

UNITED NATIONS ENVIRONMENT PROGRAMME{PRIVATE }

GLOBAL ENVIRONMENT FACILITY

*CONCEPT DOCUMENT FOR SUSTAINABLE WATER RESOURCES
MANAGEMENT IN THE LA PLATA RIVER BASIN*

- Countries:** Argentina, Bolivia, Brasil, Paraguay, and Uruguay
- Eligibility:** The five participant countries are eligible for financing by the GEF pursuant to paragraph 9b of the Instrument.
- GEF Focal Area:** International Waters OP # 9
- (Cross-cutting Areas:** Land Degradation, Climate Change, and Biodiversity)
- Project Title:** **A Framework for Sustainable Water Resources Management in the la Plata Basin, with Respect to the Hydrological Effects of Climatic Variability and Change.**
- Requesting Agency:** UNEP
- Executing Agency:** General Secretariat of the Organization of American States (GS/OAS)
- Local Executing Agency:** Intergovernmental Co-ordinating Committee (CIC) for the la Plata Basin, in co-operation with the following national institutions:
- Argentina:** Ministerio de Infraestructura y Vivienda, Subsecretaria de Recursos Hidricos de la Nacion;
- Bolivia:** Viceministerio del Medio Ambiente y Recursos Naturales, Direccion General de Clasificacion de Tierras y Cuencas;
- Brasil:** Ministério do Meio Ambiente, Secretaria de Recursos Hídricos;
- Paraguay:** Secretaría del Ambiente (SEAM), Dirección General de Protección y Conservación de Recursos Hídricos;
- Uruguay:** Ministerio de Transportes y Obras Públicas (MTO), Dirección Nacional de Hidrografía (DNH).
- Project Cost:** To be further defined during the PDF-B: estimated to be **US\$ 12.725 to 15.725 million of GEF Grant** including PDF-A (US\$25,000 awarded) and PDF- B grants (US\$700,000)

Financing Plan (tentative and indicative):	Full details of baseline and co-financing will be determined during the PDF-B process: GEF - US\$12-15 million Countries - US\$ 5-6 million FONPLATA-US\$ 8-11 million Other* - US\$ 5-6 million
Project Duration: (tentative)	To be further defined during the PDF-B; estimated to be 6 years comprised as follows: PDF-A phase (6 months—already completed), PDF-B phase (18 months), and FP phase (4-5 years)
Preparation Costs:	US \$ 1,558,800 for 18 months with US\$700,000 of GEF Grant (see Section G)
Work Program submission:	January 2005 Inter-Sessional or May 2005 Council Work Program

* Other = *inter alia* UNEP, OAS, WMO, AAAS, etc, as per negotiations

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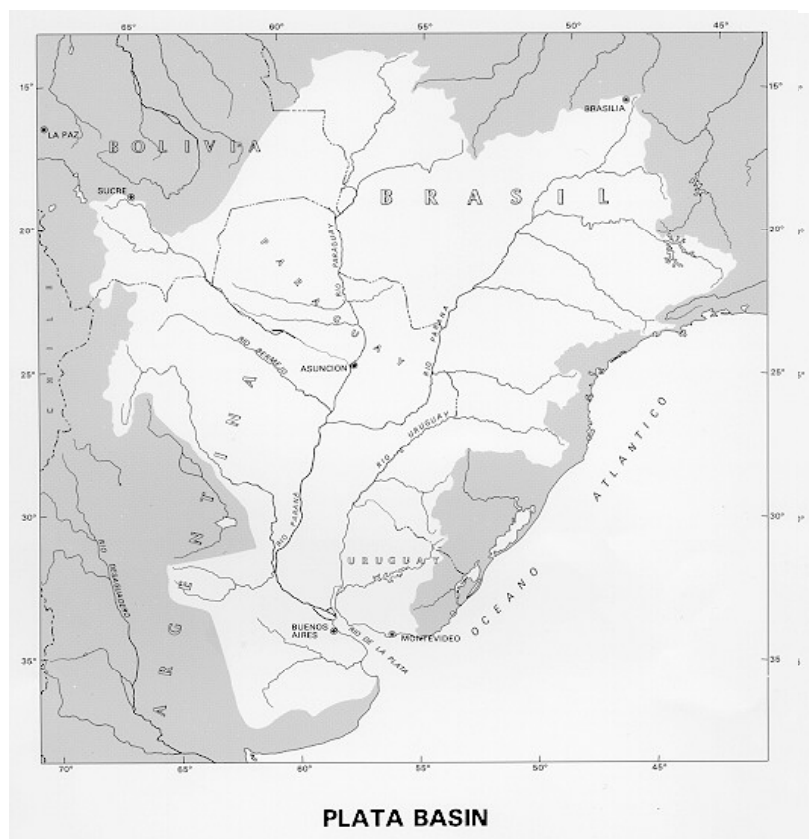
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A. BACKGROUND AND RATIONALE FOR GEF FUNDING

Basin Description

The la Plata River is one of the great rivers of the world. Draining approximately one-fifth of the South American continent, extending over some 3.1 million km², and conveying waters from central portions of the continent to the south-western Atlantic Ocean, the la Plata River system rivals the better-known Amazon River system in terms of its biological and habitat diversity, and far exceeds that system in its economic importance to southern and central South America. The la Plata Basin includes almost all the southern part of Brasil, the south-eastern part of Bolivia, a large part of Uruguay, the whole of Paraguay, and an extensive part of northern Argentina. It accounts for 17 percent of the surface area of the South American continent. The Basin is comprised of three large river systems; namely, the Paraná River, the Paraguay River, and the Uruguay River. Each of these waterways has unique characteristics that reflect the source waters of the rivers as well as the human influences that define their flow patterns and environmental status. In addition, water that infiltrates into the groundwater system from within the Basin provides recharge for the Guarani Aquifer, one of the largest continental groundwater reservoirs in the world. Map 1 shows the location of the la Plata River Basin and its component drainage systems, additional details of which appear in Annex II.



In a recently published review, the World Resources Institute named the la Plata River system as being among those watersheds of the world having the highest numbers of endemic fishes (in the Paraguay River sub-basin), the highest numbers of endemic birds (the Parana River sub-basin), and the highest numbers of major dams (the Parana River

sub-basin).¹ The diversity of fishes and bird life illustrates the diversity of landforms within the la Plata River Basin. Arising on the eastern slopes of the Andes Mountains, at altitudes above 4,000 m, the Paraguay River sub-basin extends across the vast expanse of the central plains of South America, including the diverse *Chaco* ecosystem and globally-significant *Pantanal* wetlands. The South American *Chapada de Parecis* and *Planalto*, or highlands, with elevations of about 500 m, that separate the la Plata Basin from the Amazon Basin, form the headwaters of the Parana River and Uruguay River sub-basins which rise in the east.

Superimposed upon this geographic Basin and its unique natural resources is the economic heartland of Latin America. Thirty-one large dams and fifty-seven large cities, each with populations in excess of 100,000 persons and including the capital cities of Brasil, Paraguay, Argentina, and Uruguay, are to be found within this Basin. The total human population of the Basin is estimated to be approximately 67 million individuals.

Environmental Issues and Concerns

This intense human activity, and its associated rapid urbanisation and accompanying deforestation of lands for cultivation, has increased runoff to the rivers, modified local climatic conditions (e.g., humidity, temperature, and wind speeds), and, due to the area of the la Plata Basin, impacted the global climate.

These processes and their associated hydrological changes increase the natural variability inherent in the behaviour of the water resources of the Basin. Consequently, floods are larger and more frequent, and flood-drought cycles recur more often. Under these conditions, infiltration into, and recharge of, aquifers is reduced. Further, this rapid urbanisation and trend toward mechanised agriculture alters both surface and ground water flow patterns—by placing layers of asphalt and concrete, compacting soils, and building appurtenant structures over the land surface—and increases the sources and rates of delivery of contaminants to streams and aquifers. These changes are not limited by the national frontiers, but have clear transboundary consequences that must be addressed at the Basin scale, as envisioned under Operational Strategy Program 9 of the International Waters focal area.

Context

From the beginning, the scope of this undertaking was apparent: not only were the interrelationships between the water, land, and biosphere exceedingly complex and varied, but so, too, were the nature and number of concrete and critical problems. Nevertheless, a process was initiated by the countries of the la Plata River Basin, beginning with a technical meeting convened during September 2001 by the Intergovernmental Co-ordinating Committee for the la Plata Basin (CIC), to seek support for the idea of formulating a strategy for water resources management within the la Plata River Basin.² At this meeting, the representatives agreed to support an

¹ Revenga, C., S. Murray, J. Abramovitz, and A. Hammond, *Watersheds of the World: Ecological Value and Vulnerability*, World Resources Institute and Worldwatch Institute, Washington, DC, 1998, 205 pp.

² This meeting was held during the IV Inter-American Dialogue on Water Resources Management. Participants included the institutions responsible for water resources, the Ministries of External Relations of the five countries signatory to the la Plata Basin Treaty, the Intergovernmental Co-ordinating Committee for the la Plata River (CIC), and the individuals in charge of various programs and projects relating to the use and management of water resources in the la Plata River Basin. Many of these persons were staff from the four GEF International Waters projects being executed within the la Plata Basin and its coastal zone: i) Implementation of the Strategic Action Program for the Bermejo River Binational Basin:

initiative proposed by the government of Brasil to seek GEF funding through UNEP and, with the support of the other Basin countries of the CIC, to identify and formulate an appropriate project to achieve this goal.

