



UNITED NATIONS ENVIRONMENT PROGRAMME
PROGRAMME DES NATIONS UNIES POUR L'ENVIRONNEMENT
TELEFAX TRANSMISSION FROM
THE GEF COORDINATION OFFICE



CABLE: UNITERRA NAIROBI
TEL: (254 2) 621234
Direct fax (254 2) 520825

P.O. BOX 30552
Nairobi, Kenya

FAX: (254 2) 226886
(254 2) 226890
TX: 22068 UNEP KE

To: Mr. Ian Johnson
Chairman, GEFOP &
Assistant Chief Executive Officer
GEF Secretariat, WASHINGTON, D.C. 20433, USA
Fax: (1 202) 522 3240

Mr. Rafael Asenjo
Executive Coordinator, UNDP
New York, USA
Fax: (1 212) 906 6998

Mr. Kenneth Newcombe, Chief
Global Environment Division, The World Bank
WASHINGTON, D.C. 20433, USA
(1 202) 522 3256

Dr. Pier Vellinga, (Vice Chairperson)
Director, Institute for Environmental
Studies, Free University
1081 HV Amsterdam, The Netherlands
(31 20) 444 9553

Telefax No: (31 20) 444 9553

From: William H. Mansfield III
Deputy GEF Executive Coordinator

Subject: Submission of Revised Bermejo Project
for GEFOP, 14 September 1995

Date: 31 August 1995

Drafter: WHM/yk

Room: W-342
Ext: 4166

Prefix No: _____

C.C. Mr. Alfred Al-Duda, International Waters Specialist, GEF Secretariat
Mr. Nick Remple, Latin American & The Caribbean Regional Coordinator, UNDP
Mr. Richard Paton, International Waters Coordinator, The World Bank
Mr. Larry Simpson, The World Bank
Ms. Tina Kimes, The World Bank
Mr. Rohit Khanna, UNEP GEF Washington Office.

Attached please find the revised Bermejo River Basin project. The project has been revised in accordance with the discussion at the 10 and 17 August GEFOP. UNEP, World Bank, OAS and GEFSec staff met in Washington during the past few weeks to revise the document, which we now submit for the 14 September GEFOP meeting.

Regards.

Out/Fax No. _____/1995

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**GLOBAL ENVIRONMENT FACILITY
PROPOSAL FOR PDF BLOCK B GRANT**

Country Regional - International Basin of the Bermejo River.
(Argentina and Bolivia)

Focal Area International Waters

Project Title Water Resources Management in the Bermejo River Binational Basin

Funding Requested US\$231,000

Cofunding US\$290,000 Source: Various UNEP, OAS, COREBE and
INCYTH (Argentina), Dirección
Nacional de los Ríos Pilcomayo
y Bermejo (Bolivia)

Requesting Agency UNEP

Executing Agency Organization of American States (OAS)

Local Executing Agency Binational Commission for the Development of the Upper Bermejo and
Grande de Tarija Rivers Basins

Block Block B

Block A Grant awarded No. Project to this point supported by Governments of Argentina and
Bolivia and OAS grant.

Duration September 1995 - February 1996.

I. SUMMARY PROJECT OBJECTIVES AND DESCRIPTION

BACKGROUND

The binational basin of the Bermejo River, shared by the Republics of Argentina and Bolivia, is a part of the Plata Basin, draining almost a fifth of the South American continent to the Atlantic Ocean. It has a variety of climates, landscape, fauna, flora and natural resources. (See Annex 1.)

A distinctive feature of the Bermejo is the enormous production of sediment in the Upper Basin, transported through the Lower Basin and the Paraguay, Parana and Plata Rivers. It has been estimated that about 80 percent of the sediment, deposited in the Plata River in the vicinity of the port of Buenos Aires, originates in the Bermejo Basin.

The Bermejo River Basin links two major geographic features of the southern tip of South America: the Cordillera de los Andes and the Paraguay-Parana Rivers. In the Upper Basin, radically differing weather conditions promote an array of rain forests, humid valleys, and mountain deserts. In the Lower Basin, the level topography and contrasting rainfall patterns produce dry forests in the West and humid and gallery forests in the East.

The Bermejo River has a unique characteristic: it is the only river that completely crosses the huge expanse of the Chaco Plains. All the other rivers, the Timani, the Pilcomayo and the Juramento, come to an end in those plains. Thus, the Bermejo River, which acts as a corridor allowing the connection of biotic elements of both Andean zone and Chaco Plains, has generated exceptional habitat diversity along its course.

The present level of degradation of natural resources, in the Lower as well as in the Upper Bermejo Basin, has resulted in poor productivity of land. Low levels of income force temporary migrations of local farmers, seeking additional income, that result in general neglect of farms and farmed lands. Under the present, primitive systems of production, simultaneous attention to economic profitability and sustainable land and water management are impossible.

An opportunity exists for the gradual substitution of new systems of production. Innovative methods of environmental management, agroforestry, and watershed management will be required.

While inter-census comparisons show progress in living conditions and education, rural areas in the basin are still characterized by great population dispersion and isolation, high birth rates (close to 30 per thousand), high infant mortality, constant emigration, lack of incentives to the young to remain in agricultural activities, poor information, school desertion, functional illiteracy, and few opportunities for continued education. A large proportion of the population in the basin in both countries is indigenous.

Within the framework of the Plata Basin Treaty and successive binational integration and cooperation agreements, the Governments of Argentina and Bolivia have recently agreed on promoting the construction of a series of multipurpose (hydropower, irrigation, water supply and sediment control) projects for the development of water resources, and promotion of general development in the basin. The setting up of multipurpose development projects will have impacts on the region. The Bermejo Basin will be the stage for development processes, with economic, social and environmental consequences, positive and negative.

