

## Integrated water resources management in the transboundary Bermejo River Basin

### Part I: Project Information

**GEF ID**

10995

**Project Type**

FSP

**Type of Trust Fund**

GET

**CBIT/NGI**

CBIT No

NGI No

**Project Title**

Integrated water resources management in the transboundary Bermejo River Basin

**Countries**

Regional, Argentina, Bolivia

**Agency(ies)**

CAF

**Other Executing Partner(s)**

to be determined

**Executing Partner Type**

Others

**GEF Focal Area**

International Waters

**Taxonomy**

International Waters, Focal Areas, Transboundary Diagnostic Analysis and Strategic Action Plan Preparation, Freshwater, River Basin, Participation, Type of Engagement, Stakeholders, Women groups, Gender Mainstreaming, Gender Equality, South-South, Knowledge Exchange, Capacity, Knowledge and Research, Capacity Development, Training, Knowledge Generation, Influencing models, Transform policy and regulatory environments

**Sector**

Mixed & Others

**Rio Markers****Climate Change Mitigation**

Climate Change Mitigation 0

**Climate Change Adaptation**

Climate Change Adaptation 1

**Duration**

48 In Months

**Agency Fee(\$)**

571,500.00

**Submission Date**

4/11/2022

A. Indicative Focal/Non-Focal Area Elements

Programming Directions	Trust Fund	GEF Amount(\$)	Co-Fin Amount(\$)
IW-3-5	GET	2,250,000.00	18,820,000.00
IW-3-6	GET	1,800,000.00	8,880,000.00
IW-3-7	GET	2,300,000.00	18,000,000.00
	<b>Total Project Cost (\$)</b>	<b>6,350,000.00</b>	<b>45,700,000.00</b>

## B. Indicative Project description summary

### Project Objective

To reverse present land and water degradation trends in the binational Bermejo Basin by introducing integrated water resources management approaches including to groundwater resources, revamping and consolidating existing transboundary cooperation mechanisms, and accelerating priority reforms and investments.

Project Component	Financing Type	Project Outcomes	Project Outputs	Trust Fund	GEF Amount(\$)	Co-Fin Amount(\$)
Component 1: Consolidating transboundary cooperation: new approaches and tools	Technical Assistance	1. Conditions created for the full adoption of modern integrated approaches to managing water resources and balancing competing uses.	<p>1.1 The 1995 "Agreement for the Multiple Use of the Resources of the Upper Bermejo River Basin and the Río Grande de Tarija" establishing COBINABE, expanded to include the Lower Bermejo Basin and groundwater resources, and revamped in terms of scope and mandate.</p> <p>1.2 Creation of Bermejo Basin Geographic Information Management System.</p> <p>1.3 Design and implementation of a Data-based Decision Support System (DSS) and an Early Warning System.</p> <p>1.4 Training modules on IWRM and operation and maintenance of monitoring networks, SGI and DSS.</p>	GET	1,100,000.00	9,960,000.00

<p>Component 2: Assessment and strategic integration of groundwater resources</p>	<p>Technical Assistance</p>	<p>2. Enhanced climate resilience and water security in the basin through the assessment and sustainable strategic exploitation of the groundwater resources.</p>	<p>2.1. . Assessment of the groundwater resources, and definition of their conceptual models.</p> <p>2.2 Assessment of present uses and users of groundwater, and of existing governance frameworks (tenure, related legislation, etc.).</p> <p>2.3 Design and pilot field testing of modern multi-purpose groundwater and erosion monitoring networks and protocols.</p> <p>2.4 Training modules for the strengthening the capacity of national and transboundary basin management entities.</p>	<p>GET</p>	<p>1,450,000.00</p>	<p>7,470,000.00</p>
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Component 3: Accelerating priority reforms and investments	Technical Assistance	3. Strengthened countries' commitment to the implementation of priority reforms and investments agreed in the Strategic Action Program.	<p>3.1 Updated TDA of the basin, aimed at identifying critical emerging transboundary issues, and including the consideration of future climate variability scenarios.</p> <p>3.2 Updated SAP, identifying the priority reforms and the investments needed to address degradation trends in the basin endorsed at the ministerial level by the two countries.</p> <p>3.3 Bankable projects defined for each priority investment agreed upon in the SAP, based on technical-economic pre-feasibility studies including identification of financing mechanisms and possible public and private sources.</p>	GET	2,300,000.00	22,390,000.00
Component 4: Stakeholders engagement and awareness raising	Technical Assistance	4. Systematic stakeholder engagement in project activities, improved public awareness and access to information, and involvement of the private sector, foster the achievement of the project's outcomes and the broader commitment to the implementation of SAP reforms and investments	<p>4.1 A citizen participation and environmental education program involving all key actors in the basin, gender balanced and including indigenous communities, to be detailed during PPG</p> <p>4.2 Mechanism and procedures for the participation of civil society organizations in overseeing environmental management together with governmental Basin agencies.</p>	GET	1,182,500.00	3,480,000.00

4.3 Round table aimed at periodically engage representatives of the productive sector (private enterprises, landowners and farmers), in the TDA-SAP update process.

4.4 Annual stocktaking meetings, with broad participation of stakeholders, media, academia, donors and financial institutions, for disseminating and monitoring the project progress to impacts, to coordinate with other relevant initiatives, and present the final agreed upon SAP.

4.5 Creation of project website and online communication platform, and active participation to IW: LEARN activities and events.

	<b>Sub Total (\$)</b>	<b>6,032,500.00</b>	<b>43,300,000.00</b>
<b>Project Management Cost (PMC)</b>			
	GET	317,500.00	2,400,000.00
	<b>Sub Total(\$)</b>	<b>317,500.00</b>	<b>2,400,000.00</b>
	<b>Total Project Cost(\$)</b>	<b>6,350,000.00</b>	<b>45,700,000.00</b>

Please provide justification

PMC will be used to cover administrative cost established in GEF's procedures and regulations.

**C. Indicative sources of Co-financing for the Project by name and by type**

Sources of Co-financing	Name of Co-financier	Type of Co-financing	Investment Mobilized	Amount(\$)
Recipient Country Government	Ministerio de Ambiente y Desarrollo Sostenible (MAyDS)	Public Investment	Investment mobilized	29,000,000.00
Recipient Country Government	Ministerio de Ambiente y Desarrollo Sostenible (MAyDS)	In-kind	Recurrent expenditures	2,500,000.00
Recipient Country Government	Ministerio de Medio Ambiente y Agua de Bolivia	Public Investment	Investment mobilized	10,000,000.00
Recipient Country Government	Ministerio de Medio Ambiente y Agua de Bolivia	In-kind	Recurrent expenditures	2,500,000.00
Donor Agency	OAS	In-kind	Recurrent expenditures	800,000.00
GEF Agency	CAF	In-kind	Recurrent expenditures	900,000.00
			<b>Total Project Cost(\$)</b>	<b>45,700,000.00</b>

**Describe how any "Investment Mobilized" was identified**

The listed values do not include structural solutions but only the components of planning, evaluation and non-structural solutions relevant to the Basin. These will be highly valuable sources of data, information, experiences and best practices. ARGENTINA - Preparation of the Master Plans of rainwater and river works (Jujuy); Works for stabilization of torrents (Salta); Channeling of the San Antonio river (Salta); Productive drainage systems (Chaco); Master Plan for rain drainage and flood control (Formosa); Hydraulic and hydrodynamic study for the protection of margins Rio Bermejo (Formosa). BOLIVIA – Integrated management plans of 26 micro-basins tributaries of the Bermejo River; Implementation of surface water monitoring networks.

D. Indicative Trust Fund Resources Requested by Agency(ies), Country(ies), Focal Area and the Programming of Funds

Agency	Trust Fund	Country	Focal Area	Programming of Funds	Amount(\$)	Fee(\$)	Total(\$)
CAF	GET	Regional	International Waters	International Waters	6,350,000	571,500	6,921,500.00
<b>Total GEF Resources(\$)</b>					<b>6,350,000.00</b>	<b>571,500.00</b>	<b>6,921,500.00</b>

E. Project Preparation Grant (PPG)

PPG Required **true**

PPG Amount (\$)

200,000

PPG Agency Fee (\$)

Agency	Trust Fund	Country	Focal Area	Programming of Funds	Amount(\$)	Fee(\$)	Total(\$)
CAF	GET	Regional	International Waters	International Waters	200,000		<b>200,000.00</b>
<b>Total Project Costs(\$)</b>					<b>200,000.00</b>	<b>0.00</b>	<b>200,000.00</b>

## Core Indicators

Indicator 7 Number of shared water ecosystems (fresh or marine) under new or improved cooperative management

	Number (Expected at PIF)	Number (Expected at CEO Endorsement)	Number (Achieved at MTR)	Number (Achieved at TE)
Shared water Ecosystem	La Plata			
Count	1	0	0	0

Indicator 7.1 Level of Transboundary Diagnostic Analysis and Strategic Action Program (TDA/SAP) formulation and implementation (scale of 1 to 4; see Guidance)

Shared Water Ecosystem	Rating (Expected at PIF)	Rating (Expected at CEO Endorsement)	Rating (Achieved at MTR)	Rating (Achieved at TE)
La Plata	2			

Indicator 7.2 Level of Regional Legal Agreements and Regional management institution(s) (RMI) to support its implementation (scale of 1 to 4; see Guidance)

Shared Water Ecosystem	Rating (Expected at PIF)	Rating (Expected at CEO Endorsement)	Rating (Achieved at MTR)	Rating (Achieved at TE)
La Plata	3			

Indicator 7.3 Level of National/Local reforms and active participation of Inter-Ministeral Committees (IMC; scale 1 to 4; See Guidance)

Shared Water Ecosystem	Rating (Expected at PIF)	Rating (Expected at CEO Endorsement)	Rating (Achieved at MTR)	Rating (Achieved at TE)
La Plata	1			

Indicator 7.4 Level of engagement in IWLEARN through participation and delivery of key products(scale 1 to 4; see Guidance)

Shared Water Ecosystem	Rating (Expected at PIF)	Rating (Expected at CEO Endorsement)	Rating (Achieved at MTR)	Rating (Achieved at TE)
La Plata	1			

Indicator 11 Number of direct beneficiaries disaggregated by gender as co-benefit of GEF investment

	Number (Expected at PIF)	Number (Expected at CEO Endorsement)	Number (Achieved at MTR)	Number (Achieved at TE)
Female	665,000			
Male	665,000			
<b>Total</b>	1330000	0	0	0

Provide additional explanation on targets, other methodologies used, and other focal area specifics (i.e., Aichi targets in BD) including justification where core indicator targets are not provided

The Bermejo Basin was not listed in the list of shared water ecosystems. That is the reason why we selected "La Plata Basin" as the closest option. Based on the findings of the Terminal Evaluation of the previous SAP implementation project, which consisted exclusively of the implementation of 39 pilots, in the design of the proposed project pilot demonstrations were excluded and focus was instead directed to regional actions targeting consolidation of transboundary cooperation mechanisms and tools, implementation of conjunctive surface and groundwater management, and acceleration of the implementation of strategic reforms and investments. The cumulative impacts of these interventions in the basin are expected to bring about in the long term lasting benefits to all inhabitants of the basin in terms of increased water security and climate resilience, women empowerment, etc. The number of beneficiaries hence coincides with the total number of the basin's inhabitants, of which 50% are women.

