Implementation of the Guarani Aquifer Strategic Action Program: Enabling Regional Actions

Part I: Project Information

GEF ID
10139

Project Type
MSP

Type of Trust Fund
GET

CBIT/NGI
- ☐ CBIT
- ☐ NGI

Project Title
Implementation of the Guarani Aquifer Strategic Action Program: Enabling Regional Actions

Countries
Regional

Agency(ies)
CAF

Other Executing Partner(s):
UNESCO

Executing Partner Type
Others

GEF Focal Area
International Waters

Taxonomy
Focal Areas, International Waters, Freshwater, Aquifer, Strengthen institutional capacity and decision-making, Influencing models, Stakeholders, Beneficiaries, Gender Equality, Gender Mainstreaming, Capacity, Knowledge and Research, Enabling Activities

Rio Markers
Climate Change Mitigation
Climate Change Mitigation 0

Climate Change Adaptation
Climate Change Adaptation 1

Submission Date
10/5/2018

Expected Implementation Start
1/1/2019

Expected Completion Date
2/28/2021

Duration
24In Months

Agency Fee($)

180,000

A. FOCAL/NON-FOCAL AREA ELEMENTS

Objectives/Programs	Focal Area Outcomes	Trust Fund	GEF Amount($)	Co-Fin Amount($)
IW-3-5	Enhance water security in freshwater ecosystems through advance information exchange and early warning.	GET	1,500,000	4,000,000
IW-3-6	Enhance water security in freshwater ecosystems through enhanced regional and national cooperation on shared freshwater surface and groundwater basins.	GET	500,000	800,000
		Total Project Cost($)	**2,000,000**	**4,800,000**

B. Project description summary

Project Objective

Enhancing water security in Argentina, Brazil, Paraguay and Uruguay by facilitating the initial implementation of the Guarani Aquifer System SAP through the setting up of information collection and exchange mechanisms, and multi-country technical management bodies and tools.

Project Component	Financing Type	Expected Outcomes	Expected Outputs	Trust Fund	GEF Project Financing($)	Confirmed Co-Financing($)
1. Consolidating transboundary technical cooperation (SAP Action 2)	Technical Assistance	1.1 The institutionalization of the technical multi-country committees created during PGAS execution facilitates the coordinated management of the SAG	1.1.1 The Monitoring Network and Models Committee in charge of data exchange strategies, established based on agreed upon TORs.	GET	400,000	1,200,000

Project Component	Financing Type	Expected Outcomes	Expected Outputs	Trust Fund	GEF Project Financing($)	Confirmed Co-Financing($)
2. Design and field testing of monitoring networks and protocols (SAP Action 4)	Technical Assistance	2.1 The sustainable management of the Guarani transboundary aquifer enabled by the joint design and field testing of a regionally harmonized multi-purpose monitoring network and related protocols, a prerequisite for groundwater management. 2.2 Agreement among countries on harmonized monitoring data sharing protocols improve the likelihood of effective joint strategies for the mitigation of adverse transboundary impacts.	2.1.1 Review and update of the GAS Monitoring Network design defined during the PGAS, endorsed by the Monitoring and Models Committee, and pilot field testing. 2.2.1 Monitoring data sharing protocols prepared by the Monitoring Network and Models Committee.	GET	1,100,000	2,800,000

Project Component	Financing Type	Expected Outcomes	Expected Outputs	Trust Fund	GEF Project Financing($)	Confirmed Co-Financing($)
3. Stakeholders' involvement, SAP update, dissemination and capacity building (SAP actions 2, 5, 7)	Technical Assistance	3.1 Full and gender balanced participation of stakeholders and of civil society, dissemination of general SAG and project specific information, reinforcement of capacity, and integration of gender, ecosystems and climate consideration into the SAP, enhance the effectiveness, long-term sustainability and replication of project results.	3.1.1 Establishment of the Capacity Building and Dissemination Committee, implementing the stakeholders involvement plan, coordinating SAP update activities, public awareness and capacity building regional events on groundwater management, environmental and gender issues, involving civil society organizations, indigenous peoples, local committees, basin councils, the private sector and other stakeholders 3.1.2 Gender mainstreaming within the context of the Guarani SAP through a gender analysis of SAP priority actions and policy recommendations, and the conduct of national training workshops on gender analysis and sex-disaggregated data collection. 3.1.3 Review the SAP in order to ensure that information on the ecosystem services dependent on the SAG will be available for each of the countries, as a sound basis for solving controversies at the water-food-energy-ecosystems nexus. 3.1.4 Private sector involvement through structured dialogues in the four countries.	GET	340,000	600,000

Project Component	Financing Type	Expected Outcomes	Expected Outputs	Trust Fund	GEF Project Financing($)	Confirmed Co-Financing($)
				Sub Total ($)	**1,840,000**	**4,600,000**
Project Management Cost (PMC)						
				GET	160,000	200,000
				Sub Total($)	**160,000**	**200,000**
				Total Project Cost($)	**2,000,000**	**4,800,000**

C. 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($)
GEF Agency	CAF	Grant	Investment mobilized	400,000
Government	Argentina	In-kind	Recurrent expenditures	800,000
Government	Brazil	In-kind	Recurrent expenditures	800,000
Government	Paraguay	In-kind	Recurrent expenditures	800,000
Government	Uruguay	In-kind	Recurrent expenditures	800,000
Others	UNESCO Uruguay	Grant	Investment mobilized	1,200,000
			Total Co-Financing($)	**4,800,000**

Describe how any "Investment Mobilized" was identified

Based on the objectives of the project co-financed by the GEF, CAF will also focus the work of complementary technical assistance to the SAG Countries in the framework of the concrete actions that it carries out, such as the Water Agenda, the Green Agenda and the Program Cities with Future. The operation of these initiatives through technical cooperation projects financed by CAF will generate synergies, that is products and results that contribute to the implementation of the SAP-GAS. Likewise, these technical cooperation projects will include capacity development and project pre-investment will generate significant opportunities for the execution of investment projects within the direct influence area of the SAG. The UNESCO contribution, as executing agency, will be implemented through actions and activities funded by IHP aimed at water resources management in the Guarani Aquifer System.

D. 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($)	Fee($)
CAF	GET	Regional	International Waters	International Waters	2,000,000	180,000
				Total Grant Resources($)	**2,000,000**	**180,000**

E. Non Grant Instrument

NON-GRANT INSTRUMENT at CEO Endorsement

Includes Non grant instruments? **No**

Includes reflow to GEF? **No**

F. Project Preparation Grant (PPG)

PPG Amount ($)
50,000

PPG Agency Fee ($)
4,500

Agency	Trust Fund	Country	Focal Area	Programming of Funds	Amount($)	Fee($)
CAF	GET	Regional	International Waters	International Waters	50,000	4,500
				Total Project Costs($)	**50,000**	**4,500**

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		Sistema Aquφfero Guaranφ		
Count	0	1	0	0

Indicator 7.1 Level of Transboundary Diagonostic 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)	
Sistema Aquφfero Guaranφ		4			
Select SWE					
Select SWE					

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)	
Sistema Aquφfero Guaranφ		4			
Select SWE					

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)	
Sistema Aquφfero Guaranφ		1			
Select SWE					

Indicator 7.4 Level of engagement in IWLEARN throgh 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)	
Sistema Aquφfero Guaranφ		1			
Select SWE					

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		500		
Male		500		
Total	0	1000	0	0

Part II. Project Justification

1a. Project Description

The Guarani Aquifer System (GAS) is a transboundary body of groundwater-containing rocks present in large portions of the subsurface of Argentina, Brazil, Paraguay and Uruguay. Formed by predominantly sandy sedimentary rocks, it represents one of the largest freshwater reserves of the world. The Guarani Aquifer is an integral component of the regional socioeconomic context, in which it fulfills essential functions and by which it is directly affected. The GAS has specific and complex physical, geological, chemical and hydraulic characteristics that were defined as part of the GEF International Waters foundational project "Environmental Protection and Sustainable Development of the Guarani Aquifer System" (PGAS). The project led to the formulation and adoption by the aquifer countries of a Strategic Action Program (SAP) aimed at the long-term sustainability of this huge freshwater resource. Following the adoption of the SAP, the aquifer countries negotiated and signed the "Guarani Aquifer Agreement" - the first shared-management agreement for a transboundary aquifer in Latin America - soon to enter into force. The present project will propose a technical coordination frameworks and regional management tools foreseen in the SAP that will enable the coordinated and harmonized implementation of the national level priority actions that will ensure the long-term sustainability of this precious resource.

a. The global environmental and adaptation problems, root causes and barriers that need to be addressed

The Guarani Aquifer System (GAS), with an estimated extent of 1,087,879 km2, is one of the largest global freshwater reserves and represents the main source of freshwater for about 90 million people in the four countries sharing the aquifer: Argentina, Brazil, Paraguay and Uruguay. The project "Protection and Sustainable Utilization of the Guarani Aquifer - PSAG" (2003 - 2009, GEF, World Bank, OAS) allowed the four countries to substantially improve their common knowledge of this "invisible" resource. The project culminated in the preparation and adoption of a Strategic Action Program, indicating the priorities for action by the countries.

Following the finalization of the project, and while negotiating the "Guarani Agreement" according to the guidelines of the UNGA resolution on the Law of Transboundary Aquifers, each country advanced separately and independently with the implementation of some of the national actions foreseen in the SAP, but did not make progress in those requiring a multi-country coordinated action aimed at ensuring continuity and harmonization in the generation and dissemination of information of common interest. Data on the evolution in time and space of the quality and hydrodynamics of the aquifer's groundwater are in fact essential in order to detect contamination processes or flow modifications due to anthropogenic factors – including transboundary impacts - and hence to enable the sustainable utilization of this precious resource.

The present project - nested within the La Plata Treaty framework – is intended to assist the countries in accelerating the implementation of the SAP regional actions, and setting up the technical coordination frameworks and the tools indispensable for the long-term sustainability of the resource, and for complying with the Guarani Agreement provisions.

