of institutional and human resources at all necessary levels to implement the principles of integrated and sustainable water resources management (IWRM);
- an adequate level of financing provided by the member States of the Amazon Cooperation Treaty to national institutions and the ACTO to implement the strategic priorities of the SAP; and,
- the participation of Amazonian society in natural resources management, based upon a shared Basin vision, as documented, *inter alia*, in the media.

Specific impact indicators applicable to this project include the following:

- management of competing water uses based upon the principles set forth in the SAP;
- an efficiently operating basin-wide cooperation mechanism;
- national agencies implementing the principles of integrated water resources management;
- effective national inter-institutional mechanisms in each Basin country; and,
- ensured access to safe water for multiple societal purposes within the Amazon Basin.

The risks inherent to the proposed project include:

- Size of Basin area. The large area that constitutes the Basin limits the fully effective and efficient participation and active involvement of stakeholders. The dimensions of the Basin and the complexity of the SAP constitute a challenge for project implementation; however,

strong linkages with civil society, professional and relevant governmental bodies will minimize this risk.

- Low level of environmental consciousness. Integrated natural resources management of the Basin is an idea that is not shared by all Basin stakeholders. To overcome this problem, project activities have been designed to assess stakeholder needs and interests, provide stakeholder participation opportunities, promote broad-based information exchange and enhance environmental and community education programs.

- Cultural resistance to integration. This is a pervasive risk that should be taken into account. To minimize this risk, all project activities will be based on the principles of, and promote, transparency and democratic action through the implementation of clear and direct communication and participation strategies.

- Incompatibility of national interests. At the level of national politics, Amazon Basin issues are treated as a sensitive, often related to national security. The process of strengthening the Amazon Cooperation Treaty with the creation of the ACTO and the endorsement of the project at the highest political levels in the eight countries indicates the countries' disposition for regional cooperation and coordination of efforts. However, threats of unilateral actions when national interests prevail over regional agreements remain a risk.

- Unclear institutional and legal competencies. In some ACTO member countries, the legal competencies of the respective water agencies are not properly defined and generate intra-country contradictions, conflicts and overall basin-wide- ack of efficiency. To reduce this risk, the project includes an institutional strengthening and capacity-building component, including activities promoting legal and institutional harmonization.

- Inter-institutional competition. Water resource management at national level in most countries is sub-divided into different sectors and/or institutions, often with conflicting political interests, that compete for funding and other resources. If not addressed properly, this could undermine broad national agreement and obstruct implementation of the principles of integrated water resources management. In order to mitigate the risk, the project will build from a common strategic vision for the Basin, with the direct participation of key institutions and stakeholders. At the national level, the creation of NPUs as inter-institutional mechanisms will further minimize this risk.

- Insufficient national financial commitment and human resources. One of the major risks for the implementation of the project is the insufficient financial support of the local governments. Multi-lateral agreements often are not seen as a priority by national governments. To reduce such a risk, the ACTO is promoting partnerships with local intermediate Amazonian governments that are associated through the Latin American Association of Intermediate Governments (OLAGI). Overall, project activities promote multi-stakeholder participation and an effective and efficient financial strategy.

- Negative impact of governmental changes in one or more Basin countries. Often a political change at government level leads to changes of technical leadership and discontinuities in

an ongoing project or process. The fact that the project is building a basin-wide institutional structure, based on the political commitment of all member countries and supported by national legislative action, minimizes this risk to the extent possible.

- Lack of counterpart resources. From the financial point of view, a possible risk is the lack of availability or effective integration of counterpart resources to co-finance various activities. Formal agreements between, and commitments of, the ACTO member states prior to the beginning of project activities will limit these risks.

3. COUNTRY OWNERSHIP

Country Eligibility

The eight countries which form the ACTO—Bolivia, Brazil, Colombia, Ecuador, Guyana, Peru, Suriname and Venezuela—are eligible under Paragraph 9(b) of the Instrument.

