

## PROJECT BRIEF

### IDENTIFIERS

<b>PROJECT NUMBER:</b>	Project number not yet assigned (GF/8400-00-#)
<b>PROJECT NAME:</b>	<b>Regional (Argentina, Bolivia): Implementation of the Strategic Action Program for the Bermejo River Binational Basin</b>
<b>PROJECT DURATION:</b>	4.5 years
<b>IMPLEMENTING AGENCY:</b>	UNEP
<b>EXECUTING AGENCY:</b>	Binational Commission for the Development of the Upper Bermejo and Grande de Tarija Rivers Basins GS/OAS Inter-American Development Bank
<b>REQUESTING COUNTRY:</b>	Argentina and Bolivia
<b>COUNTRY ELIGIBILITY:</b>	Eligible under paragraph 9(b) of the Instrument.
<b>FOCAL AREAS:</b>	International waters with relevance to the cross-cutting area of Land Degradation

**GEF PROGRAMMING FRAMEWORK:** OP 9 Integrated Land-Water Multiple Focal Area

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### SUMMARY

This project catalyzes the implementation of the Strategic Action Program for the Bermejo River Binational Basin. The Project will implement specific strategic activities, identified in the GEF-financed strategic action program (SAP), that address the principal root causes of soil degradation as set forth in the transboundary diagnostic analysis (TDA) and, in doing so, will provide the necessary institutional, legal, and informational basis to enhance and restore the environmental functioning of the system, and provide protection to endemic species within the five component ecosystems—montane, humid forest, arid Chaco/savannah, sub-humid Chaco, and humid Chaco. These actions, with incremental costs, will complement Basin-scale interventions by the Binational Commission, and the governments of Argentina and Bolivia, financed in part from national and provincial/prefectural sources and by international loan funding, many of which address expected baseline activities. Strengthening of Basin institutions, building of agency and organizational capacity, and integration of environmental concerns into economic development activities on a sustainable basis, and the promotion of the public awareness and participation are key elements of this project.

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### COSTS AND FINANCING (MILLION US \$)

#### **GEF:**

Project	US \$ 10.40
Administrative Fees	US \$ 0.64
PDF	US \$ 0
<b>Subtotal GEF</b>	<b>US \$ 11.04</b>

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#### **Co-financing:**

UNEP	US \$ 0.15 (in kind)
OAS	US \$ 0.15 (in kind)
Governments	US \$ 8.43
<b>Subtotal</b>	<b>US \$ 8.73</b>

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**Total Project Costs:** **US \$ 19.77**

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### ASSOCIATED FINANCING TO STRATEGIC ACTIONS

Inter-American Development Bank	US \$ 160.75
The World Bank	US \$ 159.52
Other	US \$ 23.18
Government	US\$ 187.29
<b>TOTAL ASSOCIATED FINANCING:</b>	<b>US \$ 530.74</b>

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### OPERATIONAL FOCAL POINT ENDORSEMENT

**Argentina: Name:** Embajadora Elsa Kelly, **Title:** Directora de Asuntos Medioambientales, **Organization:** Ministerio de Relaciones Exteriores, Comercio Internacional y Culto, **Date:** 28/06/00

**Bolivia: Name:** Embajador Jorge Soruco Villanueva, **Title:** Primer Delegado ante la Commission Binacional para el Desarrollo de la Alta Cuenca del Rio Bermejo y Rio Grande de Tarija, Vice Ministro de Politica Exterior, **Organization:** Commission Binacional, **Date:** 21/06/00

#### **IA Contact:**

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## LIST OF ACRONYMS

BRBB	Bermejo River Binational Basin
BC	Binational Commission for the Development of the Upper Bermejo River and Grande de Tarija River Basins
GEF	Global Environment Facility
IWRN	Inter-American Water Resources Network
OAS	General Secretariat of the Organization of American States
OTN	National Technical Office for the Pilcomayo and Bermejo Rivers (Bolivia)
UNEP	United Nations Environment Programme
COREBE	Regional Commission for the Development of the Bermejo River Basin (Argentina).
IWRMP	Integrated Water Resources Management Program

## PROJECT DESCRIPTION

### BACKGROUND AND CONTEXT

1. The development of a Strategic Action Program (SAP) for the Binational Basin of the Bermejo River (hereinafter the BRBB) was the outcome of an highly transparent public interaction process that has identified community-based mechanisms for the protection of the water resources of this Plata Basin tributary river system.<sup>1</sup> The process of formulating the SAP involved the active participation and input of over 750 persons representing governmental, non-governmental, civic, and community interests throughout the Basin. As a result of this process, an expectancy has been created among the riparian communities of greater citizen involvement in the management of the land and water resources of the Basin. While this expectancy differs in quality between the Bolivian portions of the Basin—where public participation has been an element of governmental planning for some time, under the law for popular participation—and the Argentine portions, the basic concept is one of public involvement in the sustainable use and protection of the Basin's land and water resources through a process of dialogue between decision-makers and local communities. This project is proposed as a means of creating the necessary institutional, legal, and informational bases to implement this concept.

2. The BRBB extends over some 123,000 km<sup>2</sup>, originating in the Andes Mountains of northwestern Argentina and southern Bolivia. The river, which flows some 1,300 km, crosses the Chaco Plains, forming an important ecological corridor linking the Andean ecosystem with the Atlantic ecosystem. Because the Bermejo River is the only major river spanning the Chaco, the river system contributes the largest mass of Andean sediment to the Plata River system. The origin and behavior of the sediment has the potential to dramatically condition water uses in the Bermejo and Plata river systems, not only with respect to river-based and river-dependent activities but also with respect to the structure and dynamics of the riverine ecosystems.

3. Combining the foregoing demographic and geographic imperatives implies that community-level interventions to enhance the management of the land surface can contribute to the maintenance of the structure and function of the waterway, whilst preserving the economic benefits derived from the watercourse for local communities. The accuracy of this statement was borne out through the success of localized, community-level demonstration projects conducted during the period of SAP formulation. These projects reinforced local ownership and local leadership roles, while facilitating changes in historic and traditional land-use practices from unsustainable to sustainable practices. In facilitating such changes, the project encouraged the integration of governmental, non-governmental, and private sector interests for the economic benefit of entire community groups and lessened their environmental impacts on the river and its watershed.

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<sup>1</sup> Comisión Binacional para el Desarrollo de la Alta Cuenca del Río Bermejo y el Río Grande de Tarija, Programa de las Naciones Unidas para el Medio Ambiente, Organización de los Estados Americanos, y Fondo para el Medio Ambiente Mundial (1999) *Programa Estratégico de Acción para la Cuenca del Río Bermejo, Volumen I*. Programa Estratégico de Acción para la Cuenca del Río Bermejo, Buenos Aires-Tarija, Septiembre 1999.

4. A hallmark of the Global Environment Facility (GEF), under whose auspices the SAP was formulated, is the emphasis on the potential of projects for replication. The GEF, through Operational Program # 9—the International Waters Integrated Land-Water Multiple Focal Area Project component (paragraph 9.21 of the Operational Program)—encourages the conduct of projects that successfully integrate divergent socio-economic interests in an environmentally sustainable manner. For this reason, the completion of the diagnostic and strategic programming phase of the BRBB project marks the starting point in the sustainable management of the BRBB. This initial phase identified, implemented, and tested sustainable land management practices on the local level, and created a basin-wide expectation for greater civic involvement in resource management and economic development issues. The next phase of GEF programming in the BRBB must identify, develop, and implement mechanisms for the replication of those practices and measures that have been demonstrated to be successful throughout the BRBB and throughout the Plata River Basin. In so doing, the BRBB project can continue to refine and demonstrate the means for, and benefits of, country ownership and community participation in river basin management.<sup>2</sup> This integrated approach to river basin management is wholly consistent with UNEP's EMINWA process.<sup>3</sup>

5. **National Programming Context.** The governments of Argentina and Bolivia initiated the BRBB project in 1997 through the Binational Commission for the Development of the Upper Bermejo and Grande de Tarija Rivers Basins (Binational Commission).<sup>4</sup> With the support of the GEF, UNEP, and the General Secretariat of the Organization of American States (OAS), the Binational Commission, in cooperation with the National Secretariat of Environment of Bolivia and the Secretariat of Natural Resources and Human Environment of Argentina,<sup>5</sup> and in consultation with the relevant prefectural and provincial governments, conducted the Transboundary Diagnostic Analysis (TDA) that led to the preparation of the SAP. Using an environmental zoning approach, the Basin countries identified general and site-specific needs and priorities for the conservation, rehabilitation, and preservation of degraded lands; initiated the creation of a shared geographic information system to facilitate dissemination of available physical, biological, social, legal, and economic information; and field-tested specific management mechanisms designed to prevent negative impacts in urban and rural areas, especially as related to land degradation insofar as it affects on the water resources in the region.

6. Six priority problems for ecosystem-level conservation, rehabilitation, and preservation were identified in the TDA:<sup>6</sup> (1) degradation of soils and intense erosion and desertification processes; (2) scarcity of water resources and limitations on their management; (3) degradation of water quality; (4) habitat and biodiversity losses and deterioration of terrestrial and aquatic biotic resources; (5) losses due to the occurrence of flood-related and other natural disasters; and

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<sup>2</sup> See the GEF 1999 Project Implementation Review, International Waters Portfolio Overview and Issues Paper, published by the GEF Secretariat in November 1999.

<sup>3</sup> The United Nations Environment Programme's (UNEP) Environmentally Sound Management of Inland Waters (EMINWA) integrated watershed management planning process.

<sup>4</sup> The implementation of the BRBB project was preceded by a Project Development period that was initiated during 1995.

<sup>5</sup> With the recent installation of a new constitutional government in Argentina, on 10/12/99, this agency has been modified and its powers and functions reassigned within the new ministerial structure.

<sup>6</sup> Comisión Binacional para el Desarrollo de la Alta Cuenca del Río Bermejo y el Río Grande de Tarija, Programa de las Naciones Unidas para el Medio Ambiente, Organización de los Estados Americanos, y Fondo para el Medio Ambiente Mundial (1999) *Diagnóstico Ambiental Transfronterizo de la Cuenca del Río Bermejo*. Programa Estratégico de Acción para la Cuenca del Río Bermejo, Buenos Aires-Tarija, enero 2000.

(6) deterioration of the quality of life of the population living in the Basin and loss of cultural resources. These problems are endemic throughout the Basin, and most are both natural and anthropogenic in origin.

7. The analysis of their basic and direct causes was the subject of an extensive public consultation process, the results of which defined the strategic actions included in the SAP. As envisioned by Basin stakeholders, the SAP was prepared as a long-term action plan, designed not only to address the root causes of the critical environmental degradation affecting the basin, but also to promote the sustainable development of Basin communities. It is composed of four sets of priority actions: (1) prevention of environmental degradation, and rehabilitation and protection of degraded environments; (2) sustainable development of natural resources in the Basin; (3) institutional strengthening and implementation of an effective legal and institutional framework for integrated water resources planning and management within the Basin; and (4) implementation of a program of consultation, public awareness and participation for environmental protection and management, and replication of project activities in other regions of the Plata Basin. A SAP summary is presented in Annex J.

8. From each of the four strategic areas of the SAP, a restricted number of priority actions, with particular emphasis on erosion and sedimentation issues, have been selected to address the priority transboundary environmental problems affecting the Basin. These actions are considered of immediate priority, and include the execution of specific preventive and remedial activities, the consolidation of participatory mechanisms, and the provision of the necessary legal and institutional framework for the entire program. Each of these activities is being described in greater detail in Annex I and is also summarized in Table 1 hereafter.

## **RATIONALE AND OBJECTIVES**

9. Building upon the priority actions set forth in the SAP, the primary objective of this GEF International Waters project is to assist the governments of Argentina and Bolivia in addressing the root causes of the principal environmental problems affecting the Bermejo River Basin, with a focus on their main transboundary manifestations—namely, sediment erosion, transport, and deposition—and to promote the sustainable development of the BRBB. Activities for the control of land degradation due to agricultural activities, prevention of erosion, and sediment control—including the creation, restoration and protection of natural vegetated areas, conservation of aquatic and terrestrial habitat, and support to popular participation in the management of natural resources through improved access to information and enhancement of public awareness, control of water-borne contaminants, and related measures—have been selected in order to catalyze implementation of specific actions as recommended in the SAP. A key feature of this project will be the replication and extension, throughout the Bermejo and Plata basins, of the localized activities of the SAP formulation project that were determined to be feasible measures for the integration of the geographic and demographic aspects of watershed management within the BRBB. The set of actions programmed for this purpose is described in Annex I, Activity 4.4.

**Table 1. List of Priority Actions for Addressing Transboundary Environmental Problems in the Binational Basin of the Bermejo River<sup>7</sup>**

STRATEGIES/ACTIVITIES	COSTS (US\$ millions)		Sub-ACTIVITIES
	Total	GEF	
<b>I. INSTITUTIONAL DEVELOPMENT</b>			
1. Development/strengthening of the institutional framework	1.91	1.10	<ul style="list-style-type: none"> <li>▪ Strengthening of the Binational Commission</li> <li>▪ Strengthening of COREBE</li> <li>▪ Strengthening of government and civil society orgs.</li> </ul>
2. Development of a holistic regional legislative, economic, and environmental framework	1.84	0.79	<ul style="list-style-type: none"> <li>▪ Harmonization of regional and jurisdictional legal frameworks</li> <li>▪ Environmental zoning for land-use regulation in selected areas</li> <li>▪ Economic instruments for sustainable water use</li> <li>▪ Incorporation of environmental and social costs in project evaluation</li> </ul>
<b>II. ENVIRONMENTAL PROTECTION AND REHABILITATION</b>			
1. Soil management and erosion control in critical areas	2.13	1.32	<ul style="list-style-type: none"> <li>▪ Sediment control in the Tolomosa River basin</li> <li>▪ Integral management of natural resources in the Santa Ana River basin</li> <li>▪ Integrated management of the Iruya River basin</li> <li>▪ Soil-loss prevention in the Huasamayo sub-basin</li> </ul>
2. Consolidating protected areas and protecting biodiversity	1.79	1.30	<ul style="list-style-type: none"> <li>▪ Ecotourism activities in piedmont transition forests</li> <li>▪ Carbon fixation in the Yungas</li> <li>▪ Implementation of the Baritú-Tariquía biological corridor</li> <li>▪ Management plan for Sama and Tariquía biological reserves</li> <li>▪ Evaluation of sub-Andean rangelands</li> <li>▪ Study and implementation of the Teuco National Park (Chaco region)</li> <li>▪ Biodiversity study</li> </ul>
3. Protection and restoration of water quality	0.33	0.20	<ul style="list-style-type: none"> <li>▪ Environmental clean-up of the Guadalquivir River (pilot-scale waste-water treatment plants in rural communities)</li> <li>▪ Assessment and design of water-pollution control strategies in the Bermejo Triangle</li> </ul>
<b>III. SUSTAINABLE DEVELOPMENT OF NATURAL RESOURCES</b>			
1. Implementation of a planning framework for integrated water resource management and sustainable development	2.67	1.53	<ul style="list-style-type: none"> <li>▪ Regional integrated program for natural resource management, erosion and pollution control, and sustainable development in the Bermejo Basin</li> </ul>

<sup>7</sup> The set of actions listed focuses primarily on erosion and sediment control. Other environmental and developmental issues identified in the TDA which will benefit from implementation of proposed activities, include water-resource degradation; water scarcity and availability restrictions; and loss of biodiversity and biotic resources.

**Table 1 (Cont.) List of Priority Actions for Addressing Transboundary Environmental Problems in the Binational Basin of the Bermejo River**

STRATEGIES/ACTIVITIES	COSTS (US\$ millions)		Sub-ACTIVITIES
	Total	GEF	
2. Sustainable practices for rehabilitation of degraded areas in the Chaco and Yungas regions	2.40	0.85	<ul style="list-style-type: none"> <li>▪ Training and promotion of sustainable resource management techniques in the humid and subhumid Chaco</li> <li>▪ Diversification of production alternatives to reduce human pressure on natural forest resources in the Yungas region</li> </ul>
3. Community extension programs for sustainable production and natural-resource management	0.34	0.19	<ul style="list-style-type: none"> <li>▪ Survey, assessment, validation, and extension of traditional natural-resource management practices in representative areas of the Bermejo River basin</li> <li>▪ Promotion of sustainable production activities and natural-resource management in indigenous and native communities</li> </ul>
4. Sustainable agriculture and soil conservation practices along the San Jacinto project area	0.24	0.16	<ul style="list-style-type: none"> <li>• Pilot project for testing and dissemination of soil and water management techniques in irrigated farming along the San Jacinto water reservoir area (Upper Bermejo)</li> </ul>
5. Procurement of financial resources for the Bermejo River Basin	0.35	0.30	<ul style="list-style-type: none"> <li>• Donor roundtable meeting for the procurement of financial resources to support implementation of SAP activities and other complementary actions oriented to the sustainable development of the Bermejo River Basin</li> </ul>
<b>IV. PUBLIC AWARENESS, PARTICIPATION, AND REPLICATION OF PROJECT ACTIVITIES</b>			
1. Environmental education programs	1.17	0.51	<ul style="list-style-type: none"> <li>• Implementation of environmental awareness and training programs on sustainable resource use for different ecological regions of the Bermejo basin</li> </ul>
2. Public participation program	0.53	0.31	<ul style="list-style-type: none"> <li>▪ Information dissemination, consultation workshops, and establishment of suitable mechanisms for public participation in the Bermejo river basin</li> </ul>
3. Information system for the Bermejo River Basin	2.28	1.14	<ul style="list-style-type: none"> <li>• Access to information for public participation</li> <li>• Developing networks and articulation mechanisms</li> <li>▪ Creation and implementation of an environmental information and monitoring system</li> <li>▪ Definition and adoption of IW indicators</li> </ul>
4. Replication of project activities	0.85	0.70	<ul style="list-style-type: none"> <li>• Dissemination and replication of the Bermejo project into the broader context of the Plata Basin</li> </ul>
<b>TOTAL COSTS</b>	<b>18.83</b>	<b>10.4</b>	

<sup>8</sup> The set of actions listed focus primarily on erosion and sediment control. Other environmental and developmental issues identified in the TDA which will benefit from implementation of proposed activities include water-resource degradation; water scarcity and availability restrictions; and loss of biodiversity and biotic resources.



**10.** This project proposal is being compiled at a time when the Bermejo River Binational Commission, the provinces of Jujuy, Salta, Chaco, and Formosa (in Argentina), and the governments of Argentina and Bolivia are implementing measures to integrate stakeholder participation and grassroots-level involvement into water resources management. Such measures have been in place in Bolivia for some time through an established law for popular participation. These measures provide opportunities for the creation, strengthening, and/or implementation of effective organizations, and of control and fiscal instruments, to mitigate and prevent land and water management practices that enhance soil erosion and sediment transport, degrade water quality, modify hydrological and hydraulic characteristics of the Basin, and/or adversely affect the biological integrity of the Chaco and BRBB. In addition, the SAP provides a relevant and appropriate regional planning context for site-specific interventions to be designed and catalyzed under the activities set forth in this proposal. The net result of these actions will be the initiation and development of a program for the environmentally sustainable development of the land and water resources of the BRBB, including those of the Chaco plains. The strengthening of the Binational Commission, and the inter-ministerial articulation of governmental agencies involved in water resources and environmental management within and among the various jurisdictions, are anticipated to be a specific result of these actions. Thus, the sustainability of SAP implementation after GEF intervention and the incorporation of project findings into the institutional and legal frameworks will be ensured.

**11. Complementary Interventions.** Activities proposed for implementation during the project period would be conducted in a parallel, but active relationship, with numerous ongoing and proposed planning and development activities in the Plata River Basin. Some of these activities are within the various GEF focal areas of interest. In the International Waters focal area, other ongoing GEF-financed projects are being conducted within the Plata Basin, including the Upper Paraguay River and Pantanal project in Brazil, the Maritime Front of the Plata River project in Argentina-Uruguay, and several others under consideration. Among these latter projects, a medium-sized project has been proposed to create an information system for the Upper Paraguay River Basin (SIAP), providing opportunities for regional cooperation at basin level. In addition, infrastructural investments for water supply, wastewater, storm and flood water, and water quality management are being financed or considered for financing from national and international sources within the BRBB.

**12.** These projects are being conducted, or are proposed to be conducted, with funds provided by the World Bank, the Inter-American Development Bank, FONPLATA, and CAF, and through bilateral cooperation agreements. Integration of these activities within the regional planning context created by the BRBB SAP will provide opportunities for further involvement and coordination of investments within the framework of this project. Within the Plata River Basin, all of these projects, including the proposed activities within the BRBB, will contribute to the knowledge base for the sustainable management and development of natural resources of the Plata River Basin, and provide complementary information on appropriate environmental management measures for sustainable economic development throughout the multiple ecosystems that comprise the Plata River system. In an effort to better integrate these efforts, a comprehensive framework plan for the management of the Plata River Basin is currently being prepared by the Basin countries.

## **PROJECT COMPONENTS AND EXPECTED RESULTS**

**13.** The proposed project activities are designed to catalyze the implementation of actions necessary to address the root causes of priority transboundary problems identified during SAP formulation, with a focus on soil degradation and sediment transport. These problems are shown, in summary form, in Annex E. The project activities are designed to implement an integrated program of river basin management in the BRBB, and are concentrated in four principal components as set forth below. The schedule of expenditure of GEF funds is presented in Table 1.3 of the incremental cost analysis presented in Annex A. Detailed information on each component is presented in Annex I.

### **COMPONENT I: INSTITUTIONAL DEVELOPMENT AND STRENGTHENING FOR INTEGRATED WATER RESOURCES PLANNING AND MANAGEMENT.**

**14.** Component I is designed to provide a broadly based, participatory institutional framework, likewise developing and strengthening the legal basis underlying the regulation, planning, and environmental and social evaluation, environmental zoning, and economic and financial arrangements that are indispensable for effectively implementing sustainable measures for prevention, restoration, planning, and development of the natural resources identified in the SAP. The two clusters of activities that make up this component are aimed explicitly at creating an effective and integrated organizational base that will involve both the public and private sectors in implementing a multisectoral and holistic approach to the environmental management and economic development of the basin, as proposed in Chapter 18 of Agenda 21. This framework is fundamental to support the extension and subsequent implementation of the specific strategic activities in the basin that will address the basic causes of transboundary environmental problems—namely, land degradation and sediment transport—that form the framework for the other components of the project. Activities undertaken within this component specifically address weaknesses within the current organizational base, identified during SAP formulation, that hinder the effective, holistic management of the water resources of the BRBB. This will ensure institutional capacity to implement the new laws, regulations, and procedures necessary for the longer-term success of the watershed management measures by helping to increase participation in decision-making within the Basin, and enhance and underpin the ability of the Binational Commission not only to carry out its current mandate but also to assume additional responsibilities relating to information sharing and coordination among stakeholders. The two clusters of activities to be conducted within the component will include:

- Development and strengthening of the institutional framework designed to (i) to deepen and broaden activities initiated during the SAP formulation stage with respect to implementation of the project and the coordination role of the Binational Commission, (ii) to promote regional coordination and programming, and (iii) to address weaknesses in the complex institutional framework that currently impede a comprehensive vision of the basin and the integrated and sustainable management of its resources. These activities are also intended to develop and broaden the participatory framework, including mechanisms for specific participation by provincial governments, the Prefecture and municipalities of Tarija, and to strengthen the capacities of the institutions that represent them. This will be done through the following specific activities; 1) institutional development and strengthening of the Binational Commission and regional entities within the two countries (COREBE and OTN), and 2) the

institutional strengthening and capacity building of local governmental and civil society organizations.

- Development of a holistic regional legislative, economic and environmental framework. By designing and implementing legal and financial instruments and harmonizing standards for water quality management and land use in the basin, these activities will help establish a framework in which dialogue between the public and the agencies responsible for implementing integrated management programs for the basin can be translated into a comprehensive legislative program aimed at strengthening their legal and political foundations. It includes the following specific actions: 1) Development and harmonization of regional and jurisdictional political and legal frameworks; 2) Environmental zoning for land-use regulation in selected areas; 3) Development of economic instruments for sustainable water use; and 4) Incorporation of environmental and social costs into project evaluation.

**15.** The results of this component will be a documented framework for addressing transboundary problems inherent in the management of the Bermejo River basin, including the articulation of formal and informal mechanisms for participation by government units at the provincial and prefecture level in determining and implementing an integrated water resources management program (IWRMP). This will take the form of fully operational coordination and programming mechanisms within the Binational Commission, with participation by provincial governments and the prefecture of Tarija. These mechanisms will analyze and integrate agreed strategic guidelines for a regional institutional framework into an appropriate and effective binational, inter-jurisdictional entity for the basin, under which national-, provincial/prefectural- and municipal-level institutions can be strengthened in terms of their capacities and abilities to manage natural resources on a sustainable basis. This component will also provide specific support, through the regional entities of the two countries (COREBE and OTN), to provincial entities, the prefecture and municipalities of Tarija, academic organizations, NGOs, and governmental institutions involved in implementing the SAP, in order to develop their institutional, technical, and administrative bases. In addition, it will make substantive progress in the introduction of environmental zoning and land-use planning as management and planning tools, in the form of strategic methodological guidelines validated at the regional level, and concrete environmental management actions at the local level, in particularly critical areas of the Basin. The results of this component will help to optimize policies, practices, and programs for preventing land degradation and sediment transport, and managing water resources, thereby creating the economic and legal foundations for the sustainable development of the basin.

**16.** The output of this activity will include a documented context for establishing a regional regulatory framework for the use and protection of shared water resources; the determination of water-use charges, including a restructuring of fiscal, financial and legal mechanisms for managing the quantity and quality of water within the basin; and proposed legislation to put this framework into effect. A further explicit output of this activity will be legislative proposals for implementing the IWRMP at all levels of government and civil society as well as developed institutional, technical, and administrative bases.

**17.** It is anticipated that the execution of these activities will be undertaken by the Binational Commission, relevant governmental agencies at the national and prefectural/provincial levels,

universities, and NGOs. The coordination and supervision of the activities will be ensured by the Technical Coordinators at the Binational Commission. Component I is anticipated to be initiated during the first quarter of the project period and continue throughout the project period. GEF: US\$1.89 millions; co-funding: US\$1.86 millions; total: US\$3.75 millions.