Subsequently, technical meetings were convened in Sao Paulo, Brasil, during April 2002—with the assistance of GEF PDF Block A funding, and in Buenos Aires, Argentina, during June 2002. The outcome of these meetings advanced the agreement achieved to date, and instructed the Secretary General of the CIC to elaborate a proposal to develop a Framework for the Sustainable Management of the Water Resources of the la Plata Basin (Decision CIC N° 2/02-528).³ These meetings identified the main topics of common interest that affect the sustainability of development in the la Plata Basin:

- **Socio-economic and institutional issues:** The mechanism to facilitate measures to mitigate current and future impacts is contained within the Treaty of the la Plata Basin. The Treaty expresses the will of the countries to advance their economic development in a sustainable manner, and, within the CIC, the existing basin institution was strengthened in the areas of environmental management and technical capacity to co-ordinate a programme of integrated management among the five countries signatory to the Treaty.
- **Hydrological issues:** The rivers of the la Plata Basin are subject to pressures that have modified their natural hydrological regime, and that can further modify the quantity and quality of their waters. These pressures are fundamentally: i) extraordinary variations in the hydrological regime partly linked to variations and changes in climate and ii) factors associated with land use changes, population growth, urbanisation, and agricultural, industrial and infrastructure development.
- **Multi-national and regional issues:** The consequences of these pressures are not restricted to specific countries, but are of a transboundary character. These pressures will surely increase into the future as the Basin countries continue enlarge their agricultural and industrial development bases, and provision of services, to improve the living standards of their increasing populations. Recognising the importance of co-ordinated and joint action to manage and protect the water resources of the Basin, the countries of the region have created the CIC as a mechanism to co-ordinate their activities in the Basin. Likewise, recognising the benefits of co-operation in the sustainable economic development of the region, the countries have created the Southern Common Market, MERCOSUR/MERCOSUL, which has adopted an environmental policy supportive of regional-scale action to develop and management the region's natural resources.

Global Significance and Project Rationale

This agreement, together with the existing organisations within the la Plata Basin, and the ongoing initiatives currently being undertaken by the Basin countries, provide a singular opportunity to develop and implement measures to manage one of the world's

Phase I (Argentina-Bolivia); ii) Integrated Management of Land-Based Activities in the São Francisco Basin (Brasil); iii) Integrated Environmental Protection and Sustainable Development of the Guarani Aquifer System (Argentina-Brasil-Paraguay-Uruguay); and, iv) Environmental Protection of the la Plata River and its Maritime Front: the Prevention and Control of Pollution and the Restoration of Habitat (Argentina-Uruguay).

³ These meetings, conducted under the auspices of the CIC, had the participation of representatives from the five Basin countries, UNEP (as GEF Implementing Agency), and the OAS (as Executing Agency), and formed preparatory technical meetings prior to meetings of the CIC.

large river basins in a co-ordinated and sustainable manner. As noted in Annex II, the la Plata Basin provides a microcosm of many of the world's large river basins, being at once inclusive of a number of countries, overwhelmed by problems that include urbanisation, land degradation, and poorly-controlled discharges of industrial and agricultural contaminants—including the occurrence and discharge of persistent organic pollutants (POPs) at many points in the Basin. However, the established institutional structure, in contrast to many of the world's large river basins, provides a framework in the la Plata Basin within which the sustainable management of the system can occur. Thus, the likely global benefit to accrue from the conduct of this multi-phased project will be a framework for action that can serve as a model for application in other large river basins. In this regard, the la Plata Basin is uniquely positioned in that the countries of the Basin are largely united by a common culture, within a multi-lingual environment.

Co-ordination Amongst Ongoing Projects and Programmes

There are benefits to this multi-faceted approach. The primary benefit accrues to the la Plata Basin, as a whole, as a consequence of the enhanced basis for decision-making and the increased likelihood of achieving conditions favourable to the sustainable utilisation of the Basin's water resources, while continuing the economic development of the region.

It has been an hallmark of the GEF approach to International Water projects to address key environmental issues at specific "hot spots." In this regard, the seminal work of the Organization of American States (OAS) in preparing a Basin-wide planning programme during the 1960s has been the major factor in the derivation of these specific interventions, and a key element in identifying the need and priority of the current GEF-funded interventions.⁴ These efforts provide both the context and foundation for the current framework project.

Ongoing GEF-IW initiatives within the la Plata Basin embody the "hot spot" concept, and constitute interventions of significance within the Basin. The project being implemented within Bermejo River sub-basin represents a strategic programme to manage the major source area for sediment generation within the la Plata Basin; the project being implemented within the Upper Paraguay River sub-basin represents a strategic programme to protect and preserve a wetland of global significance (the Pantanal); the project being implemented at the Maritime Front represents a strategic programme to sustainably manage fisheries resources within an highly urbanised and extremely active transportation corridor; while the Guarani Aquifer project represents the initiation of a strategic programme to protect and sustainably utilise the groundwater resources underlying the Basin.

While each of these interventions, in isolation, addresses key environmental and developmental issues within the Basin, the range of projects so executed ignores the connectivity of the la Plata Basin as an hydrological entity. The current project, therefore, is designed to provide a framework to better integrate and more widely disseminate the outputs and results of the projects currently being executed in the component sub-basins of this larger hydrologic unit. This approach reinforces the regional concept of the GEF and creates essential synergy between the ongoing suite of

⁴ *Cuenca del Rio del la Plata: Estudio para su Planificacion y Desarrollo, Inventario de Datos Hidrologicos y Climatologicos*, Secretaria General de la Organizacion de los Estados Americanos, Washington, DC: 1969, 272 pp.

projects in the Basin, enhancing opportunities for replication, and strengthening their sustainability.

B. REGIONAL DEVELOPMENT AND GEF PROGRAMMING CONTEXT

Regional Priorities, Programmes, and Actions

This project continues the spirit of co-operation among the countries of the la Plata Basin that began in 1967, when the five countries created the Intergovernmental Co-ordinating Committee for the la Plata Basin. The signature of the Treaty of the la Plata Basin two years later resulted in the CIC being constituted as the main instrument for the execution of the Treaty's main objective: "... to promote the harmonious development and physical integration of the basin, in its areas of direct and immediate influence." Since that time, the CIC has emphasised areas of common interest among the five countries and has facilitated the conduct of studies, programmes and works within the Basin, in the fields of hydrology, natural resources, transportation and navigation, soil conservation, and energy. Additionally, the CIC has contributed to the development within the Basin of operational standards and guidelines in the area of water quality.

Notwithstanding, the Treaty of the la Plata Basin was never conceived as an exclusive option for agreements and co-operation among the participating states but rather as a mechanism to amplify and enhance the actions of the participating countries. In this regard, the Financial Fund for the la Plata Basin (FONPLATA) was created within the framework of the Treaty during 1976 to lend financial support to the activities envisioned in the Treaty. A series of other agreements, both within the framework of the la Plata Treaty and supplemental to it, have led to the creation of more than 20 institutions and operational agencies having direct responsibilities for the use and management of the Basin's water resources.

While the diversity of institutions highlights the interest in resolving shared problems when they affect two or more countries, it also highlights the fragmentation and segmentation that prevails, often to the detriment of the "basin vision" that led to the Treaty. Few of these institutions communicate either directly or through the CIC. An important example of this was the formation, in 1992, of the Intergovernmental Committee on the Paraná-Paraguay Waterway or Hidrovía (CIH). Theoretically this body, as others created previously, was to be co-ordinated by the CIC; however, the reality is that this committee and many of the others are autonomous.

The signature of the Treaty of Asunción, in 1991, created the Southern Common Market (MERCOSUR/MERCOSUL), and called into question the continuity of the CIC. However, the Conference of Foreign Secretaries of the la Plata Basin, the Supreme Organ of the la Plata Treaty, in Montevideo, Uruguay, reaffirmed the CIC during December 2001, and created the office of Secretary General (revolving among the countries). This Conference also created a [Technical] Projects Unit "...under Article 1 of the Treaty...to revitalise the operating system of the organism, including the creation of linkages with other technical and financial institutions within the la Plata Basin...". This project is consistent with the Program of Action subsequently agreed by the countries within the framework of the CIC (See Annex III).

International Context

The development of basin-scale agreements, programmes, plans, and policies is wholly consistent with the process established at the World Summit on Sustainable Development (WSSD), wherein water resources were identified as a major component not only of economic development but also in achieving sustainable utilisation of shared natural resources. This project responds specifically to WSSD Programmes of Intervention (POI) paragraphs 23-25, 27, 38, 60, 67 and 104. These priority issues are internalised within the GEF International Waters focal area in Strategic Priority IW-1, which seeks to catalyse financial resources for the sustainable management of freshwater resources through the TDA-SAP, or equivalent, process. In this context, the CIC, through its Technical Projects Unit, and in the context of the Southern Common Market within which the la Plata Basin is located, provides an established economic and political mechanism for executing the necessary actions to rehabilitate and protect one of the world's great river systems, its associated drainage basin, and maritime coastal zone. The CIC demonstrates the importance placed by the Basin countries on the la Plata Basin, and on the need for co-ordinated and sustainable utilisation of its waters, drainage basin, and biological resources. The active participation of the countries within the CIC and the recent creation of the Technical Unit for Projects within the CIC (see implementation arrangements, below) underline not only this importance, but also bode well for a sustainable and active implementation of the project outcomes.

C. PROJECT OBJECTIVES, DESIGN, AND APPROACH

Long-term Objective

The general objective of the phased project is to strengthen the efforts of the governments of Argentina, Bolivia, Brasil, Paraguay, and Uruguay to implement their shared vision for the environmentally and socially sustainable economic development of the la Plata Basin, specifically in the areas of the protection and integrated management of its water resources and adaptation to climatic change and variability. Co-ordinated and locally executed by the CIC, within and through its comprehensive structure and with extensive and ongoing participation by stakeholders as set forth in section E below, the phased project will harmonise and prepare for further implementation, in co-operation with the Basin countries, a programme of strategic actions for the sustainable management of the la Plata Basin.