In seeking GEF financing, the eight countries have ratified the following United Nations Conventions linked to the present project: i) United Nations Framework Convention on Climate Change (UNFCCC) and its main instrument, the Kyoto Protocol; ii) Convention on Biodiversity and iii) Convention on Combating Desertification; and iv) Ramsar Convention on wetlands protection. As agreed in the United Nations Framework Convention on Climate Change, the eight countries have presented their respective, first national communications and inventories. These reports have identified vulnerabilities to climate change, future climate scenarios and the adoption of the necessary measures for adaptation to climate change. These actions reflect the regional advances to fulfil international treaties related to environmental issues.

Further, the GEF-Amazon Project generates global environmental benefits as identified within the framework of the Agenda 21. The project also reinforces the ties among the eight countries sharing the Amazon River Basin, who together signed the Amazon Cooperation Treaty in 1978. The project shows the willingness of the countries to promote efforts that will have results beyond those of national development, helping reach global environmental goals.

Country Drivenness

The eight participating countries are signatories to the Amazon Cooperation Treaty (ACT), a legal instrument signed in 1978 for the purpose of fostering integrated and sustainable development of the Amazon River Basin through bilateral or joint activities among the countries involved. Among the Treaty's objectives, particular importance is assigned to the implementation of joint activities and exchanges of information to promote harmonious development in the Amazon territories so as to ensure better environmental protection and the rational use of water resources (Articles V and XV of the ACT).

The Organization of the Treaty, ACTO, was created in 1998, by means of an Amendment to the Treaty, as an institutional improvement to strengthen the process of cooperation among the countries within the framework of the ACT.

The proposal for this project was officially presented during the Eleventh Regular Meeting of the Amazon Cooperation Council (CCH) and the Eleventh Meeting of the Foreign Affairs Ministers of the ACTO, held in Santa Cruz de la Sierra, Bolivia, during November 2002. During this meeting, the Ministers welcomed the proposal to hold a technical meeting in Brasilia, Brazil, to continue the process of preparing the project and submit it for consideration to the Global Environment Facility (GEF).

The Declaration of Santa Cruz, signed by the foreign affairs ministers of the Amazon countries, stresses "the importance of water resource management and conservation in the Amazon River Basin and the need to integrate and harmonize the initiatives and efforts of each country…and the progressive melting of glaciers in the Andes Mountain Range, which could have severe consequences for the sustainability of the Amazonian forest"

In July 2003, with support from the General Secretariat of the Organization of American States SG/OAS) and the National Water Agency of Brazil (ANA), the ACTO held a follow-up technical meeting in Brasilia, coincident with that of the GEF-financed DELTAmerica Project (UNEP-OAS) steering committee. The meeting, also attended by the focal points of the Inter-American Water Resources Network (IWRN), prepared the conceptual basis for a Program for Sustainable Water Resource Management in the Amazon River Basin. The resulting document was then presented to the Coordination Committee of the Amazon Cooperation Council, which highlighted the strategic character of the proposal.

The resulting *Concept Document for the Integrated and Sustainable Management of Transboundary Water Resources in the Amazon River Basin* was accepted by the GEF Secretariat on 11 November 2003, and was the basis for the PDF Block B activities that led to the drafting of this proposal.

A further step in the PDF-B project implementation was made at two Workshops of National Coordinators, held in February 2006, in Brasilia, Brazil, and in June 2006, in Quito, Ecuador, respectively, that initiated the project development activities, for which activities coordinators were selected and contracted.

The meetings resulted in a number of recommendations, such as the importance of building a basin-wide Strategic Vision and the definition of the responsibilities of the National Coordinators in terms of (i) identifying and recommending national consultants, key institutions and stakeholders in the Basin; (ii) selecting a national institution to coordinate the issue of climate variation and adaptation to climate changes; and (iii) reviewing and updating the Plan of Operations.

The II Steering Committee Meeting discussed major project advances since October 2005; revised the results of the First GEF Amazon Project Meeting of National Coordinators; revised the Operational Plan; and, emphasized the importance of translating the Project documents

into the three official ACTO languages. The Steering Committee also recommended establishment of technical liaison with international stakeholders concerned with the Basin; recommended the design and operation of the project webpage; agreed that countries should identify candidates to apply for consultancies related to project activities/subprojects and that a geographical balance should be kept; and finally agreed that the II GEF Amazon Project Meeting of National Coordinators should be held in Quito, Ecuador, in June 2006.