## **COMPONENT II: ENVIRONMENTAL PROTECTION AND REHABILITATION**

**18.** Component II is designed to extend the implementation of feasible measures of basin management identified during formulation of the SAP. Within the regional coordination and planning framework progressively provided by the institutional initiatives to be undertaken as part of Component I, the activities programmed for this component will deal with specific transboundary aspects identified in the TDA. In particular, planned actions focus on soil management and sediment–transport control, either by means of feasible specific prevention and control measures or by preserving the natural landscape in critical, erosion–prone areas through the consolidation of protected areas. Complementary basic natural resource studies and the maintenance of the quality of the Basin’s water resources are parts of this Component. The cluster of activities to be conducted under this component include:

- Extension and implementation of feasible measures for erosion control in the Upper Rio Basin identified and proved effective during the SAP formulation phase, to promote greater use of soil management practices that minimize degradation and the risk of destabilization
- Establishment of buffer zones and environmental corridors, and sponsorship of basic studies on natural resources, including pilot demonstration projects that promote effective ways of restoring degraded environments, preserving environments adjacent to nature conservation areas, and protecting biodiversity, while at the same time promoting the sustainable economic development of local communities
- Protection and restoration of the quality of water in those critical stretches identified during SAP formulation, including implementation of the cleanup of the Guadalquivir River, and the initiation of planning studies of watercourses in the vicinity of the city of Bermejo, another critical point of pollution of the water resources in the Upper Basin.

**19.** The results of these efforts will encourage broader application of the feasible and proven management practices and thereby contribute to sustainable land use (essentially for farming) and the conservation of areas that, although not yet significantly altered, are at risk from land degradation. A key feature of this component will include the mitigation of erosion in critical zones of the basin.

**20.** The output of this component will include the application of recommended soil conservation and erosion control measures to limit the loss of soil in the upper basin. By demonstrating the utility of a community-based approach to the management, this component will catalyze the further adoption of community-based management techniques to restore degraded environments.

**21.** It is anticipated that the execution of these activities will be undertaken by the relevant governmental agencies at the national, prefectural/provincial, and municipal levels; research institutes; universities; and NGOs in the region. The coordination and supervision will be

ensured by the Technical Coordinators at the Binational Commission. Component II is anticipated to be initiated during the second quarter of the project period. GEF: US\$2.82 million; co-funding: US\$1.43 million; total: US\$4.25 million.

22. Additional funding for the structural development aspects of this component is indicated under existing Inter-American Development Bank and World Bank programs. While these programs are independent of the GEF-financed initiatives, the Technical Coordinators at the Binational Commission will endeavor to integrate and coordinate their activities with these development activities to the fullest extent possible and in such manner as may be determined under Component I. Their actions would also involve the participation of, and coordination with, private sector stakeholders as provided under Components III and IV below.

### **COMPONENT III: SUSTAINABLE DEVELOPMENT OF NATURAL RESOURCES**

23. Component III will encourage the implementation of alternative production modes that will be environmentally friendly or will at least minimize environmental degradation, with focus on land degradation and soil erosion, while at the same time providing greater economic opportunities for the local population, in a context of integrated management of water resources and sustainable development planning for the basin as a whole. The initial action under this component will be to formulate an Integrated Management and Sustainable Development Program for the Basin, which will draw upon, and at the same time establish, a regional framework for execution of the remaining activities. The five activities to be conducted under this component are the following:

- Formulation and development of an Integrated Water Resource Management and Sustainable Development Plan (IWRMP)—comprising information gathering and dissemination, studies, analyses, sharing of experiences, demonstrations, and evaluations conducted to date or to be undertaken as part of the first stage of implementing the SAP—to guide the development and implementation of a programming framework for the integrated management of the basin's resources, to place development initiatives in the context of preventing erosion and pollution and conserving nature, and to serve as a basis for decision-making, and the establishment of a threshold of sustainability for development projects undertaken by the various jurisdictions, either alone or jointly. The design of this planning framework will include funding requirements and will also take in account financing opportunities available from local, regional, and international sources.
- Extension and transfer of feasible approaches to sustainable economic development, resulting from experience during the SAP formulation stage, to the mitigation of environmental problems arising from the degradation of forests and soils by human activities in the form of pilot projects in order to promote diffusion of sustainable resource management techniques to the private sector, at the level of the local community, in order to encourage the restoration of degraded environments in the lower basin, management of forage in humid and sub-humid areas, productive restoration of *vinalares*, sustainable management of the agro-silvo-pastoral potential of subtropical zones, sustainable soil management and conservation, and management of excessive and deficient water flows.
- Identification of current subsistence practices in these communities and the introduction of programs designed to encourage the adoption of sustainable water and soil management

practices to protect water and soil resources, including native fauna, particularly fish, in the natural ecosystems of the Bermejo river, while at the same time helping to satisfy the demand for food, fuel and shelter in rural communities.

- Optimization of soil and water use, controlling soil loss in and around areas under cultivation, and at the same time enhancing productivity through the development and implementation of technological packages for soil and water management in irrigated farming areas and the management of marginal lands particularly within the San Jacinto Project's area of influence.
- Securing of financial support for the sustainable development of the Bermejo Basin. Actions will be taken to help catalyze funding for the implementation of SAP project proposals, both those of immediate and long-term priority, as well as other complementary actions related to *inter alia* life quality improvement, poverty alleviation, health improvement, and the preservation of indigenous cultural heritage considered as important by both Governments for the sustainable development of the Binational basin. Specifically, donor roundtable meetings with representatives of local, regional, and international financing agencies will be convened to explore the possibilities of funds allocation to support development in the Bermejo basin. Both governments have initiated actions at the national level with the Inter-American Development Bank, seeking to obtain its participation as lead agency in the organization and conduct of the meetings planned to be held in the region within the first year of project activities.

**24.** The results of this activity will provide an agreed planning framework for sustainable management of water and other natural resources, within a regional regulatory context negotiated and supported through a broad process of public participation. It will serve as the basis for extending and deepening strategic efforts within both the public and private sectors at the community level, and will imply a concrete step toward the accomplishment of the objectives of the strategic program.

**25.** The output of this component will be the implementation of structural and non-structural practices of agricultural development that will also help to mitigate the impact of agriculture on more than 3000 degraded hectares within the humid and dry Chaco zones, and 77 sites where, in addition, other practices will be applied to rehabilitate degraded areas, in relation to specific public and private economic sectors. To this end, the output of the component also will include implementation of appropriate pasture and livestock management practices and the development of traditional, small-scale crops in the Yungas zones, implementing and/or improving traditional productive systems on a basis that is sustainable from an ecological, economic, and social viewpoint, and address land management in typical farm and pasture sites in the humid and sub-humid Chaco region of the lower basin, and undertake complementary actions to restore soil productivity. These outputs will include documented information on the extent of subsistence farming and fishing activities in the basin, a documented program of information dissemination for improving local understanding of sustainable farming and fishing practices, and community extension projects in selected places within the basin.

**26.** It is anticipated that the execution of these activities will be undertaken by the relevant governmental agencies at the national, prefectural/provincial, and municipal levels; research institutes; universities; NGOs; and private agricultural operations in the region. The coordination and supervision will be ensured by the Technical Coordinators at the Binational Commission. Component III is anticipated to be initiated during the first quarter of the project period. GEF:

US\$3.03 million; co-funding: US\$2.97 million; total: US\$6.00 million. Funding provided for this activity will also be used to establish the Project Coordination Unit and to support the Binational Commission for implementation of the IWRMP.

#### **COMPONENT IV: PUBLIC AWARENESS, PARTICIPATION, AND REPLICATION OF PROJECT ACTIVITIES**

27. Component IV embraces activities to identify and coordinate the interests of people and organizations with economic and/or institutional responsibilities in the basin, including the agricultural and industrial private sectors. Access to information is an essential part of the process of encouraging local stakeholders to take an interest in sound management of the basin's natural resources. To this end, a central theme of this component will be to inform the citizenry, including corporate citizens, within the basin through an integrated program of environmental education, institutional transparency, and exchange of information among communities, organizations, and government entities. Building on the achievements of the SAP formulation phase, further development of identified participatory mechanisms during the implementation phase, will set the grounds for extension of Project findings into the Plata River Basin. Actions are considered in this component to share experiences and promote international and regional cooperation seeking for mechanisms that will enhance positive synergies at the broader level within the Plata River Basin. The four clusters of activities to be conducted under this component will include.

- Implementation of environmental education programs (awareness, training, and formal and informal educational programs), including the development and distribution of curricula and materials for use in training teachers, and involving both community and private-sector initiatives in the scope of educational programming, specifically designed to improve educational opportunities in the most vulnerable communities, and promotion of awareness and understanding among the various stakeholder groups—social, political and economic—about the environmental consequences of improper use of natural resources and the impact of human activities, through workshops, seminars, meetings, bibliographies, manuals, brochures, the mass media, etc.
- Stimulation of public participation in environmental management of the BRBB by disseminating information to communities, corporations, and organizations through a variety of means—including public hearings, community-based legislative initiatives, environmental education courses, consultation and mobilization workshops, capacity strengthening programs, and use of the mass media (radio, television, Internet, newspapers) —to build a basic awareness so that individuals, organizations, and businesses will become engaged in the decision-making process.
- Acquisition and dissemination of technical information among water-resource professionals at all governmental levels involved in the use and management of waters of the Bermejo River—including data on weather and rainfall, water quality and sediments, hydrogeology, land use, environment, law, demography, economic development, specific development sites, finance, other types of information useful for professional monitoring, and information of more general interest for the public and other interested entities in the basin and beyond the basin within the broader context of the Plata River Basin. The information to be disseminated will stimulate informed participation in community decision-making, foster institutional transparency, and help standardize practices among professionals and jurisdictions. The dissemination system is also planned to provide the grounds for defining and monitoring

specific indicators related to sustainable development and the environmental status of the BRBB, including land use and natural resources degradation and restoration trends in the Basin, and to help monitor project achievements. The actual definition and adoption of indicators will be done by means of a series of technical regional workshops, and will include (1) process indicators (focusing on the processes that will lead to desirable results), (2) stress-reduction indicators (focusing on actions with defined targets that will reduce the environmental stress on the water body), and (3) environmental status indicators (focusing on the actual improvement of the ecosystem quality).

- Replication of the methodological approach, findings, and recommendations of the Bermejo project to areas with similar problems within the Plata basin, in order to contribute to the promotion of a larger-scale and basin-wide strategic framework to address main environmental degradation processes, the identification of critical transboundary issues, and the definition of priority actions at the national and multinational level. This will be done *inter alia* by means of seminars, workshops, and information dissemination through various media.

**28.** The outputs of this component will include preparation of appropriate curricula at the different educational levels, publicity materials for promoting public awareness, and materials and manuals for use in teaching and teacher training. They will also provide a documented system of public participation, supported by suitable course materials and general information brochures, that will also benefit the regional public audience beyond the Bermejo Basin boundaries and build acceptance of public participation as a working methodology and philosophy in implementing SAP; documented user groups including a catalogue of information needs and environmental monitoring sites with suitable links to the information system; a regional information system within a GIS environment; and, one or more pilot-scale satellite information systems accessible to water management professionals, industry, and the community are key elements in this component.

**29.** It is anticipated that the execution of these activities will be undertaken by the relevant governmental agencies at the national, prefectural/provincial, and municipal levels; research institutes; universities; NGOs; and corporations in the region. The coordination and supervision will be ensured by the Technical Coordinators at the Binational Commission. Component IV is anticipated to be initiated during the first quarter of the project period. GEF: US\$2.66 million; co-funding: US\$2.17 million; total: US\$4.83 million. This activity will complement and coordinate with a proposed medium-scale project to be financed by the GEF for the Upper Paraguay River Basin (SIAP, Environmental Information System for the Upper Paraguay) to be developed by Bolivia, Brazil and Paraguay, in order to create compatible and interactive information systems within and throughout the Plata River Basin.

## **RISKS AND SUSTAINABILITY**

**30.** This project is designed to address priority environmental matters concerned with sustainable development, and the protection and preservation of the various ecosystems extant within the BRBB. To effect this, it is necessary to formulate a comprehensive program of coordinated actions by the governments of Argentina and Bolivia, the riparian provinces of Argentina (Jujuy, Salta, Chaco, and Formosa), and the riparian prefecture of Bolivia (Tarija). This program is set forth in the SAP for the BRBB. The principal risk facing development in the BRBB is that environmental considerations are not properly included in projects, programs,



policies, and actions in such a way as to ensure sustainability. Serious undesirable environmental side effects, such as increased degradation of erosion-prone areas, damage to the underlying natural-resource base, flooding, and pollution of downstream ecosystems, including economic units of production, may result from this failure. Notwithstanding this, opportunities exist for the protection and rehabilitation of the BRBB by strategically introducing effective and adequate environmental management practices and procedures. These opportunities can be given effect by the adoption by the provincial and prefectural governments of complementary legislation consistent with the principles set forth in the SAP, and reinforced by the complementary program of information and education supported by schools, universities, NGOs, and private corporations. The implementation of comprehensive programs of environmental and land-use zoning at the regional and local levels is an initial step in this process. There is a risk that prefectural/provincial and local governments may fail to recognize the need for complementary legislation, and that such legislation, necessary to give effect to a comprehensive strategic action program, will not be adopted. The effect would be a failure to overcome parochialism among governmental units that would hinder the full accomplishment of the sustainable management of the system. Likewise, there is a risk that the complementary program of public participation, including participation by private corporate entities, will not fully develop due to inadequate local resources or staff. Even so, significant improvement in the maintenance of environmental quality and sustainable economic development currently is being, and can continue to be, achieved in the absence of a comprehensive management regime, which suggests that, in any event, the net outcome of conducting this project will be a positive influence on the Basin.

**31.** There is a further risk that, while the Binational Commission has adopted an active posture that will catalyze and encourage an effective cross-sectoral role for the Commission in the sustainable management of the river basin, lack of adequate levels of financial or human resources could curtail the potential for this posture to result in significant economic and environmental benefit in the Basin. Incremental GEF funding is intended to be catalytic in reversing the unsustainable development trends in this region by, *inter alia*, helping to popularize sustainable practices among the population, provide the institutional, legal and financial structures necessary for implementation of sustainable practices, and promote mechanisms for continued economic growth, with minimal negative environmental impacts, within the Basin.

**32.** Project activities (including the participation process) and their implementation are designed to achieve sustainability. Components have been proposed for the purposes of addressing the root causes and effects of degradation of water and natural resources in the Basin, and of reclaiming once-productive areas and keeping them productive. Such components relate directly to the information gathered during SAP formulation to structure appropriate and sustainable responses, both structural and non-structural within the Basin. The extension of demonstration projects, the feasibilities of which were identified as an outcome of SAP formulation, is predicated upon their sustainability, both from the ecological and economic point of view and from the point of view of further evaluating the impact of those practices. Wherever possible, the projects will develop opportunities for the establishment of financial incentives, private-sector investment, and cost recovery in environmental management (e.g., in reclamation of eroded lands, pastures and forests, rational management of natural forests, and exploitation of newly forested or newly irrigated areas), and result in actual, working examples of new or refined land-management actions necessary for the sustainable development of the watershed. Activities on this scale will highlight issues affecting the sustainable implementation of practices allowing refinements or modifications to be made prior to further large-scale use.

**33.** To minimize risk, the national and local governments have active, ongoing programs of environmental management and are seeking more effective ways to manage and conserve their natural-resource bases, including reviewing legal and administrative practices, operational procedures, and human-resource needs. Innovative approaches have been proposed by governmental agencies during the public participation process. Incremental financing provided through this GEF project is intended to allow more extensive implementation of these approaches as a means of determining their longer-term effectiveness and thereby catalyzing the more widespread adoption of innovative methods by communities and corporations throughout the Basin. Government support of these actions proposed to be implemented in part with GEF funding includes a financial commitment of almost US\$8.43 million over a period of four years, with additional funds proposed to be allocated to the implementation of specific demonstration projects under NGO-funded initiatives and international loan-financed programs, including investment programs totaling in excess of US\$530 million. These national counterpart contributions, composed of municipal, provincial and prefectural, federal, and international funds from domestic and loan sources, will help to minimize risks during project implementation, help to create support for the watershed-management process, and assist in the development of practicable approaches to environmental resource management in the Basin. In addition, other nationally and internationally funded investment projects in the areas of natural hazard management, wastewater, stormwater, and water quality management infrastructure are being considered. Resource development plans and programs being executed by various governmental units within the Basin, as of mid-1999, are tabulated in Annex H.

**34.** Furthermore, to ensure sustainability of the Project's results, both countries have taken steps to create an **Inter-ministerial Committee**, which will help mobilize support for the investments identified, and catalyze the translation of project findings and recommendations into policy, institutional, and legal reforms at the country level. The members of the Committee will be established by the respective governments and will include, among others, ministerial representatives from the areas of economy/finance, water resources, environment, health, sanitation, culture, and tourism, who will participate as observers in the meetings of the Regional Coordination Committee.

## **STAKEHOLDER PARTICIPATION AND IMPLEMENTATION ARRANGEMENTS**

**35. Participation** (Annex F). Public participation in the management of the water resources of Argentina and Bolivia is an integral feature of the project. More than 750 persons, representing in excess of 80 civil, corporate, nongovernmental, and governmental entities (having municipal, prefectural/provincial, federal, and international interests) participated in the consultation process that led to the identification and definition of some 250 detailed project documents. Consultation included, among many other activities, public and stakeholder meetings convened during the SAP formulation process within the Basin. These meetings were held in each of the major prefectural and provincial centers between December 1995 and July 1999. The full proceedings of these meetings, and the supporting documentation listed in Annex G, are available from the Binational Commission. These meetings represented the continuation of contacts with the agencies, as well as with private sector representatives, academic institutions, and NGOs, initiated during SAP formulation, and improved and clarified specific issues arising from component proposals and other observations made during the project preparation period. Additional communications, including more than 700 letters and 500 sets of workshop documents received from and distributed to some 550 individuals and institutions on the

program's mailing lists, ensured an highly transparent project preparation effort.

**36. Private sector involvement.** Community-based activities carried out during the SAP formulation phase resulted in the active participation of the private sector, in terms of participation by individuals as well as by producer and user associations. Pilot project demonstrations provided the grounds for active involvement of small- to medium-sized farmers, land owners, and specialized corporations which participated in the development and evaluation of sustainable management practices concerning forest conservation and restoration, forage management, sustainable practices for subsistence farming, and erosion and sediment transport control. Project activities will promote and enhance further participation of the private sector in replicating sustainable management practices and technologies, and provide opportunities and guidelines to offset risks associated with investments in the expansion of such practices. The project seeks to provide a planning framework to promote and catalyze the conduct of actions identified in the SAP, by articulating specific target investment areas comprised of governmental, nongovernmental, and private groups that could productively interact with regional and international banking and investment agencies.

**37.** The GEF project preparation steering committee met in Washington, D.C., during April and November 1997; in Nairobi, Kenya, during September 1998; and again in Washington, during September 1999. During these meetings, several consultations were held with representatives of the GEF Implementing Agencies, particularly The World Bank. During the SAP formulation, more than 250 individuals representing in excess of 25 institutions (both governmental and nongovernmental) were engaged as consultants in the conduct of demonstration projects, data acquisition and analysis, and needs assessments relating to the preparation of the TDA and SAP documents. Copies of all of the consultants' reports are available for consultation from UNEP and the OAS. The principle findings identified by the public, government officials, and consultants, as well as the experiences of the agencies and public in the conduct of the demonstration projects, are contained within the SAP and given effect by this proposal. This proposal has been prepared by the Binational Commission of Argentina and Bolivia with the support of UNEP and OAS specialists.

**38.** Popular participation was built into the demonstration projects and implementation project formulation. This high level of public and stakeholder participation will be continued during the development and implementation of the IWRMP for the BRBB. As noted above, overall stakeholder participation in the project, including community- and corporate-based environmental information and education campaigns, training courses and symposia, and actions, continues to be designed to increase the capacity and future participation of institutions, personnel, and individuals to undertake activities in support of the IWRMP. Further, specific actions are proposed to be conducted under the project which address issues related to public and stakeholder participation in the planning and implementation process, and/or which provide support for the further development of a sound public participation and involvement strategy as one of the strategic actions of the SAP implementation.

**39. Implementation Arrangements.** The organizational structure for the implementation of the SAP builds upon and improves that adopted during the formulation project, incorporating binational regional governmental and nongovernmental participatory bodies to provide for regional coordination and general project stewardship. Three functional levels are envisioned. At the highest level, the Binational Commission will be responsible for the execution of the project under the auspices of the Steering Committee. The **Steering Committee** will be composed of two representatives of the Binational Commission, one from Argentina and one

from Bolivia, a representative from UNEP as the GEF Implementing Agency, a representative of the OAS and of IDB as GEF co-Executing Agencies<sup>9</sup>, and the national directors of the project from Argentina and Bolivia. The other GEF Implementing Agencies will be informed of, and may participate in, meetings of the Steering Committee in an *ex officio* capacity. Also, representatives of bilateral and multilateral donors as well as regional entities such as CIC may be invited to participate to the meetings of the Steering Committee in an *ex officio* capacity. The Steering Committee will approve the work program, oversee technical and financial arrangements relating to the project, and generally manage the progress of the project at regularly scheduled meetings of the Committee.

**40.** Coordination of the project at the regional level will be provided through a **Regional Coordinating Committee** composed by representatives of the provincial administrations of Argentina, and the Prefecture and Municipality of Tarija of Bolivia. This Committee will provide coordination, program support, and general supervision of project activities within their jurisdictions, and ensure articulations between and among governmental departments assigned to the management of the BRBB at the subregional level, including encouraging public participation in project activities. In coordination and with the support of the **Inter-ministerial Committee**, the Regional Coordinating Committee will seek incorporation of project findings and recommendations into the institutional and legal frameworks of the different jurisdictions. In addition, a **Regional Advisory Committee**, composed of representatives of NGOs, academic institutions, scientific and technical organizations, the private sector, citizens, and corporations with interests in the management of the natural resources of the BRBB, will contribute to the implementation of the project activities by encouraging public participation and providing coordination between nongovernmental organizations. The Regional Advisory Committee will also provide a conduit for public input to the project management.

**41.** At the operational level, within each country, two **Project Executing Units** will conduct the day-to-day operations of the project. A National Director will be responsible for exercising administrative oversight for the day-to-day implementation of project activities in each country. A Technical Coordinator, based in each country, will have the responsibility for the coordination and execution of project tasks, administering the financial and human resources required, refining and evaluating the outputs of the component activities of the project, preparing periodic financial and technical reports on project progress for the Steering Committee, and providing information on the progress and results of the project activities to interested parties. In addition to this administrative organization, it is envisioned that project activities will be carried out by community-based entities—including governmental agencies, academic institutions, NGOs, and private enterprises (contractors and consultants)—who will execute specific portions of the activities set forth in the Work Program in accordance with their specific mandates and in cooperation with other interested parties and the general public under the guidance and direction of the National Director and Technical Coordinator. The National Director for each country will be confirmed at the first meeting of the Steering Committee. The Technical Coordinator for each country, to be contracted with GEF Funds by OAS as the Executing Agency in consultation with UNEP, will also be confirmed at this inaugural meeting of the Steering Committee.

**42.** Administrative and reporting procedures consistent with UNEP standards and OAS requirements for financial reporting will be established by the Steering Committee at its inaugural

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<sup>9</sup> IDB in its capacity of co-Executing Agency being in charge of the organization of donor roundtables (see component III) will be integral part of the Steering Committee. Nevertheless, the OAS remains the main Executing Agency and as such will be in charge of all project administrative matters.

meeting. The program of work will be elaborated jointly by the Executing Units prior to the second meeting of the Steering Committee and inauguration of project activities. Finally, the Steering Committee, at its inaugural meeting, shall conduct any other such business as maybe required to initiate project activities, and set a date for the second meeting of the Committee. Subsequent meetings of the Committee shall be scheduled by the Committee but shall be at least every six months during the project period. The activities of the Steering Committee will be supported by the Binational Commission, with funds provided by GEF through the Implementing Agency. UNEP and OAS will support Project Execution. OAS, due to its historic involvement in the Basin, traditional partnership with UNEP in similar projects within the region, and its role in implementing activities under related projects, will act as Executing Agency and manager of the funds provided to the project by UNEP on behalf of GEF, consistent with UNEP financial reporting requirements.

**43.** Activities of national personnel, with the support of the international agencies, will be based upon preparatory work and Terms of Reference prepared at the Coordinating Committee level, agreed with and approved by the Binational Commission, in consultation with UNEP and OAS. To the extent possible, all activities will be executed by national agencies of Argentina and Bolivia, and/or by consultants from Argentina and Bolivia.

**44.** The main coordination activities will be implemented from the headquarters of COREBE, in Argentina, and of the OTN, in Bolivia. All project activities will be conducted within the Basin.

## **INCREMENTAL COSTS AND PROJECT FINANCING**

**45.** Incremental Costs are presented in Tables 2 and 3, and in Annex A. Recognizing the domestic benefits that will accrue from this project (e.g., identification of techniques and strategies for the prevention and control of erosion, land degradation, sediment control, flood control, and water supply for drinking and agricultural uses), the Governments of Argentina and Bolivia, the riparian provinces, prefectures and municipal governmental units, and other parties participating in the GEF project activities defined herein have proposed both loan-funding for the major infrastructural improvements required for the implementation of mitigation measures recommended under SAP and counterpart contributions for the cost-sharing of work program activity costs under this GEF project proposal. The Governments and other participating organizations are contributing or underwriting a substantial percentage of the total funds required, thereby demonstrating their full support and interest in this program. This investment is assumed to account for the full value of national benefits gained under this project, and will be applied specifically to costs associated with issues such as waste disposal and flood management. Further, the Governments of Argentina and Bolivia are contributing additional co-funding under internationally-financed programs, including the FONPLATA-PROSOFA program, the Inter-American Development Bank-PRISE program, and The World Bank-PROSAP and -PASMA projects (see Annex H). Incremental GEF financing will be applied specifically to catalyze activities such as mitigation and prevention of land degradation, wetland protection, biodiversity preservation, and control and minimization of persistent contaminants, institutional development at basin level for enhancing regional programming and coordination, public access to information and participation.