Among the objectives of the proposed project is to update the actions of the SAP, with special focus on enhancing water security considering the impacts of future climatic scenarios, the protection of the ecosystem services that the aquifer provides and of the need to mainstream in the SAP itself gender equality and women empowerment.

Issues of concern

The PSAG TDA concluded that present major groundwater resource management and protection needs of the SAG do not arise from direct threats posed by transboundary causes. This is due to the huge size of the aquifer and to the very slow movement of water in the subsurface delaying the propagation of degradation factors. Local 'transboundary hotspots' have however been identified along national boundaries, and between individual states of Brazil that share the aquifer. Current transboundary groundwater issues are limited to the border regions, and essentially local in character, and do not have major 'upstream-downstream' implications. They thus require resolution through agreement and action at the corresponding local scale. Only with extensive intensification of groundwater use for irrigation are any potential transboundary effects on groundwater likely to expand from local to aquifer scale.

This notwithstanding, the long-term sustainability of the exploitation of the groundwater resources of the aquifer, and hence of water security in the region, will depend on the level of coordination, and on the advancements in, and the harmonization of (i) the knowledge of the resource and (ii) the resource protection policies. Benefits will accrue from sharing advances in scientific understanding and positive management experiences – thus a clear commitment from the countries involved to continuing cooperation will be of paramount importance. Multiple demands - human water supply, agriculture and industry - have substantially intensified groundwater use, especially in zones where shallower aquifers are known to contain limited resources. In such areas, GAS water assumes immense social and economic importance, and it is likely that overlapping interests will emerge as its strategic value becomes more evident. The trend toward more intense groundwater exploitation in the region could be exacerbated by climate change pressures, in particular the expected increased frequency and extension of droughts.

b. The baseline scenario or any associated baseline projects

1) Hydrogeology

7. Groundwater quality - Natural groundwater quality depends on (i) interactions between water and solid and gas phases in the host rock, (ii) flows (speed, residence time, hydraulic level and recharge) and (iii) the natural climatic cycle and its variations. Natural variations in the composition of water may be equal to or greater than variations caused by pollution. For this reason, the baseline cannot be stated as a single value, but rather, must be expressed by a range of values, considering natural variations within the aquifer. Generally speaking, the waters of the GAS are potable, with low levels of mineralization (indicated by conductivity of < 1.000 µS/cm). Their pH values vary considerably, from 4.5 to 11 but, in general, tend to be close to neutral. Certain areas display higher concentrations of sulfates and of fluorine, at levels higher than is recommended for household use.

When salinity exceeds acceptable limits, there are restrictions on the use of the water, as occurs in the extreme south of the GAS region and on its western limits in Argentina (inferred on the basis of the electrical profiles of oil prospection wells). In certain wells located in thermal areas in the southern portion of the GAS there is evidence that, aside from salinity, the water has high concentrations of other inorganic elements, such as arsenic, and must be carefully analyzed prior to being declared suitable for use.

Geothermal characteristics - GAS water temperatures rise as a function of the depth of the aquifer's ceiling. In most of its confined area, temperatures vary between 35 °C and 55 °C. Maximum temperatures are approximately 65 °C, but in a few limited areas they may be as high as 80 °C. Figure 2 provides a map of temperature distribution in the form of isotherms, and its analysis may enable establishment of a classification by average temperature. Each temperature band should, a priori, be associated with certain types of potential geothermal uses.

GAS water temperatures are within the domain of low enthalpy. The zone of the aquifer with greatest available potential is the western region of the State of São Paulo (Brazil). Geothermal waters of the GAS, especially in its more confined central portions, represent a valuable energy source that could be harnessed for a variety of agro-industrial activities, aside from current use for spas.

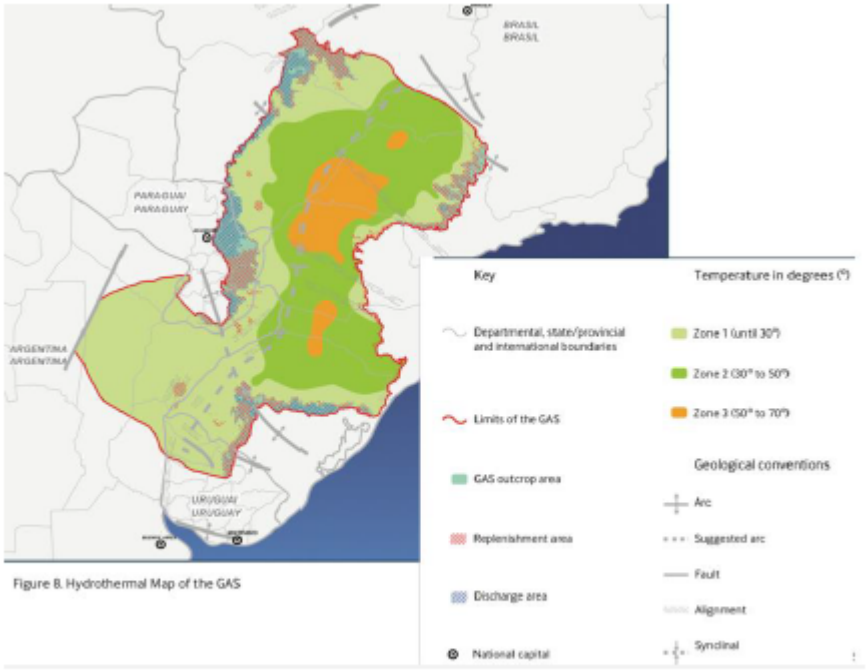


Fig. 2: Hydrothermal map of the Guarani Aquifer

Groundwater quantity - There are two types of groundwater reserves: active reserves (dynamic resources) and static reserves (permanent reserves / permanent storage). The sum of these two results in total reserves. Active reserves are the volumes of renewable water that enter the aquifer each year. They depend directly on seasonal replenishment (rainwater infiltration and other natural sources) and are available for exploitation. Figure 3 illustrates the vertical distribution of these reserves.

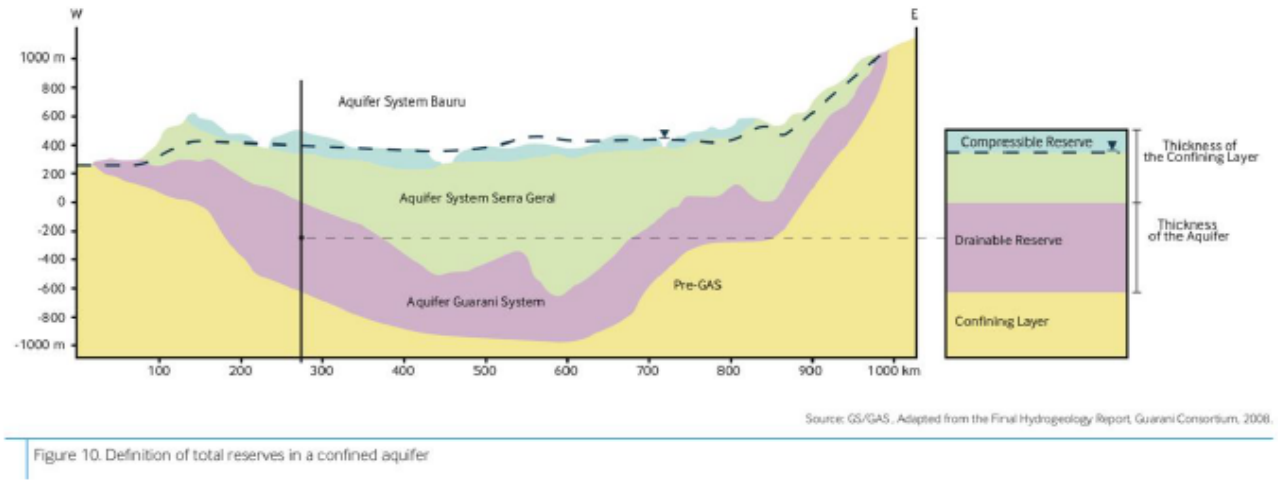


Fig. 3: Vertical distribution of groundwater reserves in the Guarani Aquifer

Estimates of volumes of GAS water range from 29.550 km3 ±4.000 km3, to 32.830 km3 ±4.400 km3. This volume of water is not all available for abstraction. In various parts of the basin, the depth of the GAS is over 400 meters, and if water levels were to drop owing to excessive pumping, abstractions would become technologically and economically unfeasible.

Exploitable Reserves - To calculate the volume of GAS water that can effectively be exploited, it is necessary to establish abstraction scenarios in line with the operating limits of pumping equipment and well-construction techniques. A 400m drop in water levels (below the land surface) is currently considered the critical technical and economic limitation for exploitation of the GAS. The greatest potential for exploitation of the GAS is to be found in areas close to recharge outcrop zones, while the exploitation of the central part requires specific management. It is imperative to quantify actual recharge rates in order to define sustainable exploitation volumes for the GAS in these preferential water extraction zones.

Current Uses - Based on own information from 2,054 wells and considering an operational regime with an average of 18 hours per day, the volume of water abstracted from the GAS was estimated at 2,847,013.5 m3/ day, i.e., approximately 1.04 x 109 m3/year. 90% of current abstractions occur in Brazil, and that the largest number of wells and volumes of water extracted are in the State of São Paulo. In Brazil, though publicwater supply is the main demand, there is great diversification of uses of the Guaraní water. In Argentinaregistered wells are exploited solely for recreational purposes. In Uruguay and Paraguay more than 90% of the volumes abstracted are for urban water supply.