Short-term and Intermediate Objectives

Specifically, in total, the project is designed to:

- i) strengthen the **technical capacity of the CIC** in planning and co-ordinating the integrated and sustainable development and management of the environment of the la Plata Basin;
- ii) advance the practice of integrated water resources management and adaptation to climatic change, by increasing the **knowledge and decision-making capacity** of the country-based institutions and technicians responsible for the scientific analysis and prediction of climatic change phenomena and their social, economic and environmental impacts;
- iii) implement a common strategic **vision of the Basin** as a basis for planning, sustainable development, and integrated management of water resources in the Basin, basis for an agreed **Mega-Transboundary Diagnostic Analysis (TDA)**

- that identifies the root causes of the principle environmental problems of the la Plata Basin in order to characterise, quantify, and define the strategic actions necessary for their resolution;
- iv) formulate agreed and integrated **watershed management programmes**, based upon the Mega-TDA, a shared Framework Strategic Action Programme (FSAP), and a common vision of Basin, that will advance the definition of, and agreement on, high-priority actions needed to formulate and implement policies, develop capacities and management instruments, and channel investments that not only protect the shared resources but also allow efforts to advance the economic and social development of the Basin in sustainable form;
 - v) identify the water resources that are at the greatest environmental risk (i.e., to identify critical areas and issues, and so-called “hot spots”), and **define and prioritise projects** for execution aimed at the restoration and protection of critical transboundary waters, taking into account both scientific information and information on cost and feasibility of remedial measures generated by the Bermejo, Upper Paraguay-Pantanal, Guarani, and Maritime Front GEF-IW projects; and
 - iv) integrate the work of groups, and facilitate the **participation of responsible institutions, interested organisations, and stakeholders** in each country, to prepare and execute the recommended actions in a sustainable and co-ordinated manner.

Project Expected Components, Outcomes and Activities

Building upon both the ongoing efforts of the countries of the la Plata Basin, funded in part through funds provided under the GEF-IW focal area, and the foundational work of the OAS, the project will focus on five principle areas of shared concern all being interconnected and interdependent and forming part of a progressive approach. The activities outlined here are indicative. A major element of the PDF, Block B, process will involve the further definition of activities for project execution.

The outcome of the project, collectively, will shape the future management programme for the la Plata Basin focussing on foundational work both at the policy and institutional levels creating a basin-wide enabling environment for subsequent major sub-basin strategic actions formulation and implementation.

The overall outputs of the project activities, inclusive of the outputs of the Project Development Facility-funded activities, will be (1) an institutional and political structure and (2) a framework for the comprehensive, integrated, and sustainable environmental programme of economic development within the la Plata Basin.

The total cost of the project will be defined during the PDF-B process; however, the cost of Phase I is estimated to be about US \$ 30-38 million, comprised of GEF-IW funding in the amount of US \$ 12-15 million and counterpart funding of US \$ 5-6 million from the five Basin countries, US \$ 8-11 million from FONPLATA, and US \$ 5-6 million from other partners, including AAAS, WMO, and others.

The components and expected outcomes of the initial four to five year project are expected to include the following:

Component 1: *Strengthening Institutional Arrangements for the Integrated Management of the Basin, and for the Conduct of Project Activities.*

Objective: This Component will set-up the institutional arrangements for the phased project, the conduct of the current project phase I activities, and stakeholder and public participation, under the auspices of the CIC.

Expected Outcomes:

- i. Strengthened capacity of the CIC to conduct the Project;
- ii. Enhanced public and stakeholder participation;
- iii. Agreed phased project institutional arrangements; and
- iv. Completed project documentation for next phase(s).

Description of Activities: Taking advantage of the relevant Best Practices emanating from other GEF and non-GEF initiatives in the Basin, Component 1 addresses the key issue of fragmented and weak institutions that currently characterise the basis for the management of the water resources of the la Plata Basin. The restructured CIC, as of December 2001, was the first step toward creating a more efficient management mechanism for the la Plata Basin.

- i. Creation and operation of the National Project Units (similar to Inter-ministerial committees) forming a network of National Project Units adequately staffed and equipped to implement subsequent project phases, augmentation of staff capacity and capabilities of the CIC structure including its Project Unit and Technical Environmental department and thematic working groups (see section E for CIC organigram), to effectively operate in a multi-national situation, and management of the project components and activities in an efficient and co-ordinated manner.
- ii. Based on the Stakeholder participation plan formulated under the PDF-B, conduct of seminars and workshops, creation of effective programmes for dissemination of project results and information using a variety of media and targeting a variety of audiences—including scholars, the general public, elected and appointed officials, industry, and others to be identified during the conduct of these activities, and inclusion of non-traditional partners within the process of formulating the Mega-TDA and FSAP.
- iii. Complementing the stakeholder and public informational programming, conduct of activities aimed at more broadly disseminating information on the institutional arrangement of the project as well as its outcomes and outputs, both within the la Plata Basin and elsewhere.
- iv. Preparation of the Phase II project proposal, in addition to the Mega-TDA and FSAP, by the CIC, in partnership with the project team established pursuant to the implementation arrangement summarised below.

Outputs:

- i. A strengthened CIC structure with efficient and functioning institutions, and a successfully managed project as witnessed by the agreed Mega-Transboundary Diagnostic Analysis (Mega-TDA), the agreed Framework Strategic Action

Programme (FSAP), effective and active stakeholder participation process, and an agreed project document for Phase II project activities.

- ii. Completed public and stakeholder meetings, published proceedings, and an on-going multi-media informational programme.
- iii. Information on the project disseminated within the Basin through a comprehensive decision support system using the network of National Project Units, inputs to the IW:LEARN best practices database, and information disseminated by means of the IWRN, local, regional and international conferences and symposia, and other appropriate media to be identified during the project.
- iv. An agreed costed project proposal for a follow-up phase.

Means:

To this end, the CIC will execute this Component. The conduct by the CIC of the activities required to prepare the project is a continuation of this process, and further advances are proposed to be achieved throughout the Project. The institutional strengthening activities will be carried out by the CIC and National Project Units (NPU) as set forth in the implementation arrangements outlined in this document.

The stakeholder involvement activities will be carried out by specialist consultants and national project teams. These activities will be co-ordinated by the CIC in partnership with UNEP (as manager of the best practices data base), OAS (as manager of the IWRN and secretariat to the Inter-American Water Resources Dialogues), and other agencies as appropriate.

Component 2: *Predicting the Impacts of Climatic Variability and Change on the Hydrology of the la Plata Basin.*

Objective: This component will enhance the capacity of the five countries to predict the likely impacts of climatic change and hydrologic variability through the identification of common concerns, strategies, and processes.

Expected Outcomes:

- i. Improved flood and drought forecasting and modelling at the basin level;
- ii. Functional and fully-staffed local institutional resources;
- iii. Improved regional planning processes; and
- iv. An harmonised regional legislative framework for the protection of wetlands, conduct of reservoir operations, management of land use, etc.

Description of Activities: The Activities under this component will initiate a process that will culminate in the establishment of a Centre for the Prediction of Climate Change and Hydrologic Variability during Phase II of the project.

- i. Selection and calibration of appropriate basin-scale models and their calibration, building upon the inventories and methodologies developed under the PDF-B process.

- ii. Strengthening of the regional network of institutions and individuals working in the fields of climatology, hydrology, meteorology, town and regional planning, and emergency preparedness.
- iii. Enhancing communications and co-ordination amongst the la Plata Basin countries, creating a basis for harmonising regional legislative frameworks for the protection of wetlands, conducting reservoir operations, and managing land use, and governing other related elements of inter-governmental co-ordination—in order to effectively and efficiently co-ordinate warning systems and responses to natural disasters, the countries and institutions of the la Plata Basin must have more closely harmonised regulatory and management strategies, legal frameworks, and monitoring and reporting protocols.
- iv. Formulation of a harmonised legislative framework including the conceptual agreement of (draft) common protocols and other standards, guidelines, and criteria that will form the basic, common performance standards upon which each country will develop their management programmes for the la Plata Basin—notwithstanding, it is explicitly recognised that the actual implementation of these results must rest upon the individual legal and legislative processes of each of the Basin countries, and, consequently, the ultimate implementation of harmonised legal and policy frameworks may not occur during the project period but be gradually achieved during subsequent project phases.

Outputs:

- i. Reviews of the existing network of stream gauges and of the availability of the telemetry for networking hydrological instrumentation at the scale appropriate for monitoring and predicting the hydrology of the Basin in the long term: at the spatial scales relevant for this proposed climate-based initiative, a probable target would be between 50 and 100 stream gauges. Identified "holes," likely enhancements needed in the meteorological network, including precipitation gauges, radar systems and radiosondes, and a data rescue effort, aimed at assembling surface climate data not currently or readily available in electronic form, needed for model implementation. Based on such data sets, comparison (testing) and selection of model outputs with retrospective climate ensembles and appropriate mapping, as well as increasing integration amongst different groups and a broadening their historically narrow focus..
- v. Directories and related elements of a meteorological, climatological, and hydrological network, and agreed commitments by these individuals and institutions to participate in subsequent project phases aimed at creating a regional climate centre acting as a center of excellence in the region and network of national partners.
- ii. Operational information exchange systems within the la Plata Basin, resulting in enhanced inter-governmental and intra-governmental co-ordination, inclusive of more effective communications among and between governmental agencies and stakeholders in each Basin country, as well as throughout the la Plata Basin, as specifically evidenced by improved responses to the mitigation and limitation of natural disasters, especially those related to floods and droughts.

- iii. Documented bases for creating and adopting the legal and societal components of such a harmonised system (the technical and institutional components will be the outputs of the activities associated with the modelling programme of the project).

Means:

The activities will be carried out by VAMOS/PLATIN, in close collaboration with RIGA and the AAAS, and with additional support from the WMO, World Climate Research Programme (WCRP), and institutions of higher education in the la Plata Basin. The legislative activities will be carried out by the CIC and its constituent governments. To the extent necessary, the local conduct of these activities will be co-ordinated by the CIC through its National Project Units and their partner organisations.

Component 3: *Promoting a Common Vision for the la Plata Basin and Formulation of the Basin-level Transboundary Diagnostic Analysis (“Mega-TDA”)*.

Objective: This component will promote the dissemination of a common vision for the Basin, its water and its natural resources, and develop a holistic diagnostic analysis of shared transboundary concerns at the Basin-level (Mega-TDA).

