

ANNEX 4 INCREMENTAL COST ANALYSIS

1. Broad Development Goals

The overall project objective is to assist the riparian country governments of Argentina, Bolivia, Brazil, Paraguay, and Uruguay¹ in managing the shared water resources of the la Plata Basin (LPB) in an integrated sustainable manner within the context of climate variability and change while capitalizing on development opportunities. The project outcome enables the riparian governments to coordinate actions and investments in the LPB for sustainable use and management of the basin's water resources within the context of climate variability and change. This basin-wide project provides context for, and linkages between, national-level activities and ongoing GEF-supported efforts within the LPB. This project promotes synergies between GEF focal areas, increasing the resilience and adaptive capacity of the Plata basin stakeholders in preparing a basin-wide structured menu of concerted adaptation measures in response to a vulnerability and adaptation assessment. In line with the GEF International Water's strategic objective, the primary global benefits of this project are an increased understanding of climatic influences in the LPB and subsequent increases in the sustainable transboundary management of surface and groundwater basin water resources.

2. Baseline condition

The scope of the baseline conditions are spatially set by the natural limits of the basin, and thematically, the project components and outcomes create the framework for defining the parameters of the baseline. The current baseline conditions for water resources management, in the LPB, primarily consists of either a) individual national economic development programs, such as water supply and sanitation and/or transportation, which are the responsibilities of various levels of government and primarily focus on individual country needs; b) bi-national or tri-national investments for hydropower generation; and/or c) other environmental management activities that are coordinated by CIC but executed by government and/or private agencies. The latter activity includes ongoing environmental monitoring programs, informational programs, and related activities at the national and local levels. Moreover, through these investments, the riparian governments, together with the respective private sector, are indirectly investing in institutional capacity within the sub-basins of the LPB. Generally, a country's individual program and/or investments in specific sub-basin funded through FONPLATA, the financing facility created to support the activities under the la Plata Treaty, are implemented by various multi-national committees. The total for the baseline conditions in the basin is estimated at US\$ 126.1 million. FONPLATA financed activities considered as part of the baseline conditions include:

- a) Construction of the Port and Coastal Defenses in the City of Formosa, in Argentina (US\$ 7.1 m);
- b) Integrated Development of the Southern Region of the City of Formosa, in Argentina (US\$ 9.2 m);

¹ The riparian governments operate within the framework of the Intergovernmental Coordinating Committee for the la Plata Basin countries (CIC), as the agreed intergovernmental organization set forth for this purpose in the Treaty of the la Plata Basin

- c) The Studies and Projects for Arroyo Cleanup in the City of Posadas, Misiones, in Argentina (US\$ 2.24 m);
- d) Emergency Program for Flood-affected Areas, with Special Emphasis on the Province of Santa Fe, in Argentina (US\$ 51 m);
- e) Funds allocated to the implementation of the Program for the Improvement and Optimization of Solid Waste Management in the Metropolitan Area of Buenos Aires, CEAMSE, in Argentina (US\$ 27.65 m);
- f) Program for the Recovery of Degraded Areas and Preservation of the Arroyo Soter, SOTER PROGRAM, Municipality of Campo Grande, in Brazil (US\$ 6.15 m);
- g) The implementation of works for the Supply of Potable Water, Itapua, Amambay, and Pte. Hayes, Canindeyu, and Alto Paraguay, in Paraguay (US\$ 3.8 m);
- h) Pre-investment Studies and Implementation of Works for the Construction of a Multi-purpose Port Terminal for the City of Pilar, in the Department of Neembuco, in Paraguay, INVESTMENT PHASE (US\$ 0.5 m);
- i) Zoning Studies of Flood-prone Areas of the Paraguay River, also in Paraguay (US\$ 0.25 m);
- j) Clean-up Plan Final Design Studies for the Countryside, Departments of Colonia, Durazno, Lavalleja, Paysandu, Salto, San Jose, Soriano, and Treinta and Tres, in Uruguay, (US\$ 0.95 m);
- k) Master Plans for the Ports of Nueva Palmira and Fray Bentos, also in Uruguay, for US\$ 0.52; non-reimbursable technical cooperation support for the Paraguay-Parana Waterway, Ports of Caceres and Nueva Palmira (US\$ 0.15 m);
- l) Non-reimbursable technical cooperation support to the Inter-governmental Committee of the Paraguay-Parana Waterway for studies on the development of the Paraguay-Parana Waterway Program's Information System (US\$ 0.05 m); and
- m) PILCOMAYO Project (US\$ 16.5 m).

In addition, currently there are a number of active GEF co-financed projects taking place in the LPB. The GEF funded projects total US\$ 91.1 million (GEF US\$45.5 million) include the following:

- a) Strategic Action Plan for the Bermejo River (PEA-Bermejo) with the Bi-national Commission for the Bermejo River and Upper Tarija River for Argentina and Bolivia [US\$ 25.73 m (GEF US\$ 14.0m)];
- b) Integrated Management Practices for the Water Resources of the Pantanal and Upper Paraguay River with the Agencia Nacional de Aguas (ANA) of Brazil [US\$ 16.4m (GEF US\$ 6.62m)];
- c) Environmental Protection of the la Plata River and its Maritime Front, to Prevent and Control Contamination and Restore Habitat with FREPLATA [US\$ 8.12m (GEF US\$ 5.68m)];
- d) Environmental Protection and Sustainable Development of the Guarani Aquifer System [US\$ 26.76m (GEF US\$ 13.40m)]; and
- e) Sustainable Land Management in the Transboundary Ecosystem of the Gran Chaco Americano [US\$ 14.0m (GEF US\$ 6.0m)].