In anticipation of these effects, the Governments of Argentina and Bolivia have agreed upon the creation of a Binational Commission for the Development of the Upper Bermejo and Grande de Tarija Rivers Basins (hereafter the Binational Commission), with competence for carrying out the projects, programming the economic and social development, and managing the natural environment of the region in a careful and orderly fashion. On June 9, 1995, in the City of Oran (Salta, Argentina), the Presidents of Argentina and Bolivia signed an "Agreement for the Multiple Development of the Resources of the Upper Bermejo and Grande de Tarija Rivers Basins: Creation of the Binational Commission." The Commission shall have international legal status, autonomy in technical, administrative, and financial matters, and legal capacity to acquire rights and assume obligations. It may also, with any other legal person, execute the necessary legal documents and contracts for the performance of its functions, as stated in Article IV of the Agreement. (See full text in Annex 2.)

PREVIOUS SUPPORT

In the 1970s the Organization of American States (OAS) prepared studies¹ that have served as the basis

¹ See OAS reports entitled "Study of Water Resources in the Upper Bermejo River Basin" (Argentina and Bolivia), 1971-73, and "Study of the Lower Bermejo River Basin" (Argentina), 1973-75.

for the multipurpose development projects that are being carried out by the Governments of Argentina and Bolivia.

Since 1975-78, when the OAS last supported an environmental pilot study in the basin, a series of surveys and research concerning biodiversity has been developed, in particular by the Argentinean Regional Commission for the Bermejo River Basin (COREBE) with the participation of state agencies and universities. Some of them are summarized in the reports on "River Dynamics - Sedimentology of the Bermejo and Evaluation of the Environmental Impact of the Water Works Projected in the Upper Bermejo River Basin and in the Lower Basin", prepared by COREBE-INCYTH (Instituto Nacional de Ciencia y Técnicas Hídricas), 1993-95, and Phase I of the Feasibility Study for the Development of the Water Resources of the Upper Bermejo and Grande de Tarija Rivers Basins. The Sub-Secretariat of Water Resources in Argentina has also continued water and sediment data gathering in the basin.

In 1977, the Government of Bolivia created the Executive Program for Soil Reclamation for Tarija (PERTT) with the objective of identifying and studying appropriate technologies for the combat of high erosion rates in the Central Valley of Tarija (Guadalquivir River, a sub-basin of the Bermejo River). Also, in that year the San Jacinto Association, a Government Agency with the purpose of building a reservoir for water regulations and power generation on the Tolomosa River (a tributary of the Bermejo River) was created.

In 1995, the Binational Commission and Governments of Argentina and Bolivia invited the OAS to field a mission to the Bermejo River Basin, at the conclusion of which, the Commission and Governments requested UNEP, in association with the OAS, to prepare an application to the GEF for PDP/B funds for the preparation of a water resources management planning project in the Bermejo River binational basin. This proposal is the result of that request.

PROJECT OBJECTIVES

Building on the previous studies, the GEF project will help the basin countries address transboundary environmental issues in a comprehensive manner while implementing sustainable development in the Bermejo binational basin. Key specific objectives will be:

1. Conducting an environmental diagnostic survey of the basin to identify priority transboundary environmental concerns and related sectoral issues.
2. Formulating a Strategic Action Plan (SAP) for the Binational Basin addressing different GEF focal areas and seeking to solve priority transboundary environmental issues and contribute global benefits.
3. Assisting the Governments of Argentina and Bolivia to incorporate transboundary environmental concerns, including biodiversity and land degradation protection, into their development policies, plans and programs for the basin.
4. Conducting pilot demonstration activities during the SAP formulation to gain information needed for management purposes.

PROPOSED PROJECT ACTIVITIES

Project activities are likely to include, but are not limited to, the following:

1) Analysis of regional problems in matters of water, erosion and sedimentation in the entire Bermejo Basin and its area of influence; assessment of their relevance for the Binational Commission and countries; and proposal of activities that are best executed under regional coordination. Based on available groundwork and the results of work by national agencies.

2) Assessment of major present and emerging transboundary environmental problems in the basin and its area of influence.

3) Conduct of a Reforestation and Land Management Needs Survey by Binational Commission and possible donors. This include a compilation of erosion, desertification problems and options for solving them. Limited pilot projects to determine costs will be conducted with a view to developing carbon sequestration projects and recommendations for activities designed to promote sustainable livelihood and resource use.

4) Analysis of water resource development projects in the basin and how they can be designed and operated to protect biodiversity and the water environment of the region. This will include upstream and downstream analyses for sharing water resources for sustainable development, and will lead to a water resources and sustainable development element of the SAP.

4.1 Evaluation of transboundary environmental impacts of projects in the Upper Bermejo and Grande de Tarija Rivers Basins. Argentina and Bolivia have initiated a program for the development of water resources of the basin, with financial support from the Financial Fund for Development of the Plata Basin (FONPLATA). Other activities are being executed by COREBE, CODETAR (Bolivian Corporation for the Development of the Department of Tarija), and other local agencies. These projects need unified environmental guidelines, that will be coherent and compatible with sustainable development in the region. The project will work to consolidate those agreements through consultations and coordination with agencies of Argentina and Bolivia, to help carry out joint or national initiatives of both countries contributing to sustainable development of the basin, within the framework created by the SAP.