Expected Outcomes:

- i. Enhanced sustainable management of water resources and improved communication amongst users in the riparian countries supported by the creation of users networks;
- ii. An agreed Basin-level Transboundary Diagnostic Analysis of the la Plata Basin; and
- iii. Promotion of the agreed “Vision” for the la Plata Basin (developed during the PDF-B phase).

Description of Activities:

- i. Creation and enhancement of user networks within the la Plata Basin with a view to complement the networking process described under Component 2 with respect to the scientific and technical institutions within the Basin. These activities will increase involvement by industry, governmental and non-governmental institutions, and civil society within the la Plata Basin.
- ii. Based upon the Vision and framework TDA for the la Plata Basin defined and agreed during the PDF-B process, identification of the issues of transboundary interest and concern to be considered within the Mega-TDA, incorporating TDAs completed for the major sub-basins. Both the formulation and the endorsement of the Mega-TDA will be integrated with the process of stakeholder participation at the Basin level conducted under Component 1.
- iii. Promotion of the Vision integrated with the process of stakeholder participation at the Basin level conducted under Component 1, above, integrating scientific knowledge across the region with the demands of the stakeholders, and with the judicial and institutional instruments currently developed by the governments of the countries (including those refinements proposed under Component 2, above).

Outputs: This component will generate consensus agreements on the objectives that the Basin communities have for the la Plata Basin. This consensus will inform the manner in which the Basin countries collaborate in their efforts to sustainably and strategically develop the Basin's resources.

- i. Mechanisms, employing a wide variety of media, including industry specific networks among various sectoral stakeholders, as well as more generalised public informational and educational programming. Delivery mechanisms, likewise, are anticipated to include a range of participants, including existing producer co-operatives, professional associations, and related organisational partners.
- ii. An agreed Basin-level or Mega-TDA, with an agreed "menu" of issues of concern and their likely root causes prioritised to reflect the most pressing concerns and targeted toward those concerns most amenable to resolution (i.e., at "hot spots" within the Basin), that will form the basis the FSAP formulation and for subsequent phases of this project.
- iii. An agreed Vision, a process for promoting the Basin Vision, published proceedings, and related informational materials documenting the meetings, seminars, and consultative activities.

Means:

- i. The user networking activities will be co-ordinated and implemented by the CIC and supported as an on-going initiative of the CIC through its various divisions and partners. Likely partners will include the environmental instrument of the MERCOSUR/MERCOSUL, investments by regional development banks and financial facilities, and country governments, amongst others.
- ii. It will be the task of the Technical Co-ordinator, with the support of the technical institutions and their staff in the countries, and with input from the specialised consultancies and workshops, to prepare the Mega-TDA in a manner consistent with the agreed Vision. The Mega-TDA will be compiled by the project team under the direction of the CIC, and published as a policy document by the CIC upon agreement by its member states.
- iii. Based upon the Vision and the TDA framework developed during the PDF-B process, and using the GEF TDA methodology as well as the experience generated by the other GEF-IW projects in the region, the national project unit staff and national representatives of the CIC Working Groups, assisted by qualified consultants, will conduct national workshops in each of the five Basin countries, on the themes defined during the formulation of the Vision. These consultations will include participation of competent individuals and institutions with an interest in these selected topics, including academic institutions and organisations from civil society. Through this iterative process, each country will develop a national TDA, to be integrated into a shared TDA for the entire basin or Mega-TDA. Specific attention will be given to gender and generational issues, focusing on women and youth.

Component 4: *Executing Pilot Demonstration Projects for the Management of Critical Areas and Topics.*

Objective: This component includes the execution of demonstration projects and other interventions as appropriate to address critical themes and areas identified during the PDF-B phase testing the feasibility and costs associated with specific interventions required for the sustainable management of the Basin's water resources. Complementing the Basin Vision and the Mega-TDA, the results of these demonstration projects will be incorporated into the FSAP.

Expected Outcomes:

- i. Enhanced basin-scale fisheries management;
- ii. Protection of aquatic biodiversity in the Paraná River sub-basin;
- iii. Enhanced carbon sequestration in the *Chaco* through mitigation of land degradation in the *Chaco*;
- iv. Innovative environmentally-friendly technologies implemented for energy production; and
- v. Optimised management of reservoir operations for multiple objectives.

Description of Activities: No more than five pilot demonstration projects are currently envisaged to be conducted during this project. These pilot demonstration projects focus on currently identified, priority issues within the Basin, and build upon issues identified by the CIC as shared issues relevant to the five countries of the la Plata Basin. The terms of reference for these projects will be developed in the necessary detail during the project preparation phase; however, the following potential demonstration project areas have been agreed by the Basin countries as likely candidates based upon the current state of knowledge and substantiated with existing data and documentation:

- i. ***Fisheries Demonstration Project—Justification:*** The countries of the la Plata Basin have significant investments in fisheries, both within the freshwater areas of the Basin and in the estuarine portions adjacent to the Maritime Front. These investments relate not only to economic development within the Basin, but also to issues of biodiversity protection (see Activity iii, below). Elements of the ongoing GEF-IW initiatives in both the Upper Paraguay River Basin and in the Maritime Front are aimed at identifying specific interventions as likely outputs of those projects. (For example, the current fisheries agreement between Brasil and Paraguay being promoted under the auspices of the Upper Paraguay River Basin project could be replicated elsewhere in the la Plata Basin as the basis for joint fisheries management by all five Basin countries). The replication of this latter, specific accord is envisioned herein and extension those outputs will be enhanced through the conduct of specific demonstration project(s). In this way, these activities will contribute to the replication of initiatives already introduced within the Basin, and contribute to achieving sustainable utilisation of the Basin's fisheries resources. The main purpose of this demo project will be to contribute information for the development of a basin scale regional legislative framework for sustainable fisheries management.
- ii. ***Biodiversity Conservation Demonstration Project—Justification:*** The activities associated with the protection and preservation of the biological diversity of the la Plata Basin will recognise the unique character of the native flora and fauna of

the la Plata Basin, and result in practical measures to protect and preserve this character, especially in the face of non-sustainable land and water management practices. A pilot demonstration project is being implemented in the Pantanal under the Upper Paraguay River Basin project. Complementary interventions are proposed to be implemented in the Paraná River sub-basin, where similar conditions and concerns exist. These activities also will complement and contribute to the fisheries resource conservation objectives of related pilot demonstration projects being undertaken both within this project and as elements of other GEF-IW initiatives as well as to the national obligations of the Basin countries under related international agreements and protocols.

- iii. ***Carbon Sequestration Demonstration Project—Justification:*** In addition to the *Pantanal*, the la Plata Basin contains one of the great grassland ecosystems of the world, the *Chaco*. The *Chaco* is comprised of a variety of prairie or savannah types, grading from the wetter ecosystems in the east to the drier ecosystems in the west of the Basin. Over the years, unsustainable management practices, generally associated with agricultural development along this frontier, have diminished the carbon sequestration potential of this ecosystem. These activities will contribute to the natural resources conservation objectives of related pilot demonstration projects being undertaken both within this project and as elements of other GEF-IW initiatives as well as to the national obligations of the Basin countries under related international agreements and protocols.
- iv. ***Implementation of Alternative Environmentally-friendly Technologies for Energy Production Demonstration Project—Justification:*** The activities are likely to address issues of conservation of electricity and substitution of destructive forestry practices associated with the unsustainable use of wood fuels in the Basin. These activities will complement the hydro-power component of the FSAP.
- v. ***Optimisation of the Management of Multiple-Purpose Reservoirs Demonstration Project—Justification:*** The activities relating to the alternative management strategies for hydro-power generating facilities within the la Plata Basin address issues of fisheries management, biodiversity conservation, alternative energy utilisation, and water resources development within the Basin. Of necessity, this demonstration project will have to consider the issues of alternative energy, fisheries management (especially breeding success and habitat protection/restoration issues), protection of native species (especially threatened and endangered plant and animal species), and the prevention and mitigation of natural disasters (especially those associated with hydrologic phenomena such as flooding). It is anticipated that this project will utilise the principles of ecohydrology in developing appropriate operational protocols for dissemination within the Basin. By adopting integrated operational policies across multiple sectors, this project will result in the sustainable and environmentally-friendly use of the Basin's renewable water resources.

Outputs:

The outputs will not only provide relevant information on cost and feasibility of remedial measures for the formulation of the FSAP but will further the best practices

data base being compiled by IW:LEARN and contribute directly to the needed capacity within communities and stakeholder organisation to implement sustainable practices within the Basin.

- i. Information basis for the formulation of a regional legislative framework. Specific fisheries management practices that will minimise loss of fish species due to over-fishing, use of unsustainable fisheries practices, and loss of fish habitat, and be comprised of documented case studies, and agreed best practices for replication within the Basin (and elsewhere through the media of, *inter alia*, the IW:LEARN and IWRN).
- ii. Biodiversity conservation activities within the “menu” of best practices, focusing on those ecosystems and ecotones not previously considered within GEF-IW projects.
- iii. Reconnected portions of the la Plata River with their floodlands, restored riverine floodland forests and wet meadows, and controlled non-native invasive species, including identification and implementation of measures to enhance and restore the carbon sequestration capacity of the *Chaco* at a minimum of one site.
- iv. Identified costs and feasibilities of likely alternative energy sources that will contribute to the energy conservation objectives of related pilot demonstration projects being undertaken both within this project and as elements of other GEF-IW initiatives, in addition to addressing national obligations of the Basin countries under related international agreements and protocols.
- v. A documented operational strategy for a hydro-power installation that recognises the multiple use status of the Basin’s water resources.

Means:

These activities will be co-ordinated by the CIC in partnership with appropriate governmental and non-governmental organisations. The pilot demonstration project(s) will be co-ordinated by the CIC and locally executed by organisational partners with appropriate assistance from consultants, academic institutions, and governmental agencies.