The III Steering Committee Meeting (Quito) discussed the matters outlined during the II Meeting of National Coordinators, and reiterated the need to strengthen the integration of the issues of climate change and IWRM, adjusting the Plan of Operations and project components to reflect the final objectives of the PDF-B phase. The meeting decided to modify the original project title into Integrated and Sustainable Management of Transboundary Water Resources in the Amazon River Basin considering climate variability and change.

In May 2007, the draft project executive summary was agreed as the basis for a submission to the GEF Council following the III Meeting of the National Coordinators for the Project, in Brasilia, with the participation of the Representatives of all eight Amazon Basin countries.

The need for a framework for joint action throughout the Amazon River Basin, of a preventive nature as well as in guiding the development process, is increasingly evident given the global importance of this hydrographic basin and the growing threats to a biome that, to date, has been relatively unaffected by human settlement. The current institutional dynamics, with the creation and operationalization of the ACTO, provides an excellent opportunity to strengthen and support the movement by the Amazon countries toward the integrated management of their shared, transboundary water resources.

The execution of the Framework Program is consistent with the Strategic Plan of the ACTO.

4. PROGRAM AND POLICY CONFORMITY

Fit to GEF Focal Area Strategic Objectives and Operational Program

The convergence of the importance of the water resources of the Amazon Basin as a high value global environmental resource and as an area critical to human economic and social development in the Latin American region provides an ideal case study for the Integrated Land and Water Multiple Focal Area portfolio, allowing for the conduct of innovative demonstration projects for reducing contamination, reconciling competing uses amongst a wide range of stakeholders, and responding to climate-related variations in water flows and availability (GEF-CC Strategic Priorities for Adapation—SPA).

An essential element of any response to land and water resource management conflicts during a period of climatic change will be reconciling competing uses and formulating agreed actions by the Basin governments and their communities, while catalyzing the necessary actions and funding to resolve shared transboundary concerns. The project, therefore, is wholly consistent with GEF-IW Strategic Objective 1, and contributes to the initiation of actions consistent with GEF-IW Strategic Objective 2, of the Strategic Programs for GEF-4. The proposed project, compiled under Strategic Program No. 3 (“Balancing Overuse and Conflicting Uses of Water

Resources in Transboundary Surface and Ground Water Basins"), aims to help the Amazonian countries to: (i) identify transboundary water resource management problems, (ii) formulate possible solutions, (iii) agree measures to reduce the stress in the Basin, and (iv) identify measures of a preventive nature, within the context of climatic change and variability. These measures (policies, programs and plans), both current and foreseen within the context of the Amazon Basin, are necessary tools to reach the 2015 millennium development goals as agreed at the World Summit on Sustainable Development (WSSD) in 2002, where water resources were identified as a key component for economic development and poverty reduction as well as for the rational use of shared natural resources

Sustainability

Project activities and implementation, including the participation process, are designed to achieve sustainability. Studies have been proposed with the purpose of identifying the causes and effects of degradation in the Basin. Wherever possible, the project is developing opportunities for the establishment of financial incentives, private sector investment, and cost recovery in environmental management. The pilot projects will provide actual, working examples of new or refined land and water management actions necessary for the sustainable development of the watershed.

This project will also demonstrate that the involvement of Basin stakeholders in watershed management is the key to the success. By engaging the Basin communities in a practical manner, the identification and field-testing of remedial measures, as well as in a dialogue process, actions formulated through the project process will benefit from communal insights and experiences, and be far more acceptable to the communities as sustainable alternatives to current, destructive practices. Public participation is a real tool for ensuring long-term sustainability in Integrated Water Resources Management.