4.2 Continued coordination and consultation with agencies of the Governments of Argentina and Bolivia, civil institutions including NGOs, scientific and academic institutions, etc. The purpose will be to identify initiatives, country based responses and priority actions for the protection and management of natural ecosystems of the Upper and Lower basins of the Bermejo and downstream in the Paraguay, Parana and Plata rivers, and to ensure close coordination with the SAP, and other related GEP projects. OAS Inter-American Water Resources Network will be used extensively in this activity.

4.3 Incorporation of the Plan of Environmental Action for the Upper Bermejo River Basin as a complement to the feasibility studies. Building upon projects identified and agreed upon by the Governments of Argentina and Bolivia for the development of Upper Basin of the Bermejo, preparation of this plan will consider the environmental and social appraisals to be made in Phases I and II of the studies financed by FONPLATA mentioned above and those carried out with implementing/executing agencies support within the present cooperation. Special pilot

programs of immediate implementation could be prepared for the management of the Upper Bermejo River Basin, in coordination with the SAP for the whole basin. Drawing upon lessons and experiences of other GEF projects on international waters, the proposed program for the Upper Basin will provide an important subregional pilot activity.

- 4).4 Strengthening the ongoing regional coordinating and programming framework. The Binational Commission, with assistance of implementing/executing agencies, will identify needed actions for strengthening its regional role to address its responsibilities, including institutional structures, regional monitoring and analysis capabilities, its role as promoter and manager of development, etc., for incorporation into the SAP. Some equipment required immediately may be included.

5) Preparation of a socioeconomic survey and review of regional environmental practices and their relations with population. It will emphasize public participation in the management of priority ecosystems with recommendations for activities designed to promote sustainable livelihood and resource use in the context of the SAP. Also included would be pilot projects in how to involve citizens and community groups in the sustainable development of the basin. The new public participation program in Bolivia will be strengthened to work in the basin and approaches will be shared with colleagues in Argentina.

- 5).1 Preparation of issues papers on social issues and convening of a workshop in each country.

- 5).2 Conduct social assessment (with pilot participatory rural appraisals and a final workshop to prepare this element of the project).

6) Creation of appropriate committees with country participation to address priority transboundary environmental issues. Determination of the most significant and urgent global needs will be made according to applicable GEF Operational Strategies (International Waters, Biodiversity, or others). The project will seek to assess and facilitate agreement on priority actions to address International Waters issues that could be funded by GEF, such as the nature of project interventions, global risk, crosscutting significance (land degradation, biodiversity), etc.

- 6).1 Development of an interim SAP to identify areas with immediate needs for action. The identification of these priority issues and activities in the interim SAP will allow project preparation for solutions to priority regional problems before the completion of the comprehensive SAP.

- 6).2 Completion of the comprehensive SAP, including detailed regional planning and an overview of long-term coordination of GEF activities with the Binational Commission.

- 6).3 Elaboration of GEF-eligible project/program concepts as identified in the SAP, to be prepared as annexes to the SAP document. Such project/program concepts could be both national and regional in scope.

- 6).4 Development of a Program of Public Awareness and Regional Information. Workshops and Seminars at two levels will be programmed, directed at two different markets: a) for interested parties of the private sector in the project area, with the objectives of facilitating local participation in projects and programs, and of receiving feedback and promoting local initiatives, and b) for all the Plata Basin countries, inviting the participation of interested government and private sector participants in order to encourage a wide discussion of the SAP.

The PDF proposal would support preparation of this project. This is a phased approach, with UNEP proposed as the requesting agency because of the nature of the initial diagnostic work that will be accomplished as well as the partnership it has with the OAS in conducting such work in Latin America. OAS is proposed as the executing agency because of this partnership and their experience in similar projects and in the Plata Basin. OAS is providing US\$25,000 for project preparation, the Government of Argentina is providing US\$150,000 in kind, and the Government of Bolivia, \$90,000 in kind. Other donors and the private sector are expected to contribute to the support of the actual project.

The Binational Commission is proposed as the local executing agency because of its competence in the Bermejo River Basin as agreed in the above mentioned Agreement between Argentina and Bolivia. The Binational Commission will provide for the participation of additional national agencies and organizations, having interests in the development of the Bermejo River Binational Basin, to enhance its regional role and capabilities during preparation of the project. A Task Force, consisting of the Binational Commission, a representative of the Environmental Agency of each country, the three Implementing Agencies of GEF, and OAS is proposed for project preparation. The Task Force will be chaired by the Binational Commission.

Participation of the national agencies of both countries with competence in the region, scientific and academic institutions, and concerned civil organizations (NGOs) will be by way of committees of the Task Force. It is intended that consultants from both countries will be used to the maximum extent and some support for equipment for the Binational Commission has been included.

II. DESCRIPTION OF PDF ACTIVITIES BY COMPONENT

OBJECTIVES OF THE PDF ACTIVITIES

The PDF grant will allow the Binational Commission supported by UNEP/OAS to prepare a project proposal for GEF Council approval, consult extensively with stakeholders in both participating countries, and initiate institutional arrangements for its implementation. The specific objectives of the PDF activities are:

1. Establishing the Task Force and preparing Terms of Reference for the establishment of the Task Force Secretariat, National Assistant Directors and Technical Coordinator.
2. Conducting stakeholder workshops in the region in order to consult with stakeholders and other project participants in order to obtain their feedback on the project design and agreement on their participation in project implementation.
3. Formulating the technical and institutional components of the project, including the identification of participating institutions and pilot sites, the linkage with other regional projects, and the preparation of required terms of reference.
4. Preparing an initial information document and subsequent GEF proposal in consultation and discussion with government authorities, stakeholders, and the GEF implementing agencies.
5. Formulating implementation instruments, including an implementation plan, a monitoring and evaluating system, and required legal and financial documents.