Studies conducted under the PGAS led to the following findings: 1. The existence of the GAS was confirmed as a vast rock stratum (geological formation) with aquifer characteristics, forming a groundwater reservoir (hydrogeological basin). Recent estimates define and area of 1,087,879 Km2, which corresponds to 92% of the original estimate. It was also confirmed that the GAS is present in the subsoil of four countries, though certain differences were detected in relation to the original estimates. The water is renewable, but circulation is slow and is hampered by hydraulic barriers and natural compartments that condition subterranean flows. Generally, water quality is good. Except in a few specific areas, problems of contamination or overexploitation were not detected. Though the GAS is a continuous structure, its waters present heterogeneities. Its characteristics vary from one region to another, and well-defined areas can be identified where the dynamics of the GAS differ considerably. Such variation includes chemical differences, hydraulic differences (static levels ranging from zero to over 200 meters), differences of accessibility, and of temperature (ranging from 18 °C to 50 °C). Levels of use of the GAS also vary considerably. In one sector of the aquifer, equivalent to 10% of its total area, there is not a single well into the GAS or that could provide re- liable information. In other sectors, within areas of 500 km2, abstractions from the GAS amount to as much as 30,000 m3 per day.

When the water of the GAS is affected by pollution, such contamination is normally detected in relatively shallow wells, and often stems from faulty well construction. Contamination may also occur in and around outcrop areas (zones with fractured basalts, through which pollution may percolate from the surface) which tend to be more vulnerable. Moreover, in areas covered by basalts, there are certain windows that expose the GAS to surface water or to flows from younger (post-GAS) geological formations. In such cases, there is considerable vulnerability. In confined areas of the GAS, vulnerability is negligible (Fig.3).

Studies carried out as part of PGAS found that current and potential transboundary impacts are restricted to a narrow strip of territory of no more than a few dozen kilometers, depending upon local specific hydrodynamic conditions. The hydraulic ‘upstream’ and ‘down- stream’ effects, common in surface drainage, are not applicable to the GAS and, generally, are imperceptible. Nonetheless, for example, the lowering of the depression cone caused by extraction in the Santana de Livramento and Rivera region, though not large, crosses the border between Brazil and Uruguay, and to some degree affects local GAS groundwater flows.

Investigation of economic and social aspects of GAS water use led to the conclusion that certain types of land uses, activities and investments could cause impacts on the groundwater resource that go beyond strictly hydraulic aspects. Thus, changing land-use patterns, especially in recharge zones, will require specific cooperation and dialogue between the countries. Among the ongoing processes on surface that may cause negative impacts on Guarani groundwater, the main are: deforestation, use of high water-consumption agricultural techniques, intensive use and inadequate management of agrochemical inputs, areas of greater abstractions of thermal waters.

The PGAS studies led to identification of three large zones with differing characteristics for groundwater management:

Looming threats - Multiple demands - human water supply, agriculture and industry - has intensified substantially groundwater use, especially in zones where shallow aquifers are known to contain limited resources. In such areas, GAS water assumes immense social and economic importance, and it is likely that overlapping interests will emerge as its strategic value becomes more evident. Climate change pressures exacerbate the trend toward more intense groundwater exploitation in the region.

2) Legal-institutional framework

Gaps exist between the provisions of legal frameworks, and deployment and enforcement of standards. Generally, the countries have developed comprehensive normative structures, in line with regional and international trends. All of them have incorporated the necessary principles and instruments for management and protection of groundwater. However, except in certain specific cases, these have not been transformed into effective advances or concrete results. Effective deployment of management instruments requires allocation of adequate financial, human and logistical resources which, generally, are scarce or unavailable.

In the four countries, the legal and institutional frameworks provide a sufficient basis for sustainable management and protection of the GAS. There are however conditions that would require the development of the necessary coordination between the countries that overlie the GAS. The experience acquired and outcomes of the PGAS technical studies offer each of the countries an opportunity to revise and adjust their legal frameworks and the concrete application thereof.

The Pilot Projects conducted under the PGAS resulted in a series of applications, procedures, methodologies and legal and fiscal instruments that could be usefully employed to enhance local management, and that could be replicated in situations with similar characteristics and that face the same water use and protection issues.

The table in Fig. 4 presents a summary of the available legal structures and instruments for implementation in the four countries.

Argentina	- National Constitution (CN) of 1994: acknowledges that the Provinces have original jurisdiction over natural resources (water) existing within their territory (art. 124) - Civil Code (CC): surface waters are under public jurisdiction of the State. Reform of the code in 1968 placed groundwater under public jurisdiction (art. 2.340) - Joint interpretation of articles 124 (CN) and 2.340 (CC), places groundwater under public jurisdiction of the provincial State in which it is found
Brazil	- Federal Constitution (CF) of 1988: water is a good for common use of the people – a diffuse good (art. 225) - Law 9.433/1997 - National Water Resources Policy: water is under public jurisdiction (art. 1, I) - According to the CF/88, it is the responsibility of the (Federal) Union to legislate on general rules for water (art. 22, IV); groundwater is included among goods of the States, with exception of mineral groundwater which is under federal jurisdiction
Paraguay	- Law 3.239/2007: surface water and groundwater are under public jurisdiction of the State - Civil Code of 1985: rivers and all waters that flow naturally are goods under public jurisdiction of the State (modified by Law 2.559/2005 that extended jurisdiction over groundwater) - Municipal Organic Law nº 1.238/1987: rivers, lakes and streams are under municipal jurisdiction. Law 3.239/2007 sets restrictions to jurisdiction of banks under private ownership adjacent to water courses. It is the responsibility of the municipality, without prejudice to other authorities
Uruguay	- Art. 47 of the Constitution (reform of 2004): surface waters and also groundwater, with the exception of rainwater, that are part of the hydrological cycle constitute a unitary resource, subordinated to the general interest, and are part of the state public jurisdiction, under public hydraulic jurisdiction

Fig. 4: Water Jurisdiction in the SAG countries[4]

[4] Paraguay: The Municipal Organic Law was substituted in 2010 by the Ley Orgánica Municipal - Nº 3966/2010. L E Y Nº 3966/10. ORGÁNICA MUNICIPAL"8

Argentina:

In Argentina, provincial public jurisdiction over groundwater has been established. Management responsibility lies with the Provinces, although federal legislation also sets minimum management standards (under the General Environment Law 25.675 and the Environmental Management of Water Law 25.688). At the federal scale, there is the Secretariat for Water Politics and Infrastructure (Ministry of Interior, Publics Works and Housing) and the Secretariat of Government for the Environment and Sustainable Development. The Provinces that overlie the GAS have water codes, and five of them have specific regulations for utilization and protection of groundwater. Entre Ríos has issued technical standards for drilling of wells for groundwater abstraction (Directory of Hydrology and Ministry of Water Affairs, respectively, in 2005), and is implementing more specific actions for management of thermal water (since the Water Law 9.172/1998 does not apply to groundwater). Misiones, by means of Ministry of Ecology Resolution 429/2006, issued technical standards for wells and drilling for groundwater abstraction.

Brazil:

In Brazil, laws on the environment and water resources set national policies and state-level public jurisdiction over groundwater. Deliberations of the National Water Resources Council (CNRH) and of the state-level Water Resources Councils (CERHs) also address issues relating to regulation, management, and protection of groundwater. Within the scope of the National Water Resources Plan (PNRH) the National Groundwater Program (PNAS) has been proposed, under coordination of the National Secretariat of Hydrologic Security oh the Ministry of Regional Development (MDR) and of the National Water Agency (ANA). The National Groundwater Program encompasses specific subprograms for:

- increasing basic knowledge, including monitoring of groundwater;
- development of institutional and legal aspects;
- capacity building, communications and public participation.

The eight Brazilian States that overlie the GAS have passed laws establishing State Water Resources Policies. Seven of them have approved specific standards relating to management, abstraction and protection of groundwater.In São Paulo, the State Water Resources Council has established restricted and controlled areas for abstraction and use of ground- water in the municipality of Ribeirão Preto.

Paraguay:

Aside from environmental laws, the Water Resources Law, instituted by legislation in 2007 and currently being put into effect, establishes public jurisdiction over groundwater. Resolutions have provided standards for water management and drilling of wells for abstraction of groundwater. The Ministry of Environment and Sustainable Development of Paraguay is the Authority for the Application of the Law of Hydraulic Resources of Paraguay and is responsible for the management of water resources, and the Sanitation Services Regulatory Corporation (ERSSAN) issues standards for water supply and sanitation services.

Uruguay:

Environmental and water resources laws (the Water Code) have been enacted. The Constitution establishes public jurisdiction and sets management principles for groundwater (currently under implementation). The Management Plan for the Guarani Aquifer and technical standards for the drilling of wells for abstraction of groundwater have been issued by Decree. From the institutional point of view, responsibility on water resources resides in the Government, exercised through the National Directorates for Water (DINAGUA) and for Environment (DINAMA) of the Ministry of Housing, Territorial Planning and Environment (MVOTMA). DINAGUA, created in 2007, has responsibility over promotion and enforcement of policies for the sustainable use of water, approval of hydraulic infrastructure, resolution of water use conflicts, maintenance of the Public Water Rights Register, and development of water resources assessments.

3) Effectiveness of normative and institutional structures

Generally speaking, the four countries have developed adequate normative structures, in line with regional and international trends, incorporating principles and appropriate instruments to address groundwater management and protection issues. However, except in a few cases, these advances have not been followed up by effective deployment of management instruments, entailing corresponding allocations of financial, human, and logistical resources.

The weaknesses that have hampered deployment of such management instruments are: (i) scarce or inappropriate regulations (unsubstantiated by scientific knowledge); (ii) lack of enforcement instruments; (iii) poor transboundary coordination; (iv) lack of mechanisms for cooperation among the countries; (v) poor institutional enforcement capabilities (lack of human and financial resources, specialized skills, etc.); (vi) ignorance of requirements on the part of water users; (vii) traditional practices and customs relating to water use; (viii) lack of public participation and dissemination; (ix) excessive centralization of management in Provincial/State and national capitals, at a distance from local problems; (x) lack of local water-quality and abstraction control bodies; and (xi) poor integration among environmental management, land-use planning and water resources management bodies.