The countries' legal institutions not only form the basis from which to execute the project but also the most important objective of its institutional strengthening and capacity building activities to ensure the sustainability of the present project. In the short term, ACTO will provide the basis for developing and disseminating information on the Strategic Action Program (SAP), coordinating and encouraging involvement of the Basin countries in the implementation of the SAP formulation activities—and ultimately of the SAP itself once agreed by the Basin countries, and monitoring progress toward formulation and implementation of the SAP. This role is wholly consistent with the mandate of the ACTO as the intergovernmental coordination mechanism for the Amazon Basin. Intra-governmental coordination during project implementation will be provided by the National Project Coordination Units (NPCUs) which will act as Inter-institutional Mechanisms to facilitate the integration and involvement of the different governmental institutions, and focus the active participation of civil organizations involved in the SAP formulation as a key element of its social sustainability.

In the longer term, the foreign affairs ministries and responsible institutions within the eight countries will support the economic and financial structures underlying the actions to be executed under the SAP. These actions will be further supported by the thematic groups to be

formed in each country, under the NPCUs. It is envisioned that the NPCUs will form the nuclei for the development of formal intra-governmental coordination mechanisms or inter-ministerial coordination committees that will continue the process of integrated basin management initiated during the SAP formulation process. The exact nature of these entities will be determined during the project pursuant to the institutional development activities proposed to be carried out under Component I..

Budgetary and other commitments to this end have been included within national fiscal planning and development strategies.

The sustainability of the SAP formulation process relies on the following main elements:

- Pilot projects in hotspots and on critical issues test the cost and feasibility of proposed measures and programs, and test proposed adaptation measures, at a local scale.
- Program of adaptation measures identifies a menu of adaptation measures for the basin, including cost, feasibility and benefit analyses.
- Acquisition and dissemination of data vital to the successful preparation of an effective SAP.
- Creation of institutional mechanisms and human capacities contributes to the long-term success of the SAP.
- Utilization of an innovative visioning process guarantees stakeholder commitment and support.

Replicability

The outputs of the project will be disseminated through governmental institutions, nongovernmental organizations, universities and other stakeholder entities participating in the activities. The strengthening of the ACTO, including the institutions related thereto in each of the eight countries, will permit the development of information transfer mechanisms to share new knowledge and provide for active coordination and horizontal cooperation in the integrated management of the water resources of the Basin.

It is expected that representatives of the communities participating in the priority projects will form a consultative committee able to assist other communities in replicating successful interventions, a consortium of expertise able to participate meaningfully in local decision making, and a case study in successful public-private partnership that could serve as the basis for “lessons learned” from this project to be highlighted through the IWRN and IW:LEARN networks.

Outside of the Amazon Basin, the Project experience will be transferred through the relevant natural resources management institutions and Foreign Affairs Ministries of the ACTO member countries as well as through IW: LEARN and the IWRN. The ACTO will be a key

instrument in transferring such experience on an international level through cooperation agreements with other multinational basin institutions, like the Congo and Mekong basin commissions.

The information and communication systems, to be implemented during the project (Component III), will constitute another important mechanism for disseminating and transferring experiences and management tools in order to replicate the institutional arrangements, sustainable practices, technologies and methodologies developed under the auspices of this project.

Since all of the proposed activities are multifaceted in nature and include a strong multi-stakeholder participation element which will contribute to the "buy-in" of the project constituencies, the prospect for replicating such activities is high and can be achieved with minimal efforts, exchanging relevant information and experiences. As noted above, the Basin countries individually have included water resources management as a national priority and are working toward development of the appropriate national policies, institutions, and related reforms which will be supported, in part, through the project components.

With specific reference to replication of pilot demonstration activities, potential replication will be dependent upon the specific interventions being found to be cost-effective and feasible approaches to managing specific issues of critical concern to the Basin. In these cases, the ACTO will initially serve as a mechanism for sharing best practices, and, through ACTO, the NPCUs and their successor entities will further serve as foci for the dissemination of feasible practices. Use also will be made of the existing IW-LEARN and IWRN web-based dissemination services to more widely share successful interventions within the Basin and beyond. Pilot demonstration activities that suggest that specific interventions are flawed also provide useful information that will be shared through ACTO, and will inform subsequent recommendations to be crafted within the framework of the SAP. In each case, as noted above, the lessons learned will be integrated into the national water resources policies and management institutions, according to the endorsements of the Basin countries participating in the project.