## Part II. Project Justification

### 1a. Project Description

#### a) **The global environmental and/or adaptation problems, root causes and barriers that need to be addressed**

The transboundary Bermejo River is an important tributary of the La Plata-Paraná River. The river is 1,300 km in length, forming a link between the Andes Mountain Range and the Paraguay-Parana River system - as it discharges into the Paraguay River and this, in turn, into the Paraná River - and providing an important corridor connecting the biotic factors of the Andean mountains and the Chaco Plain. Its basin covers about 123,162 km<sup>2</sup>, of which 90% is in Argentina and 10% in Bolivia, with an estimated total population of 1,330,000 inhabitants. In terms of its geomorphological characteristics, the basin is divided into the Upper Basin (occupying territory in Bolivia and Argentina) and the lower Basin (entirely within Argentina). The Upper Basin is defined by the four main tributaries of the Bermejo River: the Rio Grande de Tarija, the Upper Bermejo River (which takes its name from the city of Bermejo), the Pescado River and the San Francisco River. The lower Bermejo River Basin receives water from a number of tributary rivers and streams.

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This large river basin contains urban centers and areas of differing degrees of social, agricultural, commercial and industrial development, many producing goods of national significance, and all being sustained and supported at least partly, by the waters of the Bermejo River. The river exhibits an exceptional diversity of habitats, as well as great potential for human development and sustainable exploitation of its resources. Extensive livestock operations (cattle, sheep, goats) are widespread in the basin. Some crops (soybeans) are gaining importance in the piedmont zone of the upper basin in Argentina, and rice growing is increasing in the lower basin, with high seasonal demands on water resources. Despite this wealth of natural resources, however, the basin population suffers from low income levels, and the education, health and sanitary conditions are among the lowest anywhere in the two riparian countries, with the indigenous population being the most disadvantaged, followed by rural workers and small-scale agricultural producers.

#### *Global environmental problem: accelerated erosion*

Sediment loadings in the Bermejo waters are some of the highest in the world (8 kg/m<sup>3</sup>). The amount of sediment deposited along the course of the Lower Basin during floods regularly changes the course of the river, impeding rational use of water and land resources. More than 100 million tons of sediment (equal to 80% of the total) are deposited annually in the Paraguay, Paraná and La Plata Rivers.

The basin is characterized by intense hydrological, geomorphological and ecological processes, and has significant potential in terms of natural resources, variety of ecosystems and biodiversity. These same active processes however, also impose severe restrictions and create environmental risks and vulnerabilities. In particular, the Upper Basin is characterized by severe erosion problems due to its natural lithostratigraphic features exacerbated by poor land use practices and deforestation. Most of the sediment loads generated in the Upper Basin are carried downstream particularly during flash floods. This natural process generates situations of water risk and vulnerability, which restrict the development of productive activities, and threaten the security of human settlements. Upon reaching the plain, the river - with its heavy sediment load - meanders without a stable and defined stream system eventually discharging into the Paraguay-Parana rivers system.

#### *Root causes*

The accelerated erosion in the Bermejo Basin and the huge sediment loads of its waters are a well-known phenomenon, object of numerous scientific studies and fragmented efforts to revert degradation trends. The main causes are

- (i) The lithology of the Andean Cordillera in the upstream part of the Basin (mostly in Bolivia) which is particularly prone to erosion by wind and rain;
- (ii) Anthropogenic causes exacerbating the natural erodibility of the lithology, such as de-forestation and poor land use and agricultural practices. The anthropogenic contribution to the erosive processes was well documented in the TDA conducted in the late nineties as part of the GEF IW foundational project;
- (iii) Climate change, with increased frequency of extreme events.

#### *Barriers,*

The following represent aggravating factors and the barriers that need to be removed and that the project will strive to address.

- 1) Lack of systematic monitoring,
- 2) Limited understanding of the basin ecosystems functioning
- 3) Lack of understanding of the role of groundwater,
- 4) The so far erratic cooperation between upstream and downstream sections and between relevant institutions of the two countries sharing the basin

#### Early transboundary cooperative efforts

Against this background of accelerated land degradation, back in 1995 the two countries sharing the basin's resources, cognizant of the need for coordinated, cooperative action in order to address the critical environmental condition of the Basin, created the Binational Commission for the Development of the Upper River Basin (COBINABE) through the signing of the Agreement for the Multiple Use of the Resources of the Upper Basin of the Río Bermejo and Río Grande de Tarija. This Agreement is the legal instrument that gave rise to COBINABE, establishing it as a permanent legal-technical mechanism, responsible for the administration of the Upper Bermejo River and the Grande de Tarija River Basin, aimed at promoting the sustainable development of its area of influence, optimizing the use of its natural resources, generating jobs, attracting investments and ensuring the rational and equitable management of water resources. COBINABE is made up of two delegates from each member state: the first delegate is the representative of each Ministry of Foreign Relations, with the rank of Ambassador who chairs the respective delegation. The second delegates are those who occupy, respectively, the position of Executive General Director of the National Technical Office of the Pilcomayo and Bermejo Rivers of Bolivia -OTNPB- and the Chairman of the Board of the Regional Commission of the Bermejo River of the Republic Argentina - COREBE. In addition, the Bi-national Commission was granted international legal status and autonomy of technical, administrative and financial management.

In its first years of operation, COBINABE's main objective was related to the construction, operation and administration of three dams, known as Las Pavas, Arrazayal and Cambarí, destined mainly for hydroelectric generation and the regulation of the Bermejo River. Due to factors fundamentally linked to obtaining financing for the three proposed and agreed upon dams, their implementation could not materialize. This was followed by a period of reflection in the search for new alternatives, in a different energy scenario for the basin region, defined by the discovery of new and abundant gas reserves in the territory of the Department of Tarija of Bolivia. Within this new context, the generation of hydroelectricity yielded its priority.

#### Climate change impacts

Climate models forecast a greater likelihood of drought in the La Plata River Basin, especially in the *Gran Chaco*. The net effect of the temperature changes, when viewed in light of the expected changes in rainfall, is an increased risk of extreme events, as runoff becomes more sudden or erratic. The increase in the periodicity in precipitation, coupled with the reduction in available moisture due to higher evaporation and reduced runoff, can significantly impact human economic activities dependent on rainfall and runoff. In particular, the likely reduction in mean annual runoff has the potential to reduce hydroelectric power generation and by extension, social and economic development.

The Bermejo Basin is located in a climate transition zone. This is very evident in the Upper Basin, where in a short distance climate varies significantly, from a cold semi-arid highland climate in the west, to a humid tropical in the east. The relief is an important factor in the regional circulation of air masses. The maximum precipitations appear in the Sub-Andean region, with more than 2,200 mm per year, decreasing towards the West up to 200 mm (Eastern Cordillera region) and towards the East up to 600 mm in the center of the Semi-arid Chaco region; then increasing to 1,300 mm in the sector of the confluence with the Paraguay River, in the Chaco Húmedo region.

The altitudinal and longitudinal gradient, from the Upper Basin to the Northwest to the Lower Basin to the Southeast, determines a climatic heterogeneity, where there is: 1) Cold Zone: located above 2,700 meters above sea level where two climates are identified: semi-arid cold and cold sub humid, 2) Temperate Zone: between the heights of 1,500 to 2,700 meters above sea level, with arid Temperate, Semi-Arid Temperate, Subhumid Temperate, and Humid Temperate climates and 3) Warm Zone: occupies the entire eastern area of the basin, the Sub-Andean and the Chaco Plain identifying 4 types of climates: Warm sub humid, Warm humid, Warm very humid and Warm semi-arid

It should be noted that there are important extensions of the territory of the basin under conditions of water deficit, corresponding to the Eco-regions of the Eastern Cordillera (with pockets of aridity such as the Central Valley of Tarija and especially in the Quebrada de Humahuaca) and the Semi-arid Chaco. These constraints, determined by the natural environment, are exacerbated by the increasing seasonality and decrease of rainfall from the Eco-region of the Humid Chaco, causing longer periods of water deficit, and constraining the productive use of water. In the Upper Basin, water deficit combined with torrential rainfall and with the dynamics of an unstable relief, enhances the occurrence mass removal in all its variants (landslides, mud flows, etc.) and water erosion processes.

## **b) The baseline scenario and associated baseline projects**

### GEF IW involvement in the Basin

The fact of having a Binational Agreement that would provide a legal and institutional framework for the basin was a determining factor for the opening, two years after COBINABE's creation, of a dialogue between the Binational Commission and the Organization of American States (OAS), the United Nations Environment Program (UNEP) and the Global Environment Facility (GEF), with the objective of broadening the strategic vision regarding the sustainability of the development of the basin. This dialogue initiated the process that would lead to the agreement on a Strategic Action Program for the Binational Bermejo River Basin (SAP Bermejo). This process was vital to reorient the approach of the Binational Commission, slowly opening up a different vision of the possible and desirable development of the Binational Basin.

The process was completed between 1997 and 2000 with the implementation of the GEF IW project: "*Strategic Action Program for the binational Bermejo basin (Bermejo SAP I)*" implemented by UNEP and executed by the OAS, with USD 2.9 million of GEF IW financing. This stage produced a Transboundary Diagnostic Analysis (TDA), which allowed the identification and characterization of the main environmental problems of transboundary concern in the Basin, as well as the fundamental causes of said problems. The findings of the TDA served as a conceptual basis when drafting the SAP for the Bermejo River Binational Basin, incorporating a series of interventions aimed at solving the six major environmental problems of global significance identified by the TDA on the basis of technical analyses and participatory interactions:

- land degradation and intensive processes of erosion and desertification.
- shortages and restrictions on the use of water resources.
  - degradation of water quality;

- habitat destruction, biodiversity loss and degradation of biotic resources;
- risks posed by floods and other natural disasters; and,
- deterioration of living conditions of population and loss of cultural value.

Some of these important environmental problems relate to water resources and land management and are, at the same time, partly a consequence of unsustainable human activities associated with environmental constraints that, in turn, condition socio-economic development. The causal chain analysis unraveled the roles that certain causes played in each of the identified problems. These critical roles were defined as root causes, from which the environmental consequences stemmed. They were:

- (i) a weak legal and institutional policy framework;
- (ii) inadequate planning and inter/intra jurisdictional coordination;
- (iii) insufficient knowledge, commitment and community involvement, and lack of public participation;
- (iv) inadequate funding and support mechanisms;
- (v) inadequate access to, and use of, sustainable technologies.

The development of the TDA supported the need to foster in society and in institutions an inter- jurisdictional view of the basin, as a starting point to ensure the integrated and sustainable management of its shared resources. The document also laid down a set of strategic action areas as a framework for decision making and, in particular, for defining the objectives and content of actions and projects that should be implemented in the Basin. These actions and projects were reflected in the Strategic Action Program (SAP).

A total of 136 sub-projects were identified in the SAP, for a total investment of US\$ 465 million and a timeline of 20 years. Several institutional and social actors from the Basin, grouped into panels according to their expertise, participated to identify sub-projects. From this sub-project portfolio, 34 sub-projects were prioritized for execution over the short term, through consultations with water and environmental authorities from the provincial governments in Argentina and the Tarija Department in Bolivia. The selected sub-projects became part of the follow up GEF IW project: *“Implementation of the Strategic Action Program for the Bermejo Binational Basin (Bermejo SAP II)”*. This project sought to generate demonstrative impacts and develop a framework that would favor execution of the SAP in its entirety.