4) Management coordination among countries

The four countries that share the GAS have different legislative and organizational standards with varying levels of effectiveness. *Despite such differences, significant points of convergence exist, upon which coordinated management policies can be based*. Various general principles for management and protection and several of the monitoring instruments used are similar in all the four countries. A preliminary comparison shows the following coincidences among relevant policies the countries:

Common Principles:

• Public jurisdiction over groundwater• Environmental protection.• Ensure availability of water of adequate quality for current and future generations. • Rational, integrated, and sustainable use.• A limited resource with an economic value. • Multiple use.• Priority for human water supply.• River basins as the basic management unit. • Territorial decentralization.• Participation of stakeholders.

Common Instruments:

• Systems for granting of licenses for water use and discharges. • Environmental licensing.• Classification of water bodies.• Basin committees or advisory boards.• Public registry of water-use rights.• Inventory of hydraulic engineering works. • Information systems.• Possibility of deploying water-use charges. • Control and penalties for noncompliance.

Development of a future coordinated governance system will have to take into consideration these important points of coincidence, and also the need to improve implementation of these legal frameworks in each country, without which further progress in joint management would be hard to achieve. An analysis of these elements leads to the following preliminary conclusions:

• In each of the four countries (though there is still scope for improvement) a sufficient legal and institutional framework is in place for the development of sustainable protection and management of the GAS. Conditions are also favorable for development of the necessary coordination among the countries. In view of its close links to normative aspects, the question of institutional preparedness is of key importance and inevitably arises whenever actions are proposed for this area. In countries with federative structures, articulation or integration among States or Provinces is perceived by local stakeholders as the first step toward the goal of sustainable management at the national level. In Argentina, good managing practices and the existing legal structure, indicate that the participation of the involved Provinces in coordination with the National Government is necessary for the conformation of inter jurisdictional Basin Council. In this regard, their federal government system, which states that the original domain of the natural resources is in the hands of the Provinces, demands the National Government the application of a methodology such as stated in Law 25.688. Nevertheless, the above stated Law does not specificity a method to achieve the latter objective. Thus, the National Water Plan implemented by the Secretariat for Infrastructure and Water Policy promotes the creation of Basin Councils, with the active participation of the Provinces, the National Government and approval of the National and Provincial Parliament. In Uruguay, there was a proposal for establishment of an Aquifer Committee, with broad powers over the entire area overlying the Uruguayan portion of the Guarani Aquifer. In Brazil, it was proposed that the existing structure and coordination mechanisms among the states should be harnessed, through bodies of proven efficacy (CNRH, CERH, and basin committees). In Paraguay decentralization of certain functions was proposed, to enable departmental governments to collaborate better with the central Government on issues relating to groundwater management.

• Themes relating to dissemination, education and capacity building, in all of the countries, were considered central to the successful outcome of proposals. Thus, to achieve such outcomes, dissemination of information and capacity building in all areas are deemed priorities. There is a consensus among the countries that, in terms of management and

protection of groundwater, public participation and involvement of all stakeholders and of civil society (including indigenous peoples) is not just a legal requirement, but an essential requisite for coordinated management.

5) The outcomes of the foundational project: Environmental Protection and Sustainable Development of the Guarani Aquifer System (PGAS)

(i) Improved Knowledg

A great quantity of technical knowledge and a vast amount of data was produced. Manuals of procedures were prepared for managers throughout the region. Moreover, technical criteria and a regional view, so necessary for promoting sustainable groundwater management, were developed. Among the highlights of this process were:

· Drafting of geological and hydrogeological maps, with details on the geometry and behavior of the GAS, based on a consensus and on correlation with stratigraphic units in the four countries.

· Establishment of a database on tube wells, available to all stakeholders and linked to all the main regional databases.

· Design of a regional monitoring network for wells, including selection of wells (in confined areas and outcrop areas) and their respective sampling protocols.

· Construction of conceptual and mathematical regional flow models (designed to assess regional water-use scenarios including macro changes in land-use and settlement patterns) and local own-models in Pilot-Project areas (a direct management tool for solution of local problems).

· Establishment of the Information System on the Guarani Aquifer System (SISAG), using the most modern geo- processing and information technologies.

(ii) Improved Cooperation

Cooperation mechanisms for fostering regional participation in decision making were tested at the various levels, including the Project Steering Committee (CSDP), the National Coordination Units (CN), the Coordination Council (CC) and the National Project Execution Units (UNEPs). Also, a Project General Secretariat (GS/GAS) was established as a regional technical body, to serve as a convergence and starting point for initiatives of each of the countries in the PGAS.

(iii) Transboundary Diagnostic Analysis (TDA)

The TDA was prepared, based upon a comprehensive process of consultations and participation carried out in each of the countries by the National Project Execution Units. All stakeholders were invited to participate in this process, including representatives of the states/provinces and municipalities involved, organizations of civil society, and local

committees. As part of Pilot Projects causes of problems and information gaps were identified, and actions implemented for mitigating or resolving critical themes relating to the GAS, including quantitative and qualitative aspects of protection and management.

Current transboundary groundwater issues are limited to the border regions, and essentially local in character, and do not have major 'upstream-downstream' implications. They thus require resolution through agreement and action at the corresponding local scale. Only with extensive intensification of groundwater use for irrigation are any potential transboundary effects on groundwater likely to expand from local to aquifer scale.

This notwithstanding, the long-term sustainability of the exploitation of the groundwater resources of the aquifer, and hence of water security in the region, will depend on the level of coordination, on advancements in, and harmonization of knowledge of the resource and of resource protection policies. Benefits will accrue from sharing advances in scientific understanding and positive management experiences – thus a clear commitment from the countries involved to continuing cooperation will be of paramount importance.

(iv) Strategic Action Program (SAP)

The SAP – adopted by the countries in 2009 - addresses not only environmental protection and sustainable use of the aquifer, but also the broader concept of water security. Assessments carried out under the PGAS found that issues relating to water quality, quantities, and replenishment capacity of the GAS are considered of immense strategic importance in the regions that overlie it. Indeed, it is the GAS that provides these regions with a high degree of water security. It ensures fair access to high-quality water for local populations, thereby enabling them to engage in productive activities, providing that they conserve the integrity of this precious resource and the environment upon which it depends. For these reasons, it is essential that, at each level, measures be taken to ensure integrated management and sustainable use of the GAS.

Water security is an ambitious goal that requires convergence of strategic actions carried out in a coordinated manner by all the countries involved. Pursuit of this common goal will require attainment of harmonized technical and institutional capacities. Each of the countries needs to achieve sufficient capacities to implement management strategies at the national and sub-national levels, suitable for application to their specific circumstances and pressures of use. *Water security can be achieved, provided that the sovereign States adopt compatible management principles and pledge to commit the human and financial resources necessary for sustainable management.*

Fragmentation of actions, based solely on a national perspective, could pose medium and long-term risks. Such a limited approach could compromise the availability of resources for management and protection of the GAS and for ensuring water security, by:

- Exacerbating differences in understanding on the behavior of the GAS at the regional level;
- Intensifying environmental degradation and conflicts relating to use of GAS water in border regions;

- Limiting the capacity of each country to respond to challenges posed by climate change, which call for strategic coordination of actions throughout the region overlying the GAS. Indeed, any threat to water security in one of the four countries would lead to regional imbalances. The only feasible alternative, as the SAP proposes, is strengthening of cooperation for water-resources management in general, and particularly for the strategic resource of the GAS.

(v) Strategic actions

The identification of priority strategic actions entailed intense participation of all stakeholders in the PGAS. From this process, the following regional actions under the SAP emerged:

- Development of national and sub-national capacities for groundwater management.
- An operational structure for regional cooperation.
- Updating and maintenance of the GAS Information System.
- Implementation and development of the GAS monitoring network and mathematical models.
- Technical capacity building and dissemination of knowledge.
- Development of local groundwater management.
- Support for public participation.
- Development of criteria for sustainable use of the GAS.
- Implementation of technical-scientific programs linked to management of groundwater and of the GAS.
- Monitoring and evaluation of implementation of the SAP.

Details on actions under each of these approaches can be found in the SAP document that stresses the regional ties between each and contributes specific details of an operational nature. Matrixes of actions carried out within each country complement this description, identifying relevant players.

Implementation of the SAP, in accordance with the consensus achieved among the Governments of the countries, shall be carried out within the La Plata Treaty framework. However, in view of its strategic importance of the GAS for national development, countries recognize that its management will require specific provisions.

6. Actions implemented by the countries following the adoption of the SAP

Governments of the countries, shall be carried out within the La Plata Treaty framework and in coordination with the CIC (Comite Intergubernamental Coordinador de los Paises de a Cuenca del Plata). Following the SAP adoption, in view of the strategic importance of the GAS for national development and of the specificities of this largely deep and confined groundwater resource, countries recognized that the management of the Guarani Aquifer required specific provisions and mechanisms to facilitate transboundary cooperation. This recognition led countries to take the critical and innovative steps, among them the successful negotiation of the Guarani Agreement.

The Guarani Agreement

In August 2010, the four states signed the Agreement on the Guarani Aquifer, which is the first shared-management agreement for a transboundary aquifer in Latin America, taking into account the United Nations (UN) Resolution 63/124: the Law of Transboundary Aquifers.

Cooperation is one of the strong points of the Agreement and appears in many Articles, such as 8, 9, 10, 12, 13 and 14. These statements foresee the need to exchange information on water resources and the right to seek additional information. Notably, Articles 8 and 12 seek to build on the foundation provided by the Guarani Aquifer System project: “The Parties shall proceed to adequately exchange technical information about studies, activities and works that contemplate the sustainable utilization of the Guarani Aquifer System water resources.” (Article 8) “The Parties shall establish cooperation programs with the purpose of extending the technical and scientific knowledge on the Guarani Aquifer System [...].” (Article 12).