Stakeholder Involvement

The PDF-B has been prepared with the active involvement of responsible governmental institutions in each country, the academic sector, universities and investigatory centers, and civil society. During the preparation process, specialized personnel were present to actively and responsibly include civil organizations in the process. Based upon this experience, this Project will use an innovative participatory process to understand the Vision of Amazonian society, which, together with the synthesis of currently available knowledge and experiences gained through this project, will be the foundational activity underlying the creation of a Strategic Action Program for the Amazon Basin, catalyzing joint action by the Basin countries.

This participative dimension strengthens Basin governance, and is present in each of the Components to be executed during the project. Promoting public participation in this project is

integral and transversal to the process, ensuring adequate participation and involvement of the public and private sector as a whole: state, government, academics and universities, NGOs, private companies and organized groups within civil society.

This involvement also will favor appropriations and the social sustainability of the SAP during both its formulation and implementation, consolidation of social capacity, generation of a common Basin consciousness, and appropriate and targeted informational and educational programming (see Component III). Stakeholder participation also forms the foundation for the sustainability and replication of project activities in communities throughout the Amazon Basin. As noted earlier in sections referring to sustainability and replicability, stakeholder involvement and participation are key elements of all project activities, but especially those associated with the pilot demonstration projects. Local community advocates created through stakeholder involvement in the pilot demonstration activities will form the basis for wider replication of successful interventions by forming a nucleus of expertise that can be accessed to share experiences and train other individuals in successful basin management techniques.

Effective stakeholder involvement and participation is a hallmark of the GEF-IW supported Basin management programs in the LAC Region, and provides an important vehicle for information and knowledge transfer and dissemination. Consequently, stakeholder involvement forms a critical element of each project activity, complementing involvement and actions at the local, national, and regional governmental levels.

Monitoring and Evaluation

The project will meet the standard monitoring and evaluation (M&E) procedures of UNEP (administrative, technical and financial), and include quarterly advance reports, quarterly and annual expense reports, monitoring of co-financing, and mid-term and final evaluations. These actions, in combination with regular meetings of the project Steering Committee, will comprise continuous evaluation of the project.

The final evaluation will take place once disbursements have been concluded, and the *ex post* evaluation will be performed as a final act of Project execution. In this latter evaluation, the ACTO, UNEP and the OAS will participate jointly with the countries, assisted by external civil, academic, and international agency participants.

The M&E system will use quantitative indicators as a tool for monitoring and ensuring feedback to decision makers to enable any necessary project modifications in a timely manner (adaptive management).

5. FINANCING

GEF Project Costs

Project Components/Subprojects /Activities	GEF Funding USD	Counterpart Funding USD	Co-financing USD	Total Cost USD
Component I: Understanding Amazonian Society	**1,150,000**	**3,443,143**	**1,809,999**	**6,403,142**
Subproject I.1: A Vision for the Amazon River Basin	**850,000**	**140,469**	**1,689,999**	**2,680,468**
Activity I.1.1 - Preparation and Exploration	291,200	46,272	692,196	1,029,668
Activity I.1.2 - Scenario Development	284,000	44,785	60,215	389,000
Activity I.1.3 - Scenario Publication and Dissemination	224,800	42,306	914,694	1,181,800
Activity I.1.4 - Vision Formulation Phase	50,000	7,106	22,894	80,000
Subproject I.2: Strengthening the Legal and Institutional System of the Amazon Basin	**300,000**	**3,302,674**	**120,000**	**3,722,674**
Activity I.2.1 - Institutional Integration in the Amazon Basin	150,000	3,162,208	000.000	3,312,208
Activity I.2.2 – Harmonization of the Legal Framework	150,000	140,466	120,000	410,466
Component II: Understanding the Natural Resource Base	**1,150,000**	**2,371,864**	**550,000**	**4,071,864**
Subproject II.1: Targeted Research	**550,000**	**2,090,932**	**000.000**	**2,640,932**
Activity II.1.1 - Improved Knowledge of Aquatic Ecosystems	150,000	1,640,466	000.000	1,790,466
Activity II.1.2 - Hydro-geological Characteristics of the Amazon Aquifer	200,000	310,000	000.000	510,000
Activity II.1.3 - Characterization of the Sediment Load of the Madeira and Amazonas-Solimões Rivers	200,000	140,466	000.000	340,466
Subproject II.2: Hydro-climate Vulnerability Assessment	**500,000**	**140,466**	**250,000**	**890,466**
Activity II.2.1 – Hydro-climate Vulnerability Atlas	500,000	140,466	250,000	890,466
Subproject II.3: Transboundary Diagnostic Analysis	**100,000**	**140,466**	**300,000**	**540,466**
Activity II.3.1 - TDA Formulation	100,000	140,466	300,000	540,466
Component III: Response Strategies	**4,075,000**	**25,668,990**	**9,677,990**	**39,421,980**
Subproject III.1: Pilot projects in IWRM	**905,000**	**1,453,658**	**2,520,000**	**4,878,658**
Activity III.1.1 – Management of Aquatic Ecosystem	200,000	472,276	000.000	672,276