**Table 2. Incremental Cost Analysis (US\$ millions)**

	Baseline	Alternative	Increment
<b>Global Environmental Benefits</b>			
I. Institutional Development and Strengthening for Integrated Water Resources Planning and Management	1.86	3.75	1.89
II. Environmental Protection and Rehabilitation	1.43	4.25	2.82
II. Sustainable Development of Natural Resources	2.97	6.00	3.03
IV. Awareness, Participation and Replication of Project Activities	2.17	4.83	2.66
<b>Sub-total</b>	<b>8.43</b>	<b>18.83</b>	<b>10.40</b>
Administrative Fees	0	0.64	0.64
<b>TOTAL</b>	<b>8.43</b>	<b>19.47</b>	<b>11.04</b>

**Table 3. Component Financing (US\$ millions)**

ACTIVITY	GEF	Co-financing			TOTAL
		Government	UNEP	OAS	
I. Institutional Development and Strengthening for Integrated Water Resources Planning and Management	1.89	1.86	0.15	0.15	<b>4.05</b>
II. Environmental Protection and Rehabilitation	2.82	1.43			<b>4.25</b>
III. Sustainable Development of Natural Resources	3.03	2.97			<b>6.00</b>
IV. Awareness, Participation and Replication of Project Activities	2.66	2.17			<b>4.83</b>
<b>TOTAL (Project Costs)</b>	<b>10.40</b>	<b>8.43</b>	<b>0.15</b>	<b>0.15</b>	<b>19.1319.13</b>
Administrative Fees	0.64				0.64
<b>GRAND TOTAL</b>	<b>11.04</b>	<b>8.43</b>	<b>0.15</b>	<b>0.15</b>	<b>19.77</b>

## **MONITORING, EVALUATION AND DISSEMINATION**

**46. Monitoring and Evaluation.** The administrative, technical, and financial reporting framework will be provided by the Implementing Agency through the Executing Agency and Steering Committee using standard UNEP reporting protocols. Utilizing key process and status indicators will be an intrinsic part of the project. These indicators will be implemented through the establishment and integration of monitoring tools into project components, as agreed by the Steering Committee at their second meeting, as set forth above. A monitoring and evaluation plan, based upon GEF monitoring and evaluation indicators (process, stress reduction, and environmental status), will be prepared by the Project Executing Units and Binational Commission in close consultation with UNEP and the OAS, and will be approved by the Steering Committee. The objective of this monitoring is to contribute to improving, and, if needed, adapting the management of work program activities as well as creating the basis for project evaluation. Implementing Agency supervision will be exercised through the project Executing Units and the Executing Agency and by participation in the regular meetings of the Steering Committee, especially at the first and second meetings of the Steering Committee wherein the work plan will be discussed and agreed. A project implementation review consistent with GEF procedures will be undertaken jointly by the governments and UNEP within two years after the end of the project.

**47. STAP review.** (Annex C) This project proposal was reviewed by Dr Williams, Professor Emeritus, Adelaide University, Australia, an International Waters Expert included in the STAP Roster of Experts. Comments made by Dr Williams have been addressed in Annex C but did not require any specific modification to the Brief. In general, the comments of the STAP reviewer were strongly supportive of the project approach, methodology and design.

**48. Dissemination.** Incorporated into this project are specific activities which explicitly aim to promote and disseminate the experiences obtained during the SAP implementation process to the water resources professionals and to communities within the BRBB and Plata River Basin through a program of public information and education. Further, the project is explicitly designed to encourage the integration of basin actors in various project activities, including transboundary pollutant transport and similar issue identification activities. As previously noted, all project activities will encourage and facilitate technology transfer and information dissemination through programs of public participation, stakeholder involvement, and professional and community-based education and information dissemination. Prefectural/provincial and municipal governmental, NGO, private sector, and citizen involvement in project execution will contribute to the dissemination of information on specific technologies and techniques that contribute to the sustainable environmental management and economic development of the watershed. This emphasis on public participation in the SAP implementation process for the BRBB will facilitate communication with all concerned organizations, agencies and citizens, and the adoption of a comprehensive strategic approach for the management of this critical drainage basin.

## LIST OF ANNEXES

### **Included in this Document:**

**Annex A: Incremental Costs.** This Annex presents a discussion of incremental cost determination by project component, including tables of baseline and incremental costs, component financing, indicative schedule of expenditures, and financing by expenditure category.

**Annex B: Logical Framework Matrix.** This Annex presents and summary of the project including a summary, statement of outcomes, summary of components and activities, and statement of expected results.

**Annex C: STAP Review and Response.** This Annex presents the full text of the project review conducted by an International Waters Expert, and the response of the Implementing Agency staff, as appropriate.

**Annex D: Letters of Endorsement.** This Annex presents the letters of endorsement of the project provided by the GEF focal points within the BRBB.

### **To be Provided by Implementing Agency Upon Request:**

**Annex E: Root Causes Analysis and Strategic Actions.** This Annex presents an analysis of the root causes of priority environmental problems and strategic actions within the BRBB as set forth in TDA.

**Annex F: Public Involvement Plan Summary.** This Annex summarizes the agencies involved in project preparation and likely to be involved in the execution of the project by type of agency or organization.

**Annex G: Available Reference Documents.** This Annex presents a list of those documents, consulted during the PDF-B Phase and prepared during the formulation of the TDA and SAP, that provide detailed information used to develop project components and activities, including a list of documents produced as part of the SAP process.

**Annex H: Plans and Development Programs within the Binational Basin of the Bermejo River Providing Associated Financial Support to Specific Priority Strategic Actions Identified in the SAP.** This Annex presents the pro-rated estimated investment for riparian provinces in Argentina and riparian prefecture and municipalities in Bolivia, in direct support of specific priority actions of the SAP.

**Annex I: Proposed Work Program.** This Annex presents a detailed breakdown of the project components and activities, including tables of project implementation, incremental cost by activity, and component financing by activity.

**Annex J: SAP Summary.** This Annex contains a summary of the findings and recommendations of the TDA and SAP for the BRBB. These recommendations form the basis for the implementation of the local IWRMP in the Basin.



## INCREMENTAL COSTS

**1. Broad Development Goals.** The goal of the Strategic Action Program (SAP) for the binational basin of the Bermejo River (BRBB) is to promote environmentally sustainable development within the entire Bermejo Basin, taking into consideration the programs of investments of the governments of Argentina and Bolivia, the provinces and prefectures, municipalities, and local authorities as well as NGOs and private sector corporations.

**2. Baseline Situation.** The baseline situation consists of: (1) long-term development programs for the Basin, comprising investments in sanitation, agriculture, and other infrastructure such as river regulation and power generation; (2) environmentally-related activities (e.g., those activities indicated under SAP and ongoing, government-supported investments); and (3) relatively uncoordinated activities being planned or executed by many government agencies and/or private parties in the basin.

**3.** The baseline activities in category (1) include investments contained within the proposed development programs, many of which are summarized in Annex H. These activities may also include the components of category (2) activities described below, that will be executed primarily by the public sector with the support of external development agencies and the governments of Argentina and Bolivia, as well as other, additional investments required for the general development of agriculture, industry, and urban infrastructure within the basin. The costs of these general development programs have not been considered in the calculations presented in Table A.1. However, because such investments may be subject to modification as a result of the GEF project (i.e., in order to take into consideration sustainable development techniques and technologies), a modest GEF project contribution might have a substantial leverage effect in redefining those projects that might not, otherwise, be environmentally-sustainable.

**4.** Baseline activities in category (2) include environmental monitoring and remediation works being conducted by governments within the basin. These activities are contained in the above mentioned investment programs being undertaken by the governments of Argentina and Bolivia, and the prefectures and provinces, as well as in activities being conducted by the private sector, such as nature conservation and alternative means of sustainable production initiatives being funded through NGOs. Other, additional investments of the governments in routine environmental monitoring within the basin were not estimated. Although data gathered under these programs will be available to, and used in, the implementation of the SAP for the BRBB, no additional efforts will be undertaken under this project. As a consequence, the costs of these general programs have not been considered in the calculations presented in Table A.1.

**5.** The baseline activities in category (3) include activities presently being executed by some government agencies, having an indirect relationship to specific SAP activities. Baseline costs are, in each case, the amount that those government agencies are planning to spend in the next four years, in the absence of the GEF program. As noted above, this project will have access to,

and make use of, data gathered under ongoing environmental investigations, but will not supplement current investments by the governments in this area. Notwithstanding, some proposed monitoring activities that form part of the ongoing programs, but which have not yet been initiated, will be financed in part through the GEF project (e.g., partial funding to extend preliminary analyses of environmental contamination in the basin, and to create human and institutional capacity for monitoring and information management which forms elements of Component IV). Hence, the activities proposed herein represent new activities not previously supported by governmental agencies. Investments represented by existing monitoring programs, therefore, have not been considered in the calculations presented in Table A.1.

**6.** In summary, the estimated baseline investment upon which this GEF project is being developed is limited to operational and maintenance costs associated with current operating costs of the Binational Commission and its national counterparts (COREBE and OTN) estimated at about US \$ 1,000,000 including support for ongoing consultations with local government staff; the operational and maintenance costs of existing remedial measures, and ongoing extension services provided by regional universities and governmental agencies, estimated at about US \$ 2,250,000; the operational and maintenance costs of the national park and reserve systems and related costs associated with the operations of regional universities and national NGOs, estimated at about US \$ 3,000,000; and the annual costs of supporting the existing hydrometeorological information network and public informational programming, estimated at about US \$ 2,000,000 per year. In general, the additional activities proposed under the work program for this project would not be undertaken in the absence of GEF intervention.

**7. GEF Alternative Scenario.** The alternative scenario consists of the implementation of those actions needed to both introduce sustainable development into development projects in the BRBB, and achieve the resulting global environmental benefits embodied in the mitigation of transboundary environmental problems. In the first instance, these actions will focus on the control of erosion and sediment transport, and the prevention, and rehabilitation and protection, of land degradation. The costs of these actions are the costs necessary to include sustainable development considerations in the development projects within the basin, over and above the requirements of the regular environmental impact assessments and mitigation measures required to be completed under existing Argentina and Bolivian national and provincial/ prefectural environmental laws and regulations.

**8.** Water resources in the BRBB are currently managed by a variety of local, provincial/prefectural, and national government agencies, with a degree of integration provided by the Binational Commission and its corresponding regional counterpart agencies. Strengthening of the Binational Commission is a means of bringing additional coordination to the local execution of governmental and community-level responsibilities within the basin. Support for the evolution of a basin organization within the BRBB is to be provided through GEF support. The incremental cost of this activity is estimated to be about US \$ 2,000,000.

**9.** Several global and domestic benefits have been identified as being promoted by the GEF intervention; namely, decreased transboundary transport of contaminants, increased riverine biodiversity, decreased degradation of soils, increased knowledge of river behavior, improved coordination of actions for river basin management and planning, and dissemination of knowledge. The incremental costs of these activities are estimated to be about US \$ 8,000,000.

The benefits arising from these activities are reflected in the project activities presented in Table A.2. These benefits are:

Component I (Activities 1.1 and 1.2 in Annex I). The baseline cost of this component is about US \$ 1.86 millions, and is comprised of the current operational costs incurred by the Binational Commission and its partner agencies, COREBE and OTN. Improvement of knowledge about natural and anthropogenic influences on water flow and quality is expected to result in better use of water and natural resources in the basin, thus generating additional global and domestic benefits. In addition, benefits arising from the development of an effective basin organization within the BRBB, working in partnership with relevant provincial/ prefectural authorities, would significantly improve the ability of communities to develop socially and economically in a sustainable manner. The alternative cost is about US \$ 3.75 millions: GEF funding in the amount of about US \$ 1.89 millions is requested to conduct various activities designed to promote or facilitate the formulation and implementation of an effective environmental and water resources management framework within the basin. The governments of Argentina and Bolivia and local governmental and non-governmental organizations will contribute the sum of US \$ 1.86 to cover reinforcement of institutions working in the basin, and additional operational costs.

**Table 3. Component Financing (Million US \$).**

ACTIVITY	GEF	Co-financing			TOTAL
		Government	UNEP	OAS	
I. Institutional Development and Strengthening for Integrated Water Resources Planning and Management	1.89	1.86	0.15	0.15	<b>4.05</b>
II. Environmental Protection and Rehabilitation	2.82	1.43			<b>4.25</b>
III. Sustainable Development of Natural Resources	3.03	2.97			<b>6.00</b>
IV. Awareness, Participation and Replication of Project Activities	2.66	2.17			<b>4.83</b>
<b>TOTAL (Project Costs)</b>	<b>10.40</b>	<b>8.43</b>	<b>0.15</b>	<b>0.15</b>	!Syntax Error, (!Syntax Error, (
Administrative Fees	0.64				0.64
<b>GRAND TOTAL</b>	<b>11.04</b>	<b>8.43</b>	<b>0.15</b>	<b>0.15</b>	<b>19.77</b>

Component II (Activities 2.1 to 2.3 in Annex I). The baseline cost of this component is about US \$ 1.43 millions, and is comprised of the cost associated with existing university- and government-based extension services, local NGOs in establishing buffer strips around nature reserves and

preparing ecoregional plans for the basin. The global benefit to be obtained through the implementation of selected activities effecting the rehabilitation of natural vegetative cover, use of appropriate agricultural practices and land use regulations, erosion control, water quality enhancement and the mitigation of degraded lands may also result in domestic benefits arising from increased agricultural productivity and health improvements. The alternative project cost is about US \$ 4.25 millions: GEF funding in the amount of about US \$ 2.82 millions is requested for extension of feasible demonstration projects and other activities. The governments of Argentina and Bolivia and local governmental and non-governmental organizations will contribute about US \$ 1.43 millions to cover the strengthening of human resources capacity, and additional operation costs.

Component III (Activities 3.1 and 3.4 in Annex I). The baseline cost of this component is about US \$ 2.97 millions, and is comprised of the cost associated with water resources planning, and allocation, technology development and extension activities carried out by governmental agencies, user organizations, and local NGOs, operating in certain communities. The global benefits of improving water availability and expanding efficient and sustainable water and land utilization practices, based on comprehensive water and natural resource management programs at basin level, and on land use zoning will derive from increased income at community level and enhanced health and living standards, particularly in most vulnerable communities, including indigenous people. The alternative project cost is about US \$ 6.0 millions. GEF funding in the amount of about US \$ 3.03 millions is requested to conduct various activities designed to promote or facilitate the introduction of planning and sustainable development techniques within the basin. The governments of Argentina and Bolivia and local governmental and nongovernmental organizations will contribute a sum of about US \$ 2.97 millions to implement demonstration projects and to cover the strengthening of human resources capacity, reinforcement of institutions working in the basin, and additional operation costs.

Component IV (Activities 4.1 through 4.3 in Annex I). The baseline cost of this component is US \$ 2.17 millions, and is comprised of the current operational costs associated with the operation of the hydrometeorological network, processing and dissemination of the information and environmental education activities carried out by government based organization, universities, and regional and national NGOs. Improvement of knowledge about natural and anthropogenic influences on water flow and quality is expected to result in more effective participation in the decision-making process affecting resource management in the basin, at both the professional and community levels, thus generating additional global and domestic benefits. The alternative cost is about US \$ 4.83 millions: GEF funding in the amount of about US \$ 2.66 millions is requested to conduct various activities designed to promote or facilitate environmental education and water resources training, information acquisition and dissemination, and development of an environmental information system in the basin. The governments of Argentina and Bolivia and local governmental and nongovernmental organizations will contribute a sum of about US \$ 2.17 millions in support of training and environmental education programs at all levels within in critical communities and agencies throughout the basin; and, the costs of implementation of information acquisition and dissemination projects at both the professional and community levels throughout the BRBB.

**10. Additional Domestic Benefits and Costs.** Reduced soil loss, improved flood forecasting, improved water quality, retained biodiversity and biological structure and functioning, and more effective and sustainable use of available water resources are local benefits to be expected as a result of the activities of the Project. Additional local costs are unknown at this stage. Hence, any additional benefits to be derived from these environmental improvements cannot be estimated. Nevertheless, it is assumed that the domestic funding provided will compensate for the domestic benefits achieved.

**11.** Table A.3 presents an indicative financial plan under which this 4.5 year project will be implemented. It should be noted that specific expenditures for Components may be initiated at any time during the six-month period preceding the indicated date, as human and financial resources, and prerequisite information availability, warrant. Further, it is anticipated that each component within the four principal Components is likely to be executed over the period of at least one year. Project expenditures are summarized by budget category in Table A.4.

**Table A.1. Incremental Cost Analysis (Million US \$)**

	<b>Baseline</b>	<b>Alternative</b>	<b>Increment</b>
<b>Global Environmental Benefits</b>			
I. Institutional Development and Strengthening for Integrated Water Resources Planning and Management	1.86	3.75	1.89
II. Environmental Protection and Rehabilitation	1.43	4.25	2.82
II. Sustainable Development of Natural Resources	2.97	6.00	3.03
IV. Awareness, Participation and Replication of Project Activities	2.17	4.83	2.66
<b>Sub-total</b>	<b>8.43</b>	<b>18.83</b>	<b>10.40</b>
Administrative Fees	0	0.64	0.64
<b>TOTAL</b>	<b>8.43</b>	<b>19.47</b>	<b>11.04</b>

**Table A.2. Component Financing (Million US \$).**

<b>ACTIVITY</b>	<b>GEF</b>	<b>Co-financing</b>			<b>TOTAL</b>
		<b>Government</b>	<b>UNEP</b>	<b>OAS</b>	
I. Institutional Development and Strengthening for Integrated Water Resources Planning and Management	1.89	1.86	0.15	0.15	<b>4.05</b>
II. Environmental Protection and Rehabilitation	2.82	1.43			<b>4.25</b>
III. Sustainable Development of Natural Resources	3.03	2.97			<b>6.00</b>
IV. Awareness, Participation and Replication of Project Activities	2.66	2.17			<b>4.83</b>
<b>TOTAL (Project Costs)</b>	<b>10.40</b>	<b>8.43</b>	<b>0.15</b>	<b>0.15</b>	!Syntax Error, (!Syntax Error, (
Administrative Fees	0.64				0.64
<b>GRAND TOTAL</b>	<b>11.04</b>	<b>8.43</b>	<b>0.15</b>	<b>0.15</b>	<b>19.77</b>

**Table A. 3. Indicative Schedule of Expenditures (Million US \$).**

<b>Component</b>	<b>March 2001</b>	<b>March 2002</b>	<b>March 2003</b>	<b>March 2004</b>	<b>March 2005</b>	<b>Total</b>
Steering Committee	UNEP: 0.03	UNEP: 0.03	UNEP: 0.03	UNEP: 0.03	UNEP: 0.03	UNEP: 0.15
	OAS: 0.04	OAS: 0.03	OAS: 0.02	OAS: 0.03	OAS: 0.03	OAS: 0.15
GEF	1.45	3.15	2.65	2.15	1.0	10.40
Non-GEF	0.88	1.60	2.60	2.50	0.85	8.43
Administrative Fees	0.04	0.15	0.15	0.15	0.15	0.64
<b>Total</b>	2.44	4.96	5.45	4.86	2.06	19.77

**Table A.4. Project Financing per Expenditure Category (Million US \$).**

<b>DESCRIPTION</b>	<b>GEF</b>	<b>NON-GEF</b>	<b>TOTAL</b>
Personnel	0.30	4.69	4.99
Consultants	3.43	0.06	3.49
Administrative Support Staff	0.10		0.10
<b>Sub-total Personnel</b>	<b>3.83</b>	<b>4.75</b>	<b>8.58</b>
Support Activities	3.08	1.65	4.73
Workshops and Training	1.36	0.53	1.89
Travel	0.99	0.38	1.37
Expendable Equipment	0.59	0.39	0.98
Non-Expendable Equipment	0.85	0.73	1.58
Administrative Fees	0.64		0.64
<b>Total (Project Cost)</b>	<b>11.34</b>	<b>8.43</b>	<b>19.77</b>

## MATRIX OF THE LOGICAL FRAMEWORK

OBJECTIVES	OBJECTIVELY VERIFIABLE INDICATORS	VERIFICATION METHODS	CRITICAL POINTS AND RISKS
<p><b>GOAL</b></p> <p>To promote the sustainable development of the Río Bermejo Basin by implementing the Strategic Action Program for the Binational Río Bermejo Basin (SAP)</p>	<p>Strategic Action Program for the Binational Río Bermejo Basin (SAP) is being implemented in full, with verifiable progress made in the following areas:</p> <ul style="list-style-type: none"> <li>- Inclusion of environmental concerns into the region's policies, plans, and programs.</li> <li>- Establishment of mechanisms for regional coordination and interconnection and public participation.</li> <li>- Implementation of the corrective and preventive environmental programs, projects, and actions, and those for the sustainable development of natural resources, that were given priority in the SAP.</li> </ul>	<ul style="list-style-type: none"> <li>- Reports from the Regional Coordinating Commission that is to be set up under the SAP.</li> <li>- Final reports, progress reports, and assessments of completed and ongoing projects.</li> </ul>	<ul style="list-style-type: none"> <li>- The governments provide the Regional Coordinating Commission with effective support, and the Commission actively interconnects all the social stakeholders in the basin.</li> <li>- The financial commitments of the agencies in charge of executing the SAP's different projects are maintained.</li> <li>- External funding is channeled into the implementation of the SAP's projects</li> </ul>
<p><b>PURPOSE:</b></p>			
<p>To promote and reestablish the correct environmental functioning of the system, by executing selected strategic actions that complement and facilitate the efforts of the Argentine and Bolivian governments and institutions in implementing the SAP.</p>	<p>Institutional, financial, organizational, and legal mechanisms in operation in the basin; pilot demonstration studies and actions have been carried out; SAP implementation process is underway.</p>	<ul style="list-style-type: none"> <li>- Final assessment report on the project.</li> <li>- Report of the Steering Committee.</li> </ul>	<p>The participating agencies coordinate actions and maintain the priority of the projects within the institutional structure of the SAP.</p>
<p><b>RESULTS:</b></p>			
<p>I) INSTITUTIONAL DEVELOPMENT AND STRENGTHENING: Establishing a participatory institutional and legal framework, including both the public and private sectors, and providing a multisectoral and integral approach to environmental management and economic development in the basin.</p> <p>II) ENVIRONMENTAL PREVENTION, PROTECTION, AND REHABILITATION: Implementation of basin management measures aimed at priority transboundary issues related to the prevention and control of sediment production and transport, water quality pollution and degradation, nature conservation, and protection of biodiversity.</p> <p>III) SUSTAINABLE DEVELOPMENT OF NATURAL RESOURCES: Promoting the use of alternative sustainable methods of production that are environmentally friendly, minimize environmental degradation, and provide the population with better economic opportunities.</p> <p>IV) PUBLIC PARTICIPATION AND AWARENESS: Coordinating and supporting the interests of the basin's different stakeholders, through environmental education, institutional transparency, social participation, and the generation and exchanging of information.</p>	<p>The working program has been implemented and significant goals have been achieved, over a period of four years, through 31 projects and four components. Achievements:</p> <p>I) Institutional and legal framework for integrated basin management is being consolidated and is functioning efficiently.</p> <p>II) Actions, pilot demonstrations, and complementary basic studies have been carried out, setting the technical grounds for prevention and the environmental rehabilitation of ecosystems.</p> <p>III) (a) Integrated basin planning system, procedures, or actions have been agreed upon, consolidated, and operating, (b) Sustainable natural resource usage practices have been developed and disseminated.</p> <p>IV) Representative sectors of the population that are sufficiently informed, aware, and actively participating in the basin's natural resource management programs, projects, and actions.</p>	<ul style="list-style-type: none"> <li>- Final assessment report on the project.</li> <li>- Reports from the Regional Coordinating Commission that is to be set up under the SAP.</li> </ul>	<ul style="list-style-type: none"> <li>- Environmental considerations are duly incorporated into the projects, programs, policies, and actions of the agencies involved in managing the basin's natural resources, thus ensuring their sustainability.</li> </ul>



## ACTIVITIES UNDER COMPONENT I: INSTITUTIONAL DEVELOPMENT AND STRENGTHENING

OBJECTIVES	OBJECTIVELY VERIFIABLE INDICATORS	START & END DATES	VERIFICATION METHODS	CRITICAL POINTS AND RISKS
<p>1.1 DEVELOPMENT OF AN INSTITUTIONAL FRAMEWORK: Consolidated institutional framework for integrated basin management, through the Binational Commission, with participation by the institutions and political districts of both countries, through the implementation of the following actions:</p> <p><b>P.1.</b> Institutional development and strengthening of the Binational Commission. <b>P.2.</b> Basin-wide institutional development in Argentina. <b>P.8.</b> Strengthening of institutions and of the capabilities of governmental and civil society organizations.</p>	<p><b>P.1.</b> (a) Interjurisdictional mechanism for coordination, programming, and control, with authority throughout the entire basin, has been designed, agreed upon, implemented, and operating. (b) Strategies for the institutionalization of the functions of basin agency at the binational level have been designed and agreed upon. (c) Binational Commission and regional and jurisdictional institutions, private institutions, and NGOs have been strengthened and trained to actively participate in this organizational structure and in the implementation of programs and projects.</p> <p><b>P.2.</b> Interjurisdictional basin agency in Argentina has been designed, agreed upon, consolidated, and is operating. Regional Commission of the Río Bermejo (COREBE) and the jurisdictional representatives have been strengthened.</p> <p><b>P.8.</b> The technical capacities and equipment resources of governmental and civil society organizations responsible for or participating in the management of the basin's natural resources have been strengthened.</p>	<p>Start: 07/year1 End: 06/year4</p> <p>Start: 07/year1 End: 06/year3</p> <p>Start: 07/year 1 End: 06/year4</p>	<ul style="list-style-type: none"> <li>- Interjurisdictional Binational Agreement formalizing the implementation of the coordination, programming, and control mechanism.</li> <li>- Final reports on work element.</li> <li>- Final reports on the project.</li> <li>- Statutes of the COREBE functioning as the basin agency.</li> <li>- Inventory of supplied equipment.</li> <li>- Assessment reports on courses taught.</li> </ul>	<ul style="list-style-type: none"> <li>- The governments of the two countries, the provincial governments, the prefecture, and the municipalities agree to adopt the institutional and legal recommendations developed in the project.</li> <li>- Political acceptance in the COREBE area.</li> <li>- Governments and organizations facilitate the right personnel for training.</li> </ul>
<p>1.2 DEVELOPMENT OF A LEGISLATIVE FRAMEWORK: Strengthened regulatory framework for the use and preservation of the basin's natural resources, through the following actions:</p> <p><b>P.3</b> Development and harmonization of regional legal framework. <b>P.7</b> Environmental and territorial zoning. <b>P.9</b> Strengthening and development of economic instruments. <b>P.10</b> Inclusion of environmental and social costs in development projects.</p>	<p><b>P.3.</b> Actions to promote and implement regional and district legal frameworks have been developed and harmonized, particularly as regards environmental laws, water codes, environmental impact assessments, public participation, and access to information.</p> <p><b>P.7.</b> Territorial zoning has been applied and promoted as a basic planning instrument. In Argentina, application to pilot demonstration cases to provide common technical and methodological guidelines; in Bolivia, preparation of a territorial zoning plan for the entire basin.</p> <p><b>P.9.</b> Economic instruments have been designed, agreed on by consensus, and included as mechanisms for assessing economic value of water, and the generation of funds for managing water resources.</p> <p><b>P.10.</b> Methodological guidelines and implementation strategies have been designed and agreed on for the inclusion of environmental and social costs in the assessment of development projects, using methods that place value on the resources and services of nature. Methodology applied to pilot case studies and result assessments.</p>	<p>Start: 01/year2 End: 12/year3</p> <p>Start: 01/year2 End: 12/year3</p> <p>Start: 01/year2 End: 06/year3</p> <p>Start: 06/year2 End: 12/year3</p>	<ul style="list-style-type: none"> <li>- Final reports on work elements.</li> <li>- Regulations, guides, and manuals drawn up.</li> <li>- Rules for implementing management instruments.</li> <li>- Territorial zoning plan for the Upper Basin in Bolivia.</li> <li>- Final report on the work element.</li> <li>- Final report on the work element.</li> </ul>	<ul style="list-style-type: none"> <li>- National, provincial, and prefectural authorities recognize the need for and promote the furtherance of environmental legislation.</li> <li>- The proposed rules are duly approved on time.</li> <li>- The participating institutions and communities coordinate actions and maintain the priorities of the projects within their institutional structures.</li> </ul>

