

LA PLATA RIVER BASIN

A Framework for the Sustainable Management of Its Water Resources with Respect to the Hydrological Effects of Climatic Variability and Change

A FRAMEWORK FOR THE SUSTAINABLE MANAGEMENT OF THE WATER RESOURCES OF THE LA PLATA BASIN, WITH RESPECT TO THE HYDROLOGICAL EFFECTS OF CLIMATIC VARIABILITY AND CHANGE

National Territories of the five La Plata Basin countries within the Basin



COUNTRIES: Argentina, Bolivia, Brazil, Paraguay, and Uruguay

IMPLEMENTING AGENCY: United Nations Environment Programme (UNEP)

REGIONAL EXECUTING AGENCY: Organization of American States/Office for Sustainable Development and Environment (OAS/OSDE)

LOCAL EXECUTING AGENCY: Intergovernmental Coordinating Committee for the La Plata Basin Countries (CIC)

PROJECT DURATION: 2003-2005 (PDF-B phase)

GEF GRANT: 0.725 US\$ millions

CO-FINANCING: 0.834 US\$ millions

PROJECT COST: 1.559 US\$ millions

INTRODUCTION

The La Plata River Basin is one of the most important river basins 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. The La Plata River system is recognized as 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 (in the Parana River sub-basin), and the highest numbers of major dams (the Parana River sub-basin). 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 above the sea level, 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.

The La Plata Basin comprises almost all the southern part of Brazil, the south-eastern part of Bolivia, a large part of Uruguay, the whole of Paraguay, and an extensive part of northern Argentina. In total, 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 Guaraní Aquifer, one of the largest continental groundwater reservoirs in the world.

The La Plata Basin represents an important concentration of economic development in southern and central South 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 Argentina, Brazil, Paraguay, and Uruguay, are to be found within this Basin. The total human population of the Basin is estimated to be approximately 67 million.



The rivers of the La Plata River Basin are subject to pressures that have modified, and 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, urbanization, and agricultural, industrial and infrastructure development.

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 to enlarge their agricultural and industrial development bases, and provision of services, to improve the living standards of their increasing populations.

THE PROJECT

The “Framework for the Sustainable Management of the Water Resources of the La Plata Basin” project marks the start of the preparatory phase, which was preceded by a PDF-A grant from GEF through UNEP. The initial project concept was discussed at the Fourth Inter-American Dialogue on Water Management, held in Foz de Iguazu, Brazil, in 2001. At this meeting, more than 50 experts from national water management institutions of the five countries, together with researchers from universities, NGOs, staff from GEF projects on International Waters in the Basin, and international agencies discussed the common problems affecting the La Plata Basin. As a result of these unique and inter-disciplinary consultations, the initiative has focused on gaps in current water-related activities, policies and institutions, and lined the need to coordinate management actions in a framework characterized by a process to integrate the countries of the la Plata Basin in MERCOSUR. The experiences of GEF projects in International Waters (transboundary) also played a seminal role. The staff working on the projects and the staff from the participating agencies pinpointed common problems and opportunities and obvious interactions among them. It also identified the absence of a coordinating institutional framework that could help them to solve those problems. The initiative to use the CIC as the most suitable institutional framework for the Project arose from that meeting, as did the idea of going ahead with it under the La Plata Basin Treaty signed by the five countries.

The current project is intended to build upon and consolidate a number of other GEF projects executed in the Basin. Since 1996, when the first proposals for the Bermejo River Basin were put forward, GEF has financed government initiatives by the countries

of the Basin for critical sub-Basins or zones. This was the case with the projects approved for the protection of the Pantanal wetlands and the Upper Paraguay River Basin (Brazil). Another one was the Bermejo River Basin (Argentina-Bolivia,) previously mentioned, for addressing the sustainable development in that basin that contributes with 90% of sediments in la Plata river, from the mouth of the Paraná. The FREPLATA Project seeks to ensure the

sustainable management of the exceptional biota of the la Plata River and its waterfront (Argentina-Uruguay) and the Guaraní aquifer system Project promotes the protection of one of the largest semi-confined aquifers in the world (Argentina, Brazil, Paraguay and Uruguay), through preventive measures. All these initiatives address the problem of hotspots and are of utmost importance to the Basin. While each of these actions deals with key environmental and development issues within the Basin, they did not realize the connectivity of the Basin as an integrated hydrological entity. The Framework Program is therefore designed to build a cohesive and comprehensive approach. This approach reinforces GEF's global nature and creates a synergy between the on-going projects, improving the opportunities for replication, strengthening their sustainability, and providing for the integration of international waters with other focal areas of the GEF, particularly biodiversity, and land degradation.