Hotspots				
Activity III.1.2 - Sustainable Management of Transboundary Floodplain Forests	405,000	552,276	2,200,000	3,157,276
Activity III.1.3 - Sustainable Groundwater Use in Amazon Urban Centers: the Case of Manaus (Brazil)	300,000	429,106	000.000	729,106
Activity III.1.4 - Transboundary Integrated Basin Management in the Amazon Regions of Napo Basin and MAP	000.000	000.000	320,000	320,000
Subproject III.2: Special Priorities on Adaptation	**1,500,000**	**225,000**	**6,037,990**	**7,762,990**
Activity III.2.1 - Ecosystem Services and Governance in the Transboundary Purus River Sub-basin	500,000	000.000	4,387,990	4,887,990
Activity III.2.2 - Adaptation to Climate Change in the Transboundary MAP Region.	250,000	000.000	450,000	700,000
Activity III.2.3 - Adaptation to Sea Level Rise in the Amazon Delta	250,000	000.000	1,200,000	1,450,000
Activity III.2.4 – Conjunctive Use of Ground- and Surface Waters in the Tres Fronteras Region	500,000	225,000	000.000	725,000
Subproject III.3: Integrated Information System	**870,000**	**11,422,864**	**750,000**	**13,042,864**
Activity III.3.1 – Design and Implementation of Integrated Information System	720,000	9,782,398	750,000	11,252,398
Activity III.3.2 - Water Quality and Pollution Sources Inventory	150,000	1,640,466	000.000	1,790,466
Subproject III.4: Communication, Outreach and Finance	**400,000**	**12,567,468**	**370,000**	**13,337,468**
Activity III.4.1 - Education Strategy	150,000	8,214,070	000.000	8,364,070
Activity III.4.2 - Communications Strategy and Multi-stakeholder Participation	150,000	3,342,932	000.000	3,492,932
Activity III.4.3 - Financial Strategy	100,000	1,010,466	370,000	1,480,466
Subproject III.5: Strategic Action Program	**400,000**	**000.000**	**000.000**	**400,000**
Activity III.5.1 – Formulation of the SAP	400,000	000.000	000.000	400,000
Component IV: Project Management	**625,000**	**1,318,104**	**000.000**	**1,943,104**
Activity IV.1 - M&E	70,000	659,052	000.000	784,052
Activity IV.2 - Project Oversight	555,000	659,052	000.000	1,159,052
TOTAL PROJECT COST ($)	**7,000,000**	**32,802,101**	**12,037,989**	**51,840,090**

Integrated and Sustainable Management of Transboundary Water Resources in the Amazon River Basin Considering Climate Variability and Climate Change

PROJECT MANAGEMENT BUDGET/COST

Cost Items	Total Estimated person weeks	GEF ($)	Other sources ($)***	Project total ($)
Personnel	4992*	435,600	2,866,096	3,301.696
Equipment, publication and communications		30,600	659,052	689,652
Travel Cost **		88,800	190,800	279,600
Monitoring and Evaluation		70,000	659,052	729,052
Total		**625.000**	**4,375.000**	**5,000.000**

* Includes 384 person/weeks to be funded with GEF resources and 4608 person/weeks financed with non-GEF sources.