<sup>1</sup>Numbers refer to project identification in SAP

## ACTIVITIES UNDER COMPONENT II: ENVIRONMENTAL PREVENTION, PROTECTION, AND REHABILITATION

OBJECTIVES	OBJECTIVELY VERIFIABLE INDICATORS	START & END DATES	VERIFICATION METHODS	CRITICAL POINTS AND RISKS
<p><b>2.1 SOIL MANAGEMENT AND EROSION CONTROL:</b> Application of appropriate structural and nonstructural measures for soil conservation and erosion control, through a basin management approach, in selected critical areas of the basin. The following actions will be carried out:</p> <p><b>P.51.</b> Sediment control in the Río Tolomosa Basin. <b>P.55.</b> Integral management of the natural resources of the Río Santa Ana Basin. <b>P.58.</b> Integrated management of the Río Iruya Basin. <b>P.59.</b> Management of the Río Grande Basin. Systematization of the Río Huasamayo Subbasin.</p>	<p><b>P.51.</b> Sediment in transit and soil erosion has been controlled, with a 25% fall in silting at the San Jacinto dam and losses of agricultural soils. Practices applied in the Río Mena subbasin: construction of 5 soil dikes and 10 gabion dikes; 160 ha closed off for natural regeneration; reforestation of 80 ha; soil management on 600 ha; technical assistance and training.</p>	<p>Start: 04/year1 End: 09/year2</p>	<ul style="list-style-type: none"> <li>- Final report on the work element.</li> <li>- On-site inspection.</li> </ul>	<p>Local people accept and participate in the planned actions.</p>
	<p><b>P.55.</b> Integrated natural resource management plan in the Río Gamoneda subbasin has been implemented, through irrigation stream regulation work, agricultural soil conservation, and reducing erosion. Involving the sustainable management of 200 ha of land used for dry farming, 50 ha of irrigated land, and 500 ha of sylvo-pastoral land.</p>	<p>Start: 01/year2 End: 06/year3</p>	<ul style="list-style-type: none"> <li>- Final report on the work element.</li> <li>- On-site inspection.</li> </ul>	<p>Local people accept and participate in the planned actions.</p>
	<p><b>P.58.</b> Management plan or practices for soil conservation and the prevention and control of sediment production and transportation in the Río Iruya Basin have been designed, applied, and assessed. Pilot demonstration project to reduce erosion on farm terrace rills has been carried out. Structural actions implemented in the Colanzulí pilot project. Results transferred to the community. Land use regulation plan designed and adopted. Participatory follow-up actions designed and implemented.</p>	<p>Start: 07/year1 End: 06/year4</p>	<ul style="list-style-type: none"> <li>- Progress reports and final report on the work element.</li> <li>- Works inspection reports.</li> <li>- Reports from meetings and workshops involving the community.</li> </ul>	<p>Municipalities and local communities participate actively in the planned actions. No exceptional meteorological events will take place.</p>
	<p><b>P.59</b> Structural actions and management measures have been designed, agreed on by consensus, and carried out, in order to: (a) reduce torrential erosion in the Río Huasamayo Subbasin; (b) practices to be implemented throughout the Río Grande Basin assessed and selected.</p>	<p>Start: 01/year2 End: 06/year4</p>	<ul style="list-style-type: none"> <li>- Final report on the work element.</li> <li>- Works inspection reports.</li> <li>- Reports from community workshops and meetings.</li> </ul>	<p>Municipalities and local communities participate actively. No exceptional meteorological events will take place.</p>
<p><b>2.2 CONSOLIDATION OF PROTECTED AREAS AND PROTECTION OF BIODIVERSITY:</b> Protection of biodiversity and promotion of the sustainable development of local communities through the consolidation and development of protected areas, the creation of buffer zones, the execution of basic studies into natural resources, and the execution of pilot carbon fixation actions. The following activities are involved:</p> <p><b>P.14</b> Implementation of ecotourism alternatives in El Rey and Calilegua National Parks. <b>P.16</b> Carbon fixation in the sub-Andean region. <b>P.17</b> Study of biodiversity. <b>P.20</b> Creation of the Baritú–Tariquía Biological</p>	<p><b>P.14.</b> Ecotourism activities have been introduced in the mountain forests, including the monitoring and assessment of ecotourism alternatives in El Rey National Park, and the identification, design, and implementation of ecotourism alternatives in the buffer zone of the Calilegua National Park.</p>	<p>Start: 07/year1 End: 06/year4</p>	<ul style="list-style-type: none"> <li>- Final report on the work element.</li> <li>- Agreements with owners in the buffer zones.</li> <li>- Reports on improvements and investments made.</li> </ul>	<p>The national and provincial tourism authorities encourage and adopt the initiatives. Tourism providers incorporate ecotourism activities into their tours.</p>
	<p><b>P.16</b> (a) Studies into the current status of natural resources in the sub-Andean region have been carried out. (b) A pilot plan for the management and conservation of natural resources has been designed and executed, focusing on increased fixation of carbon through sustainable productive practices, the ordered use of natural resources, and the application of techniques to protect, conserve, manage, and rehabilitate habitats that have deteriorated.</p>	<p>Start: 07/year2 End: 06/year4</p>	<ul style="list-style-type: none"> <li>- Final report on the work element.</li> <li>- On-site inspection.</li> </ul>	<p>Owners actively participate in and promote the initiatives</p>
	<p><b>P.17.</b> Studies have been conducted into the current status of</p>	<p>Start: 01/year2</p>	<ul style="list-style-type: none"> <li>- Final report on the work</li> </ul>	

OBJECTIVES	OBJECTIVELY VERIFIABLE INDICATORS	START & END DATES	VERIFICATION METHODS	CRITICAL POINTS AND RISKS
<p>Corridor.</p> <p><b>P.19</b> Zoning and management plan for the Sama and Tariquía reserves.</p> <p><b>P.18</b> Evaluation of pastureland in the sub-Andean region.</p> <p><b>P.22</b> Zoning for the planned Teuco National Park.</p>	<p>biodiversity in the Upper Bermejo Basin and the levels of ecosystem conservation, and action lines for conserving and managing them have been proposed.</p> <p><b>P.20.</b> The interconnection of the Baritú Park (Argentina) and Tariquía Reserve (Bolivia) protected areas has been assured through the legal and administrative consolidation of the corridor and the adoption of an integral management plan for natural resources and for administrating these areas.</p> <p><b>P.19.</b> (a) Proposal for the redefining, recategorization, and zoning of the Sama and Tariquía biological reserves has been drawn up. (b) Management plan for the two reserves has been designed.</p> <p><b>P.18.</b> Zoning study and description of natural pastureland in the sub-Andean ecoregion has been drawn up, its management status has been surveyed, and a sustainable management plan for these natural pasturelands has been prepared.</p> <p><b>P.22</b> The sector's real potential as a protected area has been defined, with the establishment of conservation goals, the zoning of the area (250,000 ha), and recommendations for its management and the creation of a protected area.</p>	<p>End: 12/year2</p> <p>Start: 10/year1 End: 06/year4</p> <p>Start: 07/year1 End: 06/year2</p> <p>Start: 01/year3 End: 10/year3</p> <p>Start: 10/year1 End: 09/year2</p>	<p>element.</p> <p>Report from executing agencies</p> <p>Reports from meetings and workshops with the community.</p> <p>Final report on the work element.</p> <p>Report from PROMETA.</p> <p>Final report on the work element.</p> <p>Final report on the work element.</p>	<p>Local people accept and participate in the planned actions.</p> <p>The agencies responsible for managing protected areas respond appropriately to the programmed actions.</p> <p>Local people accept and participate in the planned actions.</p> <p>The responsible agencies and owners actively participate in and promote the initiatives.</p> <p>The responsible agencies and owners actively participate in and promote the initiatives.</p>
<p>2.3 PROTECTION AND RESTORATION OF WATER QUALITY:</p> <p>Restoration of water quality in water courses along preestablished critical stretches, by implementing the following actions:</p> <p><b>P.43</b> Environmental cleanup of the Río Guadalquivir.</p> <p><b>P.44</b> Study for the environmental cleanup of water courses in the Bermejo Triangle.</p>	<p><b>P.43</b> Two waste water treatment systems (pilot plants) built in small rural towns; underground aquifer pollution control system created; and waste water monitoring plan drawn up.</p> <p><b>P.44</b> A study to assess pollution levels, their main causes, and proposed solutions for the environmental cleanup and sustainability of the waters of El Nueve and El Cinco gorges, the Río Grande de Tarija, and the Río Bermejo has been completed. The results to be attained are final versions of the analysis of the situation and the environmental cleanup plan.</p>	<p>Start: 10/year1 End: 12/year2</p> <p>Start: 01/year3 End: 09/year3</p>	<p>Final report on the work element.</p> <p>On-site inspection.</p> <p>Measurements of the quality of surface and ground water.</p> <p>Final report on the work element.</p>	<p>Tarija prefecture and the municipalities prioritize and implement the Río Guadalquivir cleanup project.</p>

### ACTIVITIES UNDER COMPONENT III: SUSTAINABLE DEVELOPMENT OF NATURAL RESOURCES

OBJECTIVES	OBJECTIVELY VERIFIABLE INDICATORS	START & END DATES	VERIFICATION METHODS	CRITICAL POINTS AND RISKS
<p>3.1 PROGRAMMING AND PLANNING:</p> <p>Regional policies, procedures, and capabilities for programming and planning to be developed and strengthened, by means of:</p> <p><b>P.53</b> Program for the integrated management of water resources in the Río Bermejo Basin.</p>	<p><b>P.53.</b> (a) Program for the integrated management of water resources has been drawn up, integrating development initiatives in the context of preventing erosion and sediment transport, water quality degradation and conserving nature. (b) Activities vis-à-vis the coordination and administration of the project, follow-up and oversight of contracts have been carried out, including the creation of a basic technical team.</p>	<p>Start: 01/year1 End: 12/year4</p>	<p>Final report on the work element.</p> <p>Minutes of the meetings of the Regional Coordinating Commission.</p> <p>Reports from meetings and workshops with stakeholders and the community.</p>	<p>The individuals and agencies involved fully participate in the planning processes and accept them.</p>

OBJECTIVES	OBJECTIVELY VERIFIABLE INDICATORS	START & END DATES	VERIFICATION METHODS	CRITICAL POINTS AND RISKS
<p>3.2 SUSTAINABLE MANAGEMENT PRACTICES FOR THE REHABILITATION OF DEGRADED AREAS: Sustainable practices for productive development to be implemented and disseminated, thus helping mitigate the environmental problems that arise from the degradation of forests and soils as a result of human activity. The following actions are to be carried out: <b>P.62</b> Alternatives for the sustainable management of natural resources in the Humid and Semihumid Chaco.  <b>P.70</b> Diversification of sustainable production practices in the Yungas.</p>	<p><b>P.62.</b> Sustainable resource management practices disseminated among and adopted by producers, covering: the recovery of degraded environments in the lower basin; the handling of forage in humid and semihumid areas; the productive recovery of <i>vinalares</i>; the management of agricultural, sylvicultural, and pastureland potential in subtropical areas; the management and conservation of soils; and the agronomic management of water shortages and surpluses.  <b>P.70.</b> (a) Productive systems based on the sustainable use of natural resources have been implemented in the communities of Victoria and Orán, including the development and diversification of small-scale cash crops, forestry usage, management of woods and pastureland, and the development of small-scale industries and artisanship. (b) The quality of life among local populations has improved, and environmental degradation has been reduced.</p>	<p>Start: 07/year1 End: 06/year4  Start: 07/year1 End: 06/year4</p>	<ul style="list-style-type: none"> <li>- Progress reports and final report on the work element.</li> <li>- Systematic measurements of biogeophysical indicators and economic and financial indicators.</li> <li>- Reports from meetings and workshops with producers and the community.</li> <li>- Progress reports and final report on the work element.</li> <li>- On-site inspection</li> <li>- Survey of participating families.</li> <li>- Assessment of improvements in the communities' living standards and income levels.</li> </ul>	<ul style="list-style-type: none"> <li>- Local owners and communities participate in and adopt the programmed actions.</li> <li>- No exceptional meteorological events take place.</li> <li>- Local owners and communities participate in and adopt the programmed actions.</li> </ul>
<p>3.3 TRADITIONAL COMMUNITY SUBSISTENCE PRACTICES BASED ON FARMING AND FISHING: Traditional water and natural resource management practices to be validated and extended into communities with subsistence economies. The actions comprising this activity are the following: <b>P.72</b> Traditional management practices for water and natural resources. <b>P.133</b> Sustainable rural development for indigenous and native communities.</p>	<p><b>P.72.</b> (a) Traditional culture has been surveyed and assessed vis-à-vis the management of water and other natural resources in subsistence communities. (b) Application in pilot demonstrations has been assessed. (c) A program of actions for promoting and applying the most appropriate traditional practices has been designed.  <b>P.133.</b> (a) Agricultural, sylvicultural, and pastureland systems are being managed sustainably by Wichi and native communities. (b) Standards of living in these subsistence communities have improved.</p>	<p>Start: 01/year2 End: 12/year3  Start: 01/year2 End: 06/year3</p>	<ul style="list-style-type: none"> <li>- Progress reports and final report on the work element.</li> <li>- Reports from meetings and workshops with the community.</li> <li>- Final report on the work element.</li> <li>- Survey of participating communities.</li> </ul>	<ul style="list-style-type: none"> <li>- Local communities participate in and accept the programmed actions.</li> <li>- Local communities participate in and accept the programmed actions.</li> </ul>
<p>3.4 SUSTAINABLE DEVELOPMENT OF NATURAL RESOURCES: Sustainable use to be made of natural resources by means of the following action: <b>P.115</b> Systematization of land – areas under irrigation of the San Jacinto Project.</p>	<p><b>P.115.</b> (a) Technological packages for soil and water management have been designed and implemented in the irrigated areas and marginal zones of the San Jacinto Project. (b) Soil and water use has been optimized. (c) Crop productivity has increased. (d) Erosion of farmland has been brought under control.</p>	<p>Start: 01/year2 End: 12/year3</p>	<ul style="list-style-type: none"> <li>- Final report on the work element.</li> <li>- Report from the San Jacinto Association.</li> <li>- On-site inspection.</li> </ul>	<ul style="list-style-type: none"> <li>- Local people participate in the project..</li> <li>- The San Jacinto Association is involved in project execution.</li> </ul>

#### ACTIVITIES UNDER COMPONENT IV: PUBLIC PARTICIPATION AND AWARENESS

OBJECTIVES	OBJECTIVELY VERIFIABLE INDICATORS	START & END DATES	VERIFICATION METHODS	CRITICAL POINTS AND RISKS
<p>4.1 IMPLEMENTATION OF ENVIRONMENTAL EDUCATION PROGRAMS: Environmental education and awareness programs to be implemented as a key element in sustainable development, through the following strategic</p>	<p><b>P.129.</b> (a) Teachers, pupils, parents, and the community in general and pilot cases in particular have been trained in and made aware of the need for conservation and sustainable management of natural resources in general and water resources in particular (b) Progress has been made in making native communities aware of sustainable forest management.</p>	<p>Start: 07/year1 End: 06/year4</p>	<ul style="list-style-type: none"> <li>- Progress reports and final report on the work element.</li> <li>- Surveys and assessments of teachers, pupils, and the community.</li> <li>- Reports from workshops,</li> </ul>	<p>The educational institutions, civil society organizations, and the community understand and actively participate in the project.</p>

OBJECTIVES	OBJECTIVELY VERIFIABLE INDICATORS	START & END DATES	VERIFICATION METHODS	CRITICAL POINTS AND RISKS
<p>action:  <b>P.129</b> Promotion of environmental education activities in the basin.</p>			meetings, courses, and training modules.	
<p>4.2 PUBLIC PARTICIPATION PROGRAM: Public participation in environmental management to be promoted and strengthened, by means of information, environmental education, and the establishment of appropriate mechanisms for public consultation and participation. The strategic action to be executed is the following:  <b>P.126</b> Public participation program.</p>	<p><b>P.126.</b> (a) Public participation actions and system have been designed and implemented, involving the population in management and decision-making processes through workshops, meetings, enquiries, surveys, webpages, discussion forums, etc. (b) Procedures and guidelines for consultation and public participation have been drawn up, promoted, and launched. (c) Promotion of citizen participation as a working method included for the implementation of the SAP's projects.</p>	<p>Start: 07/year1  End: 12/year4</p>	<p>Progress reports and final report on the work element.  Reports from workshops and meetings.</p>	<p>The public institutions, nongovernmental organizations, and civil society respond adequately to the public participation processes.</p>
<p>4.3 CREATION OF AN INFORMATION SYSTEM FOR THE BASIN: Environmental information and monitoring system in the basin to be created and brought on line, as a mechanism for supplying information about water and natural resources to the basin's social stakeholders. The following strategic actions will be implemented:  <b>P.136</b> Mechanisms to access information for participation.  <b>P.5</b> Development of networks and interconnections among the different economic sectors and district authorities.  <b>P.6</b> Environmental information and monitoring system for the Río Bermejo Basin.</p>	<p><b>P.136.</b> a) Appropriate mechanisms for access to information by civil society have been identified. (b) Technical, institutional, and legal evaluation for their implementation has been carried out, based on the results of selected pilot projects. (c) Recommendations on implementation strategies have been drawn up.  <b>P.5.</b> Networks and other sectoral and district interconnection mechanisms have been designed, developed, and put into operation, as an instrument for coordinating sustainable management actions among the different sectors and different district authorities in the basin.  <b>P.6.</b> (a) An integrated, geo-referenced environmental information system covering the basin's environmental variables has been designed, established, and put into operation. (b) The following components have been launched: hydrometeorology and sedimentology, water quality monitoring, follow-up and assessment of water quality and usage, biodiversity, legal and institutional information, socioeconomic indicators, human and institutional resources, documentation center, guides and technological guidelines for information.</p>	<p>Start: 01/year3  End: 06/year4    Start: 07/year1  End: 12/year4    Start: 07/year1  End: 12/year4</p>	<p>Progress reports and final report on the work element.    Progress reports and final report on the work element.  Reports from meetings and workshops.    Progress reports and final report on the work element.</p>	<p>The individuals and institutions involved in managing the basin's water and other natural resources fully participate in and accept the information systems being introduced.  The agencies and institutions that generate and supply information participate actively in the system, keeping their commitments to information flows and quality.</p>

## ANNEX C

### **STAP ROSTER Technical Review GEF Project: Implementation of the Strategic Action Program for the Bermejo River Binational Basin**

**By W.D Williams**

**Professor emeritus**

**Adelaide University - Australia**

#### **Introduction**

- This review responds to a request from UNEP to provide a technical review of the *Implementation of the Strategic Action Program for the Bermejo River Binational Basin*.
- In responding, I note that I provided a review of the UNEP/OAS Bermejo River Proposal in April 1996. This review gave me some initial familiarity with this important program.
- I further note that I am a designated expert for the STAP Roster of Experts with particular experience and knowledge concerning dryland (arid and semi-arid) regions. Of direct relevance has been my chairmanship of the Research Advisory Committee of the Murray-Darling Freshwater Research Centre and my membership (as the Independent Scientist appointed by the Government) of the Barwon-Darling River Management Committee. Both the Barwon-Darling and Murray rivers are Australian river systems with considerable similarity to the Bermejo River Basin.
- In preparing the review, I have had available and read with care the following documents:
  1. The full text of the Final Draft for the Strategic Action Program for the Binational Bermejo River Basin (51pp).
  2. A summary document describing the project, rationale and objectives, project components and expected results, risks and sustainability, stakeholder participation and implementation arrangements, and costs and financing (22pp).
  3. Annexes A, B, E, F, G, H & I.
  4. Annexes I (Work Program elements, 4pp), II (Basin Environmental Data, 48pp), III (Determination of Ecological Regions), 17pp), IV (Environmental Zoning, 6pp) and V (Quantification and location of Environmental problems, 8pp).
  5. Annex I (lists of Government agencies, Non-governmental organizations, other participant organizations).

6. Annex IV (Summary of Strategic Priority Actions proposed in the Strategic Action Plan: scope and location).

- In preparing the technical review, I have also had available the documents detailed in my previous (1996) review as well as material made available to me at the Second World Water Forum (The Hague, March 2000) where water development projects in South America were discussed. Of particular interest are (1) *Executive Summary March 2000. Strategic Action Program for the Bermejo Binational River Basin* (19pp), and (2) *Water for the 21<sup>st</sup> Century: Vision to Action (South America)* (78pp).
- The brevity of this technical report does not reflect the perceived importance of the Project.

### **Scope of the Review**

In the interests of standardization, and as requested, the review addresses, *seriatim*, issues outlined in the terms of reference.

- *Key issue 1. Scientific and technical soundness of the project.* Overall, the project is scientifically and technically sound in those areas in which I am professionally competent to judge. Of some concern, however, is the lack of information on the biodiversity resources of the region (acknowledged in the report itself), and the paucity of planned comprehensive investigations to obtain this information. Also lacking are explicit guidelines on how to monitor the extent to which biodiversity will be affected by the implementation of the Bermejo River Binational project, and how sustainability is to be judged as effective. Moreover, although salinisation is already a problem in certain catchments of the basin, it seems likely that its extent will expand. Salinisation has become a major problem in dryland regions which have been developed - especially when irrigation is part of the development. It would be advisable to put in place procedures to monitor and manage salinisation before it has an effect since such effects are often irreversible and significantly degrade habitats affected. The final document makes no reference to such procedures although frequent reference is made to the associated phenomenon, erosion.
- *Key issue 2. Identification of global environmental benefits and/or drawbacks of the project.* A major benefit of the program is that development will proceed predicated on the concept of environmental sustainability rather than, as is usually the case, on *ad hoc* concepts of local benefit irrespective of wider and longer term environmental responsibilities. Since no part of the biosphere is an independent

entity, the global implications are obvious. The major drawback is that, faced with the inevitable growth of local populations in the area and the need to upgrade their living conditions, yet further changes to the natural environment will occur; that is, the project remains focussed on development - albeit sustainable development - rather than on restoration and rehabilitation of already degraded environments within a steady state local population.

- *Key issue 3. How the project fits within the context of the goals of GEF.* In so far as the goals of the GEF are “to help developing nations and countries with economies in transition assess and determine priorities among their international water problems, find ways to work together, and take concerted action to overcome those problems” [The role of the Global Environmental Facility in *GEF Projects related to Water Resources*. The Hague, March 2000], the Bermejo River Basin project is in accord with GEF goals.
- *Key issue 4. Regional context.* The project comprehensively addresses key regional issues.
- *Key issue 5. Replicability.* None of the issues involved in the Bermejo River Basin project is unique to the region: all issues, in one form or another, occur elsewhere. And certainly the central issue of how to develop water resources in a sustainable way is the core issue throughout the world. Thus, problems, resolutions and issues dealt with by the Bermejo River Basin project are for the most part transferable (either directly or indirectly) to all river basins in developing countries attempting to develop their water resources. In this context, reference is made to “*Towards Sustainable River Basin Management: Recommendations and Guidelines on Best Management Practices*” Anon (2000), The Hague.
- *Key issue 6. Sustainability of the project.* [This is taken to mean: is the development proposed likely to be environmentally sustainable?] It is clear that the proponents of the project are keenly aware that **the principal risk in the project is that environmental considerations will not be adequately incorporated into projects, programs, policies and activities in the manner needed to ensure sustainability** (page 49 of final draft document). This clear sighted awareness provides considerable optimism that the project will be implemented in a way which ensures that environmental considerations **will** be adequately taken account of. If the project is implemented as planned, it is likely to be environmentally sustainable.