IMPLEMENTATION STATUS

The Framework Program for the Management of the Plata Basin's Water Resources in relation to Climate Variability and Change (Framework Program) commenced on August 1, 2003 and will conclude by the end of 2005. At that time, a request will be submitted to the GEF and other financing and cooperation agencies. The current phase is being funded by a PDF Block B grant from GEF in the amount of US\$700,000, with participation and co-financing from the governments of Argentina, Bolivia, Brazil, Paraguay and Uruguay.

A NEW APPROACH TO WATER MANAGEMENT: INTEGRAL ATTENTION TO THE HYDROLOGICAL CYCLE IN THE BASIN

The process of identifying and preparing the Framework Program to be submitted to GEF for additional funding changed the scope of the traditional analysis used in water resource management by the countries and allowed the spirit and vision of the la Plata Basin Treaty to be recovered after their concerted effort in the sixties to promote development actions through the Treaty. The Treaty, adopted in 1969, identifies CIC as the permanent body responsible for promoting, coordinating and furthering multinational action in order to maximize the use of the la Plata Basin resources and ensure the harmonious and balanced development of the region. Among the accomplishments of the Treaty is a joint action for addressing a number of critical economic sectors, including transportation, hydroelectric generation, hydrological warning systems, water quality, and the development of financing mechanisms and instruments for the

basin, for which a specific regional development bank, FONPLATA, was created. The CIC was set up to administer the la Plata Basin System and is supported by the General Secretariat whose headquarters is in Buenos Aires, Argentina.

Within the framework of CIC, the Project had already identified the Basin's main problems which, at a

macro level, were the devastating and increasingly frequent floods and long periods of drought; disasters caused by the radical changes in vegetation coverage, the onslaught of urbanization combined with poverty and limited sanitation. An analysis of this situation suggested incorporating in the proposal the time and space dimension in the Project, taking into account the need to improve systems for forecasting climate variability and change, in relation to hydrology. This improved forecasting demanded by the Project may prove to be a significant economic and social benefit, as well as a fundamental contribution towards the Basin's environmental management. The incorporation of cooperation by the WMO through a pre-existing Memorandum of Understanding with CIC sought to include this fundamental capacity in its preparation and funding.

The main progress made by the Project is the inclusion of the systemic analysis of the hydrology, climate and soil use dynamics. Special emphasis was given to Climate Change and Variability and their effect in the whole hydrological system of the Basin. The Guarani Project (GEF/World Bank/OAA) contributes with a new trend in knowledge and experience to this trilogy, in relation to the inclusion of ground water in the analysis-variables to be considered for integrated basin management. The progress made in the Guarani Project generated a demand for the inclusion of the topic in the preparation of the Framework Program for the La Plata Basin, thereby fully integrating the hydrological cycle in sustainable water development planning. The topic was accepted by Italy which will combine cooperation and funding for the preparation of the Framework Program.

A POSITIVE VISION OF THE DEVELOPMENT OF THE BASIN TO GUIDE THE EFFORTS AND THE TRANSBOUNDARY DIAGNOSTIC MACRO-ANALYSIS

From the outset, the preparation of the project including the wider La Plata Basin raised new methodological issues vis-a-vis GEF's traditional methodology for International (transboundary) Water projects. When undertaking environmental



management, participating countries assign high priority to development and poverty. These themes play a central role in multi-country vision and also imply adopting a sustainable development of the Basin. This involves channeling development and not just finding out

which current trends are scientifically justified. Shared desires and the strengthening of an objective approach to the Basin

were included in the preliminary phase of the Transboundary Diagnostic Analysis (TDA,) covering the role of water in the process of channeling sustainable development efforts and reinforcing the time dimension and the political will to guide development. This approach has fostered widespread participation by all the countries of the Basin and highlighted the expectations of different groups of stakeholders in areas initially considered to affect each country and the Basin, by bringing together key players from the five countries.