PROPOSED PDF ACTIVITIES**A) GEF-FUNDED ACTIVITIES**

The following activities are proposed to be funded in part by funds provided by the GBF:

Activity 1. Establishment of the Task Force and preparation of Terms of Reference for the Task Force Secretariat, National Assistant Directors and Technical Coordinator.

The Binational Commission, with the support of UNEP/OAS, will establish the Task Force as mentioned above. The Task Force, chaired by an Executive Director named by the Binational Commission, will prepare Terms of Reference for the Task Force Secretariat, National Assistant Directors and Technical Coordinator. These Terms of Reference will guide the conduct of subsequent PDF activities and the subsequent project activities.

Activity 2. Compilation of an updated overview of major present and emerging environmental issues of the region.

National experts, appointed by the Binational Commission, will identify, locate and compile existing information on the Bermejo River Binational Basin, and prepare an overview of the major present and emerging environmental issues in the region in order to identify important transboundary concerns that will form the basis for the determination of subsequent activities to be conducted during the project.

Activity 4. Coordination and consultation with organizations in both countries in the identification of country-based initiatives for the protection and management of natural ecosystems.

The Task Force will conduct consultations with agencies and units of government in Bolivia and Argentina, civil institutions and nongovernmental organizations, scientific and academic institutions, and other groups within the Bermejo River Binational Basin in order to identify initiatives, country-based responses and priority actions for the protection and management of natural ecosystems of the Upper and Lower basins of the Bermejo and downstream in the Paraguay, Parana and Plata Rivers, and to ensure close coordination between project development activities, proposed project activities and other related GEF projects. The OAS Inter-American Water Resources Network will be used extensively in the conduct of this activity. (Public participation activities set forth under Activity 6.) The initiatives identified and consultative framework established during the conduct of this PDF activity will form the basis for subsequent activities proposed for the project.

Activity 5. Support for strengthening institutional arrangements.

The Task Force will identify needed actions for strengthening the regional role of the Binational Commission and other institutions within the Bermejo River Binational Basin. Actions will address the regional responsibilities, institutional structures, monitoring and analytical capabilities, and roles in promoting and managing development, etc. Some equipment required immediately may be included under this activity. Relevant follow-up activities will be recommended for inclusion in proposed project activities.

Activity 6. Support for public participation and consultation.

The Task Force will convene six national workshops and two regional workshops to promote public input to, and citizen involvement in, the proposed project, especially with regard to the sustainable development of the Bermejo River Binational Basin. The concerns identified and approaches for citizen involvement identified as a result of this activity will be used to formulate public participation elements in the proposed project.

Activity 7. Preparation of project concept and documents for approval of the Binational Commission and Governments, and submission to the GEF Council.

The Task Force will oversee preparation of a project document for the preparation of a project designed to conduct an environmental diagnostic survey of the Bermejo Basin to identify priority transboundary environmental concerns and related sectoral issues; to formulate a Strategic Action Plan for the Binational Basin addressing different GEF focal areas and seeking to solve priority transboundary environmental issues and contribute global benefits; to assist the Governments of Argentina and Bolivia to incorporate transboundary environmental concerns into their development policies, plans and programs for the basin; and to conduct pilot demonstration activities during SAP formulation to gain information needed for management purposes.

B) CO-FUNDED ACTIVITIES

The following activities are proposed to be co-funded:

Activity 3. Analysis of regional problems and on-going projects in the region, and their relevance to the development of the basin.

The analysis of regional problems in matters of water erosion and sedimentation in the entire Bermejo Basin and its area of influence, its relevance to the Binational Commission and countries, and proposals for activities that are best executed if regional coordination exists, based upon existing information assembled by consultants under the direction of the Task Force in Activity 2, will guide the conduct of PDF activities and form the basis for the formulation of subsequent project activities.

In addition to the foregoing activities, the Governments of Argentina and Bolivia will undertake specific basic studies relevant for the future development of the GEF project. Appropriate data gathered and information collected in terms of these studies will be incorporated into the overview of major present and emerging environmental issues within the region, set forth as Activity 2 above. These data will contribute to the analysis, to be funded by the Governments, identified as Activity 3 of the PDF process. Likewise, the Government of Argentina will provide further, general support for the PDF process, including office facilities and support services for consultants and others participating in, and contributing to, the PDF process.

C) GENERAL CONSIDERATIONS

All the proposed activities will be driven by the Governments of Argentina and Bolivia and the Binational Commission.

The Binational Commission will appoint the Executive Director of the Task Force. He will be assisted by two assistant directors, one for Argentina and one for Bolivia. A Technical Coordinator will be contracted by the executing agency with funds provided by GEF. UNEP/OAS will support the Task

Force in this preparatory phase.

Participation in the task Force, of national personnel as well as of the implementing agencies of GEF, will be by invitation of the Binational Commission.

Activities of national personnel, with the support of the international agencies, will be based upon preparatory work and Terms of Reference agreed with and approved by the Task Force. To the extent possible, all tasks will be executed by national agencies of Argentina and Bolivia and/or consultants from those countries.

All three GEF Implementing Agencies will be invited to participate in the Task Force for preparation. It is anticipated that UNEP will assist in preparing project elements relating to the environmental diagnostic and identification of transboundary priority issues; UNDP could assist in consultations among countries in the Basin and in preparing project elements relating to institutional strengthening and the World Bank could provide guidance for the preparation of project elements relating to economic development and associated sectoral policy issues. OAS will act as manager of the funds provided to the project by UNEP and UNDP on behalf of GEF.