- *Key issue 7. Targeted Research Projects.* It is not clear if any of the identified research projects will specifically address improved definition and implementation of GEF strategies and policies. More details are required to respond to this issue.
- *Secondary issue 1. Linkage to other focal areas.* It is clear from documentation provided by the Ministerio de Infraestructura y Vivendi (Subsecretario de Recursos Hidricos) and available to me that the Bermejo River Basin project is linked to other water development projects in Argentina. At the bilateral level, Argentina and Bolivia formed a Bipartite Subcommittee for the Use of the Resources of the Upper Basin of the Bermejo River and Rio Grande de Tarija in 1992. More recently, Argentina founded the Bermejo River Regional Commission (COREBE) which has surveyed the basin's resources, with particular reference to regulation in the upper reaches of the river, sediment control, environmental impact assessment and sediment movement.
- *Secondary issue 2. Linkages to other proposals.* See above.
- *Secondary issue 3. Other beneficial or damaging environmental effects.* In addition to the general benefits outlined in *Key issue 2* (see above), there are several particular benefits that are likely to accrue if the project is fully and properly implemented. Not the least of these will be an increase in knowledge concerning the biodiversity resources of the region itself (already acknowledged as inadequate), an increase in the environmental awareness of the local human population, and, perhaps, once the benefits of sustainable development become more widely recognized, the spread to other river basins of policies, structures and processes used in the Bermejo River Project. With regard to damaging environmental effects, mention is again made of salinisation as a possible issue and threat. The threat of salinisation has been grossly underestimated in past water resource developments, with considerable cost to the environments involved. Once damaged by salinisation, catchment 'health' is difficult if not impossible to restore.
- *Secondary issue 4. Degree of involvement of stakeholders in the project.* Wide-ranging plans are presented which indicate that considerable effort will be made to involve stakeholders at all stages in the implementation of the project. Experience indicates that such involvement is both necessary for the success of projects of this sort and has a wider integrative social function (it provides a mechanism for social cohesion).

- *Secondary issue 5. Capacity building aspects.* Although the final draft indicates that some attention is to be given to capacity building, the relatively low budget allocated to this issue (and the lack of explicit plans) suggests that suitable staff and support personnel to educate the local population and, indeed, to ensure that development will be undertaken in a sustainable way, will be either too few, too poorly trained, or both. This is identified as an important risk (page 50). **Particular attention should be paid to the need to have available adequately trained staff to manage and monitor the project and educate the local population and stakeholders.** The project overall will succeed or fail on the basis of the caliber of those responsible for its implementation.
- *Secondary issue 6. Innovativeness.* The issues and problems related to the development of river basins worldwide are to a considerable extent specific or unique to the basin involved by virtue of differences in history, climate, social context and biogeography. All river basin development projects, therefore, can be seen to be innovative to some extent: all break new ground and need innovative and original management approaches. An additional factor in the present project, however, is its comprehensiveness and the range of issues to be considered.

### **General conclusions**

In agreement with the first report on this project (1996), the present technical review provides further approval of both the over-arching objectives of the project and their rationale. It also offers approval of the proposed implementation of the project.

## **RESPONSE TO THE STAP REVIEWER'S COMMENTS.**

In general, the comments of Prof. W. D. Williams are quite supportive of this project, which initiates the implementation of the Strategic Action Plan (SAP) for the Bermejo River Basin. Notwithstanding, Prof. Williams has indicated some issues that, in his opinion, require further consideration in the formulation of this project. The following paragraphs provide a detailed response to the principal queries raised by Prof. Williams; no response is provided to those issues, identified by Prof. Williams, as being adequately addressed by the current project brief.

### **Key Issue 1: Biodiversity:**

The Transboundary Diagnostic Analysis (TDA) identified the loss of biodiversity and the need for the protection of biodiversity as one of the six main problems identified in the Bermejo River Basin. Information on biodiversity and biotic resources in the region are set forth in the TDA. Actions addressing the root causes underlying biodiversity problems have been incorporated into the SAP and selected priority issues form part of the present project. These actions emanate from the survey of environmental and developmental projects and initiatives carried out as a part of the SAP formulation process. Over 120 proposals in the field of Nature Conservation and Biodiversity Protection (103 provincial, 6 national, 9 private, and 3 international) were submitted during the SAP formulation process.

Because the primary objective of the Bermejo Project is "Integrated Water and Land Management", nature conservation, including biodiversity protection, forms a substantial part of this project, not only addressing the GEF policy of encouraging cross-sectoral issues within the GEF focal areas, but also aiming at strengthening preventive actions within non-degraded, vegetated landscapes in areas prone to erosion and mass removal movements in the upper basin. These actions seek to control and mitigate sediment production and transport, which is the main transboundary problem facing the entire Bermejo Basin. Activities to be undertaken through this project include the consolidation of protected areas in order to preserve the natural landscape in critical erosion prone areas, the establishment of buffer zones and biological corridors, the initiation of alternative sustainable management practices in the Montane and remaining piedmont forests. These measures not only address water management issues but also enhance nature conservation and biodiversity protection.

With respect to monitoring the degradation of biodiversity in the Basin, the SAP seeks to develop an environmental information system designed to monitor selected indicators related to land use, deforestation, and habitat loss or degradation. The GIS

environment that will support this information system is already in place as a subproduct of the SAP formulation project.

Furthermore, the SAP will provide the basis for coordination of ongoing and future national and regional programs, some of which are being funded by the GEF and address the biodiversity issue. For instance, GEF-UNDP ARG96/G31 led to the formulation of a National Biodiversity Strategy for Argentina during the period between 1996 and 1998. Some of the key activities identified in this program were incorporated into the SAP. Similarly, the ongoing GEF-WB Project on Biodiversity Conservation, being executed by the National Parks Administration of Argentina, has a component on biodiversity information management that will be linked to this project. These activities, being conducted in Argentina, have equivalent undertakings in Bolivia.

Thus, the implementation of the SAP inherently and explicitly includes and incorporates specific actions related to biodiversity information and protection, nature and habitat conservation, and coordination between regional and national activities in these fields.

**Salinization:**

Although currently not viewed as an issue of concern within the Bermejo River Basin, the TDA did identify salinization as a relevant, currently localized and potentially widespread, issue in many areas of Bermejo Basin. The TDA also evaluated its geographic distribution and intensity. This evaluation was based on soil type (soil mapping being an element within the GIS database), the best professional judgement of local and regional experts, analysis of various layers within the digital thematic cartographic data base, satellite imagery, and bibliographic reviews. Water quality monitoring also provided insight into salinization problems and risks associated with water use. As a consequence measures have been considered in the SAP to address the root causes that may enhance or trigger salinization problems. These causes include land usage and the failure of past environmental zoning, development and extension of inappropriate agricultural practices, lack of effective monitoring and information dissemination mechanisms (e.g., an environmental information system), the paucity of local capacities, and poor public awareness, participation and involvement in decision making at the local and regional levels. As rightly pointed out by Prof. Williams, sound land management (erosion control) will have beneficial effects on soil loss as well as on other soil problems. Component II of the project extends and implements feasible measures for erosion control, especially in the Upper Bermejo River Basin, that were identified and proven to be effective during SAP formulation, in

order to promote greater use of soil management practices that minimize degradation through erosion and salinization, and the risk of destabilization.

### **Key Issue 7: Targeted Research**

The SAP, both as a whole as well as in terms of its objectives, components and activities, addresses the effective implementation of GEF strategies and policies. Support to research activities, consistent with SAP priorities, is embodied both directly as specific academic activities and embedded in pilot demonstration projects, or indirectly through strengthening capacities and enhancing cooperation amongst research institutions, governmental agencies, nongovernmental organizations (NGOs), and the private sector, within the current project's component activities.

### **Secondary Issue 5: Capacity Building**

Of the four major components of the SAP, one is devoted to enhancing and encouraging public awareness and participation. A major part of the activities and projects included within this Component deal with education, access to information, and participation of stakeholders in decision-making with the aim of enhancing awareness and involvement, as well as strengthening capacities to participate at all levels.

Component I is specifically devoted to institutional strengthening, involving both binational and regional bodies, including the provincial and prefectural organizations which participate in them as well as representative organizations of the civil society and the private sector. In particular, specific project elements seek to increase the technical and managerial capabilities of the organizations and their staff that will integrate regional governmental and nongovernmental bodies in a manner that will enable them to collectively steer, coordinate, and monitor the next implementation phase. Further, most of the SAP projects in each of the four components, in considering community-based participation and extension activities, contribute to strengthening institutional and local community capacities to implement and maintain the programs initiated within the context of the SAP.

Thus, a significant share of the total SAP budget is directly or indirectly allocated to capacity building, and, hence, to ensuring the continuity and success of the actions to be set into motion as a result of the conduct of this project.

**ANNEX D**  
**COUNTRIES ENDORSEMENT LETTERS**

**Letter of Endorsement from Bolivia**



Comision Nacional de los Rios  
Pilcomayo y Bermejo

La Paz, 21 de junio de 2000  
CNRPB - OTN Of. No.115/00

De nuestra mayor consideracion:

Los delegados por Bolivia ante la Comision Binacional para el Desarrollo de la Alta Cuenca del Rio Bermejo y el Rio Grande de Tarija presentan sus atentos saludos al Fondo Para El Medio Ambiente Mundial y tienen el agrado de presentar a su consideracion la propuesta de financiamiento para la etapa de implementacion del "Programa Estrategico de Accion para la Cuenca Binacional del Rio Bermejo, PEA"; similar nota les sera enviada por los puntos focales de la Republica Argentina. En este sentido, forman parte de esta solicitud de los siguientes documentos:

- Diagnostico Ambiental Transfronterizo de la Cuenca del rio Bermejo
- Programa Estrategico de Accion para la Cuenca Binacional del rio Bermejo
- Documento del Proyecto, el cual describe la solicitud de financiamiento para la siguiente etapa del PEA

Con este particular, hacemos propleia la oportunidad para reiterar al FONDO PARA EL MEDIO AMBIENTE MUNDIAL las seguridades de nuestras mas alta y distinguida consideracion.

Atentamente,

Emb. Jorge Soruco Villanueva  
Primer Delgado ante la Comision  
Binacional y Vice Ministro de Politicos  
Exterior

Ing. Jorge O'Connor d'Ariaph M.  
Segundo Delegado ante la Comision  
y Director Ejecutivo de la OTN

cc: PNUMA y USDM de la OEA

A Los Senores  
FONDO PARA EL MEDIO AMBIENTE MUNDIAL (FMAM)  
Washington D.C., Estados Unidos de America

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BOLIVIA

**Letter of Endorsement from Argentina**

*Ministerio de Relaciones Exteriores,  
Comercio Internacional y Culto*

Buenos Aires, June 28th, 2000

Mr. Alfred Duda  
GEF Operations  
18 18 H Street, N W Room G6035,  
Washington DC, 20433  
Fax: 001202 47-31-077

Ref: Argentina/Bolivia - Implementation of the Strategic Action Program for the Bermejo River Binational Basin: Phase I

Dear Mr. Duda.

As the GEF Political Focal Point, the Argentine Ministry of Foreign Affairs, fully endorses the above mentioned project.

This project will help to provide the necessary institutional, legal, and informational basis to enhance and restore de environmental funtioning of the binational basin.

We look forward to continue collaborating with GEF's activities.

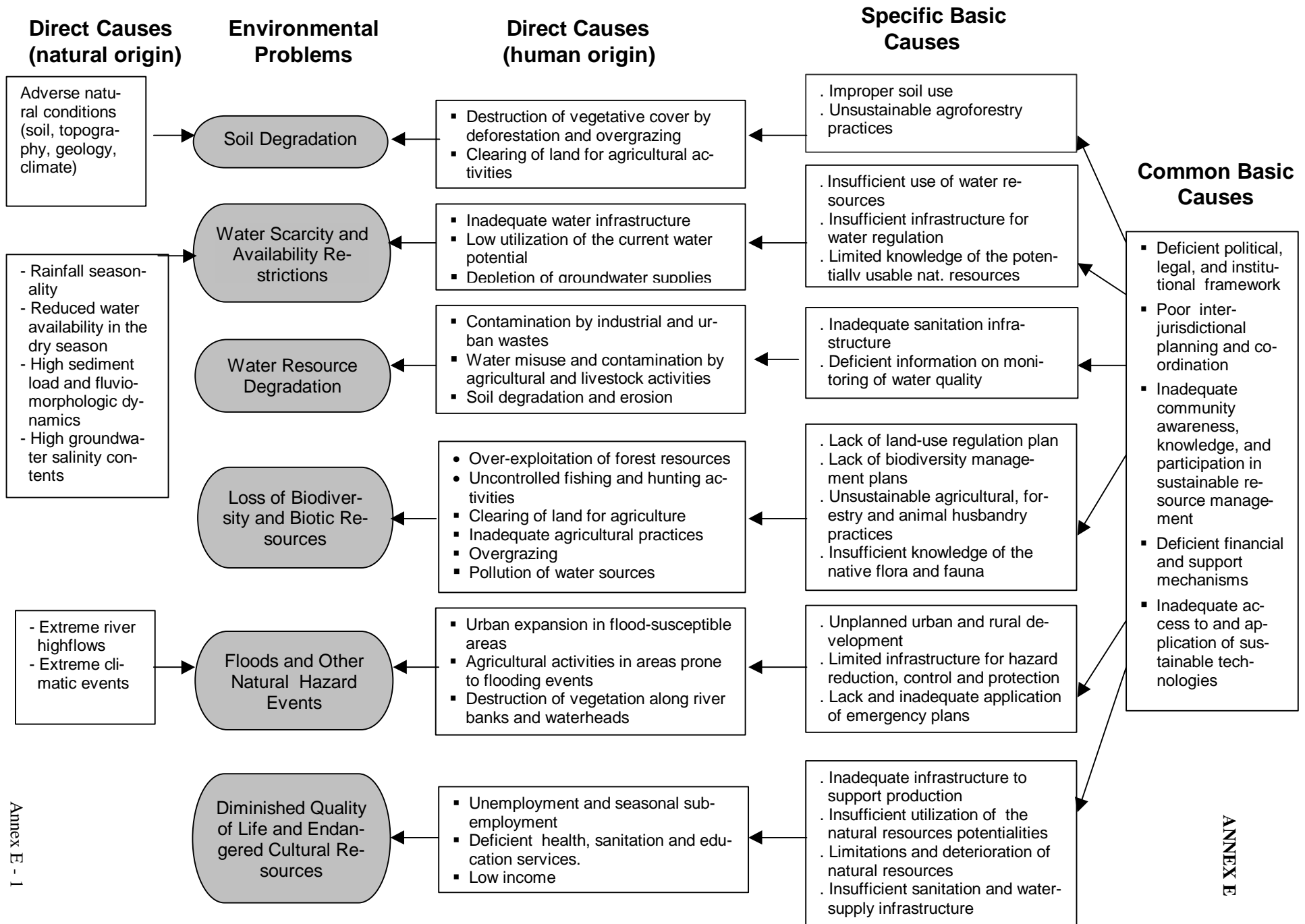
Yours faithfully,



Elsa Kelly  
Ambassador  
Special Representative for  
International Environmental Affairs



# CAUSAL CHAIN RELATIONSHIP FOR PRIORITY ENVIRONMENTAL PROBLEMS



### **PUBLIC INVOLVEMENT PLAN SUMMARY**

1. Public participation in the management of the water resources of Argentina and Bolivia is an integral feature of the project. More than 750 persons, representing in excess of 80 civil, corporate, nongovernmental, and governmental entities (having municipal, prefectural/provincial, federal, and international interests) participated in the consultation process that led to the formulation of this project. Participating organizations are set forth below. Their participation led to the identification and definition of some 250 detailed project proposals that were conveyed to the project team during public and stakeholder meetings convened during the SAP formulation process within the Basin. The project concepts were used by the project team to formulate the proposed implementation program set forth in this project document.
2. Public meetings were held during the SAP formulation period in each of the major prefectural and provincial centers in the Bermejo River basin between December 1995 and July 1999. The full proceedings of these meetings are available from the Binational Commission. These meetings represented a continuation of the contacts with the agencies, private sector organizations, academic institutions, and NGOs, initiated during SAP formulation, and improved and clarified specific issues arising from component proposals and other observations made during the project preparation period. Additional communications, including more than 700 letters and 500 sets of workshop documents received from and distributed to some 550 individuals and institutions on the program's mailing lists, ensured an highly transparent project preparation effort.
3. This high level of public and stakeholder participation will be continued during the development and implementation of the IWRMP for the BRBB. Stakeholder participation in the project, including community- and corporate-based environmental information and education campaigns, training courses and symposia, and actions, continues to be designed to increase the capacity and future participation of institutions, personnel, and individuals to undertake activities in support of the IWRMP. Specific actions are proposed to be conducted under the project which address issues related to public and stakeholder participation in the implementation process, and/or which provide support for the further development of a sound public participation and involvement strategy as one of the strategic actions of the SAP implementation.

### **BINATIONAL AND INTERNATIONAL INSTITUTIONS**

1. Binational Commission for the Development of the Upper Basin of the Río Bermejo and the Río Grande de Tarija
2. Organization of American States (OAS)
3. United Nations Environment Programme (UNEP)
4. Global Environmental Facility (GEF)

## **GOVERNMENTAL AND NONGOVERNMENTAL INSTITUTIONS IN ARGENTINA**

1. National Parks Administration, SRNDS
2. Center for Population Studies (CENEP)
3. Regional Commission for the Río Bermejo (COREBE)
4. CHACO, Provincial Water Administration, Directorate of Basic Studies
5. CHACO, Provincial Water Administration
6. CHACO, Directorate of Soils, Secretariat of Natural Resources and the Environment
7. CHACO, Total Environment Foundation
8. CHACO, Institute for Social Development and Human Promotion (INDES)
9. CHACO, Provincial Settlement Institute
10. NW Argentina Regional Technical Delegation, National Parks Administration
11. EVARSA, Evaluación de Recursos, S.A.
12. FORMOSA, Forestry Directorate, Secretariat of Natural Resources and Ecology
13. FORMOSA, School No. 109, El Zapallito neighborhood
14. FORMOSA, School No. 404
15. FORMOSA, School No. 43
16. FORMOSA, Federation of NGOs / CIRENOR
17. FORMOSA, Ministry of Education, General Directorate of Basic Education
18. FORMOSA, Ministry of Production
19. FORMOSA, Ministry of Production, Directorate of Water and Soil
20. FORMOSA, Gral. Lucio V. Mansilla Municipality
21. FORMOSA, Mayor Villafañe Municipality
22. FORMOSA, Pozo del Tigre Municipality
23. FORMOSA, Central Program Administration Unit
24. Environment and Natural Resources Foundation (FARN)
25. Argentine National Gendarmes, Environmental Division, Salta Group
26. National Water and Environment Institute, Hydraulics and Environmental Laboratory
27. National Water and Environment Institute, National Toxic Waste and Water Pollution Program
28. National Water and Environment Institute, Hydrology Center
29. INTA Ibarreta Agricultural Extension Center, Formosa
30. INTA Chaco Regional Center – Formosa
31. INTA Salta Regional Center, Salta Station
32. INTA Colonia Benítez Agricultural Experimental Station
33. INTA El Colorado Agricultural Experimental Station, Formosa
34. INTA Saéñz Peña Agricultural Experimental Station
35. INTA Climate and Water Institute, Castelar
36. INTA Soil Institute, Castelar
37. JUJUY, Aguas de los Andes S.A.
38. JUJUY, General Directorate of Renewable Natural Resources
39. JUJUY, Provincial Directorate of Hydraulics
40. JUJUY, Superintendency of Public Services (SUSEPU)
41. Las Yungas Ecological Research Laboratory (LIEY), Tucumán University
42. Argentine Ecological Movement (El Colorado Base), Formosa
43. SALTA, former General Water Administration of Salta (AGAS)
44. SALTA, Association of Alternative Tourism Operators of Salta (ADOPTAS)

45. SALTA, Environment Directorate, Ministry of Public Health
46. SALTA, Directorate of the Environment and Natural Resources
47. SALTA, Los Toldos Municipality
48. SALTA, Provincial Tourism Secretariat
49. University of Buenos Aires, Landscape and Environment Study Group (GEPAMA)
50. University of Buenos Aires, Regional Ecology Study Group (GESER)
51. National University of Formosa
52. National University of Formosa, Sylviculture Institute
53. National University of Jujuy
54. National University of Jujuy, Geology and Mining Institute
55. National University of Salta, Faculty of Natural Sciences, Soils Department
56. National University of Salta, Faculty of Natural Sciences, Geomorphology Department
57. National University of Salta, Sociodemographic Study Group (GREDES)
58. National University of the Northeast, Faculties of Engineering and Humanities, Applied Geoscience Institute
59. National University of the Northeast, Engineering Faculty, Hydraulics Department

## **GOVERNMENTAL AND NONGOVERNMENTAL INSTITUTIONS IN BOLIVIA**

### **PUBLIC INSTITUTIONS**

1. Prefecture of Tarija Department:
  - Directorate of Economic Development
  - Basic Clean-up Unit
  - Agricultural Development Unit
  - Strategic Food Security Program
  - Directorate of Sustainable Development and the Environment
  - Forestry Development Unit
  - Social Development Directorate
  - Prefecture Action Program
  - National Governance Program
  - Subprefecture of Méndez province
  - Subprefecture of Avilés province
  - Subprefecture of Arce province
  - Bermejo town council
  - Tarija department council
2. General Directorate of Biodiversity, Vice Ministry of Sustainable Development and the Environment
3. ZONISIG
4. Tarija Executive Program for Land Recovery, PERTT
5. San Jacinto Association
6. National Meteorology and Hydrology Service, SENAMHI
7. National Irrigation Program, PRONAR
8. Bolivian Agricultural Technology Institute, IBTA
9. Cercado municipal mayor's office
  - Cercado province municipal council
  - Technical Unit for Planning

- Technical Unit for Urban Development
- Tarija municipal sanitation corporation
- 10. San Lorenzo municipal mayor's office
- 11. Padcaya municipal mayor's office
- 12. Bermejo municipal mayor's office
- 13. Uriondo municipal mayor's office
- 14. Entre Ríos municipal mayor's office
- 15. Juan Misael Saracho Autonomous University
  - Research Directorate
  - Faculty of Science and Technology
  - Civil engineering school
  - Faculty of Forestry and Agronomic Science
  - Agronomic engineering school
  - Forestry engineering school
  - Faculty of Social and Legal Science
  - Law school
  - Bolivian Inter-University Water Resource Institute, INIBREH
- 16. Social Investment Fund, FIS
- 17. Campesino Development Fund, FDC
- 18. National Agrarian Reform Institute, INRA
- 19. Tarija Parliamentary Brigade
- 20. Tarija district court

**PRIVATE INSTITUTIONS:**

- 21. Drinking Water and Drainage Cooperative of Tarija, COSAAL
- 22. Tarija Civic Committee
- 23. Sole Union Federation of Campesino Workers of Tarija
- 24. Sole Union Federation of Campesino Workers of Bermejo
- 25. Volunteers of the Peace Corps
- 26. Federation of Neighborhood Committees of Tarija
- 27. College of Agronomic Engineers

**NONGOVERNMENTAL ORGANIZATIONS**

- 28. Tarija Regional Development Study Center, CERDET
- 29. Agricultural Research and Training Center, CICA
- 30. Development and Environment Information Center, CIRDEMA
- 31. Vida Verde
- 32. Tarija Environmental Protection, PROMETA
- 33. Loyola Cultural Action, ACLO
- 34. Tarija Social Pastoral
- 35. Tarija International Plan
- 36. Church Social Assistance Office, OASI
- 37. Tarija Environmental and Development Forum
- 38. Peasant Research and Support Center, CIAC
- 39. Peasant Research and Training Institute, IICCA

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## ANNEX H

### Plans And Development Programs Within The Bermejo River Binational Basin Providing Associated Financial Support To Specific Priority Strategic Actions Identified in the SAP

PRIORITY STRATEGIC ACTIONS		Pro-rated estimated investment for Riparian Provinces in Argentina Riparian Prefecture and Municipalities in Bolivia Million US \$				TOTAL
		IDB	WB	Other Foreign	Govern -ment	
Plans and Programs <sup>1</sup>						
<b>A. INSTITUTIONAL DEVELOPMENT</b>						
a.4	<b>Implementation and Strengthening of the Basin Environmental Information System</b>					
	PASMA I & II – Technical assistance mining sector development (Arg.)		10.44		2.55	12.99
a.5	<b>Formulation and Implementation of Integrated Management Plans for Basins, Environmental Zoning, and Territorial Ordering</b>					
	Land use planning/GIS ZONISIG (Bol.)			2.00 Holland	0.40	2.40
a.6	<b>Institutional Strengthening for Integrated Natural Resource Management</b>					
	Institutional development and social investment in municipalities (Arg.)	42.00			18.00	60.00
	Provincias II – Second provincial development program (Arg.)		45.00		19.20	64.20
	Second loan for provincial reform (PRL II) (Arg.)		75.00			75.00
	Civil society strengthening plan (Arg.)				1.38	1.38
	PRODISM - Program of funding for municipalities (Arg.)				8.55	8.55
	CENOC – National Center for Community Organizations (Arg.)				0.84	0.84
	PFDJ – Youth Development strengthening plan (Arg.)				0.56	0.56
	FOPAR – Participatory social investment fund				5.28	5.28
	Participatory rural investment project (Bol)		1.00		0.20	1.20
	AUTAPO – Support for Tarija and Potosi Universities (Bol)			2.00 Holland	0.10	2.10
SUB-TOTAL STRATEGIC ACTION “A”		42.00	131.44	4.00	57.06	234.5

<sup>1</sup> Some plans and programs support various priority strategic actions.