The Agreement has already been ratified by Argentina, Brazil and Uruguay, and will finally enter into force thirty days after the forth instrument of ratification have been deposited. Paraguay has not concluded the process of ratification of the Agreement.

The Regional Center for the Management of Groundwater for Latin America and the Caribbean (CeReGAS, UNESCO Category II Center)

The Center includes – among other Latin American countries - the four countries of the Guarani, all of them also part of the CeReGAS Board of Directors. The sustainability of the Center is enshrined in the Agreement with UNESCO, and will be ensured through the financial support provided by the Ministry of Housing, Territorial Planning and Environment of Uruguay.

National SAP Implementation actions (Baseline)

o The Pilot Concordia (AR) – Salto (UY), including monitoring activities, capacity building and information exchanges, is still operational thanks to the support of the local authorities (Municipality of Concordia) and Argentinian Federal entities such us the Secretary for Water Politics and Infrastructure (SIPH) and the Water Federal Council (COHIFE). Municipality of Salto (UY), University of the Republic (UdelaR – UY) and Uruguayans water authorities (DINAGUA) participate regularly of the transboundary committee and activities development. It does not have however the authority of a legal instrument.

o Several Provinces in Argentina have provincially ratified the Federal Law of the SAG Agreement and/or have declared the SAG under different kind of provincial protection status. Some others have also included by provincial regulations the PSAG guidelines and technical standards for deep drilling as official procedure for the SAG exploitation.

o In Brazil, starting in 2012 and for the duration of two years, the National Water Agency (ANA) has implemented a project for the evaluation of the vulnerability and risk of contamination of the recharge areas of the Guarani Aquifer – where the aquifer outcrops at surface – in Brazil (except for the Sao Paulo State, that already had an equivalent evaluation). In addition, the Brazilian Geological Survey has included in its existing monitoring network, several wells tapping water from the Guarani Aquifer.

o In Paraguay, the dissemination and environmental awareness plan on the Guaraní Aquifer System has continued, in the Departments located within the limits of the SAG, and especially at the level of educational centers, municipalities and governorates. The impulse that the advances in the knowledge reached on water resources and aquifers, produced within the execution of the SAG Project, allowed to revolutionize the Academy and the discussions on public policies related to water management, allowed to position for the first time , to the set AGUA and AMBIENTE in a preponderant frame of importance that allowed that the same one is incorporated to the Political Agenda of National Discussion as a result of this Law 3239/07 of the Water Resources of Paraguay is produced.

o Uruguay is in the process of installing 20 divers in wells reaching the Guarani Aquifer for the monitoring of piezometric levels and of electrical conductivity.

c. The Proposed Alternative scenario

The Guarani Aquifer System, with an estimated extent of 1,087,879 km2, is one of the largest global freshwater reserves and represents the main source of freshwater for about 90 million people in the four countries sharing the aquifer: Argentina, Brazil, Paraguay and Uruguay. The project “Protection and Sustainable Utilization of the Guarani Aquifer” (2003 - 2009, GEF, World Bank, OAS) allowed the four countries to substantially improve their common knowledge of this “invisible” resource. The project culminated in the preparation and adoption of a Strategic Action Program, indicating the priorities for action by the countries.

Following the finalization of the project, each country advanced separately and independently with the implementation of the national actions foreseen in the SAP, but did not make progress in those regional actions requiring a multi- country coordinated action aimed at ensuring continuity and harmonization in the generation and dissemination of

information of common interest. Data on the evolution of the quality and hydrodynamics of the aquifer's groundwater are in fact essential in order to detect contamination processes or flow modifications due to anthropogenic factors – including transboundary impacts - and hence to enable the sustainable utilization of this precious resource.

The present project - nested within the La Plata Treaty framework – is intended to assist the countries in accelerating the implementation of the SAP regional actions aimed at setting up the technical coordination frameworks and the tools indispensable for the long-term sustainability of the resource, and for complying with the Guarani Agreement provisions.

Among the objectives of the proposed project is to update the actions of the SAP, with special focus on enhancing water security considering the impacts of future climatic scenarios, the protection of the ecosystem services that the aquifer provides and of the need to mainstream in the SAP itself gender equality and women empowerment.

PROJECT COMPONENTS

Component 1: Consolidating transboundary technical cooperation (SAP Action 2)

During the execution of the PSAG, the countries sharing the aquifer resources agreed that the management of the Guarani Aquifer, likewise all groundwater resources, falls under national sovereignty. Coordination and cooperation have however been fully recognized by the countries as indispensable for the implementation of strategic actions of regional and/or transboundary relevance. In this respect, the SAP recommended that the institutional structures that successfully operated during the execution of the foundational project (PSAG), be maintained and institutionalized. In particular, for what concerns the present project:

1) Technical Committees (Monitoring and Models; Capacity Building and Dissemination) – They represent the institutionalization, within the new context of SAP implementation, of the Technical Commissions created by PSAG. They will enable the necessary multi-country technical coordination during SAP implementation.

2) The SAP implementation facilitating unit – representing the liaison among Technical Committees, and with higher levels of decision making.

Following SAP recommendations, the Monitoring and Models Committee will include representatives of the scientific community and of the entities responsible for water resources of each country. It will take advantage of available monitoring and modeling experience in each country, and of the body of knowledge generated by the PSAG. Countries will nominate their representatives, and explore the regulatory instruments ensuring sustainability to the coordinated monitoring in aeas of transboundary influence.

In turn, the Capacity Building and Dissemination Committee will take responsibility in promoting gender equality and sex disaggregated data collection, and the sharing of information and experiences regionally and globally. Countries will nominate their representatives the committee to assure ample representativeness and participation.

Outcome 1.1: The institutionalization of the technical multi-country committees created during PGAS execution facilitates the coordinated management of the SAG.

Output 1.1.1: The Monitoring Network and Models Committee in charge of monitoring protocols and data exchange strategies, established based on agreed upon TORs.

Component 2: Design and field pilot testing of monitoring networks and protocols (SAP Action 4)

The purpose of this activity is to respond to the need for reliable periodic information from wells in order to produce sets of data on water quality and quantity similarly to what is being done by countries for surface and meteoric waters, with systematic and periodic measurements.

The envisaged "multi-purpose" monitoring network will be designed in order to pursue both the overall of characterization of the aquifer – not requiring frequent measures and samplings - and the detection of possible zones of degradation of the water quality below drinking standards – which will require instead frequent downhole measurements. In recharge and discharge areas, where the aquifer rocks outcrop and where groundwater is highly vulnerable to contamination, a greater number of parameters will have to be monitored. On the contrary, in deep wells extracting waters thousands of year's old, expected variations in chemical characteristics are minimal. Methodological guidelines, to be applied both at the national and the regional levels, will have to be defined in order to guarantee the representativeness of the collected samples and of the measurements onsite. A number of technological options for downhole monitoring exist, that will have to be evaluated during project execution.

The implementation of the Regional Monitoring Network will require an initial step, or Pilot Phase, which will allow the four countries' institutions to develop the monitoring methodology. This step by step implementation will allow to adjust the procedures and methodology based on experience gained in the field while strengthening the capacity of the relevant institutions in each country. It has to be stressed that the strategy for the selection of sampling/measurement sites is just as important as the choice of parameters, variables and frequency of monitoring.

For the Pilot Phase, object of the present project, a number of representative wells will be defined. This phase will allow the countries to gain direct field experience and adjust accordingly their internal procedures, as well as the mechanisms for the storage of shared data in a common database.

The total number of monitoring wells for the Pilot Phase will be 35 (15 in Brazil, 8 in Paraguay, 6 in Argentina, and 6 in Uruguay). Wells already belonging to national SAG monitoring networks will be included as part of the counterpart contribution. The design of the complete regional network will include a total of 180 wells in the four countries, as recommended by the SAP.

Activities to be developed include:

· Definition of the areas of priority interest, including the zones of transboundary influence such as Pedro J. Caba*llero (Py) – Ponta Pora (Br),* Artigas (Uy) – Quaraí (Br), Concordia (Ar)-Salto (Uy) and others identified in the TDA.

· Once established, the Monitoring and Models Committee will make the choice of the monitoring wells.

· Acquisition and installation of the automatic downhole instrumentation (piezometry, conductivity, temperature), data-loggers and transmission equipment.

· Definition of downhole sampling procedures of groundwater, and of chemical analysis in certified laboratories.

· Definition of monitoring frequency according to hydro-geologic characteristics of aquifer in the selected site (outcropping, shallow confined, etc.).

· Definition of the data storage system, based on an updated version of the SISAG developed during PGAS, and of the data sharing and reporting protocols.

Outcome 2.1: The sustainable management of the Guarani transboundary aquifer enabled by the joint design and field testing of a regionally harmonized multi-purpose monitoring network and related protocols, a prerequisite for groundwater management.

Output 2.1.1: Review and update of the GAS Monitoring Network design defined during the PGAS, endorsed by the Monitoring and Models Committee, and pilot field testing.

Outcome 2.2: Agreement on monitoring data sharing protocols among countries improve the likelihood of effective joint strategies for the mitigation of adverse transboundary impacts.

Output 2.2.1: Monitoring data sharing protocols prepared by the Monitoring Network and Models Committee.

Component 3: Stakeholders' involvement, gender mainstreaming, dissemination and capacity building (SAP actions 2, 5, 7)

Establishment and operationalization of the Capacity Building and Dissemination Committee, tasked with the updating of the SAP, the raising of stakeholder's awareness, the dissemination of general SAG and project specific information, the implementation of educational initiatives, together with capacity building and gender mainstreaming, are considered by countries as of paramount importance for the success of the project and of the sustainability of the SAG resources utilization. There is also consensus among countries that groundwater management and protection demands the participation of all stakeholders, including women, indigenous people, the private sector and the civil society. This Component of the project will strive to institutionalize these functions, essential throughout SAP implementation and beyond, and to promote gender equality and sex disaggregated data collection, and the protection of groundwater dependent ecosystems and biodiversity.