III ELIGIBILITY

The Binational Commission is the institution established by the Governments of Argentina and Bolivia for the general programming of the basin, and the organization for regional cooperation and the coordination of development activities. With this background, the Binational Commission is the most appropriate agency to receive support from the GEF. It is presently receiving technical support from OAS and UNEP. In addition, the preparation of elements that will contribute to the Upper Bermejo River Basin component of the SAP is presently receiving support from FONPLATA, with the objective of updating the proposals prepared in the 1970s by the Governments of Argentina and Bolivia in cooperation with the OAS.

This request fulfills and accords with the approach laid out in the "Scope and Preliminary Operational Strategy for International Waters" approved by the GEF Council Meeting of 22-24 February 1995.

- It focuses in the binational basin of the Bermejo River, which is a part of the Plata River Basin, a common watershed shared by five countries (Argentina, Bolivia, Brazil, Paraguay and Uruguay). Activities in the Bermejo area will condition the development of other activities being carried out or to be executed in the rest of the Plata Basin.
- It proposes an approach based upon (1) strengthening and developing capacity needed to enable existing or new institutions to function more effectively, and (2) sharing costs for interventions required for setting up priority elements within comprehensive plans that have been already agreed upon.
- It proposes to help catalyze the necessary regional actions, and the resulting national and local actions, required to address international waters problems in this region.
- It aims to help decision-makers in the Bermejo and Plata River Basin to identify necessary changes in decisions in order to help make existing programs of development in the region consistent with the principles of sustainable development and compatible with the capability of the environment to support them.

- It accords with GEF's key role in promoting collective actions to address the issues codified or otherwise articulated in this large body of international agreements and policy instruments, and helps ensure, to the extent possible, that international efforts are coordinated and not duplicated.

IV. NATIONAL LEVEL SUPPORT

The Government of Argentina has pledged the amount of US\$150,000 and the Government of Bolivia an amount of US\$90,000, as detailed in the general finance table presented in point VI.

As mentioned above, the Binational Commission and Governments of Argentina and Bolivia invited the OAS to field a mission to the Bermejo River Basin in June 1995. At the conclusion of which, the Commission and Governments requested UNEP, in association with the OAS, to prepare this application to the GEF for PDF/B funds for the preparation of a water resources management planning project in the Bermejo River binational basin.

V. JUSTIFICATION

The present PDF proposal has been prepared by UNEP, with the assistance of the OAS, at the request and on behalf of the GEF eligible countries of the Bermejo Basin, the Republics of Argentina and Bolivia. UNDP and the World Bank have been consulted in the preparation of this PDF/B proposal. It responds to the policy guidance of the "Scope and Preliminary Operational Strategy for International Waters" approved by the GEF Executive Council in its meeting of 22-24 February 1995 as programming guidance for GEF International Waters activities in the Operational Phase.

The present proposal is designed to support an integrated and holistic approach to the management of the binational basin of the Bermejo River, the interaction of this with management actions in the Plata River Basin, and actions for the mitigation of transboundary problems leading to global and regional environmental benefits in the area of International Waters.

VI. ITEMS TO BE FINANCED

It is proposed that the PDF finance consultant services (in technical and institutional fields), travel for national consultants, and workshops costs (participants travel, workshop coordinator, supporting services) amounting to US\$231,000. The OAS would finance consultant and UNEP/OAS specialist services (in legal, financial, accounting, and management fields), amounting to US\$50,000. And the countries will contribute in kind with participant staff time and logistical support for the national and regional workshops, estimated to amount to US\$240,000.

The following table shows the support provided by, and allocation of resources between, each of the implementing agencies, governments and other cofunders. The Binational Commission will be the local executing agency. OAS will manage funds provided through UNEP and part of the funds provided through UNDP. Funds requested will be used by UNEP to finance expenses related to the support of the Task Force in carrying out the activities proposed. Following GEF PDF rules, funds will be used for Implementing Agency consultant and staff travel only upon specific request to the GEF Secretariat by the participating member countries.

ITEM	GEF	GOVERNMENT	OTHER COFUNDERS
Activity 1: Establishment of Task Force.	UNEP/OAS \$15,000	Argentina \$10,000 Bolivia \$10,000	OAS \$25,000 UNEP \$25,000
Activity 2: Compilation of updated overview of major present and emerging environmental issues of the region.	UNEP/OAS \$40,000	Argentina \$8,750 Bolivia \$8,750	
Activity 3: Analysis of regional problems and on-going projects in the region, and their relevance to the development of the basin.		Argentina \$23,500 Bolivia \$13,500	
Activity 4: Coordination and consultation with organizations in both countries in the identification of country based initiatives for the protection and management of natural ecosystems.	UNEP/OAS \$50,000	Argentina \$5,250 Bolivia \$5,250	
Activity 5: Support for strengthening institutional arrangements.	UNDP/OAS \$35,000	Argentina \$14,000 Bolivia \$11,500	
Activity 6: Support for public participation and consultation.	UNEP/OAS \$75,000	Argentina \$13,000 Bolivia \$8,000	
Activity 7: Preparation of project concept and documents for approval of Governments and submission to GEF Council.	UNEP/OAS \$16,000	Argentina \$6,000 Bolivia \$3,000	
Basic Studies		Argentina \$30,000 Bolivia \$30,000	
General Support		Argentina \$39,500	
TOTAL COSTS AND AGENCY INVOLVEMENT	UNEP/OAS \$196,000	Argentina \$150,000	OAS \$25,000
	UNDP/OAS \$35,000	Bolivia \$90,000	UNEP \$25,000
	Total \$231,000	Total \$240,000	Total \$50,000