Component 5: *Elaborating a Framework Strategic Action Programme (FSAP) for the Integrated Management of the Water Resources of the la Plata Basin.*

Objective: This component building on the outputs of each of the other project components including this current one will ultimately result in the elaboration of a framework of strategic actions (FSAP) that will act as a policy document for the integrated management of the water resources of the la Plata Basin within which more localised watershed management programmes can be developed and implemented.

Expected Outcomes:

- i. Consolidation of the technical capacity of the CIC to efficiently co-ordinate the integrated management of the Basin’s water resources, in part, utilising a Decision Support System for the Basin;

- ii. Appropriate technical procedures for the adaptation to, and mitigation of, the effects of climatic variability and change within the Basin;
- iii. Development of appropriate technical and economic instruments for the integrated management of the water resources would be desirable to harmonise judicial and institutional frameworks in the Basin; and,
- iv. Enhanced communication between and participation of interested stakeholders in the integrated management and sustainable use of water resources through education for the sustainable development.

Description of Activities: The constituent elements, scope, and terms of reference of the FSAP will be determined and put together. These constituent elements of the FSAP will be defined by the Basin Vision and the Mega-TDA, within which the Programme will be formulated. The following process is envisaged:

- initiation by the CIC of co-ordination activities to manage information and integrate experiences from this and other GEF projects in the Basin, leading to the development of a Decision Support System for the Basin during subsequent phases of the project;
 - implementation/testing and further refinement of appropriate technical procedures developed during the PDF-B process for the adaptation to and mitigation of the effects of climatic variability and change that will alert communities and prevent and mitigate, to the extent necessary, the occurrence of catastrophic events, particularly of the recurrent floods and droughts that affect the distribution and availability of the water resources of the Basin;
 - collection of appropriate information for the FSAP formulation;
 - development of *pro forma* appropriate technical and economic instruments for the integrated management of the water resources that seek to harmonise juridical and institutional frameworks to address contamination, erosion, transportation and deposition of silts, and major water use conflicts and guide societal, public and private investments toward aspects and key actions for sustainable development; and
 - on-going communication with and participation of interested stakeholders in the integrated management and sustainable use of water resources through education for the sustainable development.
- i. Development of a Decision Support System, closely associated with that set forth under Component 2 relating to the creation of a regional climate centre, but extended and expanded to include the development of support systems for the range of decisions being made within the la Plata Basin in respect to the sustainable development of the Basin.
 - ii. Mitigation and prevention of natural disasters associated with climatic and hydrologic variability in the Basin, likewise, closely associated with the more specific and focused activities set forth under Component 2, but aimed at enhancing community-based warning and response systems for the mitigation of natural disasters through the Basin.
 - iii. Adoption of legal and legislative frameworks within each of the la Plata Basin countries, to be refined as a consequence of foregoing activities and focused on supporting and initiating the necessary legislative responses—while the actual

legislative processes differ throughout the la Plata Basin, the results of these activities will be the initiation of the respective processes within the various governmental jurisdictions to conform the regulatory and legal frameworks throughout the Basin.

- iv. Stakeholder-focused programming activities tightly targeted to specific user groups, economic sectors, and individual stakeholders, which are foreseen as being highly inter-active, resulting in changes in operating procedures and institutional processes that will contribute materially and substantially to the sustainable use and development of the natural resources of the la Plata Basin over time.

Outputs:

- i. A Decision Support System (DSS) available to all Basin countries through the CIC and its Technical Unit for Projects.
- ii. Specific community-based warning systems as pilot demonstration projects, as well as documented methodologies for replicating feasible systems elsewhere in the la Plata Basin thereby increasing public safety, reduced loss of life and property, and increased public welfare and economic stability (including enhanced sustainability of economic activities) throughout the Basin.
- iii. The outputs of the legal activities are likely to be seen at the national level, but, ultimately, the outputs will be local level land use plans, ordinances, disaster response programmes, and related initiatives.
- iv. Documented case studies that will be widely disseminated through the IW:LEARN network, IWRN, and related delivery mechanisms.
- v. An agreed framework SAP (FSAP) with agreed legal and institutional reforms, as well as investments needed both nationally and jointly to address the transboundary problems.

Means:

These activities will be implemented, in part, and co-ordinated by the CIC in collaboration with its constituent governments, the appropriate agencies of which will form the local delivery system within each country based upon their adopted legal and legislative frameworks. In addition, the on-going stakeholder and public participation activities are seen as an essential element of the activities to be completed under this Component. The CIC will be the lead agency in this portion of the process, with significant participation by the stakeholders, their existing networks and associations, and appropriate governmental agencies at all levels of civil society.

Project Design

To fully and comprehensively address the basin issues, this project includes a project development activity (PDF, Block B) that will define the conduct and content of the project. As currently envisioned, this initiative is expected to be developed and implemented in a stepwise manner, with potentially three-phases. Each successive phase would be developed during the preceding phase and remain contingent upon the successful completion of the previous phase: The current project as described above (4

to 5 years) will address the fundamental issues of strategic planning and capacity building, putting in place the institutional framework that will form the basis for interventions in later phases and that will catalyse sustainable development within the la Plata Basin as a whole; follow-up project Phase II, conditioned by the success of the current project, by translating the policy (FSAP), institutional, and technical (hydrological forecasting) frameworks into actions (Watershed Management Programmes) at the major sub-basin level will initiate and strengthen the capacity of the Basin countries to jointly manage the la Plata Basin as a hydrologic unit; while Phase III will strictly focus on implementation of agreed strategic actions, policies, and programmes within the Basin, leading to the integrated management of the shared water resources in a sustainable manner. Beyond the current phase as presented in the project identifier section, the estimated financing plan for the follow-up potential successive phases contingent upon success of the preceding phase, is estimated, given the scope of the initiative, to be US\$ 15 million of GEF Grant with a total amount of co-financing estimated, to be US\$ 23 million from countries, FONPLATA, UNEP, OAS, WMO, AAAS, and others for a period of 8 years.

D. INCREMENTAL COST ANALYSIS

Baseline Situation

The baseline situation consists of: (1) long-term development programmes for the la Plata Basin, where investments in sanitation, transportation and other infrastructure such as a natural gas pipeline development project and IDB Pantanal sanitation programme, etc., are being planned at the local, provincial, and national levels for construction during the next ten to fifteen years; (2) planned and ongoing investments in river transportation systems, hydro-power generation systems, and related investments at the bi-national or tri-national levels; (3) environmentally-related activities (e.g., ongoing, government-supported investments in the hydro-meteorological network), and, (4) relatively uncoordinated activities being planned or executed by many government agencies and/or private parties in the Basin.

At the national and sub-national levels, the estimated baseline investments consist of: a) ongoing operation and maintenance costs associated with public and private conservation areas; b) operational costs associated with river regulation and hydro-power projects; c) current operating costs of governmental agencies tasked with administering regulatory programmes within the la Plata Basin countries, including support for the hydro-meteorological information network; and, d) costs associated with flood- and drought-related losses in both urbanised and rural agricultural areas of the Basin.

Significant investments have been made in the project area and surrounding environs. These cover related investments in irrigation, hydropower, sanitation, transportation, and other infrastructure in the la Plata Basin in the coming years. Government and counterpart funding is also provided within specific sub-basins for the formation of basin committees; studies on the impact of agriculture and agro-industries on water resources; and, studies of surface and ground water quality. Although many of these latter initiatives are relatively uncoordinated to realise direct benefits for the project, they nevertheless represent in-country programs and activities within the region that may have impacts on the project site.

Despite the number and variety of interventions currently being undertaken or being planned for the la Plata Basin, the majority of these interventions remain largely sectoral in nature. For this reason, most are uncoordinated, at best and, in some cases, conflict or compete with initiatives proposed by other agencies, organisations, and communities utilising the same resources. Such occurrences prompted the recommendation from the WSSD that water resources uses be co-ordinated at the basin level through effective international agreements. As such co-ordination is a fundamental element of the GEF-IW focal area, and critical for the sustainable utilisation of freshwater and coastal marine resources, development of a GEF project within the la Plata Basin is warranted.

GEF Alternative Scenario

The GEF support for activities within the la Plata Basin that promote a unified Vision for the Basin and collective, co-ordinated action by all Basin countries acting in concert is embodied within the existing portfolio of projects being executed within the la Plata River Basin.⁵ However, without a common vision of the Basin and a wider political and institutional framework, even these efforts can become fragmented and parochial because of their focus on specific portions of the la Plata Basin—even though, without a doubt, these projects have yielded positive outcomes.

The alternative scenario consists of the implementation of those actions needed to both introduce sustainable development into development projects within the la Plata Basin, and achieve the resulting global environmental benefits embodied in the mitigation of transboundary environmental problems. The costs of these actions are those necessary to include sustainable development considerations in the projects within the Basin over and above the requirements of the regular environmental impact assessments and mitigation measures required to be completed under existing national and local environmental laws and regulations.

Water resources management in the la Plata Basin will be directed and co-ordinated by the Intergovernmental Co-ordination Committee (CIC), which body has been established by Treaty between the five Basin countries to promote the integrated management of the Basin in consultation with the Basin governments. This agency will require strengthening, to be provided, in part, through GEF support.

Reduced soil loss, improved flood and drought forecasting, and more effective and sustainable use of available water resources are national benefits to be expected as a result of the activities of this project. These also have significant impacts in maintaining the watershed and its environs, and the globally significant resources, such as the Pantanal, within the Basin. However, the full extent of localised benefits cannot be estimated at this time and it is assumed that the domestic funding provided is equivalent to the national costs and will adequately compensate for the domestic benefits achieved. In addition, many of these same benefits accrue across jurisdictional boundaries. As demonstrated through the GEF-funded interventions in the Bermejo River Basin and in the Upper Paraguay River Basin, incremental investments in headwater areas can have

⁵ These projects are: i) Implementation of the Strategic Action Program for the Bermejo River Binational Basin: Phase I (Argentina-Bolivia); ii) Integrated Management of Land-Based Activities in the São Francisco Basin (Brasil); iii) Integrated Environmental Protection and Sustainable Development of the Guarani Aquifer System (Argentina-Brasil-Paraguay-Uruguay); and, iv) Environmental Protection of the la Plata River and its Maritime Front: the Prevention and Control of Pollution and the Restoration of Habitat (Argentina-Uruguay).

significant benefit in downstream areas which are subject to sedimentation, flooding, and contamination. Likewise, the Southwest Atlantic Large Marine Ecosystem (LME) benefits as a consequence of reduced transport of contaminants into the coastal zone and enhanced fish breeding success as a result of habitat preservation, protection, and restoration, these latter benefits being demonstrated through the GEF-funded intervention in the Maritime Front.