The Project Bermejo SAP II was approved in 2001. It received US\$ 11.4 million in financing from the GEF, and co-financing from member countries totaling US\$ 8.78 million. UNEP was designated as the implementation agency of the GEF, and the OAS was designated the regional execution agency. In addition, COBINABE formalized agreements with the Bermejo River Regional Corporation (COREBE) in Argentina and the National Technical Office of the Pilcomayo and Bermejo Rivers (OTNPB) in Tarija, which served as Secretariats of the Commission and coordinated execution of the sub-projects in their respective jurisdictions. Execution of the Project was initially scheduled for a period of 4 - 5 years, but successive extensions resulted in a duration of nearly 10 years, from 2001-2009. During this time, 29 of the 34 sub-projects were executed. These interventions, typically joint ventures between provincial governments, university extension services, and the local communities, included: (i) constructing check dams or soil erosion control structures in the upper portions of the basin; (ii) recreating terraces for sustainable agricultural development in the middle basin; (iii) restoring seasonal flooding of grasslands in the lower basin;

and (iv) introducing community-based informational and educational programs to encourage re-vegetation of river corridors in the lower basin and adoption of sustainable agricultural practices. Some were not completed due to a lack of consensus with institutional counterparts, while others were left unfinished due to external factors. Of the sub-projects executed, 11 were conducted jointly by both countries, while 18 were executed nationally (9 in each country).

The Terminal Evaluation of the Bermejo SAP II project concluded that “The Project was unable to generate impacts Basin-wide as per the terms established in the project document, but rather achieved a series of local benefits resulting from the actions undertaken. While the processes of sedimentation and erosion were contained at critical points, and the COBINABE was strengthened as a binational entity, the Project did not have basin-wide impacts, as per the expected objectives. The comprehensive vision of the SAP was weakened by a project execution strategy that focused on smaller sub-projects with limited regional scope and transversal application. In many cases actions tended toward a local impact. Such actions were nonetheless relevant and to the benefit of different communities and institutions. Several of these actions also contributed to the demonstrative effect of the Project, particularly within a local scope. However, these actions tended to be executed in isolation, and lacked a connection with similar initiatives, inhibiting larger scale impacts. As such, the Project actions did not constitute a coherent program. The products of the individual sub-projects did not translate into consolidated impacts and effects to make integrated Basin management more viable. Also, of influence were the scale of the Project and of the Basin itself, heterogeneity of institutional and regulatory frameworks, the lack of mechanisms for exchange and feedback between areas and sub-projects, and the predominance of the needs of each jurisdiction over those of the Basin as a whole. The Bermejo SAP II fully upheld the immediate objective of containing soil degradation and erosion in critical areas of the Basin. This was achieved primarily through infrastructural measures, which were accompanied by non-structural measures, generally of lesser impact. The infrastructural measures implemented in the Upper Basin demonstrated strong performance, with visible and geographically specific effects on sediment transport. However, the limited information available and the difficulties in evaluating erosion processes and sedimentation throughout the Basin make it impossible to quantify the level of reduction in environmental stress and changes in the state of the environment. It is important to mention that the infrastructural measures, although effective, are temporary, and do not offer a permanent solution. These useful investments require maintenance plans and support from non-structural measures, such as appropriate agricultural and forestry practices and community awareness and participation.”

The TE concluded that “beyond the success or failure of its individual sub-projects, the Evaluation Team believes that the activities implemented as part of the Bermejo SAP II have established an important precedent, contributing to the improvement of conditions so that: (i) future decisions on development policies and programs for the Basin will be better informed; (ii) there is greater involvement on the part of stakeholders; and (iii) greater consideration is given to hydrological and environmental factors in development plans and programs”.

After the completion of the Bermejo SAP II project, in 2010, COBINABE produced the Integrated Management Program of the Binational Basin of the Bermejo River (PROBER), which consolidates, in a long-term programmatic document, the follow up actions of the Bermejo SAP II project (for a total of over US\$ 400m). PROBER appeared however to adopt the same fragmented approach of the Bermejo SAP II, and to be hence destined to encounter the same difficulties as the Bermejo SAP II, but on a much larger scale.

After the publication of PROBER, the activities of COBINABE suffered eight years break due to both political and socio-economic factors. In November 2017, faced by pressing needs of water for human consumption, irrigation and energy production, representatives of the two countries met, for the first time since 2009, in Tarija and decided to revive COBINABE and resume joint activities aimed at fostering the integrated and sustainable management of the shared water resources of the Bermejo Basin.

[The main lessons and recommendations from the previous GEF IW interventions](#)

In order to benefit from, and avoid the pitfalls of previous GEF IW interventions in the basin, the present project concept considers the lessons learned and the recommendations formulated after their completion. In particular the following considerations will inform the project detailed design:

*Enhanced participation of COBINABE, COREBE and the OTNPB:* these bodies have been part of the project development and will be in a position to create the conditions for its effective implementation, in particular the promotion of an integrated Basin management system, and the analysis of links and gaps in the institutional/regulatory framework, identifying needs and initiatives that promote better coordination and linkage with the institutions, jurisdictions, and social actors from each country.

*Design of a more proactive monitoring and evaluation system:* This will require a system that monitors the development of the project from its inception, has presence on the ground, evaluates processes and impacts (and not only the delivery of outputs), offers feedback to project management, and generates lessons and knowledge of interest to a larger audience, as opposed to activity and output inventories. In order for this initiative to be viable, it is important that the monitoring and evaluation mechanisms be designed with the participation of external agencies (academic and research institutions, NGOs, etc.) with compatible interests. This will encourage dissemination of knowledge, while also facilitating the involvement of the academic community in the program.

*COBINABE's institutional recognition within the Basin:* This will be aimed at consolidating its role as a center for the emerging system of integrated management. This is an opportune moment to create spaces for institutional reflection and planning, in consultation with other Basin actors. COBINABE can take advantage of this opportunity to include activities or roles that depend less on specific sub-projects and are vulnerable to the coming and going of international cooperation. COBINABE and the Technical Units must establish themselves as the focal points of the emerging system, connecting different actors and initiatives; channeling support from other sources; planning research and sustainable development initiatives; organizing forums for debate; and analyzing/disseminating environmental and water scenarios to inform political powers at national, provincial, and departmental levels.

*Implementation of evaluation and management tools:* these will enable the analysis of scenarios and support in decision making, such as the development of a Basin-wide rainfall/runoff hydrological model. In this context, it is also important to support the development and analysis of climate change adaptation scenarios, taking advantage of the experience from the Plata River Basin, and better evaluate the effects of certain interventions in the Basin (e.g.: change in land use, deforestation, pipelines, dams, etc.).

*The updated formulation of the SAP will avoid the fragmented approaches of the previous GEF project:* It will strive instead to concentrate future efforts on fewer and larger investments, associated with key reforms and effective basin wide replication mechanisms.

#### Government funded actions

The governments of the two countries are presently investing in the following types of interventions in the Bermejo Basin:

- (i) Hydrological Monitoring and Information Systems, (ongoing, binational)

Within the framework of the National Water Plan of Argentina, a new Technical Cooperation was agreed between the Secretariat for Infrastructure and Water Policy of the Ministry of the Interior, Public Works and Housing with the Inter-American Development Bank (IDB). As part of this agreement, the implementation of the high-resolution Flood and Drought Monitor developed by the Terrestrial Hydrology Research Group of Princeton University will be

supported in various basins and regions of Argentina. The Bermejo River Basin has been chosen first, for which there will be the active participation of the Bermejo River Regional Commission (COREBE).

The acquisition and start-up of 19 new automatic hydrometeorological stations will lead to the modernization of the COREBE Hydrological Information System (SIH), allowing the hydrometeorological monitoring of the Bermejo River basin to be expanded, which will allow the availability and supply of information in real time to more than a million inhabitants of the basin. The new equipment, that will complement the network of existing stations, will be installed in the provinces of Salta, Jujuy, Chaco, Formosa, and in the territory of the Plurinational State of Bolivia.

Plan for multiple uses of water resources in the upper basin of the Bermejo river. The purpose of this project is to establish a reliable information base, which allows to identify and define the location and typology of the water uses that provide benefits and generate the greatest impact in the Upper Bermejo River Basin, using remote sensing databases, digital terrain models, soil type and use, hydrometeorological, etc., in a modern platform such as geographic information systems.

(ii) Hydraulic infrastructure

The construction of an agricultural irrigation and drainage system, destined to manage in a controlled way the flows for irrigation and a drainage system by diverting the surpluses produced by heavy rainfall and complementary irrigation, increasing the productive efficiency of the region. The direct beneficiary area is 7,500 hectares, in which there are more than 100 producers dedicated to the production of fruit and vegetables, tobacco and sugar cane. (ongoing, national).

Defense system of the city of Embarcación, against the ordinary and extraordinary floods of the Bermejo River, protecting various neighborhoods, as well as indigenous communities, and an area of small and medium rural producers with greenhouses. Basically, the work consists of the construction of an embankment located on the left bank of the Bermejo River, in the sector where the river exceeds the levels of the bank and consequently overflows, spilling its waters towards the sector South West of the city of Embarcación. The city of Embarcación has a total population of about 20,000 inhabitants, of which at least one third is affected by the floods caused by the overflows of the Bermejo River.(completed, national).

(iii) Interventions in the Upper Bermejo, Bolivia

In the upper Bermejo basin of Bolivia, a number of initiatives are focused on the following themes: micro-basin integrated management plans in 26 tributaries of the Bermejo river (ongoing); mitigation of the impacts of extreme events in one tributary (completed) ; construction of irrigation systems (completed); rainwater harvesting systems (Rio San Juan de Oros) (completed); assessment of the Guadalquivir aquifer; feasibility study of a protected area (Padcaya) .

The National Technical Office of the Pilcomayo and Bermejo rivers is setting up the surface water monitoring networks of the Guadalquivir basin through the project: "Implementation of the Water Monitoring System in the Guadalquivir River Basin, department of Tarija -Bolivia", with 23 automatic monitoring stations. In addition, the office has conducted two monitoring campaigns in the dry and wet season for the Guadalquivir and Bermejo rivers. Around 25 water quality parameters were analyzed from a total of 56 water samples collected from the monitoring basins where there are 3 flow measurement equipment (2 propeller and 1 with sensor).

The automatic stations that are available are the following:

- 9 Meteorological Stations
- 2 Thermo-pluviometry Stations
- 4 Hydrometric Stations
- 8 Water Quality Stations
- 2 Buoys – Water quality stations in dams.