PRIORITY STRATEGIC ACTIONS		Pro-rated estimated investment for Riparian Provinces in Argentina Riparian Prefecture and Municipalities in Bolivia Million US \$				TOTAL
		IDB	WB	Other Foreign	Govern -ment	
Plans and Programs <sup>1</sup>						
<b>B. ENVIRONMENTAL PROTECTION AND REHABILITATION</b>						
b.1	<b>Protecting Biodiversity and Natural Heritage</b>					
	Native Forests and Protected Areas Project		2.93	1.50 GEF	1.88	6.30
b.3	<b>Implementation of Plans to Mitigate the Effects of Floods and other Climatological Disasters</b>					
	PREI – Program for flood victims; house rebuilding subprogram (Arg.)				1.14	1.14
b.4	<b>Prevention, Pollution Control, and Environmental Clean-up of Bodies of Water</b>					
	National drinking water and clean-up program, stage VI (Arg.) (50%)	20.00			5.00	25.00
b.5	<b>Prevention and Control of Erosion and Sedimentation</b>					
	Erosion control project in the El Monte and San Pedro subbasins (Bol.)			3.80 JICA	1.00	4.80
SUB-TOTAL STRATEGIC ACTION “B”		20.00	2.93	5.30	9.02	37.25
<b>C. SUSTAINABLE DEVELOPMENT OF NATURAL RESOURCES</b>						
c.3	<b>Development, Validation, and Application of Appropriate Technologies and Sustainable Productive Models</b>					
	Forestry development project (Arg.)		2.40		1.50	3.00
	PROSAP – Provincial agricultural services program (Arg.)	18.75	18.75	2.58	13.50	53.58
	PRODERNEA – Program of credit & tech. support for small-scale farmers in NE (Arg)				2.88	2.88
	PROHUERTA – Orchards program (Arg.)				1.50	1.50
	PSA - Social agricultural program (Arg.)				1.40	1.40
	Natural resources and environment program (Bol.)			0.50 KWF	0.10	0.60
c.4	<b>Implementation of Projects for the Sustainable Development and Use of Water Resources</b>					

PRIORITY STRATEGIC ACTIONS		Pro-rated estimated investment for Riparian Provinces in Argentina Riparian Prefecture and Municipalities in Bolivia Million US \$				TOTAL
		IDB	WB	Other Foreign	Govern -ment	
Plans and Programs <sup>1</sup>						
	PROSOFA (Arg)			8.80 FonPlata	1.20	10.00
	National drinking water and clean-up program, stage VI (Arg.) (50%)	20.00			5.00	25.00
	PROPASA (Arg)				13.60	13.60
	Water resources program, Phase 3 (Bol.)			2.00 China	0.80	2.80
	Water supply program (Bol.)		4.00		2.00	6.00
SUB-TOTAL STRATEGIC ACTION "C"		38.75	25.15	13.88	43.48	121.26
<b>D. PARTICIPATION, AWARENESS AND REPLICATION OF PROJECT ACTIVITIES</b>						
d.1	<b>Strengthening Public Participation in Action Planning and Implementation</b>					
	INAI – Actions by the National Aborigine Affairs Institute (Arg.)				1.00	1.00
d.2	<b>Environmental Education and Training Programs for Civil Society</b>					
	PRISE – Primary education reform and investment program (Arg.)	60.00			60.00	120.00
	Social educational plan – PSE I & II (Arg.)				15.60	15.60
d.4	<b>Public Access and Dissemination of Information for Supporting Decision-Making Processes</b>					
	SIEMPRO – Social programs information, monitoring, and assessment system (Arg.) (* )				1.13	1.13
SUB-TOTAL STRATEGIC ACTION "D"		60.00	0.0	0.0	77.73	137.73
<b>TOTAL</b>		<b>160.75</b>	<b>159.52</b>	<b>23.18</b>	<b>187.29</b>	<b>530.74</b>

(\* ) Estimated program budgets based on 1997 figures. Source: SIEMPRO

**WORK PROGRAM**

Project number:	not yet assigned (GF/8400-00-#)
Project name:	Argentina/Bolivia - Implementation of the Strategic Action Program for the Bermejo River Binational Basin: Phase I
Duration of project:	4.5 years
Implementing Agency:	UNEP
Executing Agency:	General Secretariat of the OAS  Binational Commission for the Development of the Bermejo River and Rio Grande de Tarija Upper Basins
Requesting Countries:	Argentina and Bolivia
Country Eligibility:	Eligible pursuant to paragraph 9(b) of the instrument.
Focal Area:	International Waters with relevance to the cross-cutting area of Land Degradation
GEF Programming Framework:	OP 9 Integrated Land-Water Multiple Focal Area

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1. **The Project.** The purpose of this project, Implementation of the Strategic Action Program for the Bermejo River Binational Basin, is to promote and restore proper environmental functioning of the Bermejo River Basin ecosystems, by undertaking strategic actions to address the basic and direct causes of environmental degradation as identified in the Strategic Action Program (SAP) for the Bermejo River Binational Basin (BRBB). These actions will supplement activities currently underway or programmed by the governments of Argentina and Bolivia, and by the provincial governments in Argentina and the Prefecture of Tarija in Bolivia, with funding from local sources and international loans. The key elements of the project will involve developing and strengthening the institutions of the basin, including improving institutional capacities and organizational abilities and their sectoral and regional coordination, integrating environmental concerns into economic development activities through effective management and handling of water and other natural resources, and promoting public awareness and participation in the process of managing the land and water resources of the Bermejo River Basin.

2. The Bermejo River is a tributary of the Paraguay River, which, together with the Paraná and Uruguay rivers, forms the system known as the Cuenca del Plata, or Plata River Basin. This system drains an area of some 3 million km<sup>2</sup>, or nearly one-fifth of the South American continent, to the Atlantic Ocean. Within this system, which extends along either side of the Tropic of Capricorn, the Bermejo River watershed is approximately 123,162 km<sup>2</sup> in areal extent and has a length of about 1,300 km from its origin in the Andes Mountains to its confluence with the Paraguay River. A key feature of this watercourse is the fact that it is the only river that actually crosses the huge expanse of the Chaco plain. Other major rivers in the region, such as the Timani and the Pilcomayo, infiltrate into the subterranean water system of the plain and do not retain their identity as surface watercourses. For this reason, the Bermejo River Basin is an "exporter" of sediments, and has a great influence on the content of sediments in the Paraguay-Parana river system. The Bermejo River Basin also provides exceptional diversity of habitat and opportunities to maximize biological diversity along its course. A principal feature of this continuous watercourse is that it creates a biological corridor connecting the biotic elements of the ecosystems of the Andean Region and of the Chaco Plain, and these with those of the Atlantic ecosystems.

3. Drawing upon the results of studies and pilot demonstration projects completed prior to and during the process of completing the Transboundary Diagnostic Analysis (TDA) and developing the SAP, this project will facilitate actions by the governments of Argentina and Bolivia to promote sustainable development in the BRBB. This project is designed to begin the process of implementing the developmental and environmental guidelines of the SAP and, through a broad and participatory action program, to address the principal causes of environmental degradation within the BRBB. The proposed components of the project are consistent with the globally important concerns and priority actions identified in the SAP. These actions, however, constitute only a small part of the total program included in the overall strategic action program set forth in the SAP. This subset of actions has been selected because they comprise a specific set of priority, incremental activities that will facilitate execution of the remaining strategic actions. Successful implementation of these actions will provide support to the efforts of regional, national and binational institutions in implementing the balance of the program of action identified in the SAP during subsequent phases of this project. The four components that together embrace all the project activities are detailed below. These priority components have been identified through a process of broad-based public participation and have been designed to permit the formulation and implementation of a program for integrated management of the basin's water resources (IWRMP).

4. UNEP, in its role as implementing agency, in consultation with the OAS, the Binational Commission and the governments of Argentina and Bolivia, has prepared preliminary descriptions and budgets for the activities that are proposed within each of these four components. These are summarized in the following paragraphs. It should be noted that, because of the diversity of these activities, each of the four components is multifaceted in nature and includes not only activities directly related to specific outcomes, but also opportunities for the active involvement of different social stakeholders, for environmental education of local inhabitants and technical staff, for institutional strengthening, etc. Nevertheless, for the sake of brevity and clarity, each activity has

been categorized within one specific component, and is not repeated under the remaining areas to which it may be related. One of the first activities to be undertaken by the project executing units, in consultation with UNEP and the OAS, will be to prepare for each component a detailed work program establishing the terms of reference for each strategic activity and the objectives to be achieved during the period of implementation of the project.

## **A. COMPONENT I: INSTITUTIONAL DEVELOPMENT AND STRENGTHENING FOR INTEGRATED WATER RESOURCES PLANNING AND MANAGEMENT**

5. Component I is designed to provide a broadly participatory institutional framework by developing and strengthening the legal basis underlying the regulation, planning, and environmental and social evaluation of the environmental, economic, and financial arrangements that are indispensable for implementing the activities of prevention, restoration, planning, and development of the natural resources identified in the SAP. The two activities that make up this first component are aimed explicitly at creating an effective and integrated organizational base that will involve both the public and private sectors in implementing a multisectoral and holistic approach to the environmental management and economic development of the Basin, as proposed in Chapter 18 of Agenda 21. This framework is fundamental to support the extension and subsequent implementation of the specific strategic activities in the Basin that will address the basic causes of transboundary environmental problems—namely, land degradation and sediment transport—that form the remaining components of the project.

### **Activity 1.1. Development and strengthening of the institutional framework**

This activity is intended (i) to deepen and broaden activities initiated during the SAP formulation stage with respect to the implementation of the project and the coordination role of the Binational Commission, including its institutional development as binational- interjurisdictional basin organization, (ii) to promote regional coordination and programming, and (iii) to address weaknesses in the complex institutional framework that currently impede a comprehensive vision of the Basin and the integrated and sustainable management of its resources. This activity is intended to develop and broaden the participatory framework, including mechanisms for specific participation by provincial governments, the prefecture and municipalities of Tarija, and to strengthen the capacities of the institutions that represent them. This will result in a greater institutional capacity at the regional level and will help to place management of the Basin's water resources on a sustainable footing. It will also ensure proper articulation and commitment among the institutional stakeholders that have primary responsibility for implementing the actions, so that they can serve as part of a regional coordination and programming process conducted by the Binational Commission and other existing regional agencies in each country. The results of this activity will be a documented framework for addressing transboundary problems inherent in the management of the Bermejo River Basin, including formal and informal mechanisms for participation by government units at the provincial and prefecture level in determining and implementing the IWRMP. This will take the form of fully operational coordination and programming mechanisms within the Binational Commission for the Development of the Bermejo River and Rio Grande de Tarija Upper Basin, with participation by provincial governments and the

Prefecture of Tarija. These mechanisms will analyze and integrate agreed strategic guidelines for a regional institutional framework into an appropriate and effective binational, interjurisdictional entity for the Basin, under which national-, provincial/prefectural- and municipal-level institutions can be strengthened in terms of their capacities and abilities to manage natural resources on a sustainable basis. This activity will also provide specific support to the regional entities of the two countries (COREBE and OTN), to provincial entities, the prefecture and municipalities of Tarija, academic organizations, NGOs, corporations, and governmental institutions involved in implementing the SAP, in order to develop their institutional, technical and administrative base. Consequently, this activity is designed to integrate the following specific actions, among others, identified in the SAP:

- Institutional development and strengthening of the Binational Commission for the integrated management of the Basin (SAP Project No. 1)

The purpose of this activity is to foster institutional development at the binational level in the Bermejo River Basin that will permit integrated and participatory planning and management of the basin's water resources. To this end, it includes actions to: (i) promote the establishment, under the aegis of the Binational Commission, with participation by the provinces of Argentina and the prefecture and municipalities of Tarija in Bolivia, of a coordination, programming, and control mechanism that will have a mandate covering the entire Basin, to design a proposed Basin-wide agency; (ii) agree on strategies for the implementation of such a mechanism; and (iii) strengthen the institutions involved in this coordination mechanism with a view to achieving the objectives of the SAP and of this project in particular.

- Institutional development for the integrated management of the Basin at the inter-jurisdictional level in Argentina (SAP Project No. 2)

The purpose of this activity is to support the institutional development of the Regional Commission for the Bermejo River with a view to establishing an interjurisdictional entity for the Bermejo River Basin in Argentina. While this will primarily facilitate integrated and participatory planning and management of the Basin's water resources within Argentine territory, the creation of an interjurisdictional mechanism between the provinces and municipalities within Argentina will contribute to the overall sustainable management of the Basin's resources. To this end, it includes actions to promote the design and implementation of an agency for the Basin, under the aegis of the Regional Commission for the Bermejo River, and to strengthen this commission and other institutions involved in order to facilitate achievement of the SAP objectives.

- Institutional strengthening and capacity building for governmental and civil society organizations (SAP Project No. 8)

The purpose of this activity is to strengthen the capacities of governmental and civil society organizations within the Bermejo River Basin that have responsibilities for, or involvement in, the sustainable management of natural resources. This will result in a greater institutional capacity at the regional level for placing the management of the Basin's water resources on a



sustainable footing, and articulating and committing institutional stakeholders with primary responsibility for implementing the activities, so as to integrate them into a process of regional coordination and programming. In this context, the project includes actions to support the equipping and training of technical and managerial personnel in these organizations.

The estimated cost of Activity 1.1 is US\$1,824,500 (GEF: US\$1,105,000; co-financing US\$809,500).

**Activity 1.2. Development of a holistic regional legislative, economic, and environmental framework**

By designing and implementing legal and financial instruments and harmonizing standards for water quality management and land use in the Basin within a strong and integrated institutional framework, this activity will serve to inform and involve water resource professionals and others in the diagnosis and correction of environmental problems identified in the Bermejo River Basin. The results of this activity will produce a framework for addressing transboundary aspects inherent in management of the Basin.

This activity, therefore, will seek to establish a framework in which dialogue between the public and the agencies responsible for implementing integrated management programs for the Basin can be translated into a comprehensive legislative program aimed at strengthening their legal and political foundations. The nature and framework for these programs was developed during the SAP formulation stage of this project. This activity will facilitate the introduction of Basin management measures through a coordinated program of activities by both governments and nongovernmental organizations at all levels of civil society, including the proposed development of a legislative framework for strengthening and implementing the administrative mechanisms necessary for successful and equitable implementation of the IWRMP. In addition, it will make substantive progress in the introduction of environmental zoning and land-use planning as management and planning tools, in the form of strategic methodological guidelines validated at the regional level and concrete environmental actions at the local level, in particularly critical areas of the Basin. The results of this activity will help to optimize policies, practices and programs for managing water resources, thereby creating the economic and legal foundations for sustainable development of the Basin. The output of this activity will include a documented context for establishing a regional regulatory framework for the use and protection of shared water resources, the determination of water-use charges, including a restructuring of fiscal, financial, and legal mechanisms for managing the quantity and quality of water within the basin, as well as proposed legislation to put this framework into effect. A further explicit output of this activity will be legislative proposals for implementing the IWRMP at all levels of government and civil society.

Consequently, the activity will include the following specific activities, among others, identified in the SAP:

- Development and harmonization of political and legal frameworks for sustainable management of water resources in the Basin (SAP Projects No. 3 and No. 4)

The purpose of this activity is to promote action to establish common environmental quality objectives and policies, and to foster the participatory formulation and implementation of a regional regulatory framework that will address basic aspects in the management of shared water resources and make possible the integrated management of water and other natural resources. It will also encourage the development and harmonization of jurisdictional frameworks, particularly those relating to environmental legislation, water codes, environmental impact assessment standards, public participation and access to information. To this end, it will generate a process for developing and harmonizing regional and jurisdictional legal frameworks based on the joint preparation of technical criteria and instrumental strategies for their implementation.

- Environmental zoning and land-use regulation (SAP Project No. 7)

The purpose of this activity is to encourage land-use regulation as a basic tool of regional planning that will contribute to sustainable management of natural resources. To this end, the project will identify and assess the technical, institutional, legal, and political aspects that must be taken into account in establishing the basic instruments governing land settlement and economic activities as a function of the carrying capacity of natural resources. In Argentina, demonstration projects will be carried out in various areas of the basin, and support will be provided to initiatives now under way, in order to identify valid methodological and instrumental criteria for the different regions of the Basin that can be extended for application to the territory as a whole. In Bolivia, initiatives now under way in the prefecture of Tarija under the ZONISIG program will be supported in order to optimize their technical and human resources to ensure successful development of a land-use plan for the Upper Basin.

- Strengthening and developing economic instruments to promote sustainable use of water (SAP Project No. 9)

The purpose of this activity is to design and achieve consensus on strategies, at the regional level, for incorporating financial and economic instruments to reflect the economic value of water. These strategies will be designed as complementary to other regulatory instruments governing natural resources in the Bermejo River Basin region and will constitute genuine sources of financing for integrated management of water and other natural resources.

- Development of strategies for incorporating environmental and social costs into project management and decision-making (SAP Project No. 10)

The purpose of this activity is to design, formulate, and validate regional criteria, instrumental strategies, and recommendations for generalized incorporation of environmental and social costs into the evaluation of development projects, using methodologies that will assign proper value to natural resources and services. On the basis of an analysis of the current situation in the region, methodological guidelines will be developed and applied to case studies embracing the SAP portfolio, representative in terms of their characteristics and location, as a basis for advancing the discussion and validation of criteria and formulation of recommendations for implementation of such criteria throughout the Basin during subsequent phases of this project.

The estimated cost of Activity 1.2 is US\$1,929,500 (GEF: US\$882,400; co-financing US\$1,047,100).

## **B. COMPONENT II: ENVIRONMENTAL PROTECTION AND REHABILITATION**

6. Component II is designed to extend the implementation of feasible measures of Basin management identified during formulation of the SAP. Together with the institutional initiatives to be undertaken as part of Component I, the three activities programmed for this component will deal with specific transboundary aspects identified in the TDA. In particular, the actions planned focus on soil management and sediment-transport control, either by means of feasible specific prevention and control measures or by preserving the natural landscape in critical erosion-prone areas through the consolidation of protected areas. Complementary basic natural resource studies, and the maintenance of the quality of the Basin's water resources, are part of this component.

### **Activity 2.1. Soil management and erosion control in critical areas**

The TDA identified several regions and subbasins of the Bermejo River Basin, such as those in the Central Valley of Tarija, the sub-Andean or *Yungas* region, and the Iruya River and Río Grande watersheds in the Upper Basin, as critical areas in terms of current or threatened erosion, current and potential contribution to the production and transport of sediments, and loss of productive soils. The SAP calls for the adoption of appropriate measures, both structural and non-structural (farming, ranching and forestry practices, regulatory frameworks, environmental regulation), to control soil loss through a focus on watershed management. This activity, which will extend and transfer the implementation of feasible measures for erosion control in the Upper Bermejo River Basin, identified and proved effective during the SAP formulation phase, will promote greater use of soil-management practices that minimize degradation and the risk of destabilization. The results of these efforts will encourage broader application of these management practices and thereby contribute to sustainable land use (essentially for farming) and to the conservation of areas that, although not yet significantly altered, are at risk from land degradation. A key feature of this activity will include the mitigation of erosion in critical zones of the Basin. The output of this activity will include the application of recommended soil-conservation and erosion-control measures to limit the loss of soil.

Consequently, the activity includes the following specific actions, among others, identified in the SAP:

- Sediment control in Tolomosa River Basin (SAP Project No. 51)

This activity consists of three components: (i) control of sediments in transit, through the construction of five earthen dikes, 10 gabion dikes with riprap for bank protection, and 160 ha of enclosed areas for natural vegetation regeneration; (ii) protective reforestation over an area of 80 ha, and (iii) management and conservation of 600 ha of farmland and rehabilitation of dry-land farming areas in the Rio Mena subbasin. This project is intended to control sediments in transit and to apply erosion control techniques to reduce silting in the reservoir of San Jacinto, the principal water resource in this area, and to reduce loss of arable soils in the Mena River subbasin. It will draw upon experience with erosion control practices gained during the formulation phase of the SAP.

- Integrated management of natural resources of Santa Ana River Basin (SAP Project No. 55)

This activity consists of a series of works and activities: (i) regulation of water flows in micro basins tributary to, and in the main channel of, the Santa Ana River, for irrigation purposes; (ii) soil management, conservation, and rehabilitation practices; (iii) restoration of vegetation; (iv) livestock management; and (v) consolidation of grass-roots institutions through public participation. The initial stage will see the execution of a project in the Gamonedá River subbasin. Integrated basin-management techniques will be developed and applied with a view to ensuring environmental sustainability and improving the living conditions of the local population.

- Integrated management of the Iruya River Basin (SAP Project No. 58)

The valley of the Iruya River contributes nearly 50 percent of all sediments transported by the Bermejo River into the Plata River system. Thus, it is in this valley that the implementation of management measures and practices for controlling the production and transport of sediments will have the greatest influence at the regional level. The objective of this activity is to supplement developments already being undertaken by COREBE to identify, evaluate, and implement methodological approaches and techniques for preserving ecosystems still in their natural state, and for restoring those disrupted by human activity that have a determining influence on the stability of the landscape and on the phenomena of surface erosion and landslides that are characteristic of this region. The result will be a technical and economic assessment, in local and regional terms, of the efficacy of direct interventions, some which were undertaken in the Basin during the formulation stage of the SAP, as well as non-structural measures, to establish criteria for their selection and application in controlling the generation and transport of sediments.

- Management of the Grande River Basin: mapping of the Huasamayo River subbasin (SAP Project No. 59)

This is the first component of a program for the sustainable management of the Grande River Basin, the purpose of which is to reduce the severe erosion from which it currently suffers. This activity will consolidate a comprehensive plan to control soil loss and will comprise structural actions and non-structural management measures, like the construction of small gabion dikes, protective forested areas, and sustainable farmland practices.

The estimated cost of Activity 2.1 is US\$2,134,200 (GEF: US\$1,327,400; co-financing US\$806,800).

### **Activity 2.2. Consolidating protected areas and protecting biodiversity**

This activity is intended to protect biodiversity through the consolidation and development of protected areas, the conduct of basic studies on natural resources, and implementation of a pilot-scale project on carbon fixation. The SAP concluded that the best way to preserve the remaining areas of natural habitat in the region would be to create integrated, community-based units within the Bermejo River Basin to serve the ecotourism market, both domestic and international. At the same time, it called for the creation of a growing number of clearly defined areas where human activity can be conducted in ways that will not damage natural resources. Previous experiments by both governmental and nongovernmental agencies, including those carried out during the SAP formulation phase, suggest the use of buffer zones as a means of reducing the human impact on ecosystems. The creation of environmental corridors linking areas of significant habitat value has also been shown to be successful in maintaining migratory routes that have been disrupted by human activities. This activity, therefore, will encourage the establishment of buffer zones and environmental corridors, and will sponsor basic studies on natural resources, including pilot demonstration projects that promote effective ways of restoring degraded environments, preserving environments adjacent to nature conservation areas and protecting biodiversity, while at the same time promoting sustainable development for local communities. This activity will also help to transfer experience gained in two other natural areas of the Yungas cloud-forest region of Argentina and Bolivia and to design strategies for extending them to other natural areas of the Lower Basin. The results of the project will be the introduction of management programs for the development of protected areas and buffer zones in the vicinity of the national parks and reserves of Calilegua, Campo El Rey, Baritú, Tariquia, and Sama, and will promote ecotourism as a form of sustainable development in those areas, within a framework of sustainability and protection of biodiversity. The output of the activity will include actions to enhance carbon fixation in cloud-forest zones. This activity also will provide specific support for developing the Transboundary Biological Corridor of Tariquia-Baritu. Consequently, the activity will include the following specific activities, among others, identified in the SAP:

- Introducing alternative forms of ecotourism in piedmont transition forests in the vicinity of the El Rey and Calilegua national parks (SAP Project No. 14)

This activity consists of two elements, distinct but intimately linked. The first element includes the monitoring and evaluation of alternative ecotourism uses in the area surrounding the El Rey National Park, initially identified during the SAP formulation stage. The second element consists of identifying, designing, and implementing alternatives for sustainable use of the buffer zone surrounding the Calilegua National Park for ecotourism. Both of these elements envision, among other things, the introduction of ecotourism as a sustainable alternative to traditional productive practices, by incorporating the montane *selvas*, in particular the transition forests, into the tourism market, and by encouraging conservation-oriented management practices that will consolidate the buffer zones surrounding existing protected areas.

- Carbon fixation in the Yungas (SAP Project No. 16)

The progressive reduction of green biomass in the Basin is reducing the photosynthetic capacity of the area and hence the ability of plants to fix carbon, an element that is becoming increasingly concentrated in the upper layers of the atmosphere and identified as causing environmental imbalances that are well known to the international community. In addition, the loss of biomass encourages land degradation more directly within the Bermejo River Basin by diminishing the reserves of organic carbon and reducing vegetative land cover, thereby further limiting the ability of the soils in the Basin to resist erosion.

During the first phase of the project, this activity will investigate the current ecological status of natural habitats in the Yungas (in the Upper Basin of the Bermejo River) and the design of a pilot project for protection, conservation, natural resource management, and rehabilitation of degraded habitats in this ecologically sensitive portion of the Basin. A second and more important element of this activity will implement this pilot plan in a selected representative area. The project will be located in one of the major water-supply zones of the Basin and will be aimed at increasing the carbon-fixation capacity of the area through the use of sustainable production practices, the regulated use of natural resources, and the application of techniques for the protection, conservation, management, and rehabilitation of natural habitats.

- Biodiversity study (SAP Project No. 17)

This activity is intended to improve the state of knowledge about biodiversity in the Upper Bermejo Basin, to determine the conservation status of the principal ecosystems, to identify problems affecting the biota, and to propose lines of action for its conservation and management. The activity will be based on earlier studies conducted during the formulation phase of the SAP, and on other existing studies in the region.

- Implementation of the Baritú-Tariquia biological corridor (SAP Project No. 20)

The purpose of this activity is to ensure the physical continuity of the protected areas currently included in the Baritú Park in Argentina and the Tariquia Reserve in Bolivia. Through the integrated management of the natural resources of these protected areas, a representative

portion of the Tucumán-Bolivian *selva* will be protected. The activity includes the legal and administrative consolidation of the biological corridor and the implementation of an integrated management program for natural resources in the region surrounding the corridor through actions of protection, economic support, education and environmental health education, research, and institutional strengthening. The corridor area includes the Tariquia Reserve, the Baritú Park, and the intervening zone on both sides of the border.

- Zoning and management plan for the Sama and Tariquia Reserves (SAP Project No. 19)

This activity consists of carrying out the ecological and socioeconomic studies necessary to establish core guidelines and concrete actions for managing the biological reserves of Sama and Tariquia, in a manner consistent with their objectives and characteristics. The project will develop a proposal for delimiting and reclassifying these reserves, dividing the territory into zones according to their ecological, economic and social characteristics, and preparing a management plan for both reserves. The activity implements lessons learned during the formulation phase of the SAP, and extends the underlying technical and sociological concepts initially identified in the program with respect to the Tariquia-Baritu Ecological Corridor.