Outcome 3.1: *Full and gender balanced participation of stakeholders, the private sector and of civil society, dissemination of general SAG and project specific information, reinforcement of capacity, and integration of gender and of SAG dependent ecosystem services considerations into the SAP, enhance the effectiveness, long-term sustainability and replication of project results*

Output 3.1.1: Establishment of the Capacity Building and Dissemination Committee, implementing the stakeholders involvement plan, coordinating SAP update activities, public awareness and capacity building regional events on groundwater management, environmental and gender issues, involving civil society organizations, indigenous peoples, local committees, basin councils, the private sector and other stakeholders

Output 3.1.2: Gender mainstreaming within the context of the Guarani SAP through a gender analysis of SAP priority actions and policy recommendations, and the conduct of national training workshops on gender analysis and sex-disaggregated data collection.

Output 3.1.3 Review the SAP in order to ensure that information on the ecosystem services dependent on the SAG will be available for each of the countries, as a sound basis for reconciling conflicts at the water-food-energy-ecosystems nexus.

Output 3.1.4: Private sector involvement through structured dialogues in the four countries.

Output 3.1.5: Full participation to IW LEARN activities and events (including IWCs), and establishment of the Guarani Aquifer Website according to IW LEARN standards. 1% of the total GEF grabt will be allocated to support IW LEARN related activities.

d. Alignment with GEF 7 International Waters focal area Strategy

The project adheres to the overall principles and objectives stated in the GEF 7 Programming Directions, and aligns with the International Waters focal area Objective 3: Enhance Water Security in Freshwater Ecosystems.

In particular, the project will foster action in the following strategic directions:

- Enhance the availability of sound data and information for science-based policies and decisions.
- Enhance the quality, coverage and free availability of sound information on surface and groundwater availability and use, natural resources, and related grey and green infrastructure assets and adaptation deficits.
- Enhance the capacity on country level and dialogue among countries to draw conclusions from increasingly complex and innovative information sources to support decision making and to identify joint opportunities for action.
- Foster processes to formulate and formalize cooperative legal and institutional frameworks.
- Foster engagement with national, regional and global stakeholders to increase collaboration and cross support to investments and processes, through IW-LEARN.

e. Incremental cost reasoning and expected contributions from the baseline

The incremental reasoning at the basis of the proposed project is simple. The current baseline conditions for water resources management, in the GAS region, fundamentally consist of either:

- individual national economic development programs, such as water supply and sanitation and/or transportation, which are the responsibilities of various levels of government and primarily focus on individual country needs;
- other environmental management activities including ongoing environmental monitoring programs, informational programs, and related activities at the national and local levels.
- Fragmented monitoring efforts at the national levels.

The present project seeks to overcome the barriers hindering the needed coordination in the management of the SAG - such as lack of coordination management tools, frameworks and capacity - by developing a number of incremental regional actions focusing on institutionalizing regional technical cooperation frameworks and monitoring capacity, fostering stakeholders' participation, women empowerment, thus accelerating the full-fledged implementation of the SAP.

Increased coordination among the aquifer's countries will positively reflect on the ability to enhance synergies among the many ongoing fragmented sectorial actions (baseline contributions) in countries in the SAG region.

f. Global Environmental Benefits

Through the project - in line with GEF 7 IW Strategy - two major global environmental benefits will be accrued:

(i) By establishing mechanisms for harmonized data/knowledge acquisition and sharing at both national and transboundary levels on the aquifer's water resources quality and quantity the project will enhance water security in the four countries sharing the resource.

(ii) By the establishment and operationalization within the context of CeReGAS (PCU), of the multi-country technical Committees, formed by experts from the four project countries and in charge of the project's technical execution, the project will accrue global environmental benefits in improved transboundary cooperation, strengthening the countries' common vision on the shared aquifer resources, and their commitment to sustain the aquifer freshwater resources and related ecosystems.

g. Innovation, Sustainability and Potential for Scaling Up

Innovation

The project addresses, amongst others, a challenge faced by many large transboundary aquifers globally, as demonstrated by the findings of the TWAP project: how to implement an aquifer wide harmonized monitoring system covering both short-term and long-term trends in the quality and the quantity of the water resources of the aquifer. It does so by fostering the design and pilot testing of an innovative multi-purpose network based on scientifically selected deep wells, and the definition of sampling/monitoring protocols harmonized across the four project countries.

Sustainability

The project will build multi-country cooperation, capacity and experience within the context of CeReGAS, a newly formed international body created by Latin American countries, among them all four project countries, and based in Uruguay, through an Agreement with UNESCO. The institutional and financial sustainability of the project outcomes and will be ensured through the financial support provided to CeReGAS by the Ministry of Housing, Territorial Planning and Environment of Uruguay.

Potential for Scaling Up

Component 3 of the project is largely dedicated to the dissemination of knowledge on the aquifer resources, on the progress of the project towards achieving the desired impacts, on the gender analysis methodology and outcomes. The main purpose of this dissemination effort is the fostering of scaling up and broader adoption of the successful practices promoted by the project in the fields of aquifer monitoring techniques and protocols, gender mainstreaming, and transboundary cooperation, to the level of the whole aquifer, and beyond, to other regions and major transboundary aquifers globally.

h. Cost Effectiveness

Cost effectiveness is built in project design in two main ways:

Project outcomes: the project seeks to minimize costs related to the setting up of coordination and cooperation frameworks by embedding them in the CeReGAS, an entity whose funding is ensured by the Uruguayan Government; maximizing the integration of national deep well monitoring networks into an harmonized aquifer-wide network.

Project execution: The leveraged large support from country governments and from UNESCO will ensure the targeted and cost-effective use of the GEF grant contribution.

1b. Project Map and Coordinates

Please provide geo-referenced information and map where the project interventions will take place.

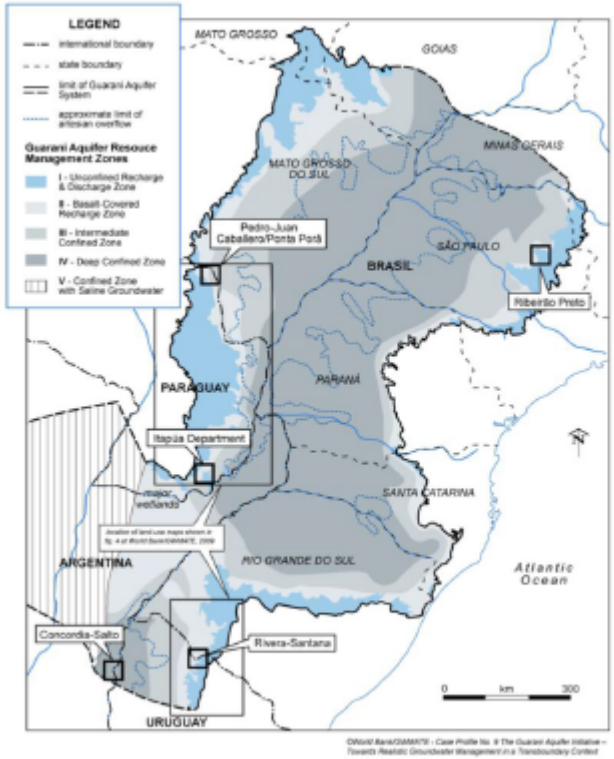


Fig. 1: The Guarani Aquifer and its management zones.

Guarani Aquifer System Extreme Points in Each Country

Country	NORT		SOUTH		EAST		WEST	
	Latitude S	Length W	Latitude S	Length W	Latitude S	Length W	Latitude S	Length W

ARGENTINA	25°31'6.29"	57°34'47.67"	31°56'2.87"	58° 9'43.70"	26°14'56.70"	53°38'18.68"	28° 3'0.59"	61°47'34.22"
BRASIL	16°49'48.62"	53°47'59.13"	31° 4'12.64"	55°21'11.20"	21° 2'46.57"	46°47'32.94"	22° 4'19.09"	56°23'14.22"
PARAGUAY	22°16'15.94"	56° 7'3.80"	27°34'15.62"	56°24'49.24"	24°21'27.71"	54°15'29.44"	27°11'8.98"	58°39'27.57"
URUGUAY	30° 5'11.92"	56°52'30.17"	32°29'17.83"	56° 2'26.57"	31° 4'12.64"	55°21'11.20"	31°52'57.92"	58°11'32.74"

NOTE: Keep in mind that these points are approximate and correspond to the final products of the SAG Project (2003-2009), so through subsequent studies may have changed.

1c. Child Project?

If this is a child project under a program, describe how the components contribute to the overall program impact.

2. Stakeholders

Please provide the Stakeholder Engagement Plan or equivalent assessment.

Stakeholder participation has been crucial for the preparation of this project proposal, which was developed through numerous consultations, including face to face, of relevant actors in the four countries. A costed Stakeholders Involvement Plan will be prepared and submitted for adoption at the first Steering Committee Meeting of the project. It will continue to be at the core of all project activities, and of Component 3 in particular. Main stakeholders that will be involved in project activities, outcomes and dissemination are:

Stakeholder	Roles in the project

Regional Institutions	CeReGAS, the Category 2 UNESCO Regional Center for the Management of Groundwater for Latin America and the Caribbean. · The Center includes the four countries of the Guarani, all of them also part of the CeReGAS Board of Directors. Its mandate is consistent with the SAP Action # 2: Creation of an operational structure for regional cooperation, as stated in Article 3 b) of the Statute of the Center. The sustainability of the Center is enshrined in the Agreement with UNESCO, and will be ensured through the financial support provided by the Ministry of Housing, Territorial Planning and Environment of Uruguay. The proposed project will adopt CeReGAS as responsible entity for project execution. · CIC, the Intergovernmental Coordinating Committee of the Countries of the La Plata Basin, involving all four Guarani countries and Bolivia. The CIC will be maintained informed of all project activities, and will be invited to participate to project events. As a results it is expected that synergies with the forthcoming Plata SAP implementation will be captured.
Governments	Governments are key stakeholder in the project. They will provide political, financial, and technical support. They will be fully involved in the project as part of the Steering Committee, through Component's 3 activities and outcomes, and through the Multi-country Committees for Monitoring and Models, and for Dissemination and Capacity Building. These Committees will be formed by experts of the four aquifer countries indicated by the respective Governments.
Civil Society and Indigenous people	The contributions of relevant regional and national NGOs, water users associations, indigenous peoples groups, and academia, will be greatly valued as part of the awareness raising and dissemination campaigns and gender mainstreaming that will be conducted under Component 3, and also in connection with the definition of monitoring data sharing protocols.
Private sector	Participation of, and contributions from major private actors in the Guarani region, and of the Plata basin, will be encouraged, in particular the hydro power industry, the water distribution and treatment utilities, the food industry.