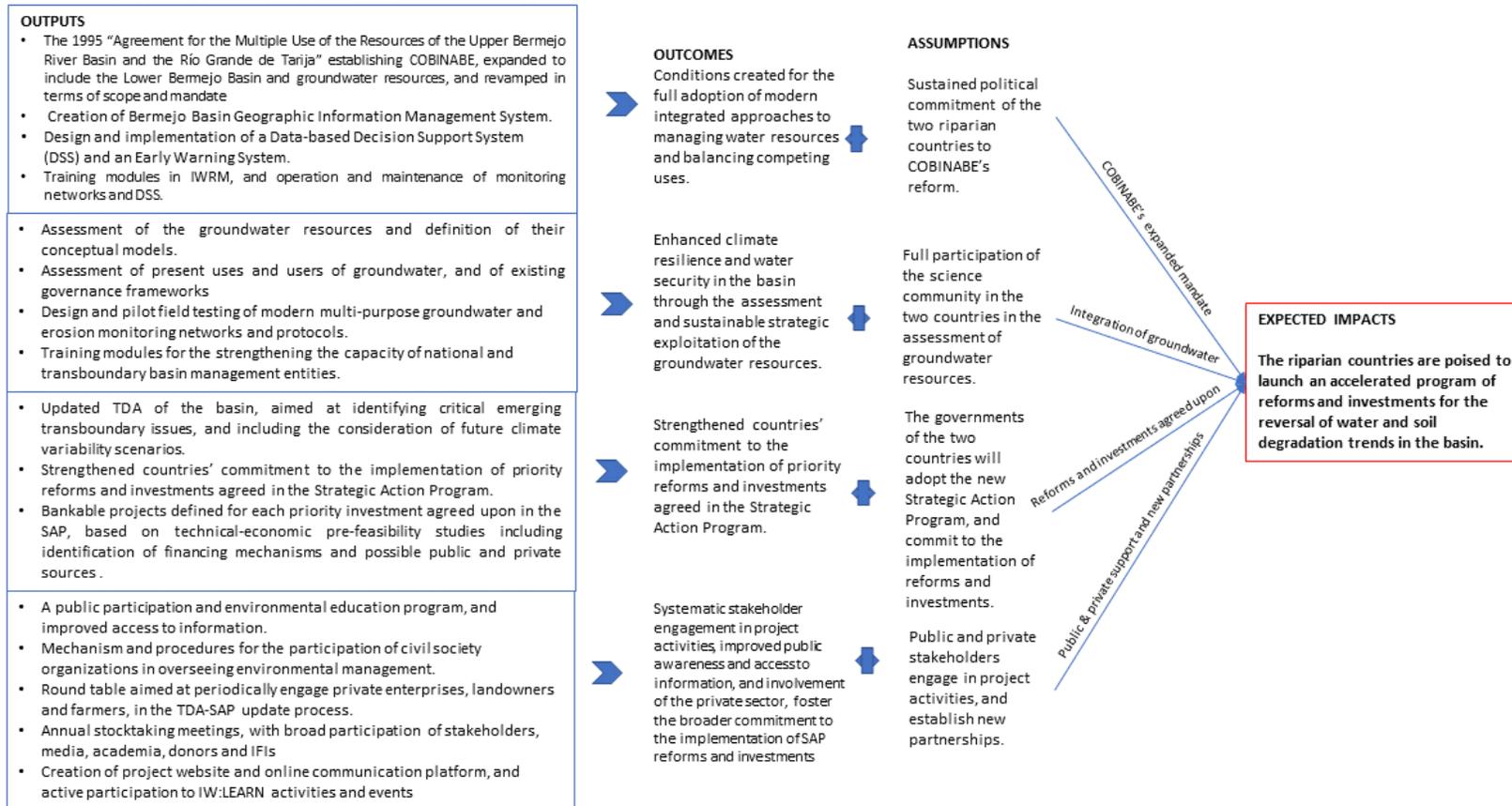
The project has the capacity to expand by 100 more automatic stations (completed, national)..

**c) The proposed alternative scenario with a brief description of expected outcomes and components of the project**

Theory of Change: From Outcomes to Impacts

The Theory builds on the notion that if the existing transboundary cooperation mechanism COBINABE will expand its mandate, consolidate its institutional arrangements and long-term sustainability, and be provided with modern management tools; if the freshwater resource base of the basin is increased by fully considering groundwater; if the two riparian countries will join forces in the conduct of a new Transboundary Diagnostic Analysis integrating consideration of climate change and gender aspects, and will agree on a program of priority reforms and investments; if transboundary cooperation will ensure harmonization of policies and of monitoring procedures; if new partnerships will be established with IFIs and the private sector for the implementation of priority actions, the populations of the basin will benefit from improved water security, health conditions, more stable livelihoods, gender equality and enhanced resilience to climatic change and variability.

**Theory of Change:** Preliminary outline of the logic as to why and how the proposed intervention is expected to achieve the intended change. The final ToC will be developed during the project preparation phase.



**Component 1 - Transboundary cooperation: new approaches and tools**

Outcome: Conditions created for the full adoption of modern integrated approaches to managing water resources and balancing competing uses. (Barriers 1, 4)

Outputs:

1.1 The 1995 “Agreement for the Multiple Use of the Resources of the Upper Bermejo River Basin and the Río Grande de Tarija” establishing COBINABE, expanded to include the Lower Bermejo Basin and groundwater resources, and revamped in terms of scope and mandate (barrier 4)

1.2 Creation of Bermejo Basin Geographic Information Management System (barrier 1)

1.3 Design and implementation of a Data-based Decision Support System (DSS) and an Early Warning System (barrier 1)

#### 1.4 Training modules on IWRM and operation and maintenance of monitoring networks, SGI and DSS (barrier 1)

The Component has been designed taking into consideration the lessons learned in, and the recommendations of previous GEF interventions in the basin. It aims at expanding the mandate and reinforcing the capacity of the binational cooperation mechanism (COBINABE), in order to enable the full adoption of modern integrated approaches to managing water resources and balancing competing uses. To do so, the Component will pursue several lines of action:

- (i) Facilitate the countries' decision on the expansion of COBINABE's mandate to include 1) the Lower Bermejo basin, and 2) the transboundary harmonization of the governance frameworks of the shared groundwater resources – confined and non-confined - present at various depths in the Basin's subsurface.
- (ii) Foster the reform of COBINABE's mode of operation, promoting more participatory approaches, consolidate its institutional structure, introducing multi-sectoral, inter-ministerial representation, and ensure its long-term sustainability.
- (iii) Provide COBINABE, and the countries' institutions, with new modern water and soil management tools, revamping, complementing and harmonizing existing information systems, monitoring networks and supporting ongoing efforts to modernize the monitoring systems' hardware and protocols, decision support and early warning systems. The project will include the design and pilot field testing of modern multi-purpose monitoring networks and protocols (water quality and quantity, erosion & sediment loads, rainfall, etc.).
- (iv) Prepare and implement training modules on IWRM principles and practices, and on the operation and maintenance of information management systems, and Decision Support Systems.

#### **Component 2** - Integration of groundwater resources

Outcome: Enhanced climate resilience and water security in the basin through the assessment and sustainable strategic exploitation of the groundwater resources (barriers 1, 3)

##### Outputs:

- 2.1. Assessment of the groundwater resources, and definition of their conceptual models (barrier 3)
- 2.2 Assessment of present uses and users of groundwater, and of existing governance frameworks (tenure, related legislation, etc.) (barrier 3)
- 2.3 Design and pilot field testing of modern multi-purpose groundwater and erosion monitoring networks and protocols. (barrier 1)
- 2.4 Training modules for the strengthening the capacity of national and transboundary basin management entities (barriers 1,2,3)

Groundwater resources have not so far been considered in any of the previous efforts to introduce sustainable water and soil management practices in the Bermejo Basin, either at the national or transboundary levels. In fact, the importance of groundwater within the context of basin management has only recently been fully recognized with the realization that only integrated water management approaches, considering all existing water resources, conventional and non-conventional, can lead to long-term sustainability and enhance resilience to climate variability and change.

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### **The three Rs: Groundwater and Climate Change Adaptation**

**Recharge** - By adding water to the system, aquifer recharge contributes to water circulation. Recharge can come from the interception of rain and run-off water (natural recharge), from increased infiltration of natural processes by manmade interventions (managed aquifer recharge – MAR) or can be a by-product of some other factor (i.e. inefficient irrigation or leaking pipes in water supply systems). There is a need therefore to manage natural recharge, apply artificial recharge and control incidental recharge.

**Retention** - Retention slows down the lateral flow of groundwater. This helps pond up groundwater and create a large wet buffer in the subsoil. Under such conditions, it is easier to retrieve and circulate water. With retention, the groundwater table is heightened. This has led to improved yields of rain-dependent agricultural areas. Some argue that in some cases it is better to control soil moisture from below than to provide surface irrigation water from above because of lower losses through evaporation and less development of salt crusts on the topsoil.

**Reuse** - The biggest challenge is making water revolve as much as possible. Scarcity is resolved not only by managing demand through reduction in use, but also by keeping water in active circulation. Two processes are important in managing reuse. The first is *management of (non-beneficial) evaporation*. Water that evaporates 'leaves' the system and can no longer circulate within it. The second process is *managing water quality*. The possibility for reuse depends on the quality of the water, with different functions putting different demands on the water quality.

It is the purpose of this project to fill this crucial gap both in terms of knowledge and of management actions, thus allowing the introduction of conjunctive surface and groundwater management options.

To achieve this, the Component will adopt a three-pronged approach addressing the three key prerequisites for integrating groundwater into basin management: Assessment of the resource; Governance aspects; institutional capacity.:

- 1) Conduct of an assessment of all groundwater resources present in the basin subsurface, including tertiary and quaternary aquifers present at various depths in the Bermejo Basin (among them, parts of the Yrenda Toba Tariqueño transboundary aquifer system), and definition of their conceptual models defining recharge and discharge areas, interactions with surface waters, and identification of dependent ecosystems.
- 2) Assessment of socio-economic aspects related to groundwater, present uses and users of groundwater, and of existing governance frameworks (tenure, related legislation, drilling standards, etc.) and the supply of the resource and the availability to cover demand in the short, medium and long term.
- 3) Reinforcement of the capacity of transboundary and national basin management entities in the protection and sustainable exploitation of the basin's aquifers, in the joint management of surface and groundwater resources, and in the design and operation of monitoring networks of the aquifers of the basin. This will include in particular the design and pilot field testing of modern multi-purpose groundwater and erosion monitoring networks and protocols (water quality and quantity, erosion & sediment loads, rainfall, etc.). The networks will be complementary to, and synergistic with existing surface water monitoring networks. Monitoring networks will also be installed in pilot aquifers in both countries.

**Component 3 - Priority reforms and investments**

Outcome: Strengthened countries' commitment to the implementation of priority reforms and investments agreed in the Strategic Action Program. (barriers 1,2,3,4)

Outputs:

3.1 Updated TDA of the basin, aimed at identifying critical emerging transboundary issues, and including the consideration of future climate variability scenarios (barriers 2,3).

3.2 Updated SAP, identifying the priority reforms and the investments needed to address degradation trends in the basin endorsed at the ministerial level by the two countries (1,2,3,4).

3.3 Bankable projects defined for each priority investment agreed upon in the SAP, based on technical-economic pre-feasibility studies including identification of financing mechanisms and possible public and private sources (1, 2,3,4).

It has now become apparent that opportunities to slow or reverse the basin's negative trends in land and water degradation while meeting poverty alleviation and ecosystem protection goals do exist. They revolve around integrated land and water management – including conjunctive surface and groundwater management - in smallholder systems to improve water supply and productivity and provision of ecosystem services (e.g.: sand dams); productive use of low-quality waters to close large gaps in nutrient cycles and slow or reverse trends in land degradation and water pollution. These strategies could help reverse land and water degradation, and intensify agricultural systems in a way that is sustainable and compatible with the needs of nature and society for ecosystem services, including food production, clean water, biodiversity, carbon sequestration, and resilience to climate change.