- Evaluation of sub-Andean rangelands (SAP Project No. 18)

This is a second and supplementary phase of the pastures study of the Central Valley of Tarija that was initiated during the formulation stage of the SAP. The study extends zoning of the natural pasturelands in the sub-Andean ecoregion (in the upper Bermejo River basin), on the basis of ecological and socioeconomic criteria, quantifying their current condition, their management, and their limitations and potential, and identifies possible sustainable development strategies. Before such strategies, are developed and implemented, basic information for developing sustainable management plans on the natural pasturelands in this ecoregion is required.

- Zoning for the future Teuco National Park (SAP Project No. 22)

This initiative is intended to protect units of the dry Chaco (in the Middle Bermejo River Basin), and is seen as a fundamental step towards establishing the Chaco Biological Corridor identified in the regional biodiversity protection and management plan. The area to be zoned covers 250,000 ha in the provinces of Formosa and Chaco. This area is bisected by the Bermejo River (known as the Teuco River in this stretch). The project will attempt to define the real potential of the sector as a protected natural area and to establish objectives for its conservation, to provide appropriate zoning for the area, to establish recommendations for its management, and to formulate and propose policies for establishing a protected area.

The estimated cost of Activity 2.2 is US\$1,786,000 (GEF: US\$1,295,000; co-financing US \$ 491,000).

### **Activity 2.3. Protection and restoration of water quality**

This activity is intended to restore the quality of water in those critical stretches identified in the Watercourses Classification Study conducted during the SAP formulation phase, focusing on the Guadalquivir River. The activity will implement actions identified during the formulation phase of the SAP by providing support to the efforts of the local institutions responsible for carrying out the core activities. It will be supplemented by the conduct of a planning study for the remediation of watercourses in the vicinity of the city of Bermejo, another critical point of pollution of the water resources in the Upper Basin identified in the SAP. In so doing, this activity will extend and refine the lessons learned in the Guadalquivir River subbasin. It will ultimately have a beneficial effect for the entire Bermejo River Basin. This activity will be complementary to the establishment of a water-quality monitoring network for the Basin. Consequently, the activity includes the following specific actions, among others, identified in the SAP:

- **Environmental clean-up of the Guadalquivir River (SAP project No. 43)**

This activity comprises the implementation of two pilot-scale wastewater treatment plants in small rural settlements, including the adaptation and dissemination of feasible wastewater treatment technologies, the establishment of a pollution-control system for aquifers, and the formulation of a monitoring plan for wastewater. This activity will assist in the environmental cleanup of the Guadalquivir River, within the context of an activity that takes an integrated approach to this environmental problem identified during the TDA.

- **Environmental cleanup study for watercourses in the Bermejo Triangle (SAP Project No. 44)**

The activity will consist of analyzing the existing sewage and water treatment system, evaluating the sources and degree of pollution imposed upon the receiving water bodies, and proposing solutions for treating wastewater from the city and the sugar industry. In addition, it will propose solutions for eliminating solid wastes and other pollutants that also degrade the environment, and be accompanied by specific legal provisions relating to the application of environmental controls. The expected outcomes are (i) a diagnosis of the environmental situation of watercourses, primarily those of the El Nueve and El Cinco gorges and the Bermejo River and the Grande de Tarija River, which are affected by industrial and organic pollution; and (ii) the formulation of the final design of an environmental cleanup plan for these watercourses.

The estimated cost of Activity 2.3 is US\$326,500 (GEF: US\$195,000; co-financing US\$131,500).

## **C. COMPONENT III: SUSTAINABLE DEVELOPMENT OF NATURAL RESOURCES**

7. Component III will encourage the implementation of alternative production modes that will be environmentally friendly, or that will at least minimize environmental degradation with a focus on land degradation and soil erosion, while at the same time providing greater economic opportunities for the local population, in a context of integrated management of water resources and sustainable development planning for the Basin as a whole. The initial action under this



component will be to formulate the IWRMP, which will establish, a regional framework for execution of the remaining activities.

**Activity 3.1. Implementation of a planning framework for integrated water resource management and sustainable development in the Bermejo Basin**

This activity is intended to incorporate and strengthen regional practices, procedures, and capacities for programming and planning, thereby addressing one of the basic causes of environmental problems in the Basin as identified by the SAP. In particular, it calls for the formulation and development of an Integrated Water Resource Management and Sustainable Development Plan (IWRMP); which will synthesize the information gathering and dissemination, studies, analyses, sharing of experiences, demonstrations, and evaluations conducted to date or to be undertaken as part of the first stage of implementing the SAP. The results of this activity will provide an agreed planning framework for the sustainable management and development of natural resources, within a regional regulatory context negotiated and supported through a broad process of public participation. It will serve as the basis for extending and deepening strategic efforts and will be a concrete step towards the objectives of the strategic program. The specific output of this activity will be consistent with the IWRMP, structured on the basis of components that address not only the fundamental transboundary issues related to the transport of sediments, water pollution and nature conservation, but also priority actions related to human development and the alleviation of poverty, particularly sustainable production activities for Basin communities. Funding provided for this activity will also be used to establish the Project Executing Units and to support the Binational Commission for the implementation of the IWRMP. The activity includes the following specific actions, among others, identified in the SAP:

- Program for Integrated Management of Water Resources and Sustainable Development in the Bermejo River Basin (SAP Project No. 53)

The purpose of this project is to integrate all the actions undertaken during the first stage of the SAP within a programming framework for the integrated management of the Basin's resources, and to place development initiatives in the context of preventing erosion and pollution and conserving nature. This framework will serve as a basis for decision-making and will establish a threshold of sustainability for development projects undertaken by the various jurisdictions, either individually or jointly. It will serve as a basis of a programming context for actions that will be included in other stages of the SAP, either subsequent or complementary. Activities relating to project coordination and administration, contract monitoring and supervision, and the formation of a basic technical team will use a substantial portion of the financing provided for this project.

The estimated cost of Activity 3.1 is US\$2,675,900 (GEF: US\$1,528,900; co-financing US\$1,147,000).

**Activity 3.2. Sustainable practices for rehabilitation of degraded areas**

The TDA identified human pressures on natural resources as a direct cause of the loss of habitat and biodiversity in the montane systems of the Upper Basin. At the same time, the combination of the tremendous fluvio-morphological dynamics resulting from the transport of sediments originating in the Upper Basin and unsustainable approaches to the management of natural resources in general, and of the land in particular, associated with farming activity have been identified as immediate causes of the problems of lack of access to water resources and degradation of soils in the Chaco, an area of great regional importance in terms of habitat and biological diversity. The SAP recommended both structural and non-structural measures to address erosion risks in the Upper Basin and to control the deposit of sediments, to moderate excessive fluctuations in water flow, and to limit the negative impacts of the invasion of exotic species in this part of the lower basin. The activity will extend and transfer feasible approaches to sustainable economic development resulting from experience during the SAP formulation stage, in the form of pilot projects. These will in turn help to mitigate environmental problems arising from the degradation of forests and soils by human activity. The output of this activity will be the implementation of structural and non-structural practices of agricultural development that will also help to mitigate the impact of agriculture on more than 3,000 degraded hectares within the humid and dry Chaco zones, and 77 sites where, in addition, other practices will be applied to rehabilitate degraded areas, in relation to specific economic sectors. The output of the activity will include the implementation of appropriate pasture and livestock management practices and the development of traditional small-scale crops in the Yungas zones, implementing and/or improving traditional productive systems on a basis that is sustainable from an ecological, economic, and social viewpoint, and will also address land management in typical farm and pasture sites in the humid and subhumid Chaco region of the lower basin, and undertake complementary actions to restore soil productivity. Consequently, among other activities identified in the SAP, the activity includes the following specific actions to implement community-based sustainable management alternatives in these ecoregions of the Chaco:

- Sustainable management alternatives for natural resources in the humid and subhumid Chaco (SAP Project No. 62)

On the basis of experience gained during the formulation stage of the SAP, several institutions have decided to pool their efforts in a joint project, and thereby help to resolve a number of the ecological problems in the humid and subhumid region of the Bermejo River Basin. These actions are aimed at a broad range of producers and problems; they involve essentially the dissemination of sustainable resource management techniques, demonstrating their application in the expectation that the local community will gradually be persuaded to adopt them. Some of the major issues to be addressed by the activity are the restoration of degraded environments in the Lower Basin, the management of forage in humid and subhumid areas, the productive restoration of *vinalares*, sustainable management of the agro-silvo-pastoral potential of subtropical zones, sustainable soil management and conservation, and management of excessive and deficient water flows.

- Productive diversification under conditions of sustainability in the Yungas (SAP Project No. 70)

This activity is intended to take advantage of the pilot experiment in the community of Los Toldos, conducted during the SAP formulation phase, by expanding its area of application and by pursuing aspects that were passed over at that time. These latter aspects include sustainable exploitation of the forest on an experimental scale; management of pasture lands and livestock and the development of small-scale traditional crops, to supply a highly selective market; and the generation of employment through existing activities or promising new ones, such as ecotourism. These actions are intended to reduce human pressures on natural forest resources by diversifying the productive options open to rural families in ways that will reduce their transformation of the forest, integrate them into the regional market, generate local employment opportunities, and promote sustainable land use techniques within the parameters of multiple use of mountainous areas of the upper Bermejo River basin.

The estimated cost of Activity 3.2 is US\$2,393,100 (GEF: US\$846,000; co-financing US\$1,547,100).

### **Activity 3.3. Community extension programs for sustainable production and natural resource management**

The TDA found a high incidence of subsistence-level exploitation of natural resources in some areas of the Bermejo River Basin. Given the high population growth rates and the vulnerability of the natural resource base in these areas, these levels of exploitation are clearly unsustainable. The SAP therefore recommended efforts to promote sustainable forms of production based upon a community approach. This activity will identify current subsistence practices in these communities and will introduce programs designed to encourage the adoption of sustainable water and soil management practices. Using the knowledge gained during the formulation stage of the SAP, this activity will contribute to the protection of water and soil resources, including native fauna, particularly fish, in the natural ecosystems of the Bermejo River, while at the same time helping to satisfy the demand for food, fuel, and shelter in rural communities. The output of this activity will contribute to developing a basic understanding of the extent and impact (or lack thereof) of subsistence farming and fishing activities in the Basin, identifying alternatives to unsustainable exploitation of natural resources, and carrying out community extension programs in specific areas of the Basin to introduce sustainable alternatives to the current practices of these subsistence communities. The experience gained will lay the basis for future sustainable development of the most vulnerable communities in the region. The outputs of this activity will include documented information on the extent of subsistence farming and fishing activities in the basin, a documented program of information dissemination for improving local understanding of sustainable farming and fishing practices, and community extension projects in selected places within the basin. Consequently, the activity will include the following specific actions, among others, identified in the SAP:

- Implementing water and natural resource management practices that are consistent with traditional practices in the basin (SAP Project No. 72)

The purpose of this activity is to recognize the value of traditional cultural manifestations typical of the region with respect to managing water and other natural resources so that subsistence communities will adopt them as valid practices for sustainable management. To this end, a cultural survey of the region will be undertaken. The most promising manifestations will be applied in pilot projects, with the participation of the communities concerned, and an action program will be prepared and implemented to promote the appreciation, dissemination, and application of traditional practices and manifestations most suitable for the sustainable management of natural resources.

- Sustainable rural development in indigenous and native communities (SAP Project No. 133)

This activity is intended to improve living conditions among indigenous Wichi and native communities, through sound management of agro-silvo-pastoral systems and greater awareness of sustainable resource management.

The estimated cost of Activity 3.3 is US\$340,200 (GEF: US\$194,200; co-financing US\$146,000).

#### **Activity 3.4. Sustainable agriculture and soil conservation practices along the San Jacinto project area**

This activity relates to the use of natural resources in a sustainable manner. A demonstration project will be undertaken in areas recently brought under irrigation within the San Jacinto project area in an effort to optimize soil and water use, control soil loss in and around areas under cultivation, and at the same time enhance the productivity of economic activities. The results of this experiment will be extrapolated to other zones with similar characteristics within the Upper Basin. Consequently, the activity includes the following strategic actions:

- Systematization of irrigated areas of the San Jacinto project (SAP Project No. 150)

The Land Systematization component of the San Jacinto Project includes the development and implementation of technological packages for soil and water management in irrigated farming areas and the management of marginal lands within the project's area of influence. The project calls for optimizing soil and water utilization in order to enhance the productivity of farming, and to control erosion in lands next to cultivated areas. The experience gained will be disseminated to other irrigated areas that are similarly vulnerable to soil loss.

The estimated cost of Activity 3.4 is US\$243,000 (GEF: US\$160,000, co-financing US\$ 83,000).

#### **Activity 3.5. Securing of financial resources for the Bermejo River Basin**

The objective of this activity is to convene meetings with representatives of local, regional and international financing agencies to explore jointly the possibilities of allocating funds to SAP proposals and other complementary actions/initiatives oriented towards the sustainable development of the Bermejo Basin, concerning the amelioration of quality of life, the alleviation of

poverty, the improvement of health, and the preservation of indigenous cultural heritage, among other aspects, and of promoting a progressively increasing and long-term involvement of these agencies in the overall development of the Basin. Representatives of the agencies responsible for technical and financial aspects of these proposals, actions, and initiatives will also participate in the meetings. Both governments have initiated actions at the national level with the Inter-American Development Bank, seeking to obtain its participation as lead agency in the organization and implementation of the meetings, which is planned to be held in the region during the first year of the project's implementation.

The estimated cost of Activity 3.5 is US\$350,000 (GEF: US\$300,000, co-financing US\$ 50,000).

#### **D. COMPONENT IV: PUBLIC AWARENESS, PARTICIPATION, AND REPLICATION OF PROJECT ACTIVITIES**

8. This component embraces activities to identify and coordinate the interests of people and organizations with economic and/or institutional responsibilities in the basin, including the agricultural and industrial sectors. Access to information is an essential part of this process of encouraging and effectively enhancing the interest of local stakeholders in sound management of the basin's natural resources. To this end, a central element of this component will be to inform the citizenry in the Basin through an integrated program of environmental education, institutional transparency, and exchange of information among communities, organizations, and government entities. Building on the achievements of the SAP formulation phase, further development of identified participatory mechanisms during the implementation phase will lay the groundwork for extending the Project findings into the entire Plata River Basin. Activities are considered within this component that will identify mechanisms to promote the sharing of experiences, and engender international and regional cooperation, in order to enhance synergies at the broader level of the Plata River Basin.

##### **Activity 4.1. Environmental education programs**

The SAP identified the need for community-level environmental education programs as key elements in the support of sustainable programs for protecting and rehabilitating the environment and promoting economic development. This activity continues and extends this community focus throughout the Bermejo River basin. It will also contribute to the development and distribution of curricula and materials for use in training teachers, and will include community and private sector initiatives in the scope of educational programming. One element of this activity is specifically designed to improve educational opportunities in the most vulnerable communities. Results of this activity will not only increase awareness among communities in the basin, but will also help them, through the local schools, to understand ways of improving their living standards and bringing about positive environmental change at the local level. The output of the activity will include the preparation of appropriate curricula at the various educational levels, publicity materials for promoting public awareness, and materials and manuals for use in teaching and teacher training. Consequently, the activity includes the following specific actions, among others, identified in the SAP:

- Promotion of environmental education activities in the basin (SAP Project No. 129)

This activity will implement a comprehensive program of efforts to promote environmental education (awareness, training, and formal and informal education) relating to the sustainable use of water and other natural resources, geared to the different ecological regions of the Bermejo River Basin, and also to promote awareness and understanding among the various stakeholder groups—social, political, and economic—about the environmental consequences of improper use of natural resources and the impact of human activities through workshops, seminars, meetings, bibliographies, manuals, brochures, the mass media, etc. One of the principal focuses of the program will be on teachers, because of the proven multiplying effect they can have on students, parents, and the community as a whole. Another important focus is on working jointly with local governments, grassroots organizations, and producers' groups, as well as with private landowners. In Bolivia, the program will address issues of environmental legislation, ecology, biology, erosion control, land clearing, fire, environmental pollution, and low-impact practices in the agricultural, livestock, and forestry industries. In Argentina, the program will address the development of environmental awareness, based on promoting a sense of appreciation and protection of the native forest among teachers, students, and the aboriginal community in different regions of the Basin. This portion of the activity will focus on schools and producers' organizations to publicize experiences gained during the formulation stage of the SAP. It will also foster discussion forums to enhance environmental awareness about the rational and sustainable use of water, through interaction among the various institutions involved in farming and irrigation activities and training for environmental promoters, thereby incorporating elements of SAP Projects No. 128, No. 130, and No. 131.

The estimated cost of Activity 4.1 is US\$1,166,000 (GEF: US\$509,000; co-financing US\$657,000).

#### **Activity 4.2. Public participation program**

The formulation process for the SAP has generated expectations among stakeholders in the Basin, who recognize that public participation in establishing priorities and implementing new practices is essential for improving the management of water and environmental resources. The basic elements for ensuring the commitment of local stakeholders are information, education, and the establishment of suitable mechanisms for public participation. To this end, this activity will seek to stimulate public participation in environmental management of the Bermejo River basin by disseminating information to communities and organizations through a variety of means, including public hearings, community-based legislative initiatives, environmental education courses, consultation and mobilization workshops, capacity strengthening programs, and use of the mass media (radio, television, Internet, newspapers). This information will help to build a basic awareness so that individuals, organizations, and businesses will become engaged in the decision-making process. This activity will develop guidance materials for implementing public participation processes at different levels of government, to increase public awareness and to provide the means for the public to contribute to environmental management. The results of this activity will enhance general environmental management by involving a broad population base in the process. The

outputs will include a documented system of public participation, supported by suitable course materials and general information brochures, and acceptance of public participation as a working methodology and philosophy in implementing SAP projects. The activity includes specific actions identified in the SAP for undertaking a public participation program (SAP Project 126). The estimated cost of Activity 4.2 is US\$532,300 (GEF: US\$307,300; co-financing US \$ 225,000).

### **Activity 4.3. Information system for the Bermejo River basin**

The SAP identified the need to acquire and disseminate information at two levels within the Basin: technical information among water resource professionals at all governmental levels involved in the use and management of the waters of the Bermejo River, and information of more general interest for the public and other interested entities. Information of the first type includes data on weather and rainfall, water quality and sediments, hydrogeological information, land use, environmental data, legal information, socioeconomic data, information on economic development indicators, local information on specific sites, financial data, and other types of information useful for professional monitoring. Information of the second type includes aspects of community interest, notices of events and activities and useful information for individuals, businesses and civil society organizations, including NGOs. This information will foster institutional transparency, stimulate informed participation in community decision-making, and help to standardize practices among professionals and jurisdictions, within the Basin and beyond it in the broader context of the Plata River system. A prerequisite for establishing this exchange of information is the creation of an information system. The initial step in so doing will be to identify potential sources of information, nodes, and users in the basin. This activity complements a proposed medium-scale project to be financed by the GEF for the Upper Paraguay River Basin (SIAP, Environmental Information System for the Upper Paraguay) to be developed by Bolivia, Brazil, and Paraguay. The result of this activity will be to extend the SIAP or an equivalent information system to the Bermejo River Basin. The output of the activity will include documented user groups including a catalogue of information needs, environmental monitoring sites with suitable links to the information system, a regional information system in GIS environment, and one or more pilot-scale satellite information systems accessible to water management professionals and to the community. An integral aspect of this latter output will be a negotiated operating protocol to establish ownership over user rights, suitable levels of access to information, and associated operational details. A further product of this activity will be to create a supervisory or management committee to operate the information system within the context of the Binational Commission.

Funding is required to create an environmental information and monitoring system, as a mechanism for supplying a broad range of information on water and natural resources to a wide variety of stakeholders, ranging from civil society to government agencies, within the Bermejo River basin. The system is planned to provide the grounds for building and monitoring specific indicators related to sustainable development and environmental status, including land use and natural resources degradation and restoration trends in the Basin. The implementation of the SAP, and project achievements, also will be subject to monitoring based on the indicators to be

identified at the time this project is implemented. The activity includes the following specific actions, among others identified in the SAP.

- Access to information in support of public participation (SAP Project No. 136)

The purpose of this activity is to prepare recommendations and strategies for establishing and applying mechanisms to ensure that civil society has access to information on water, natural resources, and development projects, including the identification of the necessary regulatory frameworks and institutional structures. The current situation within the region will be analyzed, and guidelines will be formulated to ensure the flow of information and to identify focal points for providing that information. Case studies will be used to assess technical, institutional, and legal possibilities and difficulties for establishing one or more selected mechanisms, and on this basis general recommendations will be formulated and strategies will be proposed for generalized implementation across the different jurisdictional levels of the basin.

- Developing networks and mechanisms of articulation among the various economic sectors and jurisdictional authorities in the basin (SAP Project No. 5)

The purpose of this activity is to promote the development of networks and other mechanisms for sectoral and interjurisdictional articulation as instruments for coordinating efforts at sustainable management among the different economic sectors and among the various jurisdictional authorities in the basin. To this end, priority interest groups and appropriate articulation mechanisms will be identified, examined and recommended. Selected activities of articulation and coordination will be conducted in regional workshops.

- Developing and implementing an environmental information and monitoring system for the Bermejo River basin (SAP Project No. 6)

This activity will implement an environmental information system for the basin as a whole, embracing activities in the area of generating, acquiring, processing and storing information on the status and use of the basin's natural resources. To this end, an environmental monitoring network will be designed for the Bermejo River basin, to cover data on climate, sediments, the volume and quality of water in the different rivers of the basin, the state and dynamics of vegetation cover, the process of soil erosion, socioeconomic aspects and others. The GIS database developed during the formulation phase of the SAP will be strengthened and extended, and information will be made available to different users. Efforts will also be made to strengthen and coordinate activities among the responsible entities.

- Definition and adoption of IW indicators

This activity includes the organization and implementation of five (5) regional technical workshops for the definition and adoption of a set of (1) process indicators (focusing on the processes that will lead to desirable results), (2) stress reduction indicators (focusing on



actions with defined targets that will reduce the environmental stress on the waterbody), and (3) environmental status indicators (focusing on the actual improvement of the ecosystem quality). Two workshops would be held at the inception of the project to define and adopt the indicators, two during project implementation to monitor the indicators, and one towards the end of the project execution to conclude on the matter.

The estimated cost of Activity 4.3 is US\$2,281,600 (GEF: US\$1,143,400; co-financing US\$1,138,200).

#### Activity 4.4. Replication of project activities

Outputs, findings, and lessons learned during the SAP formulation process demonstrated the feasibility of integrated and participatory approaches for strategic programming of water resources and land-use management at the Basin level. Although different in scope and intensity, many of the environmental problems, transboundary manifestations and basic root causes identified in the Bermejo Basin are common in other regions of the Plata River Basin. Therefore, this activity will seek to extend the methodological approach, findings, and recommendations of the Bermejo project to these areas, contributing to promote a larger-scale and Basin-wide strategic framework to address main environmental degradation processes, including the identification of critical transboundary issues and definition of priority actions at the national and multi-national level. The estimated cost of Activity 4.4 is US\$850,000 (GEF: US\$700,000; co-financing US\$150,000).

- Dissemination and replication of the Bermejo Project into the broader context of the Plata Basin

This incorporates activities to support the dissemination of SAP methodological approaches, findings and outputs beyond the Bermejo region and into the broader context of La Plata River Basin, as a means to promote the formulation of the Basin-wide strategic framework. For dissemination activities in Argentina and Bolivia, the Binational Commission will directly coordinate actions with national agencies. For activities involving other countries of the Plata River Basin, the Binational Commission, through the Ministries of Foreign Affairs of both countries, will coordinate actions with the Intergovernmental Committee of the Plata River Basin (CIC) and with other bilateral or multilateral basin organizations, such as the Pilcomayo Trilateral Commission. The Activities include: (1) the preparation of Bermejo project materials in various media (documents, CD, video, Internet Web sites) for wide distribution in the region, with special consideration to materials that may be used in training courses, seminars, workshops, specialized journals, and social-communication media; (2) the presentation of Bermejo SAP Project in national and regional technical meetings related to water resources and environmental management currently held in the Basin; (3) the organization and conduct of seminars and workshops to present Bermejo SAP experience and promote the replication of the project's methodology, leading to the identification of environmental problems, transboundary manifestations, basic causes, strategic framework, and priority actions, including the participatory approach to strategic programming of shared waters resources. As long as this activity is carried out, criteria and guidelines for planning and

implementing replication activities in the broader context of La Plata River Basin will be identified.

9. Table I.1 presents an indicative work schedule, according to which the project will be implemented over a period of four years. It should be noted that the specific activities can be initiated at any time within the six months preceding, the date specified in the table provided that the human and financial resources and the required information are available. Moreover, it is expected that each activity can be executed within a period of at least one year.

10. The total cost of the project is estimated to be US\$18,830,000. The total cost of the baseline situation, without funding from the GEF, is US\$8,430,000. In addition, an amount of more than US\$500 million is included for investment in the Bermejo River basin, in the form of various reimbursable loans that are now administered by the Inter-American Development Bank, the World Bank, and other bilateral governmental cooperation agencies (see Annex H). These funds may be considered as part of the financial baseline, according to the present agreements. It is assumed that these investments represent the total value of the national benefits produced by the project and that they will be specifically applied to deal with such aspects as effluent treatment, flood management and domestic water supply (see Annex A). For the alternative project, a total of US\$8,430,000 would be contributed by the governments of Argentina and Bolivia, local provinces and prefectures, and other public and private sources in support of new initiatives to be incrementally funded through the GEF. Financing by other international institutions amounts to US\$300,000, composed of funds administered by UNEP (US\$150,000 in kind) and by the OAS (US\$150,000 in kind). The incremental contribution requested from the GEF is US\$10,400,000. Additional funding from the GEF will be applied specifically to catalyze such activities as developing an effective organization for the basin, mitigating and preventing soil degradation, and controlling and minimizing degradation of water quality. Table I.2 summarizes the application of GEF funds in both countries. Table I.3 provides further breakdown for GEF funding and non GEF funding per activity and per country.