**Estimated ticket and perdiem expenses for travel to riparian countries (2 trips/4 countries per year @ $1575/trip = $12.600/yr), local travel (4 trips/year/2 persons @ $900/trip=$7.200/yr), and participation in international conferences (1event/yr @$2.400= $2.400/yr). Total per year = $22.200; Total cost 4 years = $88.800.

*** Amount for personnel and travel includes management of activities included within specific sub-projects budgets.

Consultants Working for Technical Assistance Components

Component	*Estimated person weeks*	*GEF($)*	*Other sources ($)*	*Project total ($)*
*Local consultants**	3,832	2,926,472	1,384,263	4,310,735
*International consultants**				
Total	**3,832**	**2,926,472**	**1,384,263**	**4,310,735**

* Exact co-financing will be further defined during the inception phase. Detailed information regarding the consultants in annex

Co-financing Sources

Sources of Co-financing	Type of Co-financing	Amount	%
Project Government Contribution	**In-kind**	**36,701,847**	
Bolivia	in-kind	6,100,000	13.6
Brazil	in-kind	11,247,960	25.08
Colombia	in-kind	-	
Ecuador	in-kind	13,572,964	30.27
Guyana	in-kind	-	
Peru	in-kind	5,754,910	12.83
Suriname	in-kind	26,013	0.06
Venezuela	in-kind	-	
Bilateral Aid Agency(ies) (*)	**In-kind and in cash**	**435,000**	
IRD/FFEM	In-kind	435,000	0.97

GTZ	In-kind and in cash	Amount to be determined (letter of commitment shown in Annex 9).	
Multilateral Agency(ies)	**In-kind**	**550,000**	
UNESCO – IHP (Water Balance & Map of Arid Zones)	in-kind	550,000	1.23
Private Sector	**Grant**	**50,000**	
Coca Cola	In cash	50,000	0.11
NGO	**Grant**	**690,000**	
CEBDS (Brazilian Business Council for Sustainable Development)	In-kind	370,000	0.83
Betty Moore Foundation	Cash	320,000	0.71
Others/Academia (*)	**In-kind**	**6,413,243**	
UNISANTOS	in-kind	120,000	0.27
UFAM, UNAMA, INPE, CNPq, UFPA, INPA, UNICAMP, USP	in-kind	2,443,243	5.45
UFPA, UFRA, EMBRAPA-CPATU/AMAZON, UAP, INRENA, IIAP, SINCHI	in-kind	2,200,000	4.91
IVIG/COPPE/UFRJ, UFA, ANA and State Government of Acre	in-kind	450,000	1.0
UFPA, FUAM,CEFET, INPE, UNIVALI	in-kind	1,200,000	2.68
FSP TOTAL CO-FINANCING		**44,840,090**	**100%**
TOTAL PDF-B co-financing from Countries	In-kind	**600,000**	
Total PDF-B co-financing from EA/IA	In-kind	**150,000**	
GRAND TOTAL CO-FINANCING		**45,590,090**	

(*) In negotiation additional co-financing from the Swiss Government, European Union, and Petrobras.

6. INSTITUTIONAL COORDINATION AND SUPPORT

Core Commitments and Linkages

The national water authorities and Amazonian research institutions from all the member countries of the ACTO undertook a great number of studies on the natural resources of the Amazon Basin during the last three decades. These identified potential opportunities and limitations for economic and social development in the Basin and also noted the Basin's great hydroelectric and the development potential along the main tributaries usable for navigation. Different critical areas with serious environmental impacts due to mining, agriculture and logging activities were noted as specific hotspots. The first GEF efforts in international waters in the Amazon Basin were justified to attend to the priority issues identified in these initial studies by the global importance and emerging realities of the Amazon Basin. These projects in general were successful in dealing with specific concerns, but in terms of the broader Basin, represent uncoordinated opportunities. The proposed project provides the linkages and context for those ongoing and previous activities by developing the coordination framework.