The Component responds to two major needs that countries have identified as critical for the future sustainability of the Basin's water and related ecosystems:

Update the 1999 TDA considering: (i) newly acquired knowledge on the basin's present environmental and socio-economic conditions; (ii) the hydro-morphological processes presently active in the basin; (iii) the quality, quantity aspects of the groundwater resources of the basin; and (iv) the likely future climatic scenarios; and (v) gender roles and equality issues in water supply and management.

Accelerate the needed reforms and investments: Based on the above updated diagnostic, a new SAP will be prepared and agreed upon by the countries 'countries' inter-ministerial committees, and endorsed at ministerial level. This effort will take advantage of the lessons learned, successes and failures, of the previous IW interventions in the Basin (1997-2009), and will be conducted under the leadership of COBINABE, with broad participation of the science community, of both public and private stakeholders, and of major IFIs. The SAP will consider the whole basin, promote the adoption of integrated approaches (IWRM), and for the first time include groundwater resources, shallow and deep seated. It will be articulated into two main lines of action: implementation of the legal, institutional, legislative reforms deemed necessary for creating the enabling policy and institutional environment for the implementation of coordinated investments aimed at addressing transboundary issues of concern, ensuring water security and promoting gender equality and indigenous people's participation in water and soil resources management.

Legal, institutional, legislative reforms

Among the reforms, particular consideration will be given to the following:

- o Adoption by the Basin' transboundary and national agencies, of integrated approaches (IWRM), participatory processes, and harmonized standards in the management and monitoring of the Basin' water and soil resources.
- o Introduction of basin-wide harmonized policy and legislative reforms related to protection and sustainable exploitation of groundwater resources;
- o Definition and adoption of policies to enhance participation in water management of women and of indigenous people.
- o Enhancement of measures for the protection of freshwater ecosystems and biodiversity.

### Investments

Taking stock of the lessons learned in the previous GEF SAP implementation project, which was based exclusively of pilot projects, and of the results of the updated TDA, the intent will be to avoid fragmentation and concentrate efforts on selected large investments, associated with key reforms and effective basin wide replication mechanisms It is expected that investments will fall under the following categories:

- o Implementation of basin-wide monitoring networks, and early warning systems;
- o Environmentally sustainable production practices (farming, forestry and livestock husbandry);
- o Infrastructure for erosion control and sediment management;
- o Multi-purpose hydraulic infrastructure;
- o Managed aquifer recharge, sand dams;
- o Promotion of sustainable production activities and natural resource management in indigenous and native communities;
- o Information tools on the status and trends of the fishing resource.

Once the highest priority investments will have been identified and agreed upon in the SAP, bankable projects will be defined for each of them based on technical-economic and environmental pre-feasibility studies, including identification of public and private financing sources.

#### **Sand Dams**

A sand dam is a reinforced stone masonry wall (or a similarly robust and impermeable weir) built across a seasonal riverbed and is one of the world's lowest-cost rainwater harvesting solutions. They are a simple, low cost and low maintenance technology that provide an improved, year-round, local water supply for domestic and farming use and are widely suited to the world's drylands. Seasonal rains quickly fill the dam with water containing soil. The soil is made up of silt and sand. The heavier sand sinks behind the dam, whilst the lighter silt remains suspended in the water and is carried over the dam and

downstream. Sand accumulates until the dam is completely full of sand up to the spillway. Water is stored within the sand, making up 25–40% of the total volume of the aquifer. The sand filters the water and the lack of open water surface reduces contamination and evaporation and prevents water borne parasites such as mosquitoes from breeding.

### **Managed Aquifer Recharge**

Managed aquifer recharge<sup>[1]</sup> (MAR) can increase the value of water resources by transferring surface water in times of abundance to add to groundwater storage and thereby conserve water. This replenishes depleted groundwater and avoids evaporative losses, salinity increase and possibilities for blue green algal blooms if the water had been retained in surface reservoirs. The surface waters used for managed aquifer recharge may include natural waters from catchments, urban stormwater, water recycled from treated sewage effluent, desalinated water from brackish aquifers, and suitably treated industrial effluents. There is ample guidance on protecting human health and the environment for managing aquifer recharge operations. However, guidance on policies to account for MAR in water resources management is embryonic and institutional arrangements are rare (a notable exception being the Arizona Water Bank). In semi-arid areas recharge is generally in the monsoon or wet season and recovery occurs in the dry season. Aquifers that are already depleted make excellent storage targets because there can also be environmental benefits in replenishing such aquifers. However, care is needed to ensure that groundwater replenishment is not at the expense of surface water ecosystems and water users downstream. It is possible to map the opportunities for managed aquifer recharge based on hydrogeological characteristics. Such maps should be used as a screening method to ascertain the prospects more generally.

### **Component 4 - Stakeholders engagement and awareness raising (barriers 1,2,3,4)**

Actions implemented under this Component will be aimed at strengthening capacity and promoting systematic stakeholders' engagement and gender mainstreaming in all project activities, improving public awareness and access to information, engaging the private sector, fostering broader commitment to the implementation of SAP reforms and investments, and monitoring progress to impacts. Activities will run in parallel with other components throughout the duration of the project.

The Component will be developed along five line of actions:

- o Implementation of a capacity reinforcement and environmental education program targeting indigenous communities and all key actors in the basin, to be detailed during PPG.
- o Improve access to information and understanding of the Basin's waters environmental functions and related hazards through gender balanced public participation and environmental education programs, with emphasis on indigenous communities.
- o Put in place mechanism and procedures for the participation of civil society organizations in overseeing environmental management together with governmental Basin agencies.
- o Hold periodic round tables aimed at engage private enterprises, landowners and farmers, in the TDA-SAP update process.
- o Organize Annual Stocktaking Meetings, with broad participation of stakeholders, media, academia, donors and IFIs, for raising awareness, disseminating project results, monitoring the project's progress to impacts, and coordinate actions with other ongoing initiatives, in particular the GEF/CAF project 'Preparing the ground for the implementation of the Strategic Action Program of the La Plata River basin'.

- o Create and populate a project website and online communication platform, and actively participate to IW: LEARN activities and events: 1% of the project budget will be dedicated to the participation to IW: LEARN activities, such as preparation of experience notes, attendance to IW Conferences, etc.

#### 1) d) Alignment with GEF focal area strategies

The objectives and interventions of this project are consistent with the International Waters GEF-7 programming directions, objective 3: Enhancing water security in freshwater ecosystems.

The project interventions are in line with three strategic actions, namely:

- **IW-3-5:** Enhance water security in freshwater ecosystems through advance information exchange and early warning;
- **IW-3-6:** Enhance water security in freshwater ecosystems through enhanced regional and national cooperation on shared freshwater surface and groundwater basins
- **IW-3-7:** Enhance water security in freshwater ecosystems through investments in water, food, energy and environment security

The project will strengthen the cooperative management of freshwater resources in the Bermejo Basin through appropriate measures following the GEF IW methodological approach. In addition, the project will also contribute to the GEF Biodiversity focal area through assisting with strengthening the protection and restoration of groundwater dependent ecosystems, as well as land and soil restoration.

#### e) Incremental/additional cost reasoning and expected contributions from the baseline

The transboundary Bermejo Basin represents an environmental and social territorial system which is rather unique both within South America and globally, in terms of geography - as it spans, within less than 1000 kms, from the high Andes down to the semi-arid Gran Chaco plains - of active geomorphological processes, which control one of the highest fluvial sediment transport in the world, and of poverty and important settlements of indigenous peoples. This area is also highly vulnerable to climate change with very limited capacities of adaptation of the populations. Water is the critical resource both as an erosion agent and as the indispensable element of environmental and social sustainability.

In the absence of GEF funding, countries will continue to address these critical issues with the fragmented approach that has characterized the previous decades, without solid transboundary cooperation mechanisms, disregarding the role of groundwater and the looming threats posed by climate change on local populations, in particular indigenous peoples, and on environmental resources. The business as usual scenario is unsustainable. This realization is at the basis of the incremental reasoning of the proposed project.

Incremental GEF funding is intended to be catalytic in reversing the unsustainable trends in land and water management by consolidating transboundary cooperation, improving knowledge of the resource, helping to popularize sustainable practices among the population, and reinforcing institutional capacity in order to enable the implementation of the reforms and investments necessary to promote mechanisms for continued economic growth, with minimal negative environmental and social degradation trends within the Basin.

#### f) Global environmental benefits

The project concept is clearly in line with the achievement of the indicative targeted contributions to global environmental benefits (measured through core indicator 7 and sub-indicators): it will improve the cooperative management of a transboundary freshwater ecosystem, the Bermejo basin; will update the TDA and the SAP; will consolidate the legal agreement for transboundary cooperation; will identify key national reforms with the support of inter-ministerial committees; will actively participate to IW LEAERN activities.

In addition, the project aims to produce global environmental benefits that fall into three categories:

- (i) Enhanced cooperation in the management of the transboundary surface and groundwater resources of the Basin;
- (ii) Improved sustainable use of the services provided by the Basin ecosystems, with focus on adaptation to climate variability and change;
- (iii) Improved water security for local populations.

The project will emphasize cross-sectoral, integrated ecosystem approaches that rely on consultative processes and provide a basis for basin-wide water and soil resources management agreements and processes.

The project fills a gap in present approach to water management in the region by promoting the integration of groundwater, including transboundary groundwater, into water management practices and policies.

To maximize the ability of the project to produce global benefits, its design includes elements that will emphasize the benefits that conjunctive surface and groundwater management, and increased transboundary cooperation will bring about. In particular: in the area of natural resources management, this project will promote a coordinated and integrated approach to mitigate/prevent environmental degradation from unsustainable use and mismanagement of water and soil resources.

The strengthened transboundary cooperation mechanism that will be set up under Component 1 (COBINABE), will promote appropriate allocations among competing uses, equitable distribution of benefits and burdens and community participation in addressing sustainability in water resources management. The project will additionally promote gender equality in the areas of management, governance, and policy development.

#### **g) Innovation, sustainability and potential for scaling up**

**Innovation:** For the first time in the region, full consideration will be given to the role of groundwater resources within the context of river basin management, introducing groundwater governance frameworks and identifying conjunctive surface and groundwater management options and practices. This approach will be reflected in the conduct of the update of the TDA and SAP (Component 3), and in the institutional strengthening at the transboundary, national, and provincial levels (Component 1 and 2).

Another innovative aspect is represented by the formulation of the SAP. Focus will be on (i) the identification of, agreement on, and preliminary design of few high priority investments, selected on the basis of technical and socio-economic and environmental prefeasibility studies, and (ii) the tentative identification of funding sources. It is expected that this approach will accelerate the actual implementation of the SAP recommended actions

**Sustainability:** The project's interventions are consistent with each country's water sectoral priorities (Inter-ministerial Committees)

with a particular emphasis on participation and capacity building, both for institutional actors and for indigenous community and local actors. This aims to guarantee the ownership of the project's achievements and outcomes by the stakeholders. Key for the future sustainability of the use of basin water and land resources will be the success of the project in facilitating the expansion and consolidation of the mandate of COBINABE, providing it with the technical tools necessary for implementing IWRM and coping with climate change related water hazards.

**Potential for scaling up:** As stated, the project intends to develop an updated Strategic Action Plan (SAP), and to facilitate and accelerate its implementation by introducing prefeasibility studies and identifying potential funding sources for main investments foreseen in the SAP. This innovative feature, tested for the first time in the proposed project, might be replicable in the context of the Plata Basin SAP implementation, and beyond, in other IW projects globally.