Consequently, the global benefits arising from the GEF intervention will be the formulation of a comprehensive Basin Vision to reduce contamination and pollution of wetlands, coastal areas, groundwater and riverine systems; the implementation of agreed strategic actions to protect economic investments from flood and drought losses; and the utilisation of enhanced capacity within the CIC to co-ordinate and promote sustainable economic development within the Basin at the regional level. The process, lessons-learned, and best practices identified and implemented will complement and enhance the ability of national and regional water resources agencies and organisations within and outside of the la Plata Basin to manage shared transboundary water resources for sustainable use. By sharing the experiences of the CIC through such media as the Inter-American Water Resources Network (IWRN), IW:LEARN, and the GEF-IW best practices data base, the latter two being Internet-based initiatives funded through the GEF, the project will strengthen and enhance GEF-IW funded interventions throughout the world, as well as within the la Plata Basin.

E. IMPLEMENTATION ARRANGEMENTS, STAKEHOLDER PARTICIPATION, AND SUSTAINABILITY

The CIC is the agency established by the five signatory countries to the Treaty of the la Plata Basin, and the agency tasked by the countries to provide the institutional framework within which this GEF-funded project is to be executed. The CIC will be the local executing agency of the project. The CIC will have the technical and administrative support of the General Secretariat of the OAS—through the Unit of Sustainable Development and Environment and the offices of the OAS in each of the five countries—and of UNEP, as the GEF Implementing Agency.⁶

The agreement of a new statute for the CIC, approved by the five countries during December 2001, created a Commission of ten representatives and their alternates, two from each of the five basin countries. One of the representatives to the Commission is a political representative, charged with plenipotentiary powers by their governments, and the other is a technical specialist. The technical representatives for the Unit for the la Plata River Basin Project (PU-CIC). This Unit will co-ordinate and develop the technical aspects of the proposed project: (i) constituting the organ that will internalise agreed regional actions in each of the Basin countries, (ii) forming the channel by which proposals are developed, and (iii) catalysing the preparation and execution of the program for the development of the Framework Strategic Action Program for the la Plata River Basin.

⁶ While UNEP is proposed as the GEF Implementing Agency—given the regional character of the project, UNEP's relationship to the GIWA project, and UNEP's role in the previous international waters projects being executed in critical sub-basins of the la Plata Basin—the participation of The World Bank and United Nations Development Programme (UNDP) is considered indispensable and will be welcomed during the preparation and conduct of the Project.

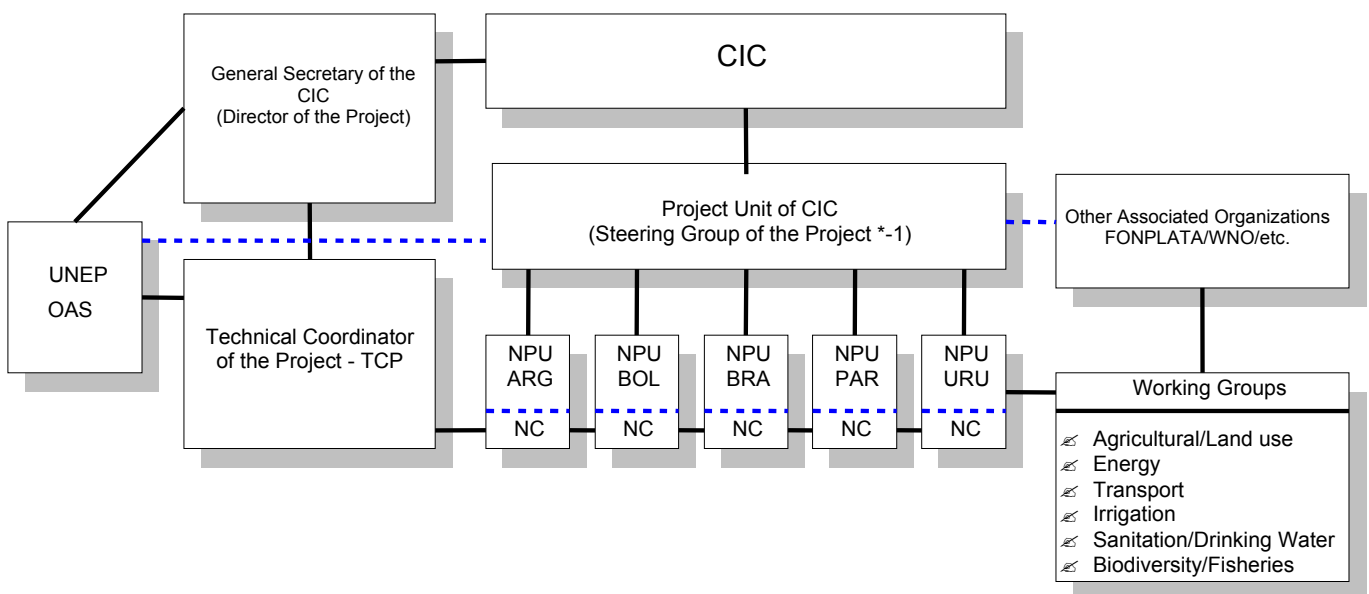
The CIC will secure agreement on the project, and initiate their role in co-ordinating the integrated management of the water resources of the la Plata Basin, pursuant to their mission: "...CIC is the permanent organ that promotes, coordinates and integrates the multinational actions guiding to the best use of the resources of the la Plata Basin and the harmonious and balanced development of the region, through the achievement of the objectives set forth in the Treaty of the la Plata Basin and the Resolutions of the Meetings of Foreign Ministers."

Each country has defined the institution(s) responsible for the co-ordination of project execution within the country, and each country participates in the CIC through their National Technical Representative. The co-ordinating institutions responsible for the execution of the project in each country are:

- In Argentina, Sub-Secretariat for Water Resources of the Nation.
- In Bolivia, Vice-Ministry of Environment, Natural Resources and Forestry Development, Ministry of Sustainable Development and Planning.
- In Brasil, Secretariat of Water Resources, Ministry of the Environment.
- In Paraguay, General Directorate for the Protection and Conservation of Water Resources, Secretariat for the Environment (SEAM).
- In Uruguay, National Directorate of Hydrography (DNH), Ministry of Transportation and Public Works (MTO).

These institutions will be the responsible for constituting and co-ordinating with the NPU in each country, and identifying and addressing the formalities considered necessary, with overall co-ordination by the Secretary General of the CIC, as Local Executing Agency.

Organigram for the Preparation of the Project



Implementation Arrangements

The institutional arrangements agreed for the preparation of the project (shown in Diagram 1, above) reflect the governance arrangements within the CIC. While these arrangements will be further refined during the project preparation phase, certain elements may be anticipated based upon the governing document of the CIC approved by the Meeting of Foreign Ministers from the la Plata Basin during December 2001, the CIC is comprised of two regular representatives and two alternates from each Basin country. One of these representatives is political, invested by their government with plenipotentiary authority, and the other representative is technical, being a project specialist. The technical representatives form the Unit for Projects in the la Plata Basin System (PU-CIC). The PU-CIC is the agency within the CIC that is charged with: i) co-ordinating and implementing regional agreements through institutional action within each country, ii) supporting and sustaining environmental management efforts in the Basin, and, at the conclusion of the project, iii) preparing and executing the Framework Strategic Action Program that will be produced as the outcome of this project.

The Secretary General of the CIC will be the Director of the Project. In this role, the Secretary General will co-ordinate the technical work of the project and oversee preparation of the project document (Project Briefs for the three phases). The OAS will hire, in consultation and with the guarantee of the General Secretary of the CIC and the national technical representatives of each country (in accordance with its norms and administrative procedures) and in close consultation with UNEP, a Technical Co-ordinator of the Project (PTC) who will be specialist in integrated handling of the water resources with wide experience in the topic and in the preparation of projects. The PTC will work with headquarters in the offices of the CIC in Buenos Aires and it will travel to the countries when it is necessary.

The PU-CIC will serve as a Technical Committee overseeing the scientific aspects of the project. This Committee is comprised of the Technical Representatives from the institutions in each country charged with developing policies for the management of water resources in each country. In addition, UNEP, the OAS, FONPLATA, and the other implementing agencies of the GEF (The World Bank and UNDP) will be invited to attend meetings relating to this project. In addition, representatives from other associated institutions that are collaborating in the financing and execution of the project will be invited to attend—these latter institutions being present in an *ex officio* capacity.

During the preparation of the project and for the entire phased approach, each country will form a National Project Unit (NPU), acting as an inter-ministerial committee, that will co-ordinate between the institutions responsible for water resources management policy and integrate each government's institutional participation with that of the academic organisations and civil society participating in the Project. Since project preparation and execution is conceived as a consensus building process among the countries, the Activities will be developed on the basis of workshops, organised according to Component, and based on the existing institutions in each country. This process is envisioned as a means of facilitating the active participation and involvement of academic institutions and organisations from civil society. These consensus-building events (seminars and formal and informal meetings, national and international workshops, etc.) will be prepared with the support of consultants specialised in the subjects to be discussed. The consultants will act as facilitators of the process and

catalyse the proposals agreed among the participants in the workshops. To guide these discussions and incorporate their outputs into the technical proposals those concerns that reflect a national consensus on high-priority topics, the National Project Units will synthesise the inputs of specific Work Groups, created under the institutional auspices of the competent national agencies as a means of elaborating consensus on each specific topic.