In addition, provide a summary on how stakeholders will be consulted in project execution, the means and timing of engagement, how information will be disseminated, and an explanation of any resource requirements throughout the project/program cycle to ensure proper and meaningful stakeholder engagement.

In order to further foster and monitor participation and more specifically, the Stakeholders' involvement and commitment to the project goals, a Stakeholders' Engagement Framework (SEF) has been developed through the adaptation of some of the International Association for Public Participation (IAP2) concepts and tools. Also a costed Stakeholders Involvement Plan will be prepared and submitted for adoption at the first Steering Committee Meeting of the project.

The SEF sets out the principles guiding the participative approach based on the common principles and common instruments identified in chapter 4 of the “Baseline Scenario”. Its methodology sets up a four-category engagement typology in order to recognize that different kinds and levels of participation are not only expectable, but also necessary.

The four categories include “Inform”, “Consult”, “Collaborate” and “Empower”. They are used to plan and to monitor the different actions agreed to accomplish a useful, relevant and inclusive participation strategy.

The first step (Planning) is to narrate and describe the commitments taken by each actor (expected actions) regarding every project’s component and activity and specifying ultimate responsibilities. Those actions are fed into the following chart. Their execution is monitored on a regular, negotiated basis, and afterwards registered on the same table. Every expected action is accompanied by a description and every executed action by a link directing to a verification means.

Engagement level/type	**Inform**		**Consult**		**Collaborate**		**Empower**	
	Expected	**Executed**	**Expected**	**Executed**	**Expected**	**Executed**	**Expected**	**Executed**
Stkhldr 1	-action 1 -action 2	-action 1 -action 2	-action 1 -action 2	-action 1 -action 2	-action 1 -action 2	-action 1 -action 2	-action 1 -action 2	-action 1 -action 2
Stkhldr 2	-action x -action y	-action x -action y	-action x -action y	-action x -action y	-action x -action y	-action x -action y	-action x -action y	-action x -action y

Select what role civil society will play in the project:

Consulted only;

Member of Advisory Body; Contractor; Yes

Co-financier; Yes

Member of project steering committee or equivalent decision-making body; Yes

Executor or co-executor; Yes

Other (Please explain)

3. Gender Equality and Women's Empowerment

Provide the gender analysis or equivalent socio-economic assesment.

Equality for women and girls is a strategic and operational imperative for the GEF. Men and women use natural resources differently and, as a result, they are affected differently by changes to these resources. Gender inequality and social exclusion increase the negative effects of environmental degradation on women and girls. Despite recent promising policy and legal reforms, and the full appreciation in the region that "women in decision-making spaces can promote the sustainable water resource use and management' (Water and Gender Workshop, Brasilia October 2017), persistent gender-discriminatory social and cultural norms, unequal access to land, water and productive assets, and unequal decision-making continue to constrain women and men from equally participating in, contributing to, and benefitting from environmental projects and programs.

No water assessment or diagnostic can be realistic without a gender perspective. And no decision-making is inclusive unless both women and men participate in the process. In line with the GEF Gender Equality Action Plan, as part of Component 3 the project will conduct a gender analysis of the SAP developed during PSAG, in order to systematically introduce gender responsive results frameworks and foster women's empowerment. The "gendered" SAP will be submitted to countries for adoption. Gender consideration will inform all activities and products of the proposed project, in particular fostering women's participation to all working groups, dialogues, consultations and awareness raising activities. In addition, the project will conduct national training courses to familiarize stakeholders in all Basins' countries on gender analysis and indicators, and sex disaggregated data collection, in order to assist countries in overcoming one of the key stumbling blocks to achieving a more robust gender-integrated international policy regime: the lack of comparable international data on gender-sensitive water indicators. An estimated of 1.000 participants will enroll in these courses, and several mechanisms to ensure gender parity in enrollment will be but in place.

International policy mechanisms are driven first and foremost by data. Without sex-disaggregated data, it is not possible to fully measure progress towards Sustainable Development Goals (SDGs). Without data, it is difficult to make effective analytical assessments of the comparative situation of women and men in different communities, countries, or parts of the world. If data are not available on a topic, no informed policy will be formulated; if a topic is not evident in standardized databases, then, in a self-fulfilling cycle, it is assumed to be unimportant. UNESCO (WWAP) has developed and tested an indicator-based methodology for collection and analysis of key sex-disaggregated water data, with the purpose of creating a baseline knowledge related to water, from which gender progress can later be evaluated. It is expected that the monitoring data sharing protocols referred in component 2 will include a chapter on harmonization, measurement and interchange of a set of priority gender sensitive indicators.

According to UNESCO’s methodology priority gender-sensitive indicators fall under five broad topics: i) water governance, ii) safe drinking water, sanitation and hygiene, iii) decision-making and knowledge production, iv) transboundary water resources management, and v) water for income generation for industry and agriculture. More specifically, the indicators relate to women's water empowerment and participation in water decision- making, income generation, and unaccounted for water-related working hours. Apart from the incorporation of the most relevant of these indicators within specific chapter of the data sharing protocols a complete gender analysis of the SAP will be conducted as part of the project.

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 Yes

Generating socio-economic benefits or services or women

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

Yes

4. Private sector engagement

Elaborate on private sector engagement in the project, if any

The proposed project represents a bridge, indispensable after the long time that it took for countries to negotiate the Guarani Agreement after SAP endorsement, that sets the enabling technical and cooperation framework for the following full SAP impmentation. Clearly, the private sector will play a fundamental role in contributing to the sustainable use of the GAS. Because of this, during the course of this bridging project the private sector will be kept fully informed of the project objectives and achievements, and directly involved through activities foreseen as part of Component 3, consisting in the organization of ad hoc events, at national and regional levels.

5. Risks

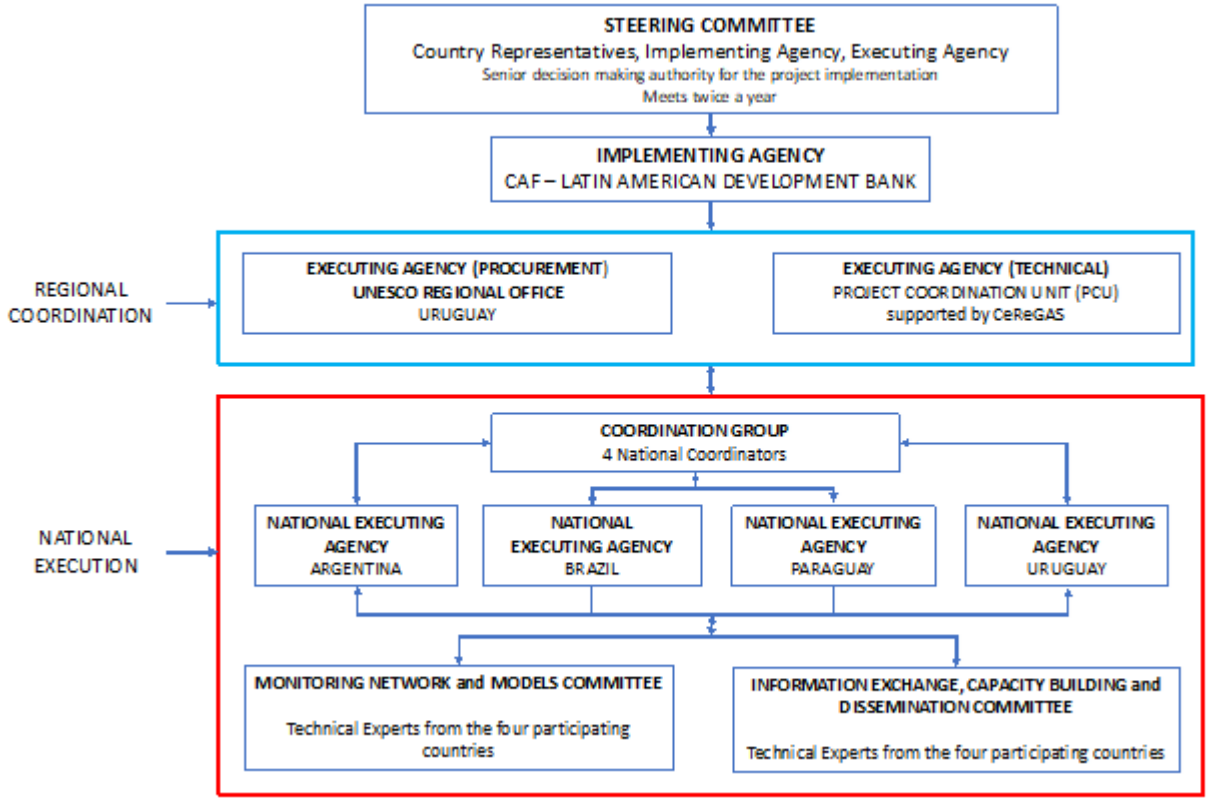
Elaborate on indicated risks, including climate change, potential social and environmental risks that might prevent the project objectives from being achieved, and, if possible, the proposed measures that address these risks at the time of project implementation.(table format acceptable):

Risks	Rating	Risk Mitigation Actions
Cooperation risk. The existing diverse, heterogeneous nature of the legal jurisdictions in the four countries as they pertain to water in general, and groundwater in particular, define risk. Politically, from the national level, to the provincial or state levels, failures to adopt, implement and/or cooperate on the SAP recommendations may negate efforts initiated by the GEF support	Low	This risk will be mitigated by strengthening coordination at the aquifer level (Component 1), and enact broad stakeholders' participation throughout project implementation
Implementation risk. The level of risk associated with the implementation of the project is very low, considering the great interest on, and commitment to the SAP of the countries' governments and institutions, as well as of international organizations and potential partners.	Very Low	Through activities of Component 3 the project will ensure continuing support from countries and partners.
Climate Change The project deals with the huge groundwater resources contained in the Guarani Aquifer, a resource little affected by climatic variations, and a fundamental asset for CC adaptation.	Very Low	Through activities of Component 2 the project will monitoring the quantity, quality and availability of the resource, which contribute to cross-border water security
Lack of active private sector participation. The private sector users of the Guarani resources will have a key role in the future full SAP implementation. The enabling nature of this project will set the ground for private sector involvement.	Very low	Through activities of Component 3 the project will raise awareness of the private sector and open the way for systematic involvement in the full SAP implementation.