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[1] For more information about MAR methodology, please, consult: <http://www.zaragoza.es/contenidos/medioambiente/onu/968-eng-v4.pdf>

<http://www.bebuffered.com/>



## 2. Stakeholders

Select the stakeholders that have participated in consultations during the project identification phase:

**Indigenous Peoples and Local Communities** Yes

**Civil Society Organizations** Yes

**Private Sector Entities** Yes

**If none of the above, please explain why:**

Public participation in the management of the water resources is an integral feature of the proposed project.

Stakeholders engagement during PIF preparation: Nongovernmental and governmental entities (having municipal, prefectural/provincial, federal, and international interests) and indigenous communities have been informed through COBINABE, COREBE and OTNBP and had some level of participation in the consultation process that led to the formulation of the PIF.

Stakeholder participation was built into project formulation, including community-based environmental information and education campaigns, training courses to increase the capacity of institutions, personnel, and individuals to undertake activities in support of SAP implementation. Further, specific actions are proposed to be conducted under the project which address issues related to public and stakeholder participation, 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.

**In addition, provide indicative information on how stakeholders, including civil society and indigenous peoples, will be engaged in the project preparation, and their respective roles and means of engagement**

Stakeholders to be involved during PPG and project execution

- 1) Governmental national and provincial Institutions will participate to the detailed design and execution of the project through their representatives in the national (COREBE and OTNPB) and regional (COBINABE) basin management bodies. During execution they will also be directly engaged in the Annual Stocktaking Meetings, in the negotiations of the expanded scope and mandate of COBINABE, and will interact during SAP preparation through the Inter-ministerial Committees.
- 2) Non-governmental entities, indigenous people and local communities will actively participate to activities related to outputs 4.1, 4.2 and 4.3, and will be invited to the Annual Stocktaking Meetings. They will also have a role in the preparation of the SAP.
- 3) Representatives of the scientific community, or Academia, will form the Scientific Advisory Panel (see section 6, Coordination).

The project preparation and implementation will adhere to the GEF Principles and Guidelines for Engagement with Indigenous Peoples.

It has to be noted that during PPG a "citizen participation and environmental education program" involving all key actors in the basin, gender balanced and including indigenous communities, will be detailed (output 4.1), while during execution the mechanism and procedures that will enable civil society organizations to oversee environmental management together with governmental Basin agencies, will be agreed upon and established.

## GOVERNMENTAL AND NONGOVERNMENTAL INSTITUTIONS IN ARGENTINA

### *NATIONAL*

Dirección de Coordinación de las Comisiones Binacionales de la Cuenca del Plata (DICOR) – Ministerio de Relaciones Exteriores.

Subsecretaría de Obras Hidráulicas de la Nación (SSOH) – Ministerio de Obras Públicas (MOP)

Recursos hídricos de las provincias de Jujuy, Salta, Formosa y Chaco.

Instituto Nacional del Agua (INA).

Instituto Nacional Tecnológico Agropecuario (INTA)

Instituto Nacional de Tecnología Industrial (INTI)

Ministerio de las Mujeres, Géneros y Diversidad

*CHACO* - Total Environment Foundation, CHACO, Institute for Social Development and Human Promotion (INDES) CHACO, Provincial Settlement Institute, NW Argentina Regional Technical Delegation, National Parks Administration

*FORMOSA* - Forestry Directorate, Secretariat of Natural Resources and Ecology, Federation of NGOs / CIRENOR, Ministry of Education, General Directorate of Basic Education, Ministry of Production, Ministry of Production, Directorate of Water and Soil, Environment and Natural Resources Foundation (FARN), National Water and Environment Institute, Hydraulics and Environmental, National Water and Environment Institute, National Toxic Waste and Water Pollution Program, Argentine Ecological Movement (El Colorado Base)

*JUJUY* - Aguas de los Andes S.A., General Directorate of Renewable Natural Resources, Provincial Directorate of Hydraulics, Superintendency of Public Services (SUSEPU), Las Yungas Ecological Research Laboratory (LIEY), Tucumán University

*SALTA* - General Water Administration (AGAS), Association of Alternative Tourism Operators of Salta (ADOPTAS), Environment Directorate, Ministry of Public Health, Directorate of the Environment and Natural Resources, Provincial Tourism Secretariat

### *ACADEMIA*

University of Buenos Aires, Landscape and Environment Study Group (GEPAMA)

University of Buenos Aires, Regional Ecology Study Group (GESER)

National University of Formosa

National University of Formosa, Sylviculture Institute

National University of Jujuy

National University of Jujuy, Geology and Mining Institute

National University of Salta, Faculty of Natural Sciences, Soils Department

National University of Salta, Faculty of Natural Sciences, Geomorphology Department

National University of Salta, Sociodemographic Study Group (GREDES)

National University of the Northeast, Faculties of Engineering and Humanities, Applied Geoscience Institute

National University of the Northeast, Engineering Faculty, Hydraulics Department

#### GOVERNMENTAL AND NONGOVERNMENTAL INSTITUTIONS IN BOLIVIA

##### *PUBLIC INSTITUTIONS*

Directorate of Sustainable Development and the Environment Forestry Development Unit

Prefecture of Tarija Department: Directorate of Economic Development, Bermejo town council, Tarija department council, Tarija Executive Program for Land Recovery PERTT, National Meteorology and Hydrology Service, SENAMHI, National Irrigation Program, PRONAR, San Lorenzo municipal mayor's office, Padcaya municipal mayor's office, Bermejo municipal mayor's office, Uriondo municipal mayor's office, Entre Rios municipal mayor's office; National Technical Office for the Pilcomayo and Bermejo Rivers (OTN-PB), National Service for Protected Areas (SERNAP), Autonomous Departmental Government of Tarija (GADT), Departmental Service for Comprehensive Water Management (SEDEGIA), Autonomous University Juan Misael Saracho ( UAJMS).

##### *ACADEMIA*

Bolivian Agricultural Technology Institute IBTA, Technical Unit for Urban Development Tarija municipal sanitation corporation, Juan Misael Saracho Autonomous University, 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.

##### *NONGOVERNMENTAL ORGANIZATIONS*

Farmers' Federations in the Upper Bermejo, Tarija Regional Development Study Center, CERDET Agricultural Research and Training Center, CICA Development and Environment Information Center, CIRDEMA, Vida Verde, Tarija Environmental Protection, PROMETA, Loyola Cultural Action, ACLO, Tarija Social Pastoral, Tarija International Plan, Church Social Assistance Office, OASI, Tarija Environmental and Development Forum, Peasant Research and Support Center, CIAC, Peasant Research and Training Institute, IICCA;

### 3. Gender Equality and Women's Empowerment

**Briefly include below any gender dimensions relevant to the project, and any plans to address gender in project design (e.g. gender analysis).**

Argentina is taking concrete steps to promote women's rights in three key areas for substantive equality: 1) physical autonomy and violence prevention; 2) autonomy and economic empowerment and 3) participation in decision-making and political empowerment. Today there is a regulatory framework favorable to the promotion and development of receptive policies with a gender perspective. Among the most recent legislative advances in order to achieve gender equality, is the sanction of the Law 27499 "Ley Micaela" on compulsory training in gender for all people who make up the three branches of the State. But it is noteworthy that most of the legislation is on gender violence. The country lacks explicit policies strengthening the role of women in promoting environmental sustainability, or in the integrated management of water resources. This is reflected in the limited availability at the national level of data and information on women's participation in water resources use and management and on water data disaggregated by gender. Of the relevant national regulations for the management of water resources, only the National Water Plan corresponds to the gender approach. Although the Plan seeks to facilitate dialogue and promote interaction among key stakeholders related to water through participatory activities (regional workshops, focus groups and interviews), it does not propose gender-specific strategies that promote the participation of men and women in equality of conditions, considering the particular characteristics of each one. It is however evident that there is a favorable change in the country, with greater awareness and more policies aimed at addressing gender inequalities.

In Bolivia, the Multiannual Program for Integrated Management of Water Resources and Integrated Management of Watersheds, 2017-2020 of the Ministry of Environment and Water, recognizes that: "*Community participation and interaction are requirements for the construction of viable, sustainable processes, with social equity, including gender equity. Interventions around IWRM and Integrated Basin Management affect and benefit men and women in a different way and therefore should be conducted paying special attention to the gender focus in the processes, instruments and methodologies of identification, formulation and implementation of these interventions.*"

The Program also notes that "*... the communication requirements and efforts that the incorporation of the gender approach implies in most cases are not part of the intervention identification processes.*"

The Program suggests starting with the development of management and intervention experiences at the pilot basin level and then moving on to the incorporation of the gender and generational aspect in the methodologies from a successive phase of the National Watershed Plan.

It appears from the above that both countries fully recognize the important roles played by women in the supply and management of water resources, and the need to foster gender equality in all water related management approaches and interventions. Argentina and Bolivia are on the verge of transitioning to the incorporation of policies aimed at introducing gender equality, and lack however concrete experiences in the context of basin management, and water data disaggregated by sex – indispensable for diagnostics and the designing of new policies – are not available.

It is the purpose of the project being proposed to fill this critical gap, and support countries in their efforts to transition to gender responsive water policies and management practices. This will be done in two main steps: (i) As part of activities leading to Output 3.1, a diagnostic of the "gender" situation through the collection of sex disaggregated water data, and the adoption and implementation of ad hoc gender indicators, will be carried out in representative parts of the Basin. (ii) On the basis of the diagnostic's findings, as part of Output 3.2, the policy, institutional and legislative reforms necessary for achieving gender equality will be formulated as part of the SAP.

Gender equality and women participation will be moreover mainstreamed in all project activities, and in the design of the expanded roles and constitution of COBINABE.

The detailed design of gender related project activities will be done during PPG, based on a Gender Analysis conducted at the Basin level.

**Does the project expect to include any gender-responsive measures to address gender gaps or promote gender equality and women empowerment? Yes**

**closing gender gaps in access to and control over natural resources; Yes**

**improving women's participation and decision-making; and/or Yes**

**generating socio-economic benefits or services for women. Yes**

**Will the project's results framework or logical framework include gender-sensitive indicators?**

Yes

#### 4. Private sector engagement

**Will there be private sector engagement in the project?**

Yes

**Please briefly explain the rationale behind your answer.**

Community-based activities carried out during previous IW projects in the Basin resulted in the active participation of the private sector, in terms of participation by individuals as well as by producer and user associations. The present project will take advantage of these experiences, and strive to involve medium-sized farmers, land owners, and specialized corporations in the evaluation of sustainable management practices concerning forest conservation and restoration, forage management, sustainable practices for subsistence farming, and erosion and sediment transport control. . A specific output under Component 4 *“Round table aimed at periodically engage representatives of the productive sector (private enterprises, landowners and farmers), in the groundwater assessment and the TDA-SAP update process”* will ensure the engagement of the private sector in the SAP negotiations and its participation in replicating sustainable management practices and technologies. To this end, the SAP will include consideration to the provision of incentives and guidelines to offset risks associated with investments in the expansion of such practices. Finally, the project will strive to overcome the probable resistance of the private sector to share subsurface data needed for integration of groundwater into basin management, and crucial for the assessment and diagnostic of the groundwater resources of the basin.

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.