Thus, the project-related baseline conditions for this GEF project is estimated at US\$ 213.5

million, as set forth in the Table 1, the Incremental Cost Matrix.

3. GEF alternative scenario

Studies and analyses, conducted to formulate the baseline framework for the TDA, the basis for the project design for this GEF project, identified several existing activities, which concurrently deal some of the problems addressed by this project. Some of these activities, already supported by the GEF, and included in the baseline conditions of this project, extend transboundary benefits to only small portions of the LPB. Thus, these baseline projects are insufficient to achieve the broader development goals for the LPB. The alternative scenario includes investments during the five years of implementation, which require resources sought from the GEF, as well as additional investments from national counterparts' donor institutions and private sector to implement actions to coordinate on-going and programmed actions and investments in the LPB for the sustainable management of its water resources. The alternative scenario includes enabling actions for adaptation to climate variability and change. The governments of the Basin are committed to making these financial contributions, and this commitment extends across all governmental levels, (federal, national, state, provincial, departmental, and municipal). With existing baseline activities, GEF financing and additional co-financing, the alternative under this scenario is estimated at about US\$ 275.5 million. The incremental cost, by which the alternative scenario exceeds the costs of the baseline situation, is estimated at about US\$ 61 million, or 22.5% in which the GEF contribution is 4% to the alternative scenario. In addition, but not included in the incremental cost analysis, US\$ 25,000 and US\$ 700,000 PDF Block A and Block B grants, respectively, already disbursed.

Table 1 Incremental Cost Matrix

Component	Category	Value (US\$)	Local Benefits	Global Benefits
I: Strengthening basin-wide cooperation	Baseline	200,000	Currently, there are intermittent development of national capacity, institutions, and inconsistent laws for water resources management; Monitoring networks are not integrated; and There are varied levels of public participation in local projects.	-
	Alternative	7,421,380	Improved institutional capacity for water resources management at the national and local level; the CIC and basin countries continually evaluate the project	A strengthened CIC has capacity to act on a regional multi-sectoral approach empowered by a harmonized legal and institutional framework for adaptive and integrated management of the LPB; The social capital and available resources

Component	Category	Value (US\$)	Local Benefits	Global Benefits
	Increment	7,221,380 (GEF 2,713,756)		
II: Integrated Water Resources Management	Baseline	135,152,036	Currently, most water resources management actions are implemented by sector at the national level; Country-based development actions lacking coordination, except perhaps at the bilateral or trilateral levels; and Critical problems addressed at the local level.	-.
	Alternative	163,816,843	Improved and accessible data and information for surface and groundwater resources and environmental management can be used throughout the basin; an increase in stakeholders and civil society engaged and informed and about the importance of IWRM and of the quality of natural resources,	LPB water supply and demand water balance methodology supports adaptive integrated water resources management in the Basin; SAP focuses holistic, multi-sectoral approaches to environmental development and economic development in the LPB as envisioned in Chapters 18 and 21 of Agenda 21; Development and management of the LPB is undertaken in a coordinated manner to the benefit of all; Actual examples of approaches to resolving critical regional environmental problems at the local level that can be replicated elsewhere.
	Increment	28,664,807 (GEF 5,252,300)		
III: Adaptation to climate change	Baseline	51,000,000	The five riparians have presented their respective, first national communications and inventories, as agreed to in the United Nations Framework Convention on Climate Change, these reports identified the countries' vulnerability to climate change, future climate scenarios, and the adoption of the necessary measures for adaptation to climate change.	-
	Alternative	72,319,150	Risks to vulnerable communities are reduced and sustainable development and use of the LPB water resources are enhanced; Riparian countries' capacity	Adaptive integrated water resources management balances overused and conflicting demands on surface and groundwater through adaptive integrated water resource management practices promotes;

Component	Category	Value (US\$)	Local Benefits	Global Benefits
	Increment	21,319,150 (GEF 900,000)		
IV TDA & SAP	Baseline	27,196,000	Primary emphasis has been on and continues to be on national issues with transboundary issues addressed in a limited way, if at all; limited national resources have focused on integrated basin management. In terms of climate change concerns, national priorities have been identified but not implement, least in an integrated basin-wide manner	-
	Alternative	31,909,500	Additional effort to understand the entire LPB as it pertains to domestic benefits, which would include additional human and financial resources, and private sector interests,	Transboundary issues identified during the TDA and SAP formulation enables prioritization of intervention based on the most urgent issues thus ensuring benefit to the LPB's natural resources and helping ensure their long-term sustainable use. .the identification of prioritized transboundary issues, and sand of approaches to address these and it will help facilitate determination of addition policy and institutional reforms necessary rot enhance transboundary management and secure funding for sustainable water ruse.
	Increment	4,860,6300 (1,292,824 + 571,200)		
Baseline Total		US\$ 213,548,036		
Alternative Total		US\$ 275,466,873		
Increment Total		US\$ 61,7644,167 with (GEF US\$10,730,000)		