Each National Project Unit will identify a National Co-ordinator (NC) who will communicate with the CIC and the OAS. The NC, ideally, will be the Technical Representative to the CIC, or a designated official of the NPU. The NPU will be funded as part of the country-based co-financing designated for this project. This co-financing will include the costs of a compensation package based upon prevailing national rates in each country, dedicated technical staff time, and corresponding operational expenses.

As noted above, UNEP will be the Implementing Agency and the General Secretariat of the OAS, through the Unit of Sustainable Development and Environment, will be responsible for the preparation of the project in support of the CIC, co-ordinating with the office of the Secretary General of the CIC. The OAS, through their national offices, will administer the funds and support project activities in each participating country and co-ordinate technical services provided to the project from their headquarters in Buenos Aires, Argentina.

Stakeholder Participation

During the preparation of the project, the active participation of organised interest groups will be promoted by: i) the participation of key representatives in the events, workshops and meetings, and ii) the participation of specialised local consultants in the development of a public participation plan and the execution of the education and communication component of the project. Such participation will be facilitated through both informal meetings in the countries and formal meetings at the national and international levels.

At the basin scale, public participation will be enhanced by the involvement of basin authorities, civil organisations, consortia and associations of municipalities, public companies and public service providers, unions, universities, and other networks. In addition, a more direct form of user participation will be through the participation of lenders and service providers in pilot demonstration projects addressing specific critical areas and topics (“hot spots”). Through this process, the participants will develop “ownership” of the total project, knowing that their participation has helped to shape the proposals presented at the end of the project preparation process. In addition, the participation of these actors will develop concrete commitments and encourage complementary actions in support of the studies elaborated in the phased project documents. Further, as an element of ensuring the sustainability of the project, it is anticipated that this process of public participation in the preparation of the project will be formalised in a Plan for Public Participation, Education and Social Communication that will be incorporated into the Framework Strategic Action Plan.

Sustainability

The sustainability of the project is inherent in the strengthening of the CIC, as Local Executing Agency, and of the competent national institutions, acting in the different areas that the project proposes to address. The commitment of the different institutional

and jurisdictional entities of the participating countries with competence in integrated water resources management (water-earth-climate), and of the organisations of civil society, will strengthen a process that already extends over more than 30 years of official initiatives and policy development.

Replicability

The dissemination of the phased project outcomes will initially be co-ordinated with the opportunities for stakeholder involvement in the total project. Responsible participation of the Basin's educated population is to be encouraged through the workshops and seminars. These opportunities are to be included in each one of the activities included in the project preparation phase, and in each of the major project components. An interactive Internet page, guided virtual dialogues on topics and matters of interest relating the project, and similar opportunities for participation of the general populace will be provided. Project documents will be posted on a world-wide web site to be designed and managed by a consultant specialised in social communication and engaged for this purpose. Through the use of Internet media such as the IWRN and IW:LEARN, the results and outputs of the project can be widely disseminated. Additional opportunities for sharing the project results and outputs are provided through inter-governmental meetings, scientific symposia, and events such as the Fifth Inter-American Dialogue on Water Resources Management (Dialogue V) and Fourth World Water Forum, which will occur during the currency of this project. Also, as previously noted, the active interest of the la Plata Basin countries in the co-ordinated management of the resources of the Basin, as evidenced through the CIC, its units, and sister organisations in the region, provides not only a basis for sustainability but also a vehicle for replicability in and adjacent to the Basin.

F. MONITORING AND EVALUATION

UNEP, as the GEF Implementing Agency and in co-operation with the OAS as Executing Agency, will ensure that the project conforms to GEF requirements relative to reporting and financial management. In addition, UNEP, the OAS, and the CIC, through the Steering Committee structure, will ensure that the project addresses the GEF-IW monitoring and evaluation indicators. Utilising key process and status indicators will be an intrinsic part of the entire project. These indicators will be implemented through the establishment and integration of monitoring tools into project components, as agreed by the Steering Committee. The objective of this monitoring is to contribute to improving, and, if needed, adapting management of work program activities as well as creating the basis for project evaluation. Implementing Agency supervision will be exercised through the Executing Agency and by participation in the regular meetings of the Steering Committee, wherein the work plan and terms of reference for project staff and consultants will be discussed and agreed. A project implementation review would be undertaken jointly by the governments of the five countries and UNEP-OAS within one year after the end of the project.

During the PDF-B, a comprehensive monitoring and evaluation (M&E) plan taking into account the new required GEF-IW indicators as well as looking at output and outcome indicators will be prepared. This M&E plan will serve as the basis for the entire phased approach ensuring periodic project M&E using appropriate indicators to track progress throughout the life of the project. All indicators will be quantified with numerical targets including timeframe. Means of verification will also be outlined.

The baseline data will be collected as much as possible during the PDF-B phase and possible data gaps will be identified for further remediation during the early stages of the project phase.

G. PROJECT DEVELOPMENT STRATEGY

The past two decades have witnessed important efforts to generate information, exchange data, and build technical capacity within the la Plata Basin. The PDF-B activities, set forth below, build on this momentum by preparing the first phase of a potential three-phased project as outlined above, that will co-ordinate actions between the five Basin countries and address common problems that affect and are likely to affect the shared water resources of the la Plata Basin. These activities, which are wholly incremental in nature, are proposed to be funded in part through the financial support of a PDF Block B grant by the GEF in the amount of US \$ 700,000. In addition, the CIC has received funding through FONPLATA (US \$ 155,000) and has committed support from governments and other agencies (US \$ 471,100), including the WMO and AAAS.

Completion of these project development activities within 18 months will allow the five Basin countries, within the framework of the CIC as local executing agency, to define the parameters, establish terms of reference, and determine the components and activities to be included in the GEF project Phase I. The outcome of the activities set forth below will be the preparation of a project document (Project Brief) for a first full size project. This document will not only guide the application for GEF funds, but also stimulate parallel actions to strengthen the common vision of the Basin and is integrated management, through an institutionally effective and technically strengthened CIC.

The preparation of the project will involve the institutions in each country responsible for defining the policies required for the sustainable and integrated management of water resources, including substantive participation from the appropriate national environmental institutions should water resources responsibilities be spread across several agencies. Five core elements form the PDF-B activities, and are set forth below.

Activity 1. Strengthening Institutional Arrangements for the Integrated Management of the Basin, and Arrangements for the Preparation of the Project

The technical and financial capacity of the General Secretariat of the CIC will be evaluated and mechanisms and instruments for strengthening its capacity will be proposed. Terms of reference for strengthening the institutional arrangements for the integrated management of the basin and project execution will then be formulated. This activity one will also cover the preparation of the Project Document (Project Brief) for a first phase. Also included in this Activity will be the formulation of a multi-stakeholder participation and consultation programme as an outcome of the public participation process—the public participation plan, and the formulation of a Monitoring and Evaluation plan which will condition the M&E activities for the entire phased project. The cost of this Activity is US \$ 544,700. GEF: US \$ 240,700; co-financing from the countries and the CIC in the amount of US \$ 149,000, from FONPLATA in the amount of US \$ 55,000, and from UNEP and the OAS, each, in the amount of US \$ 35,000 (in kind).

Activity 2. Predicting the Impacts of Climatic Variability and Change on the Hydrology of the la Plata Basin.

This activity will include the conduct of an international workshop with experts from within the region to define the scope and TORs necessary to develop capacity within the la Plata Basin to predict, with more certainty, the impacts and consequences of climatic variability (short and medium term) and change (long term) on the water resources of the Basin, including the initial development of methodologies for the efficient incorporation of the various components needed to carry out predictions of impacts under a range of scenarios as well as for the selection of models to be used, and provide guidelines for the forecasting system to be prepared during the project phase in the Basin. At the same time, the activity will facilitate collection of required information for the design and operation of such systems. The cost of this Activity is US \$ 178,300. GEF: US \$ 150,500, and co-financing from the countries and the CIC in the amount of US \$ 27,800.

Activity 3. Development of a Common Vision of the la Plata Basin and Formulation of a Framework TDA.

A unique and common vision for the Basin will be developed in order to guide the sustainable development of the Basin as a whole. This Vision will act as the basis for the formulation of the framework for the Mega-TDA. A framework TDA will be developed subsequently, identifying the major threats facing the la Plata Basin at the sub-basin level. The cost of this Activity is US \$ 229,900. GEF: US \$ 147,100, and co-financing from the countries and the CIC in the amount of US \$ 32,800, and from the WMO of US \$ 50,000.

Activity 4. Identification of Pilot Demonstration Projects for the Management of Critical Areas and Topics.

The terms of reference including costs, indicated results, and indicators of success (to be determined by appropriate monitoring and evaluation procedures) for these pilot demonstration projects will be developed in the necessary detail during the project preparation phase to allow the implementation during the project phase. The choice of these pilot activities will be based on both the vision and the Framework TDA as well as stemming from the experiences of other GEF projects within the Basin. The cost of this Activity is US \$ 155,300. GEF: US \$ 27,000, and co-financing from FONPLATA in the amount of US \$ 100,000 and from the countries and the CIC in the amount of US \$ 28,300.

Activity 5. Elaboration of the Process to Prepare a Framework Strategic Action Program (FSAP) for the Integrated Management of the Water Resources of the la Plata Basin.

This activity will prepare the scope, constituent elements, and terms of reference for the formulation of a FSAP, to be undertaken during the project phase thereby elaborating a process for its formulation. The cost of this Activity is US \$ 181,900. GEF: US \$ 134,700, and co-financing from the countries and the CIC in the amount of US \$ 47,200.