Project Implementation Agreement – See also Subproject IV

UNEP, as the GEF Implementing Agency (IA), will be responsible for overall project supervision to ensure consistency with GEF and UNEP policies and procedures, and will provide guidance on linkages with related UNEP- and GEF-funded activities. The UNEP Division of GEF Coordination (UNEP/DGEF) will monitor implementation of the activities undertaken during the execution of the project and will be responsible for clearance and transmission of financial and progress reports to the GEF. UNEP retains responsibility for review and approval of the substantive and technical reports produced in accordance with the schedule of work.

OAS, by virtue of: (a) its direct presence in the participating countries, its long-standing involvement in the Basin; (b) its traditional partnership with UNEP in similar projects within the Americas; (c) its role as the Executing Agency of the PDF Block B, consistent with its agreements with ACTO set forth in the MOU signed in 2005 relating to the execution of the GEF Amazon Project; (d) its experience in implementing activities under related projects in large river basins in South America; and (e) its wider experience in national and transboundary projects in the Amazon region over more than 20 years—will act as Executing Agency (EA) in coordination with ACTO, the regional agency for the Amazon Basin. OAS will provide overall technical oversight to project implementation and manage the funds provided to the project by UNEP on behalf of GEF, in a manner consistent with UNEP financial reporting requirements.

ACTO, the organization created by the Amazon Cooperation Treaty, will serve as co-executing agency (EA) for the project, in accordance with its objectives and activities as agreed by the member States to the Treaty. Consistent with this mandate, ACTO will be responsible for coordinating the participation of the Basin countries in the project and the technical and administrative contributions identified as counterpart financing and co-financing in accordance with the rules and regulations of the institutions and agencies participating in the project. ACTO will also be responsible for the direct execution of project activities related to institutional strengthening and for such other roles as may be agreed upon by the Steering Committee

A Steering Committee (SC) will be formed to guide the execution of the project. It will be composed of the National Coordinators from ACTO member countries, UNEP, ACTO and OAS. Representatives of co-financing agencies may be invited to serve on the Committee if the need arises. The Secretary General of ACTO will be the Project Director. The Project Coordination Unit (PCU) will act as the Secretariat of the SC. The other GEF implementing agencies could be invited to participate in an *ex-officio* capacity. The SC, as main project authority, shall establish the execution baselines, and consider and approve annual operations plans and budgets, as well as quarterly and annual technical and financial reports and final technical reports. The SC will operate on the basis of consensus among its members. UNEP, as Implementing Agency, will be responsible for final decisions about budgetary programs, terms of reference, and contracts proposed for the Project's execution.

A Project Coordination Unit (PCU) for the Execution of the Project, comprised of the Project Coordinator, Communications Specialist, Financial Management Professional, Technical Specialist, and support staff, will be established. The Project Coordinator will be responsible for the day-to-day activities of the project, including providing direction to support staff, national counterparts, and consultants to the project. The Project Coordinator specifically will coordinate and supervise all technical activities undertaken at the national level by each of the National Project Coordination Units (NPCUs, see below), and will be in charge of ensuring the preparation of the project reports and other outputs as indicated in the Terms of Reference for the subprojects, Activities and work elements for Components I through III. The coordination of counterpart activities by country organizations will be jointly carried out with the national coordinators to ensure the best possible articulation of the project with national programs and organizations.

The local execution of the project in each of the Basin countries will be undertaken by National Project Execution Units (NPEUs). Each NPEU will have a National Coordinator for the in-country coordination of project activities. The NPEUs will serve as inter-ministerial/inter-agency coordinating committees in each of the Basin countries, and will form focal points for the delivery of information, transfer of project information to country counterparts and other interested stakeholders, and general oversight and support of national consultants executing project activities. The National Coordinators will coordinate country- and local-level project execution and convene and coordinate meetings of the inter-institutional mechanisms in each participating country in order to facilitate the efficient and effective conduct of the project activities. The National Coordinators will identify and recommend qualified country- and local-level staff to undertake project activities, which will be contracted by the EAs for specific tasks, with the approval of ACTO, OAS and UNEP.

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