## 5. Risks to Achieving Project Objectives

Indicate risks, including climate change, potential social and environmental risks that might prevent the Project objectives from being achieved, and, if possible, propose measures that address these risks to be further developed during the Project design (table format acceptable)

The following is a preliminary assessment of the risks that might affect project execution. These risks will be further assessed and mitigation measures developed during PPG, in particular regarding Covid- 19, and climate change, which while not being considered a risk at this stage, will be the object of further analysis during the PPG.

### Covid-19: Opportunities

The timely and sufficient availability of water of adequate quality is a prerequisite for the provision of safe water, sanitation and adequate hygiene and for tackling possible impacts of the COVID-19 crisis, including poverty, economic downturn, food and energy insecurity and political instability, particularly in transboundary basins. The cooperative management of transboundary water resources fostered by the proposed project allows to prevent potential tensions between countries and to prevent transboundary impacts such as pollution. Moreover, it includes provisions for early warning across borders, joint monitoring and assessment, and support to river basin organizations (COBINABE, COREBE, OTNPB) that can play an important role in coordinating and supporting actions by riparian countries for COVID-19 recovery and prevention of future crisis.

RISK	PROBABILITY	RISK MITIGATION
Lack of sustained political support for expanded transboundary cooperation hinders the consolidation of COBINABE as joint basin management body of the entire basin.	Low	The project will build on the initial political determination to resume cooperative efforts for reversing the growing degradation trends in the basin, and maintain a high level of engagement of political and administrative institutions.
Lack of, or resistance to share subsurface data needed for integration of groundwater into basin management.	Low to medium	The project will strive to achieve an effective engagement of the private sector (farmers, mining industry etc.) that will be crucial for the assessment and diagnostic of the groundwater resources of the basin.
Limited engagement of financial institutions, and of the private sector in the SAP implementation process.	Low	The project will give high visibility to the formulation and endorsement process of the SAP update, by involving IFIs, Conventions' Secretariats, major private stakeholders. The implementing agency, CAF, will play a critical role mitigating this risk.
Covid-19 pandemic persists leading to containment measures determining delays in government counterparts providing	High	According to current projections the COVID-19 pandemic will persist till at least end 2022. Such a scenario will affect the implementation of the PPG

<p>es determining. Delays in government counterparts providing feedback for the preparation of studies; Difficulty/inability in reaching out to stakeholders for the implementation of demonstration activities and to acquire information and data for the preparation of studies. Overall, the project implementation timeline may be affected.</p>		<p>east end 2022. Such a scenario will affect the implementation of the PPG phase. In a worst-case scenario COVID-19 effects will expand in time and affect project implementation.</p> <p>In such a case, the project will use the “know-how” developed and same means used in similar projects during 2020 and 2021: on-line meetings of the steering committee, conferences etc. using, virtual modes of interaction with stakeholders. The project implementation arrangements will include one project officer/national coordinator based in each of the project countries allowing “in-situ” interaction with country counterparts and stakeholders for the implementation of all activities.</p> <p>Based on the relaxation measures that governments adopt in their jurisdictions, face-to-face meetings will be scheduled and arranged.</p>
<p>The vulnerability of both ecosystems and population to the expected impacts of climate change</p>	<p>High</p>	<p>The project reduces the vulnerability of both ecosystems and population to the expected impacts of climate change and contributes to build adaptive capacities. The measures supported by the project would only turn from preventive to mitigative in an accelerated-change scenario, but its financial, environmental and social performance and production of GEB are unlikely to be affected except marginally by that change during the design period.</p> <p>The specific analysis of climate risk provides two main recommendations for the wider project. First, it reinforces the general project approach of providing focused attention, in a positively discriminated way, to the most vulnerable members of its beneficiary populations. Indigenous peoples, and/or women, and/or other excluded members of local communities (children, elder, the physically handicapped, LGBTI+), must be provided with enhanced opportunities to participate in the project activities and enjoy their benefits. In doing so, the project will ensure that resilience is optimized. In the same way, the project must ensure that all and every of its procedures, structures, activities, and deliverables are embedded within a risk prevention &amp; reduction culture, and that it supports its beneficiaries and stakeholders in the wide and deep building of societal capacities, both public and private, for disaster response at all levels.</p>

## 6. Coordination

**Outline the institutional structure of the project including monitoring and evaluation coordination at the project level. Describe possible coordination with other relevant GEF-financed projects and other initiatives.**

The proposed project will be implemented by CAF, and executed by an executing agency (TBD) in partnership with COBINABE, COREBE and OTNPB. Other relevant actors will be identified during the Project Document development stage. CAF, as implementing agency, will support the executing agency (to be determined) and other executing partners and supervise the implementation.

COREBE – The regional Commission of the Bermejo River is an interjurisdictional body, created in 1981 by Federal Agreement signed by the National Government and the Provinces of Jujuy, Chaco, Formosa, Salta, Santa Fe and Santiago del Estero with the purpose of adopting political decisions and exercising the necessary actions for the use integral, rational and multiple of the water resources of the Bermejo River Basin.

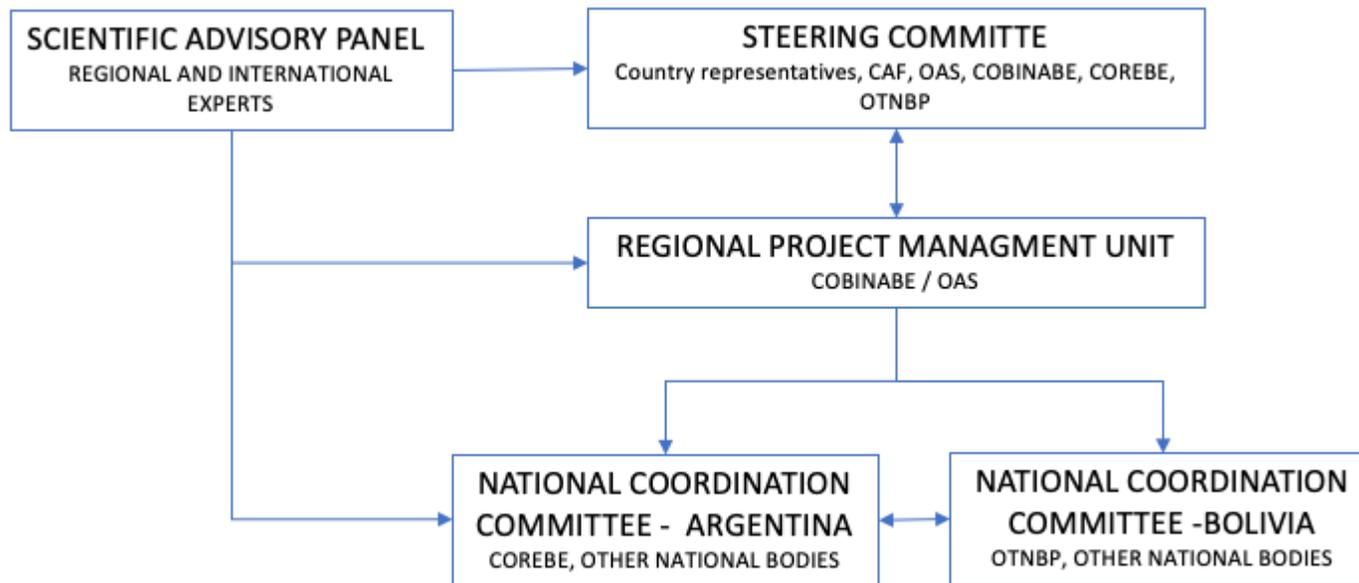
OTNPB - The National Technical Office of the Pilcomayo and Bermejo Rivers establishes the following strategic objectives: Contribute to developing and implementing improvements in the levels of management and sustainable use of the various natural resources in the area of influence of the Pilcomayo and Bermejo river basins; Contribute to implement and validate infrastructure and technologies for monitoring, measurement, follow-up and evaluation of climatic, environmental, water, soil, and agrometeorological factors, Contribute to strengthen and promote the management, operation and transnational relationship of social, productive, institutional, and life systems of the area of influence of the Pilcomayo and Bermejo river basins,

OAS has pioneered the implementation of the three key GEF IW projects precursor of the one being proposed: the Bermejo I and II, and the Rio de La Plata basin projects. Its participation to the project as main executing agency (TBD) is a guarantee that no efforts will be duplicated, and that lessons learned will be integrated into project execution. Moreover, the partnership between CAF and OAS will represent an assurance that the project will adhere to the broader Plata Basin SAP and support its implementation.

The project will be coordinated and executed on a daily basis by a project management unit, with the specific tasks/activities that will be outlined during the PPG phase, while the transboundary and national technical basin management bodies (COBINABE, COREBE, OTNPB) and the entities in charge of water in each country will support the OAS (TBD) in the project's implementation. The institutional implementation framework will include:

- **A Regional Project Management Unit (RPMU)**, under the responsibility of the OAS (TBD) and hosted by COBINABE will be in charge of daily implementation and overall coordination of the project activities. It will be in charge of the management of all technical, administrative and financial aspects of the project, as well as the processing of procurement files and the monitoring and evaluation of studies. It will also be in charge of accounts and budgetary monitoring of the project's activities.
- **National Coordination Committees**, hosted by the two national basin management bodies COREBE and OTNBP will be set up and led by a *National Focal Point* inside the respective countries to ensure the coordination and monitoring of actions in the country. This committee will consist of the main ministerial sectors involved in water management issues (Water Agriculture, Environment, Land management) and will lead activities implementation at national level.
- **A scientific advisory panel**, consisting of renowned scientific regional and international experts that will follow-up activities from a scientific perspective and will ensure consistency. The scientific committee will meet once a year right before the Steering Committee meeting.

- A **Regional Project Steering Committee (RPSC)** which is the highest decision-making and strategic orientation body for the project. It will be made up of: CAF (GEF Agency), the executing agency (TBD), and partners (COBINABE, COREBE and OTNBP), and the representatives of the 2 countries. The RPSC will provide guidance for an effective project management; and will periodically evaluate (once a year, or more if needed) the degree to which project results meet forecasts.



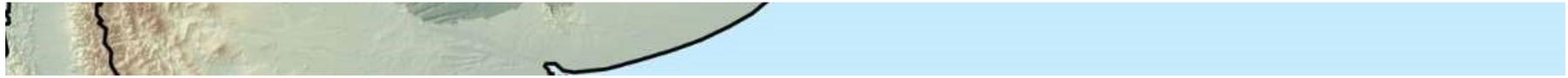
Coordination with other relevant GEF-financed projects and other initiatives

Coordination with the ongoing projects and initiatives will be achieved through activities developed under Outputs 4.4.

In addition to the governments led activities described at pages 14 and 15, two GEF IW projects are of particular importance for the project being proposed. Both relate to the wider La Plata Basin of which the Bermejo Basin is part. The project being proposed in fact, addresses one of the priority issues of transboundary concern identified in the La Plata basin SAP (see below).







1) Sustainable management of the water resources of the La Plata basin with respect to the effects of climate variability and change (UNEP/OAS/CIC, completed).