Results and Outputs of the PDF-B

The most important output of the PDF-B process will be the preparation of the project brief. This output will be the result of a process whereby the countries will have strengthened the CIC as part of the process of co-ordinating the integrated management of the water resources of the la Plata Basin. Complementing this output will be a defined Vision for the sustainable development of the Basin, with an agreed scope and terms of reference for the development of a framework program of strategic action between the countries and among society. Specifically, outputs of the execution of the PDF Block B program will include:

- i) Terms of reference for strengthening institutional arrangements for the integrated management of the basin, and project execution in its subsequent phases including TORs for the creation of functioning NPUs within each country, together with operational thematic Working Groups on the environment of the Basin. The initiation of the strengthening of the Projects Unit and the General Secretariat of the CIC to formulate programs and projects, co-ordinate the execution of activities between countries, and catalyse co-operation and financing within the la Plata Basin will result from the PDF-B phase;
- ii) A stakeholder and public participation plan;
- iii) An agreed Monitoring and Evaluation plan;
- iv) A Project Brief;
- v) An interactive Digital Map that links key actors and information sources in the la Plata Basin, able to support the preparation of an FSAP, and capable of interfacing with the different existing systems of information—including those of other GEF-financed projects, through the creation of a Centre for Documentation in the la Plata Basin;
- vi) TORs for the design of a system to forecast climatic and hydrological events, which design will be operationalised during the project phase;
- vii) Definition of the technical and instrumental basis, with appropriate terms of reference, for implementing a Decision Support System in the la Plata Basin, addressing, in the first instance, contingency planning with respect to managing catastrophic climatic events in the la Plata Basin;
- viii) Identification of a group of concrete demonstration projects to quantify critical topics and areas, capable of being executed during the period of the formulation of the FSAP, that will provide information and experience in the integrated management of the water resources of the Basin, their costs and feasibilities, to be incorporated into the FSAP;
- ix) Publication of a group of technical documents containing:
 - a Vision for the sustainable development of the Basin agreed among the five countries based upon an issue paper on the adoption and implementation of the Vision as it relates to water resources in the Basin,
 - a framework for the Mega-Transboundary Diagnostic Analysis (TDA) aimed at identifying the root causes of, and priorities for action to address, the main environmental problems in the Basin;
 - a preliminary characterisation of the climate-water-soils relationship in the la Plata Basin, its current and projected situation, which will form the basis of an improved forecasting system to guide the sustainable development of the Basin and prevent and mitigate the effects of floods and droughts;

- the development of preliminary, integrated climatic models of the la Plata Basin, addressing climatic variability and change, and the prediction of associate disasters, including the definition of terms of reference, costs, and indicators of success;
- the development of preliminary hydrological models of the la Plata Basin, including terms of reference for the elaboration of studies and use of global models (water-soils-climate) of the Basin to be further developed in the FSAP; and
- a cartographic base map of the Basin, linked to up-to-date economic, social, and environmental information.

Financing Plan:

Preparation Costs:	US \$ 1,558,800
PDF-B Funding Request:	US \$ 700,000 for 18 months
PDF-B Co-Funding: Total:	US \$ 808,800 provided as follows:
	US \$ 467,800 Countries through CIC
	US \$ 155,000 Non-reimbursable co-operation funds from FONPLATA
	US \$ 100,000 WMO
	US \$ 16,000 AAAS
	US \$ 35,000 UNEP
	US \$ 35,000 OAS
Block A Grant Awarded:	US \$ 25,000 (6 months)
PDF-A Co-Funding:	US \$ 25,000 provided as follows:
	US \$ 15,000 OAS (in cash and in-kind)
	US \$ 5,000 UNEP (in-kind)
	US \$ 5,000 Brasil (in-kind)

H. INFORMATION ON PROJECT PROPONENTS

The Intergovernmental Coordinating Committee for the la Plata Basin, or CIC, came into being in 1967, at the time when planning and operational issues for Itaipú were prominent; in resolving them, CIC was extremely successful, and participants who argued the cases of their respective countries “became almost like friends”. Thereafter, the usefulness of CIC fell into a slow decline, and because its diplomatic function was allowed to become separated from technical interests, it came to be disregarded by many within the five la Plata countries. However, it is the de facto institution in which all five countries are represented. Revitalised, and with its structure changed so as to enable technical viewpoints to be expressed and discussed with the CIC’s diplomatic representatives, it has a critical role to play in the co-ordinated development and management of the la Plata’s water resources. Work at the technical level will always encounter barriers to further progress, resulting from differences in political, legal and financial structures within the different countries; the role of CIC should be to remove these barriers to progress at the technical level.

A series of measures to revitalise the CIC were taken by the Ministers of Foreign Affairs of the Plata Basin in December 2001, including (1) the creation of a Technical Secretariat with representatives of the five countries involved, in addition to the existing Executive Secretariat, and (2) the preparation of a Program of Actions to revitalise the operating system. The restructured CIC, as of December 2001, was the first step toward creating a more efficient management mechanism for the la Plata Basin. Hence this future GEF project would empower this promising regional entity.

Since its inception, the CIC has emphasised areas of common interest among the five countries and has facilitated the conduct of studies, programs and works within the Basin, in the fields of hydrology, natural resources, transportation and navigation, soil conservation, and energy. Additionally, the CIC has contributed to the development within the Basin of operational standards and guidelines in the area of water quality.

The CIC is the agency tasked by the countries to provide the institutional framework within which this GEF-funded project is to be executed.

I. INFORMATION ON THE PROPOSED EXECUTING AGENCY

The Organization of American States (OAS) is the world's oldest regional organisation, dating back to the First International Conference of American States, held in Washington, D.C., from October 1889 to April 1890. The establishment of the International Union of American Republics was approved at that meeting on April 14, 1890. The OAS Charter was signed in Bogotá in 1948 and entered into force in December 1951. Subsequently, the Charter was amended by the Protocol of Buenos Aires, signed in 1967, which entered into force in February 1970; by the Protocol of Cartagena de Indias, signed in 1985, which entered into force in November 1988; and by the Protocol of Managua, signed in 1993, which entered into force in January 1996. In 1992, the Protocol of Washington was signed; it will enter into force upon ratification by two thirds of the member states. The OAS currently has 35 member states. In addition, the Organization has granted Permanent Observer status to 39 states and to the European Union.

The GS/OAS, through the Unit of Sustainable Development and Environment (USDE) is acting as executing agency for 5 GEF International Waters Projects: (1) Brasil: Implementation of Integrated Watershed Management Practices for the Pantanal and Upper Paraguay River Basin (UNEP), (2) Brasil: Integrated Management of Land-based activities in the Sao Francisco Basin (UNEP), (3) Costa Rica/Nicaragua: Strategic Action Program for the Binational Basin of the San Juan and its Coastal Zone (UNEP), (4) Argentina/Bolivia: Implementation of the Strategic Action Program for the Binational Basin of the Bermejo and (5) Brasil/Paraguay/Uruguay/Argentina: Environmental Protection and Sustainable Development of the Guarani Aquifer System (WB). Hence, likewise UNEP it has considerable water resources management experience as demonstrated through these years of partnership with UNEP/WB and the GEF.

J. LINKAGES WITH IA PROGRAMMES AND ACTIVITIES

The proposed actions are consistent with the *UNEP GEF Action Plan on Complementarity* which provides the framework for GEF project interventions as well as with the UNEP GEF III strategy whereby the UNEP portfolio in GEF III will build on the four main pillars of UNEP intervention that were established during GEF Phases I and II:

- Environmental assessment, analysis and research;
- Development and demonstration of tools and methodologies for improving environmental management;
- Strengthening the enabling environment so that countries can more effectively implement commitments made as Parties to various environmental conventions; and
- Management of transboundary ecosystems, with the development of the GEF portfolio building on the experience gained through the development of previous transboundary water projects that involved the formulation of Transboundary Diagnostic Analyses and Strategic Action Programmes for a variety of freshwater basins and Large Marine Ecosystems (LMEs). Specific areas of intervention for GEF III will include integrated land and water resources management in selected mega-basins in Latin America.

Further the proposed actions are specifically in line with the UNEP Environmentally Sound Management of Inland Waters (EMINWA) integrated watershed management planning process and related, regional seas programme. Within the Plata Basin, UNEP is the GEF Implementing Agency for two International Waters projects, including those in the Upper Paraguay River basin in Brasil, and the Bermejo River Basin in Bolivia and Argentina having demonstrated considerable experience in watershed management.

This proposal continues the partnership with the GS/OAS in catalysing an holistic approach to watershed management in Latin America and the Caribbean by developing the obvious synergy between the GEF-IW projects and the EMINWA approach.

K. ANNEXES

- I. Profiles of GEF International Waters projects in the la Plata Basin.
- II. Characteristics of the la Plata Basin
- III. Documents used as the basis for the preparation of this concept paper
- IV. Preliminary Program of Action of the CIC

L. ACRONYMS USED

AAAS	American Association for the Advancement of Science
CIC	Intergovernmental Co-ordinating Committee of the la Plata Basin
CIH	Intergovernmental Committee for the Hidrovía Paraná-Paraguay
CLIVAR	Climate Variability and Predictability Program of the World Climate Research Programme
FONPLATA	Financial Fund for the Development of the la Plata Basin
FSAP	Framework Strategic Action Program for the la Plata Basin
GEF	Global Environment Facility
GEF-IW	Global Environment Facility, International Waters focal area
GS/OAS	General Secretariat of the Organization of the American States
IA	GEF Implementing Agency
M&E	Monitoring and Evaluation
NPU	National Project Units
PLATIN	Plata Basin Network component of CLIVAR/VAMOS
RIGA	Network for the Investigation and Environmental Management for the la Plata Basin
TDA	Transboundary Diagnostic Analysis
PU-CIC	Technical Project Unit of the CIC
UDSMA	Unit for Sustainable Development and Environment
UNDP	United Nations Development Program
UNEP	United Nations Environment Programme
VAMOS	Variability of the American Monsoon Systems program of CLIVAR
WB	The World Bank
WCRP	World Climate Research Programme, jointly sponsored by WMO, the International Council for Science (ICSU) and the Intergovernmental Oceanographic Commission (IOC)
WMO	World Meteorological Organization
WMP	Watershed Management Program