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IMPLEMENTING AGENCY REPRESENTATIVES:

UNEP: Dr. Walter Rast, Chief, Fresh Water Unit.
Mr. Bill Mansfield, Chief, GEF Coordination Unit

World Bank: Mr. Larry D. Simpson, Water Resource Management Consultant, Natural Resources and Rural
Poverty Division, Latin America and the Caribbean Region.
Mr. Richard Paton, GEF Coordination Unit

UNDP: Mr. Nicholas Remple
Regional Environmental Officer
GEF/REBLAC

GEF Sec. Mr. Alfred Duda
Senior Environmental Specialist (Water Resources)

ANNEX 1.

THE BERMEJO RIVER BASIN IN THE CONTEXT OF THE PLATA BASIN.

The Bermejo is a tributary of the Paraguay River, which in turn is a tributary of the Parana that flows in the Rio de la Plata. The Plata Basin drains waters of almost a fifth part of the South American continent (3,100,000 km²) to the Atlantic Ocean. In 1969 the five riparian countries of the Plata Basin, Argentina, Bolivia, Brazil, Paraguay and Uruguay, created a Treaty and Organization, with the objective of unifying efforts toward the harmonic development and the physical integration of the basin. Within this general framework there have been many initiatives among all the riparian countries or among groups of them. In particular, Argentina and Bolivia decided on June 9, 1995, to create a permanent mechanism for the management of the Upper Bermejo and Grande de Tarija Rivers Basins, i.e. the Binational Commission.

Extending through the Tropic of Capricorn, the Bermejo River Basin links two major axes of the southern tip of South America: the Cordillera de los Andes and the Paraguay-Parana Rivers. In the Upper Basin, radically differing weather conditions promote an array of rain forests, humid valleys, and mountain deserts. In the Lower Basin, the level topography and distinct rainfall patterns determine the existence of dry forests in the West and humid and gallery forests in the East. This great diversity of topographic, climatic and bio-geographic situations, allow the Bermejo River Basin to be classified as an "Area of Megadiversity".

The Bermejo has a unique characteristic: it is the only river that bridges the huge area of the Chaco Plains. All the other rivers, the Timani, the Pilcomayo and the Juramento, are lost in those plains. This fact has four consequences of great importance:

- The river has experienced an evolution of enormous extension that has generated exceptional habitat diversity.
- Areas where the river has recently modeled its bed have attracted an intense process of human settlement, much higher than in areas where no water is available.
- Being the only river spanning the plain, the Bermejo is an "exporter" of sediments, with a high influence on the sediment contents of the Paraguay-Parana Rivers.
- The great diversity of habitats determines ideal conditions for biodiversity. Being a continuous course of water it acts as a corridor, allowing the connection of biotic elements of both Andean and Chaco Plain ecosystems.

The Upper Basin is located in the NW end of Argentina and the SSE end of Bolivia; it has an area of 50,500 km². The Lower Bermejo, located totally in Argentinean territory covers an area of 140,000 km². Total length of the river is more than 1,200 km, 1,000 of them in Argentina. The Upper Basin is covered by high mountains, reaching more than 6,000 m, and inter-mountain valleys, where most of the economic and social activities are carried out. Climate, is characterized by great variability in short distances, due to a very broken topography, to the orientation of valleys with respect to prevailing air currents, and to the exposure of valleys to the sun. Rains are very seasonal, with a period from November to March concentrating 85% of total precipitation, and a dry season in the months of fall and winter. Average yearly precipitations varies between 200 mm in the West and 1,400 mm in the center of the basin. Average summer temperatures varies between 16 and 28° Celsius and in winter between 8 and 15°C. Daily variation is much higher.

The average contents of sediment of the Bermejo are some of the highest in the world (8 kg/m³). Total discharge of sediments is in the order of 100 million ton/year. The greater part of the sediment is produced in the Upper Basin and dragged down during peak floods. A recent report of the World Bank estimates that 80% of the sediment in the Plata River originates in the Bermejo.

The Cities of Tarija, Jujuy and Salta, are located in the Upper Basin or very close by, and as a consequence a rather large economic importance. In the valleys, sugar production is the main user of labor. Paper, tobacco, wine and wine spirits, citrus fruits, wood and vegetables are other products of importance. In the high plateaux sheep, goats and llamas are produced, with wool and hair as principal products.

Most of the Lower Basin is located in the Chaco Plain. The river has a direction from NNW to SSE. It receives few tributaries and loses water due to infiltration and overflows during floods. In the period of low waters it receives some underground contribution. Climate is characterized by a very noticeable variation in precipitations toward the West, with maxima at both borders of the basin, some 1,500 mm per year in the confluence with the Paraguay River, and 1,700 mm in the border with the Upper Basin. Minima of 500 to 600 mm per year are obtained in the center of the basin. There is a very clear seasonality, with most rain in the period of December to March, and a dry season in July and August. Weather may be characterized as subtropical-continental; it has clear tropical and subtropical features, but suffers deep intrusions of cold air in winter. Average yearly temperatures vary between 21 and 24° C. The hottest month is January with averages of 28° C and the coldest is July with averages between 15 and 18° C.

In the Lower Basin there is an intense fluvio-morphological activity, determined by large seasonal variations in streamflow, the high contents of sediment and the extremely even topography. As a consequence it is fairly common to find processes such as the one which occurred last century when the course of the Bermejo was captured by the Teuco River, or the abandonment of river beds. These processes have a strong incidence in the dynamics of forests, due to the severe changes they produce on water availability.