**Table I.1 Indicative Work Schedule showing estimated execution periods for project components**

Activity/Semester	1	2	3	4	5	6	7	8
Steering Committee meetings	◆	◆	◆	◆	◆	◆	◆	◆
1.1 Development and strengthening of institutional framework								
1.2 Regional legislative, economic, and environmental framework								
2.1 Soil management and erosion control in critical areas								
2.2 Consolidating protected areas and protecting biodiversity								
2.3 Protection and restoration of water quality								
3.1 Implementation of a planning framework								
3.2 Sustainable practices for rehabilitation of degraded areas in Chaco and Yungas regions								
3.3 Community extension programs for sustainable production and natural resource management								
3.4 Sustainable agriculture and soil conservation practices along the San Jacinto project area								
3.5 Procurement of financial resources for the Bermejo Basin		◆						
4.1 Environmental education programs								
4.2 Public participation program								
4.3 Information system								
4.4 Replication of project activities								

**Table I.2 Indicative distribution of project funding by country (Million US\$)**

ACTIVITY	GEF			GOVERNMENTS			TOTAL
	Argentina	Bolivia	Total	Argentina	Bolivia	Total	
1.1 Development and strengthening of institutional framework	0.52	0.49	1.01	0.67	0.14	0.81	1.82
1.2 Regional legislative, economic, and environmental framework	0.67	0.21	0.88	0.47	0.57	1.05	1.93
2.1 Soil management and erosion control in critical areas	0.42	0.90	1.32	0.32	0.49	0.81	2.13
2.2 Consolidating protected areas and protecting biodiversity	0.30	1.00	1.30	0.21	0.28	0.49	1.79
2.3 Protection and restoration of water quality	0.00	0.20	0.20	0.00	0.13	0.13	0.33
3.1 Implementation of a planning framework	0.93	0.60	1.53	0.63	0.51	1.14	2.67
3.2 Sustainable practices for rehabilitation of degraded areas in Chaco and Yungas regions	0.85	0.00	0.85	1.55	0.00	1.55	2.40
3.3 Community extension programs for sustainable production and natural resource management	0.19	0.00	0.19	0.15	0.00	0.15	0.34
3.4 Sustainable agriculture and soil conservation practices along the San Jacinto project area	0.00	0.16	0.16	0.00	0.08	0.08	0.24
3.5 Procurement of financial resources for the Bermejo Basin	0.15	0.15	0.30	0.025	0.025	0.05	0.35
4.1 Environmental education programs	0.31	0.20	0.51	0.53	0.13	0.66	1.17
4.2 Public participation program	0.21	0.10	0.31	0.15	0.07	0.22	0.53
4.3 Information system	0.89	0.25	1.14	1.00	0.14	1.14	2.28
4.4 Replication of project activities	0.35	0.35	0.70	0.075	0.075	0.15	0.85
<b>Total</b>	<b>5.80</b>	<b>4.60</b>	<b>10.40</b>	<b>5.79</b>	<b>2.64</b>	<b>8.43</b>	<b>18.83</b>

**Table I.3 STRATEGIC ACTION PROGRAM FOR THE BINATIONAL BERMEJO RIVER BASIN**

**PROJECT BUDGET AND FINANCING (Thousands US\$)**

COMPONENT	ACTIVITY	PROJECT	GEF			GOVERNMENT			TOTAL	
			ARG.	BOLIVIA	TOTAL	ARG.	BOLIVIA	TOTAL	PARTIAL	GLOBAL
<b>I</b> INSTITUTIONAL DEVELOPMENT AND STRENGTHENING FOR INTEGRATED WATER RESOURCES PLANNING AND MANAGEMENT	1.1 Development and strengthening of the institutional framework	P1 Institutional development and strengthening of the Binational Commission	269.59	100.00	369.59	194.80	58.40	253.20	622.79	1,824.54
		P.2 Institutional development at basin level in Argentina	0.00	0.00	0.00	148.10	0.00	148.10	148.10	
		P.8 Institutional strengthening for gov. and civil society organizations	255.45	390.00	645.45	326.20	82.00	408.20	1,053.65	
	1.2 Development of a holistic regional legislative, economic and environmental framework	P.3 Development and harmonization of political and legal frameworks	297.50	10.00	307.50	191.90	35.00	226.90	534.40	1,929.54
		P.7 Environmental zoning and land-use regulation	218.80	200.00	418.80	140.20	539.00	679.20	1,098.00	
		P.9 Strengthening and developing economic instruments	64.50	0.00	64.50	26.60	0.00	26.60	91.10	
		P.10 Incorporation of environmental and social costs.	91.64	0.00	91.64	114.40	0.00	114.40	206.04	
	2.1 Soil management and Erosion control in critical areas	P.51 Sediment control in the Tolomosa river basin	0.00	500.00	500.00	0.00	363.00	363.00	863.00	
		P.55 Integrated management of natural resources of Santa Ana River basin	0.00	400.00	400.00	0.00	120.00	120.00	520.00	
		P58 Integrated management of the Iruya river basin	277.40	0.00	277.40	223.80	0.00	223.80	501.20	

**Table I.3 STRATEGIC ACTION PROGRAM FOR THE BINATIONAL BERMEJO RIVER BASIN**

**PROJECT BUDGET AND FINANCING (Thousands US\$)**

COMPONENT	ACTIVITY	PROJECT	GEF			GOVERNMENT			TOTAL	
			ARG.	BOLIVIA	TOTAL	ARG.	BOLIVIA	TOTAL	PARTIAL	GLOBAL
II ENVIRONMENTAL PROTECTION AND REHABILITATION		P59 Management of the Grande river basin: mapping of the Huasamayo river sub-basin	150.00	0.00	150.00	100.00	0.00	100.00	250.00	2,134.20
	2.2 Consolidating protected areas and protecting biodiversity	P.19 Management plan for the Sama and Tariquía Reserves	0.00	100.00	100.00	0.00	43.00	43.00	143.00	1,786.00
		P.17 Biodiversity study	0.00	150.00	150.00	0.00	28.00	28.00	178.00	
		P.18 Evaluation of sub-andean rangelands	0.00	45.00	45.00	0.00	20.00	20.00	65.00	
		P.14 Ecotourism activities in piedmont transition forest	200.00	0.00	200.00	130.00	0.00	130.00	330.00	
		P.16 Carbon fixation in the Yungas	0.00	400.00	400.00	0.00	103.00	103.00	503.00	
		P.20 Implementation of the Baritú-Tariquía biological corridor	76.00	300.00	376.00	55.00	90.00	145.00	521.00	
		P22 Zoning for the future Teuco National Park	24.00	0.00	24.00	22.00	0.00	22.00	46.00	
	2.3 Protection and Restoration of water quality	P.43 Environmental clean-up of the Guadalquivir River	0.00	150.00	150.00	0.00	120.00	120.00	270.00	326.50
		P.44 Environmental clean-up study in the Bermejo Triangle	0.00	45.00	45.00	0.00	11.50	11.50	56.50	

**Table I.3 STRATEGIC ACTION PROGRAM FOR THE BINATIONAL BERMEJO RIVER BASIN**

**PROJECT BUDGET AND FINANCING (Thousands US\$)**

COMPONENT	ACTIVITY	PROJECT	GEF			GOVERNMENT			TOTAL	
			ARG.	BOLIVIA	TOTAL	ARG.	BOLIVIA	TOTAL	PARTIAL	GLOBAL
<b>III</b> SUSTAINABLE DEVELOPMENT OF NATURAL RESOURCES	3.1 Implementation of a planning framework for integrated water resource management	P.53: Program for integrated management of water resources and Sustainable Development	928.90	600.00	1,528.90	634.00	513.00	1,147.00	2,675.90	2,675.90
	3.2 Sustainable practices for rehabilitation of degraded areas	P.62 Sustainable management alternatives for natural resources in the humid and sub-humid Chaco	606.00	0.00	606.00	1,129.10	0.00	1,129.10	1,735.10	2,393.10
		P.70 Productive diversification under conditions of sustainability in the Yungas	240.00	0.00	240.00	418.00	0.00	418.00	658.00	
	3.3 Community extention programs for sustainable production and natural resource management	P.72 Implementing water and natural resource management practices	164.20	0.00	164.20	116.00	0.00	116.00	280.20	340.20
		P.133 Sustainable rural development in indigenous and native communities	30.00	0.00	30.00	30.00	0.00	30.00	60.00	
	3.4 Sustainable agriculture and soil conservation practices	P.115 Systematization of irrigated areas of the San Jacinto project	0.00	160.00	160.00	0.00	83.00	83.00	243.00	243.00
	3.5 Procurement of financial resources for the Bermejo river basin	Donor/round table meeting	150.00	150.00	300.00	25.00	25.00	50.00	350.00	350.00

**Table I.3 STRATEGIC ACTION PROGRAM FOR THE BINATIONAL BERMEJO RIVER BASIN**

**PROJECT BUDGET AND FINANCING (Thousands US\$)**

COMPONENT	ACTIVITY	PROJECT	GEF			GOVERNMENT			TOTAL		
			ARG.	BOLIVIA	TOTAL	ARG.	BOLIVIA	TOTAL	PARTIAL	GLOBAL	
<b>IV PUBLIC AWARENESS PARTICIPATION AND REPLICATION</b>	4.1 Enviromental education programs	P.129 Promotion of environmental education activities in the basin	309.00	200.00	509.00	530.50	126.50	657.00	1,166.00	1,166.00	
	4.2 Public participation program	P.126 Public participation program	207.30	100.00	307.30	153.00	72.00	225.00	532.30	532.30	
	4.3 Information System for the Bermejo River Basin		P.136 Access to information in support of public participation	58.00	5.00	63.00	20.20	4.50	24.70	87.70	2,281.60
			P.5 Developing networks and mechanisms of articulation	110.50	5.00	115.50	76.60	3.90	80.50	196.00	
			P.6 Environmental Information System of the Bermejo River Basin	624.90	140.00	764.90	905.00	128.00	1,033.00	1,797.90	
			P.138 Definition and adoption of IW indicators	100.00	100.00	200.00	0.00	0.00	0.00	200.00	
	4.4 Replication of project activities	Dissemination and replication of the Bermejo Project into the Plata Basin	350.00	350.00	700.00	75.00	75.00	150.00	850.00	850.00	

<b>5,803.60</b>	<b>4,600.00</b>	<b>10,403.60</b>	<b>5,785.40</b>	<b>2,643.80</b>	<b>8,429.20</b>	<b>18,832.80</b>	<b>18,832.80</b>
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## PROJECT REVIEW SHEET

### Work Program Inclusion - UNEP International Waters

**Project Title:** “Implementation of the Strategic Action Programme for the Bermejo River Binational Basin” Argentina/Bolivia.

**Date:** September 5, 2000

	Work Program Inclusion per criteria established in Draft # 8 of the project review criteria	Reference Paragraphs and Explanatory Notes:
<b>1. Country Ownership</b>		
<ul style="list-style-type: none"> <li>Country Eligibility</li> </ul>		<ul style="list-style-type: none"> <li>Countries are eligible under paragraph 9b of the GEF Instrument – see cover page</li> </ul>
<ul style="list-style-type: none"> <li>Country Drivenness</li> </ul>	Clear description of Project’s fit within: <ul style="list-style-type: none"> <li>National reports/communications to Conventions</li> <li>National or sector development plans.</li> <li>Recommendations of appropriate regional intergovernmental meetings or agreements.</li> </ul>	<ul style="list-style-type: none"> <li>National and regional priorities were identified in the Transboundary Diagnostic Analysis &amp; the Strategic Action Programme which were reviewed and later on endorsed during a series of public and stakeholders meetings held between Dec. 95 and Dec 99</li> <li>Project brief was also reviewed and endorsed during a series of public and stakeholders, and steering committee meetings held this year.</li> <li>Para 1, and 5 through 8 describe the national programming context</li> </ul>
<ul style="list-style-type: none"> <li>Endorsement</li> </ul>	<ul style="list-style-type: none"> <li>Endorsement by national operational focal points</li> </ul>	<ul style="list-style-type: none"> <li>See cover page &amp; Annex D</li> </ul>
<b>2. Program &amp; Policy Conformity</b>		
<ul style="list-style-type: none"> <li>Program Designation &amp; Conformity</li> </ul>	Describe how project objectives are consistent with Operational Program objectives or operational criteria	<ul style="list-style-type: none"> <li>Consistency of project objectives with Operational Programme 9 is described in para 4</li> </ul>
<ul style="list-style-type: none"> <li>Project Design</li> </ul>	Describe: <ul style="list-style-type: none"> <li>Sector issues, root causes, threats, barriers etc affecting global environment</li> <li>Project logical framework, including a consistent strategy, goals, objectives, outputs inputs/activities, measurable performance indicators, risks and assumptions</li> <li>Detailed description of goals, objectives, outputs and related</li> </ul>	<ul style="list-style-type: none"> <li>Discussion on root causes, threats,... were the subject of the Transboundary Diagnostic Analysis produced during the SAP formulation phase. A summary of the analysis can be found in para 6 of the Brief and in Annex E. The complete TDA is available upon request.</li> </ul>

	<b>Work Program Inclusion per criteria established in Draft # 8 of the project review criteria</b>	<b>Reference Paragraphs and Explanatory Notes:</b>
	<p>assumptions, risks and performance indicators</p> <ul style="list-style-type: none"> <li>• Brief description of project activities, including an explanation how the activities would result in project outputs</li> <li>• Global environmental benefits of the project.</li> <li>• Incremental cost estimation based on the project logical framework <ul style="list-style-type: none"> <li>• Describe project outputs (and related activities &amp; costs) that result in global environmental benefits</li> <li>• Describe project outputs (and related activities &amp; costs) that result in global and national environmental benefits</li> <li>• Describe project outputs (and related activities &amp; costs) that result in national environmental benefits</li> <li>• Describe the process used to jointly estimate incremental cost with in-country project partner</li> <li>• Present the incremental cost estimate. If presented as a range, then a brief explanation of the challenges and constraints and how these would be addressed by the time of CEO endorsement.</li> </ul> </li> </ul>	<ul style="list-style-type: none"> <li>• A complete project logical Framework is presented in Annex B. Discussion on risk and sustainability is presented in para 30 to 34 of the Brief</li> <li>• Description of project objectives, activities, outputs, is presented in para 9 to 27 of the Brief. Detailed information can be found in Annex I.</li> <li>• The Bermejo river is the major river spanning the Chaco and thus contributes the largest mass of Andean sediment to the Plata River System. The origin and the behavior of the sediment dramatically conditions water uses in the Bermejo and the Plata system. Activities to control erosion and address land degradation in the Bermejo basin will contribute to the achievement of global benefits embodied in the mitigation of transboundary environmental problems.</li> <li>• A complete incremental cost analysis is presented in Annex A. A summary of the discussion is presented in para 43 and table 2 and 3 of the Brief.</li> </ul>
<ul style="list-style-type: none"> <li>• Sustainability (including financial sustainability)</li> </ul>	<p>Describe proposed approach to address factors influencing sustainability, within and/or outside the project to deal with these factors</p>	<p>Paras 30 to 34 of the Brief, discuss the risk and sustainability per se. Various mechanisms to ensure long-term sustainability of actions and measures undertaken under this proposed project are described in the activity section of the brief that is para 14 through 27 and in particular in para 23 fifth bullet which intends to secure financial support for the SAP through donor round tables, and para 27 which presents actions to share experiences and promote international and regional cooperation seeking for</p>

	<b>Work Program Inclusion per criteria established in Draft # 8 of the project review criteria</b>	<b>Reference Paragraphs and Explanatory Notes:</b>
		mechanisms that will enhance synergies at the Plata Basin level. See also para 34 and 40 which discuss the creation and role of an inter-ministerial committee that will help ensure even greater sustainability of project results. Detailed information can also be found in Annex I
<ul style="list-style-type: none"> <li>• Replicability</li> </ul>	Describe the proposed approach to replication (for e.g. dissemination of lessons, training workshops, information exchange, national and regional forum etc.) (could be within project description)	Component IV of the Brief (para 27 –29) discusses replicability as well as public awareness and information dissemination. Access to information at all level of the society is recognized as an essential part of the process of encouraging local stakeholders to take an interest in sound management of the basin’s natural resources. Thus, the central theme of this component will be to inform the citizenry of the basin as well as areas with similar problems within the Plata basin through an integrated programme of environmental education, institutional transparency, and information exchange among communities, organizations and government entities. Workshops and technical seminars are planned with other riparian countries of the Plata basin. Overall, this project proposal also aims at replicating those practices and measures that proved to be successful throughout the basin. Annex I provides detailed explanation on activities to be carried out.
<ul style="list-style-type: none"> <li>• Stakeholder Involvement</li> </ul>	<ul style="list-style-type: none"> <li>• Describe how stakeholders have been involved in project development</li> <li>• Describe the approach for stakeholder involvement in further project development and implementation</li> </ul>	Stakeholder participation and implementation arrangements are described in para 33 to 42 of the Brief. Annex F of the Brief presents a public involvement plan which summarizes the agencies involved in the project preparation and likely to be involved in the execution of the project.

	<b>Work Program Inclusion per criteria established in Draft # 8 of the project review criteria</b>	<b>Reference Paragraphs and Explanatory Notes:</b>
<ul style="list-style-type: none"> <li>Monitoring &amp; Evaluation</li> </ul>	<ul style="list-style-type: none"> <li>Describe how project design has incorporated lessons from similar projects in the past</li> <li>Describe approach for project M&amp;E system, based on the project logical framework, including the following elements: <ul style="list-style-type: none"> <li>Specifications of indicators for objectives and outputs, including alternate benchmarks, and means of measurement.</li> <li>Outline organisational arrangement for implementing M&amp;E</li> <li>Indicative total cost of M&amp;E (may be reflected in total project cost).</li> </ul> </li> </ul>	<p>Monitoring, evaluation and dissemination issues are discussed in para 46 and 48 of the brief. Annex I presents a detailed project workprogramme. Annex B constitutes as well an element of the M&amp;E plan. Based on Annex B and I, it is anticipated that a specific M&amp;E plan will be prepared at the inception of the project implementation.</p> <p>Under component IV (para 27), a specific activity with a budget of US\$ 100,000 is planned to look at the definition and adoption of process, stress-reduction and environmental status indicators.</p> <p>Other Monitoring and Evaluation costs are built into the IA agency fee.</p>
<b>3. Financing</b>		
<ul style="list-style-type: none"> <li>Financing Plan</li> </ul>	<ul style="list-style-type: none"> <li>Estimate total project cost.</li> <li>Estimate contribution by financing partners.</li> <li>Propose type of financing instrument</li> </ul>	<ul style="list-style-type: none"> <li>Total project cost = US\$ 19.77 M</li> <li>Co-financing = US\$ 8.73 M</li> <li>GEF cost = US\$ 11.04 M</li> <li>Associated financing = US\$ 530 M</li> <li>Annex H provides additional detailed information on the co-financing</li> <li>Costing by activity and sub-activity is presented in the brief component by component in para 17,21, 26 and 29. Details are presented in Annex I.</li> <li>Summary of the project financing is presented in para 45 and table 2 and 3 of the Brief</li> <li>Table 3 of Annex A (Incremental Cost) is presenting the schedule of expenditures</li> </ul>
Implementing Agency Fees	Propose IA fee	Standard fee plus premium of US\$70,000 due to the multi-country nature of the project, the high cost of travel from Nairobi to Southern America,

	<b>Work Program Inclusion per criteria established in Draft # 8 of the project review criteria</b>	<b>Reference Paragraphs and Explanatory Notes:</b>
		additional cost for a mid-term evaluation, and the duration (4.5) of the project. A formal request is being officially sent under a separate cover.
<ul style="list-style-type: none"> <li>• Cost-effectiveness</li> </ul>	<ul style="list-style-type: none"> <li>• Estimate cost effectiveness, if feasible</li> <li>• Describe alternate project approaches considered and discarded</li> </ul>	A quantitative assessment of cost effectiveness has not been attempted. However, the report of the evaluation of the “previous phase” that is the SAP formulation mentions that the most cost effective approach is that of the short-term SAP implementation i.e. the submitted proposal.
<b>4. Institutional Coordination &amp; Support</b>		
<u>IA Coordination and Support</u> <ul style="list-style-type: none"> <li>• Core commitments &amp; Linkages</li> </ul>	Describe how the proposed project is located within the IA’s <ul style="list-style-type: none"> <li>• Country regional/global/sector programs</li> <li>• GEF activities with potential influence on the proposed project (design &amp; implementation)</li> </ul>	<ul style="list-style-type: none"> <li>• Linkage to IA’S programme is outlined in Para 4 of the Brief.</li> <li>• GEF activities with potential influence on the proposed project are described in Para 11 of the Brief, which is outlining the complementary interventions.</li> </ul>
<ul style="list-style-type: none"> <li>• Consultation, Coordination and Collaboration between IAs, and IAs and EAs, if appropriate.</li> </ul>	<ul style="list-style-type: none"> <li>• Describe how the proposed project relates to activities of other IAs and 4 RDBs in the country/region.</li> <li>• Describe planned/agreed coordination, collaboration between IAs in project implementation.</li> </ul>	As mentioned above, as it is intended to replicate the Bermejo experience to other areas of the Plata Basin with similar conditions, collaboration with other IA is anticipated. Further, complementary activities are being conducted, or are proposed to be conducted, with funds provided by the World Bank, the Inter-American Development Bank,.. and through bilateral agreements. Integration of these activities within the regional planning context created by the Bermejo SAP will provide opportunities for further involvement and coordination of investments within the framework of this project., While these programmes and activities are independent of the GEF financed initiatives, the Technical Coordinators at the Binational Commission will endeavor to integrate and coordinate activities.

	<b>Work Program Inclusion per criteria established in Draft # 8 of the project review criteria</b>	<b>Reference Paragraphs and Explanatory Notes:</b>
		Specific collaboration with the IDB for the organization of donor roundtables for SAP activities buy-in, is described in para 23 fifth bullet. The institutional arrangement is also described in para 39-44. See also para 12 and 22.
<b>5. Response to Reviews</b>		
Council	Respond to Council comments at pipeline entry	Comments not yet received
Convention Secretariat	Respond to comments from Convention Secretariat.	N.A
GEF Secretariat	Respond to comments from GEFSEC on draft project brief.	Comments from GEF SEC have been addressed in this new version of the Brief inter alia in para 7,8, 9, 14, 23, 27, 34, 39, 40, and in the revised Annex H and I. A detailed response is being presented in Annex 1 hereafter.
Other IAs and 4 RDBs	Respond to comments from other IAs, 4RDBs on draft project brief.	Comments not yet received
STAP	Respond to comments by STAP at work program inclusion.	Comments not yet received
Review by expert from STAP Roster	Respond to review by expert from STAP roster	Comments provided by the STAP expert were addressed in Annex C and referred to in para 45 of the Brief.

**Response to GEF Sec's comments presented at 13 July 2000 Bilateral meeting which adjourned work programme inclusion pending re-submission of a revised text.**

**1. Replicability**

This new phase of GEF programming in the Bermejo basin will ensure the replication of those practices and measures that have been demonstrated to be successful throughout the Basin and throughout the Plata River Basin in areas with similar conditions. In so doing, the project can continue to refine and demonstrate the means for, and benefits of, country ownership and community participation in river basin management.

Component IV (para 27) will address specifically this issue of replication of the methodological approach, findings, and recommendations of the Bermejo project to areas with similar problems within the Plata basin, in order to contribute to the promotion of a larger-scale and basin-wide strategic framework to address main environmental degradation processes, the identification of critical transboundary issues, and the definition of priority actions at the national and multinational level. This will be done *inter alia* by means of seminars, workshops, and information dissemination through various media. For these activities in the Plata River Basin, the Binational Commission, through the Ministries of Foreign Affairs of both countries, will coordinate actions with the Intergovernmental Committee of the Plata River Basin (CIC) and with other bilateral or multilateral basin organizations, such as the Pilcomayo Trilateral Commission. The amount allocated for this activity is US\$850,000 with US\$700,000 from the GEF. Detailed information about this activity is presented in Annex I (page I-21).

**2. Sustainability**

To ensure sustainability of the Project's results, both countries have taken steps to create an **Inter-ministerial Committee**, which will help mobilize support for the investments identified, and catalyze the translation of project findings and recommendations into policy, institutional, and legal reforms at the country level. The members of the Committee will be established by the respective governments and will include, among others, ministerial representatives from the areas of economy/finance, water resources, environment, health, sanitation, culture, and tourism, who will participate as observers in the meetings of the Regional Coordination Committee. (see para 34 of the brief). The inter-ministerial committee will work jointly with the Regional Coordinating Committee, composed of representatives of the provincial administrations of Argentina and the Prefecture and Municipality of Tarija in Bolivia, in the general supervision of project activities and will seek incorporation of project findings and recommendations into the institutional and legal frameworks of the different jurisdictions. (See para 40 of the brief).

### **3. Development Banks involvement.**

As mentioned in Component III fifth bullet (para 23 of the brief), both governments have initiated actions at the national level with the Inter-American Development Bank, seeking to obtain its participation as lead agency in the organization and conduct of the meetings planned to be held in the region within the first year of project activities.

Securing of financial support for the sustainable development of the Bermejo Basin will be done through donor roundtable meetings under the leadership of the IDB, co-executing agency for the project. Actions will be taken to help catalyze funding for the implementation of SAP project proposals, both those of immediate and long-term priority, as well as other complementary actions related to *inter alia* life quality improvement, poverty alleviation, health improvement, and the preservation of indigenous cultural heritage considered as important by both Governments for the sustainable development of the Binational basin. Specifically, donor roundtable meetings with representatives of local, regional, and international financing agencies will be convened to explore the possibilities of funds allocation to support development in the Bermejo basin. The total budget allocated for this activity is US\$350,000 with US\$300,000 being GEF funding. Detailed information can be found in Annex I (page I-16, activity 3.5).

### **4. Indicators**

Component IV (para 27 third bullet in the brief), will look at the definition and adoption of indicators by means of a series of 5 technical regional workshops, and will include (1) process indicators (focusing on the processes that will lead to desirable results), (2) stress-reduction indicators (focusing on actions with defined targets that will reduce the environmental stress on the water body), and (3) environmental status indicators (focusing on the actual improvement of the ecosystem quality). This activity is further described in Annex I activity 4.3 fourth bullet on page I-20. A budget of US\$100,000 entirely from GEF sources is allocated for this activity.

### **5. Others**

Finally, para 7 and 8 have been reworded to underline the emphasis placed in this project on the main transboundary problems that is erosion and sedimentation issues affecting the basin. Component I para 14 has also been reworded for the sake of clarity.

Annex H presenting the breakdown of the associate financing has been revised and is now limited to environmental/land issue aspects within the Basin. The reduced amount (US\$ 530 million) is also reflected on the cover page.