The overall **objective** of this TDA-SAP project was to assist the governments of Argentina, Bolivia, Brazil, Paraguay and Uruguay, within the framework of the CIC as the agreed intergovernmental organization set forth for this purpose in the Treaty of the la Plata Basin, in managing the shared water resources of the la Plata Basin in an integrated manner, focusing on environmentally sustainable economic and social development, as well as adaptation planning and assessment, in view of the effects of climate variability and change on the hydrology of the Basin. As outcome of the Project, the governments of Argentina, Bolivia, Brazil, Paraguay and Uruguay were poised to better coordinate actions and investments in the la Plata Basin to achieve sustainable utilization of its water resources, and to initiate the process of adapting to climate variability and change, mitigating its negative impacts, and capitalizing on the opportunities that such variability and change may provide. One of the main transboundary issues of concern identified in the TDA was the growing sediment loads that the Parana River discharges into the Plata estuary. The main source of these sediments was identified in the Bermejo River, and the SAP includes as a priority action the mitigation of this accelerated erosion process.

2) Preparing the ground for the implementation of the La Plata Basin Strategic Action Program (CAF/OAS ongoing)

The project is intended to set the scene for the implementation of the priority national and regional actions identified in the Strategic Action Program (SAP), agreed upon by the countries sharing the La Plata Basin and aimed at improving water security, climate resilience and ecosystem health; it will do so by fostering the consolidation of regional cooperation, the alignment of national and regional priorities, and by promoting integration across sectors and funding sources.

1) 3) Several GEF biodiversity and land degradation funded projects active in the Gran Chaco region, in particular the project: “Sustainable Forest Management in the Transboundary Gran Chaco American Ecosystem”, which is the only one covering the portion of the Gran Chaco in the Bermejo Basin.

4) Transboundary cooperation for the conservation, sustainable development and integrated management of the Pantanal - Upper Paraguay River Basin. The project is in the PPG phase. Although covering an upstream part of the Plata basin with respect to the Bermejo, there may be useful opportunities for exchanges of data and experiences.

5) Implementation of the Guaraní Aquifer Strategic Action Program: Enabling Regional Actions. Exchanges with this project, implemented by CAF and executed by the OAS, will prove very useful in terms of sharing knowledge and experiences on groundwater resources assessment and management.

Other GEF funded initiatives in other focal areas

Recently completed, or soon to start implementation, GEF projects address issues relevant for the proposed project, in particular the impacts of climate change and deforestation on land degradation and biodiversity in the Gran Chaco plains (including the lower Bermejo basin) and in the “vertical” ecosystems of the Andean Cordillera.

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Title	Objectives	Country	IA/EA	GEF grant	Status
Conservation and Sustainable Use of Biodiversity and Land in the Andean Vertical Ecosystems	Promote the conservation of agro-biodiversity and sustainable land and water management to restore the productive capacity and sustainability of Andean vertical ecosystems sustaining habitats of native plants and endangered species and the food security of the <i>Ayllus</i> (indigenous Andean territorial organizations) population.	Bolivia	IADB/ Ministerio de Desarrollo Rural Agropecuario y Medio Ambiente	\$6m	Completed (2015)
Strengthening the integral and sustainable management of biodiversity and forests by indigenous peoples and local communities in fragile ecosystems of the dry forests of the Bolivia Chaco.	To scale up the integral and sustainable management of biodiversity and forests (ISMBF) as a strategy for sustainable forest management (SFM) and sustainable land management (SLM) to support integral territorial planning and the strengthening the life systems in fragile ecosystems of the dry forests in the Bolivian Chaco.	Bolivia	FAO/ Ministry of Environment and Water	\$3.5m	CEO endorsement pending
Sustainable Forest Management in the Transboundary Gran Chaco Americano Ecosystem	To reverse land degradation trends in the Gran Chaco through supporting sustainable land management in the productive landscape	Argentina, Bolivia, Paraguay	UNEP, UNDP/OAS	\$6.8m	Completed (2017)

## 7. Consistency with National Priorities

**Is the Project consistent with the National Strategies and plans or reports and assessments under relevant conventions?**

**If yes, which ones and how: NAPAs, NAPs, ASGM NAPs, MIAs, NBSAPs, NCs, TNAs, NCSAs, NIPs, PRSPs, NPFE, BURs, INDCs, etc**

The proposed project is aligned with, and supports the relevant legislation and strategic documents of the Bermejo riparian counties and responds to the priorities indicated therein. It will also foster (i) compliance with the UN Convention on the Protection and use of Transboundary Watercourses and International Lakes and (iii) the achievement of relevant SDG targets.

### Argentina – 2017 Federal Water Plan: Policy Axes

- Potable water and sanitation: expand the provision of potable water and sanitation services, including potable water and sewage treatment plants.
- Adaptation to climatic extremes: increase the protection levels of the population, especially the most vulnerable (women, children, the elderly, indigenous peoples, the poor and the indigent) against floods, droughts and other threats through infrastructure, warning systems, and contingency plans.
- Water for production: provide water for primary, secondary (agroindustry), and tertiary productive activities, especially tourism services. Irrigation for agriculture and afforestation stand out among the primary activities.
- Multipurpose use and biomass: achieve the yield and generation of matter and energy from biomass.
- Preservation of water resources: use and preservation of water by the associated actors.
- Strengthening of capacities of the actors associated with the use of water.
- Innovation: optimizing the innovation available to the country to achieve practical solutions.
- Participation: achieving the participation and responsibility of the various actors associated with the use of water.

### Bolivia - Multi-year Program for the Integrated Management of Water Resources and Integrated Management of Watersheds 2017-2020: Specific objectives

- Promote and consolidate governance in strategic basins through joint planning and coordinated implementation of public and private investment for their protection and sustainable use in the short, medium and long term.
- Protection and restoration of micro-watersheds through actions that promote the sustainable management of soils, vegetation cover and water, strengthen local management capacities for these components, improve the living conditions of the inhabitants and optimize the environment. in the long term its capacity for hydrological regulation.

- Reduction of vulnerability to hydrological risks and climate change
- Prevention and reduction of water pollution through the incorporation of water quality management at the level of basins and water bodies
- Promote pedagogical and intercultural interaction between local knowledge and academic knowledge
- Information and knowledge management on water, basins and the environment, to support the implementation of water-environmental management
- Strengthening of public and private entities and social organizations, at the regional and local levels, for the promotion, planning, facilitation and execution of water-environmental management actions.

## 8. Knowledge Management

**Outline the knowledge management approach for the Project, including, if any, plans for the Project to learn from other relevant Projects and initiatives, to assess and document in a user-friendly form, and share these experiences and expertise with relevant stakeholders.**

Knowledge management and learning will be essential for the achievement of the project goal of consolidating institutional capacities and introducing best practices in water and soil management. The proposed project design has been based on lessons learned and the experiences gained through the implementation of the previous SAP implementation project, as outlined, in the section: “The main lessons and recommendations from the previous GEF IW interventions”.

During its implementation the project will continue to facilitate, through Component 4 activities, exchanges with all relevant ongoing initiatives and projects, GEF and non GEF (see section on: “Coordination with other relevant GEF-financed projects and other initiatives”), and will disseminate results and experiences being gained as the project progresses, through various means of communication, in particular through the Annual Stocktaking Meetings, to which a large number of stakeholders will be invited to participate, and through its contributions to IW LEARN activities and events.

In addition to the above, The KM Approach proposed for the present project will revolve around the creation of the Bermejo Basin Information Management System (output 1.3), a process to capture, assess, document and share, in a user-friendly manner, information, lessons, best practices, and expertise generated during implementation.

The Bermejo information system will be an integrated information management system that will make significant contributions to coordination, feedback, and monitoring processes. The Bermejo information system will have the potential to contribute to these processes in the following ways: (i) circulating information as part of an internal system of monitoring and evaluation; (ii) creating pages for different program strategic areas, in order to connect users based on common interests; (iii) organization of electronic forums on topics of relevance to the Basin; (iv) guaranteeing the dissemination of zoning plans, water studies, management plans, natural resources mapping, and other products to a wider range of users; (v) facilitating consultations, transfer of experiences, and other methods of online collaboration between sub-projects, implementers, research institutions, and other participants.

## 9. Environmental and Social Safeguard (ESS) Risks

Provide information on the identified environmental and social risks and potential impacts associated with the project/program based on your organization's ESS systems and procedures

**Overall Project/Program Risk Classification\***

PIF

CEO Endorsement/Approval MTR

TE

Low

#### Measures to address identified risks and impacts

Provide preliminary information on the types and levels of risk classifications/ratings of any identified environmental and social risks and potential impacts associated with the project (considering the GEF ESS Minimum Standards) and describe measures to address these risks during the project design.

The preliminary Environmental, Social and Climate assessment made by CAF's specialist's team categorized the Project as 1C, "Low Environmental and Social Risk". However, the project activates CAF's safeguard S06 – Ethnic groups and Cultural diversity[1]; Therefore, CAF will make all the efforts in order to guarantee that the indigenous peoples approach integrates FPIC mechanisms, the basic principles of self-determination, and respect for indigenous knowledge, traditional cultures and practices that contribute to sustainable and equitable development.

During the PPG stage, it will be relevant to explore ways, through formal FPIC processes, for the different worldviews of indigenous peoples and rural communities, among other actors in the territory, to be taken into account, in order to maximize the local effectiveness of project activities, including its delivery of benefits to these actors.

Besides, from the climate risk's analysis's perspective, the project reduces the vulnerability of both ecosystems and population to the expected impacts of climate change and contributes to build adaptive capacities. The measures supported by the project would only turn from preventive to mitigative in an accelerated-change scenario, but its financial, environmental and social performance and production of GEB are unlikely to be affected except marginally by that change during the design period.

The specific analysis of climate risk provides two main recommendations for the wider project. First, it reinforces the general project approach of providing focused attention, in a positively discriminated way, to the most vulnerable members of its beneficiary populations. Indigenous peoples, and/or women, and/or other excluded members of local communities (children, elder, the physically handicapped, LGBTI+), must be provided with enhanced opportunities to participate in the project activities and enjoy their benefits. In doing so, the project will ensure that resilience is optimized. In the same way, the project must ensure that all and every of its procedures, structures, activities, and deliverables are embedded within a risk prevention & reduction culture, and that it supports its beneficiaries and stakeholders in the wide and deep building of societal capacities, both public and private, for disaster response at all levels.

[1] <https://www.caf.com/media/3381440/manual-caf-gef-safeguardsfinal.pdf> See page 86.

Upload available ESS supporting documents.

**Title**

**Submitted**

ES risk preliminar assessment Bermejo Basin Project

**Part III: Approval/Endorsement By GEF Operational Focal Point(S) And GEF Agency(ies)**

**A. RECORD OF ENDORSEMENT OF GEF OPERATIONAL FOCAL POINT (S) ON BEHALF OF THE GOVERNMENT(S): (Please attach the Operational Focal Point endorsement letter with this template).**

<b>Name</b>	<b>Position</b>	<b>Ministry</b>	<b>Date</b>
Martin Illescas	General Director of Projects with External Finance & International Cooperation	Ministry of Environment and Development of Argentina	4/6/2022
Carlos David Guachalla Terrazas	Viceministro de Planificación y Coordinación	Ministerio de Planificación del Desarrollo	3/16/2022
Martin Illescas	General Director of Projects with External Finance& International Cooperation	Ministry of Environment and Development of Argentina	5/11/2022
Carlos David Guachalla Terrazas	Viceministro de Planificación y Coordinación	Ministry of Development Planning	5/11/2022

ANNEX A: Project Map and Geographic Coordinates

Please provide geo-referenced information and map where the project intervention takes place

22°00'14"S 64°57'30"O