The Eastern part of the Lower Basin has the largest population, and the highest economic activity. The capital cities of Chaco and Formosa are located there. In the Chaco region, most agricultural production is located in the humid areas of the East and center. Cotton, sunflower, rice, vegetables, sorghum and wheat are the principal crops; cattle grazing is a widespread activity. Methods of production are inappropriate, as they are copied from the Pampas region, creating serious problems of soil degradation. There is great potential for forestry, although as presently practiced it is destructive of the forests, because forest management methods are ignored. In the Western Chaco productive capacity of the soils is lower; with production focused on extractions rather than on permanent productivity. Soybeans, beans, jojoba and cattle grazing are other principal agricultural products.

Most of the population is indigenous, both in the Upper and the Lower Basin. They belong to the poorest part of the population, temporary workers and small farmers, with the lowest indices of education and the least capita. Many of them survive through temporary migrations, thus obtaining complementary incomes. Others survive through hunting and fishing and others complement their incomes selling regional handicrafts.

Both development and management of natural resources are required. The present level of degradation of natural resources, in the Lower as well as in the Upper Basin, determines that productivity of land is lowest. Low levels of income force temporary migrations of local farmers, because of need of additional income, resulting in general neglect of farms. Under the present, primitive systems of production, simultaneous attention to economic profitability and sustainment of the environment are impossible.

An alternative exists for gradual substitution of present systems of production for new, more appropriate ones. The style of those new systems need to be defined by the farmers in collaboration with scientists and technicians, within the framework of a program whose goal would be the well being of the population and the sustainability of production. Methods of environmental management, agroforestry, watershed management and the like will be required. The results expected of this approach are:

- Increased capacity for carbon sequestration, as a consequence of both greater crop productivity, especially of trees, and of levels of organic material in the soils.
- Improved regional water balance through a decrease in the runoff coefficients and an increase in the infiltration rates.

- A sensible improvement of the potential productivity of soils and capacity for cattle grazing due to the combined effect of an improved water availability, lower erosion, increased organic materials in the soils, and rational use of forests as sources of animal feed.
- Increased volume and quality of wood products, through introduction of appropriate genetic material, the use of suitable methods of pruning and clearing, and through introduction of management criteria in native forests.
- Increased wildlife populations, particularly in managed forests.
- Noticeable increase in the demand for labor and in the quality of life of the rural population.

An issue that needs study is the relationship of sediment control in the Bermejo to the Hidrovia Paraguay-Parana, especially with regard to reduction of the costs of dredging sediment deposits. This issue is particularly sensitive to all the countries of the Plata Basin, and requires analysis from several standpoints, not only the costs of dredging, since other factors to be considered are the increased erosive potential of the river when less sediment is present in the water, and the balance between processes of accretion and erosion in the delta islands. These subjects could be analyzed possibly through the use conceptual models (mathematical or physical).

ANNEX 2.

**AGREEMENT FOR THE MULTIPLE DEVELOPMENT OF THE RESOURCES
OF THE UPPER BERMEJO AND GRANDE DE TARIJA RIVERS BASINS:
CREATION OF THE BINATIONAL COMMISSION**

The Governments of the Argentine Republic and the Republic of Bolivia, pursuant to Article 6 of the Plata River Basin Treaty, which provides for the signing of specific agreements, and in keeping with the provisions and decisions issued by the bodies of the system,

AGREE AS FOLLOWS:

ARTICLE I: PURPOSES

- a. To establish a permanent legal and technical mechanism responsible for managing the Upper Bermejo and Grande de Tarija Rivers Basins so as to achieve the sustainable development of its area of influence, optimize the use of its natural resources, generate employment, attract investment, and provide for rational and equitable use of its water resources.
- b. In keeping with the overall purposes specified in the foregoing paragraph, the parties, through this agreement, seek to improve water use to meet such needs as home consumption, generation of electricity, irrigation, flood control, harvesting of fish stocks, and industrial and recreational uses. The foregoing list is not intended to establish an order of priority for uses of water.

In making such use of water resources, the parties shall decide upon the methods of operation of the works to be executed and shall adopt the necessary measures to preserve water quality, prevent erosion, and control sedimentation and flooding.

- c. The parties shall accord special priority to the involvement of private capital in the pursuit of these purposes; to that end they may apply an agreed procedure establishing a system of concessions for the construction, maintenance, and management of the projects.

ARTICLE II: THE COMMISSION

The parties hereby establish a Binational Commission for the Development of the Upper Bermejo and Grande de Tarija Rivers Basins, hereinafter referred to as "the Commission."

ARTICLE III: COMPOSITION

- a. The Commission shall be composed of two delegates from each member state. The first two shall be representatives of the two foreign ministries, of ambassadorial rank, and shall preside over their delegations. The second two shall be, respectively, the National Director of the Pilcomayo and Bermejo Rivers for the Republic of Bolivia and the Chair of the Board of the Regional Commission of the Bermejo River for the Argentine Republic.
- b. The Regional Commission of the Bermejo River—COREBE—of the Argentine Republic and the National Technical Office of the Pilcomayo and Bermejo Rivers of the Republic of Bolivia will serve as secretariat to the Commission.

ARTICLE IV: LEGAL STATUS

The Commission shall have international legal status, autonomy in technical, administrative, and financial matters, and legal capacity to acquire rights and assume obligations. It may also, with any other legal person, execute the necessary legal documents and contracts for the performance of its functions.