A FRAMEWORK DESIGNED TO STRUCTURE GEF PROJECTS

Three working meetings were held with the managers of the GEF projects in International Waters of the La Plata Basin and one of their National Directors, during the project design phase to ratify agreements reached, and ensure that the views of those responsible for the project in each country were taken into account and reflected in the results of the Project. This led to the identification of a series of opportunities: i) experiences to be shared; ii) complementarities between collaboration projects and mechanisms and exchange of information; and iii) gaps and actions needed to respond to problems pinpointed as priorities in each GEF project, and unable to be covered by them. The experience has brought together the intents of the three GEF implementation agencies: UNEP, UNDP and the World Bank, as well as project executing agencies like the OAS.

GEF: CATALYTIC FACTOR AND INVESTMENT PROJECTS FOR CRITICAL AREAS

While the project was being prepared, using the financial support provided to CIC through technical cooperation from FONPLATA for the preparation of the Framework Program, some of the gaps in critical areas and issues were identified and prioritized. These include: i) the TDA; ii) GEF projects; iii) binational or trinational projects implemented in the La Plata Basin, or else; and iv) those arising from the priorities identified through the public participation process. This information was used to assess the advantage of participating in the preparation of the project



formulated for the La Plata Basin by the development bank FONPLATA.

Furthermore, the existence of GEF's support for CIC has resulted in four converging actions in support of the La Plata Basin System and aimed at strengthening the integrated management of its water resources:

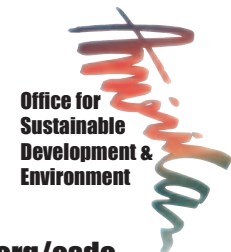


■ **ICC-ISARM Americas UNESCO/OAS-Cooperation by the Ministry of the Environment of Italy.** PDF-B funding by GEF acted as a catalyst to make the La Plata Basin and CIC a suitable environment in which to intensify the methodological experience in sustainable management of transboundary aquifers being implemented by the International Association of Hydrogeologists (IAH,) with support from UNESCO, through the Internationally Shared (Transboundary) Aquifer Resources Management Program (ISARM) and in particular in its proposal for the American Hemisphere: ISARM Americas/UNESCO/OEA. This Program has assigned priority to the work entailed in developing a pilot project on the sustainable management of the groundwater of the Yerendá-Toba-Tarijeño aquifer, which covers the Andean foothill area within the La Plata Basin, the Yungas ecosystem and the semi-arid zone of the South American Gran Chaco ecosystem. As noted, this pilot project is supported by the Ministry of the Environment of Italy, which is providing technical and financial cooperation.

■ **Plata- Rhine Twin Basin.** In 2004, CIC signed a Twinning Agreement with the International Commission for the Protection of the Rhine (ICPR) to exchange the experience and knowledge acquired by both Commissions. This has received the support of a process to prepare the Framework Program and in turn that process has the backing of the technical capacity and experience of the countries making up the ICPR. Rhine experts have participated in the workshops and seminars held to define the base situation and prepare the proposals on water resource quality and hydrological warning systems. Their support is expected to carry over into the preparation of the Framework Program for the La Plata Basin and work on the TDA and preparation of the Program of Action.

■ **Participation of CIC and the La Plata Basin in UNESCO's WWAP Program.** Given the global importance assigned to the subject of "Water Resources" in the world, the background of the La Plata Basin Treaty, and the preparation of the Framework Program for the Basin supported by GEF, the World Water Assessment Program agreed with CIC to include a section in its next report highlighting the situation of water in the world and the integrated management of water resources in the La Plata Basin.

■ **CIC - OACT Agreement.** In September 2004 the General Secretariat of the Intergovernmental Coordinating Committee for the la Plata Basin Countries (CIC) and the Organization of the Amazon Cooperation Treaty (OACT) signed a Letter of Understanding in Brasilia, Brazil, on exchanging experiences on the integrated management processes of both basins and in particular on the processes for preparing and implementing the GEF Projects in International Waters (transboundary,) involving the two Commissions that cover more than three quarters of the surface waters flowing through South America, its two large basins and all the countries of the continent of South America, with the exception of Chile.



Office for
Sustainable
Development &
Environment

www.oas.org/osde

This document has been prepared by the Office for Sustainable Development and Environment of the General Secretariat of the Organization of American States, as the regional executing agency for the La Plata Project, in collaboration with the United Nations Environment Programme (implementing agency for the Global Environment Facility), and the Intergovernmental Coordinating Committee for the La Plata Basin Countries (CIC). The document is intended to provide general information on the status, preliminary results and follow-up activities regarding project implementation, and do not necessarily reflect the opinion of CIC, the United Nations Environment Programme, the Organization of American States, or the GEF.