ARTICLE V: COMPETENCE

- a. The purpose of the Commission is to take all steps necessary for the development of the Basin as defined in this agreement.
- b. Once formed, the Commission shall issue its own internal rules of procedure.
- c. The Commission may negotiate with interested investors, from the prefeasibility stage, the technical, economic, financial, and legal project conditions for the drafting of definitive specifications to be used in awarding the concessions involved.
- d. The Commission shall have authority over the joint projects regardless of the territory in which they are located. These works shall be governed by supplementary agreements between the parties, which shall give technical specifications concerning their design, construction, administration, and use. These agreements shall have the rank of supplementary protocols or executive treaties within the framework of this treaty, and, therefore, may be executed by way of instruments that shall enter into force immediately upon signature.
- e. The Commission shall establish physical, chemical, and biological parameters for water quality control in keeping with international standards.

ARTICLE VI: FUNCTIONS

The Commission shall carry out the following functions:

- a. Design, install, operate, and maintain a network of hydrometeorology stations for operation of a real-time hydrologic warning system;
- b. Identify sustainable development programs;
- c. Select projects to be carried out in the waterways on the basis of environmental impact assessments (EIAs);
- d. Draft the terms of reference for the programs and projects to be carried out;
- e. Arrange funding for the studies and projects selected and nonreimbursable technical cooperation agreements with international organizations;
- f. Issue an international call for bids on prefeasibility and feasibility studies, the procedures for which shall be established by the Commission;
- g. Screen firms, advisers, technical personnel, and consortia for preliminary and definitive qualification;
- h. Award contracts for water resource studies, programs, projects, and works;
- i. Grant concessions for the execution and use of the planned works and projects, without government guarantees or endorsements;
- j. Sign the bidding documents and concession contracts with the firms and consortia selected;

- k. Supervise execution of the projects and works awarded and fulfillment of concession provisions;
- l. Decide upon fees, royalties, or tolls to be charged by the concessionaires;
- m. Issue regulations to govern the matters within its purview;
- n. Contract for the services necessary for fulfillment of the objectives of this agreement;
- o. Approve the planning and design of bridges, ducts, and other structures that cross the rivers and could affect the use, water flow, and navigation of those rivers;
- p. Facilitate activities that promote tourism and recreational use of the waters;
- q. Specify areas in which there shall be no resource extraction that would affect the hydraulic and morphologic behavior of the rivers;
- r. Propose regulations to govern the discharge of any kind of pollutant;
- s. Compile and update the information required for creation and maintenance of a databank under a geographic information system;
- t. Fulfill such other functions as may arise from the agreement and as the parties may expressly confer in supplementary agreements.

ARTICLE VII: BUDGET

The Commission shall approve its annual budget, the funding of which shall be governed in accordance with the Statutes.

It shall also submit each year to the foreign ministries of the member states a general activities report along with a corresponding statement of accounts.

ARTICLE VIII: CONTRACTS

- a. In its concession contracts, the Commission may stipulate the applicable legislation and jurisdiction. It may not invoke any immunity from jurisdiction that it may enjoy.

The provisions of the foregoing paragraph shall also apply to any other public or private contracts that may be entered into by the Commission.

- b. When signing employment contracts with its staff, the Commission shall specify the judicial system that shall have jurisdiction over labor matters associated with said contracts.

ARTICLE IX: HEADQUARTERS

The Commission shall have two headquarters: one in the city of Tarija, Republic of Bolivia, and the other in the city of Buenos Aires, Argentine Republic.

ARTICLE X: MEETINGS

The Commission shall meet in either of the countries without distinction. It shall hold its meetings with the frequency and in the manner established in the Statutes and shall adopt its decisions unanimously.

ARTICLE XI: TAXES AND CHARGES

Taxes and charges shall be covered in a specific agreement between the parties.

ARTICLE XII: HYDROPOWER GENERATION

- a. Power produced by the hydroelectric power plants built on Bolivian soil, subject to agreement between the parties, may be sold on the Argentine market under the same conditions as for power produced in the Argentine Republic.

No legal or administrative provision shall be required for this clause to be implemented.

- b. Anyone constructing hydraulic works in the upper part of the Basin may agree with the parties, or with each of them, as appropriate, to set aside throughout the year or during certain months capacity to accumulate water during high water periods to mitigate their negative effects downstream.

ARTICLE XIII: SETTLEMENT OF DISPUTES

- a. Any disputes between the parties not settled through direct negotiations shall be solved pursuant to the special dispute settlement procedure agreed upon by the parties as appropriate. Alternatively, the arbitration treaty between the Republic of Bolivia and the Argentine Republic, signed in Buenos Aires on February 3, 1902, shall apply.
- b. The dispute settlement procedure between the Commission and its dependents, concessionaires, and other persons who may have entered into contracts with it and with third parties by virtue of other legal relationships may be proposed for approval by the Commission by means of an agreement between the parties. This procedure shall be proposed to the parties within 90 days of establishment of the Commission.

ARTICLE XIV: FINAL PROVISIONS

This agreement shall be ratified by the parties and shall enter into force 30 days following the exchange of the respective instruments of ratification.

The Commission shall be established within 60 days of the date of signature of this agreement.

The parties shall adopt, by means of an exchange of notes, the Statutes of the Commission within 180 days of the date of entry into force of this agreement.

In witness whereof, two identical copies are signed in the city of San Ramon de la Nueva Oran on the ninth day of the month of June, 1995.

Signed
FOR THE ARGENTINE REPUBLIC

Signed
FOR THE REPUBLIC OF BOLIVIA