6. Institutional Arrangement and Coordination

Describe the institutional arrangement for project implementation. Elaborate on the planned coordination with other relevant GEF-financed projects and other initiatives.

The Implementing Agency for the Project will be the CAF. CAF will be responsible for all enquiries regarding the Project implementation progress, mid-term evaluation, final Project completion report, and Terminal Evaluation. The procurement and administration will be responsibility of the UNESCO Regional office in Montevideo, while the technical execution of the Project will be coordinated by the PCU with the support of CeReGAS (Montevideo) and implemented by the project countries through the Joint Technical Committees, and the National Executing Agencies. CeReGAS will also pay a close liaison role with the CIC and all activities and projects related to the forthcoming Plata Basin SAP implementation.



The institutional arrangements of the project will consist of four main actors:

(i) The Steering committee (SC): Highest decision-making authority for the implementation of the project.

(ii) The Implementing Agency CAF.

(iii) The Executing Agency (administration and procurement): UNESCO Regional Office, Uruguay

(iv) The Project Coordination Unit (PC): composed of the Project Director and supported by a technical team and by the National Coordinators – nominated by each country government, overseeing the Multi-Country Technical Committees:

CAF, as the GEF Implementing Agency (IA), will be responsible for overall project supervision and monitoring to ensure consistency with GEF and CAF policies and administrative procedures, and will provide guidance on linkages with related CAF and GEF-funded activities. The CAF GEF Coordination will monitor implementation of the activities undertaken during the execution of the project and will provide technical and administrative oversight to the Executing partners. It will be responsible for clearance and transmission of financial and progress reports to the GEF. CAF retains responsibility for review and approval of the substantive and technical reports produced in accordance with the schedule of work. The Executing partner for procurement (UNESCO Uruguay) will administer the GEF funds, being in charge of all project related procurement and reporting to the Implementing Agency.

The Project Coordinating Unit (PCU), will operate with the assistance provided by CeReGAS. It will (i) coordinate and supervise daily project operations in close consultation with CAF and the National Coordinators and Technical Committees; (ii) elaborate detailed terms of reference for project activities, review progress and technical reports according to the overall work plan and its schedule of work, prepare overall progress and financial reports for submission to the IA; (iii) prepare annual detailed budgeted work plan in accordance with the GEF approved project documentation and M&E plan; (iv) ensure adequate coordination with on-going GEF and other initiatives in the region to ensure relevant synergies.

The Steering Committee (SC) will be established as the highest authority in the decision-making for the conduct of the project. The SC will be responsible for implementation oversight and will decide on the yearly project work plan and budget in accordance with GEF approved project documentation. The SC will include:

- Representatives from each of the four Guarani countries (Project Sectors involved - Foreign affairs – National Coordinators), who will have the authority to make decisions pertaining to the project implementation.
- Representative of the Executing Agency (procurement) UNESCO, Uruguay.
- The CeReGAS Director.
- The PCU, acting as Secretariat for the meetings.
- A representative of CAF - the GEF Implementing Agency.
- Secretary General of the Intergovernmental Coordinating Committee of the Countries of the La Plata Basin – CIC (observer).
- Other entities may be invited to the SC meetings as observers.

Coordination with other relevant GEF projects: Effective coordination will be ensured with the complementary and parallel GEF IW MSP: "*Preparing the Ground for the Implementation of the La Plata Basin Strategic Action Program*" recently approved by the GEF CEO, and to be implemented by CAF, likewise the proposed MSP for the Guarani.

The timing and the shared "bridging" nature of the two projects, together with the participation as observer of the CIC Secretary General to the meetings of the Project Steering Committee, will facilitate synergies and coordination. No other GEF ongoing project is at present of relevance for the proposed project. The project will monitor the evolution of the GEF portfolio and establish contacts with other new projects whenever deemd necessary /useful.

7. Consistency with National Priorities

Describe the consistency of the project with national strategies and plans or reports and assesments under relevant conventions from below:

NAPAs, NAPs, ASGM NAPs, MIAs, NBSAPs, NCs, TNAs, NCSAs, NIPs, PRSPs, NPFE, BURs, INDCs, etc.

This project is fully aligned with and contributes to reaching the targets adopted by the countries in compliance with international and regional treaties and agreements, in particular:

· The Guarani Aquifer Agreement (Annex B) has already been ratified by Argenitna, Brazil and Uruguay and it will enter into force once the Paraguay's Ministry of Foreign Affairs concludes with the document deposit.

· The Guarani Aquifer Agreement (Annex B) has already been ratified by the four countries and it is about to enter into force, with only Paraguay's Ministry of Foreign Affairs document deposit missing.

· The Plata Basin Treaty.

· The SDG 6 and SDG 14 on freshwater and its targets.

· The Convention on Biological Diversity (CDB).

At the national level, all project countries have constitutional provisions placing high priority on water resources and environmental protection:

Argentina:

Environmental protection is provided for by several articles of the Constitution. Article 41, in particular, lays down the constitutional bases for environmental protection in Argentina, turning it into an environmental state which is characterized by the right of every inhabitant to a balanced environment, while imposing the collective duty of taking care of it for present and future generations. The country has a federal organization system in which the provinces "keep all powers not delegated to the federal government." Regarding environmental regulations, the Federal Government establishes common minimum standards for protection and management, while the provinces keep the authority to enhance the environmental protection and implementation since they "expressly have original ownership of natural resources existing in their territory."

Brazil:

The Constitution defines Brazil as an environmental state in which the right to an ecologically-balanced environment is essential to preserve present and future generations. The Union has exclusive power to legislate over water resources; however, when they need to be legislated and managed from an environmental perspective, all federal entities have a common responsibility and competence is concurrent. Ownership of surface water resources is determined by their boundaries; if they are across state boundaries or are transboundary, they belong to the Union; if they are within state boundaries, they belong to the state. In the case of groundwater resources, regardless of their boundaries, they are state-controlled.

Paraguay:

It is constituted as a "social State of law, which is unitary, indivisible and decentralized", which adopted a "representative, participatory and pluralist democracy" as the form of government. The Constitution makes several references to environmental protection. It establishes the fundamental quality of life right, which will be promoted by the State through plans and policies that acknowledge its determining factors. The fundamental right to a healthy and ecologically-balanced environment is also expressly stated. The concern about the environment extends to other areas, such as economic development, agrarian reform and indigenous peoples. The economic policy and the development promotion will be subject by the State to "the rational use of the available resources."

Uruguay:

The Constitution of the Republic adopted the republican democratic form of government, constituting a Unitary State, but a decentralized one. Water resources are an essential element in environmental protection since they are the only environmental resource specifically addressed by the Constitution. Surface and ground waters have been considered to be of general interest and an integral part of the state's public domain, which is called hydraulic public domain. Water management incorporates a considerable portion of the budget allocated to the integrated water resources management.

The project is in line with national priorities in the four countries, and responds to the call for coordination in the management of the SAG expressed in the Guarani SAP, adopted by all four countries, and to the provisions of the Guarani Agreement. All countries have manifested the priority of accelerating the joint and systematic implementation of the actions identified in the SAP by the four countries in response to regional priority needs.

The project would support the implementation of the National Water Plan of Argentina (2015), in particular the components on Adaptation to Extreme Climatic Events, on Supply of Potable Water and of Water for Productive Uses, and the transversal axes of Water Resources Protection and Capacity Building.

8. Knowledge Management

Elaborate the "Knowledge Management Approach" for the project, including a budget, key deliverables and a timeline, and explain how it will contribute to the project's overall impact.

Results from the project will be widely disseminated within and beyond the project's geographic area through existing information sharing networks and forums, and through 4 special regional events organized as part of the project. The project will also identify and participate, as relevant and appropriate, in scientific, policy-based, and/or any other networks, which may be of benefit to project implementation through lessons learned.

The project will join and participate in the IW-Learn activities. Lessons learned – with focus on monitoring and gender - will be identified, and shared through Experience Notes posted in the IW LEARN website, and though other means. In this regards, the project will allocate at least 1% of its budget to participating in the IW-Learn activities, including the participation in the International Waters Conference and relevant COPs, and the setting up of the project website following IW LEARN standards.

9. Monitoring and Evaluation

Describe the budgeted M and E plan

The Project s Results Framework presented in Annex A includes SMART indicators for the expected outcome and end-of-project targets. These indicators along with the key deliverables and benchmarks will be the main tools for assessing project implementation progress. The means of verification are summarized in the log frame. M&E related costs are presented in the coasted M&E Plan. These costs are integrated in the overall budget of the project.

Type of M&E activity	**Responsible Parties**	**Budget US$** *Excluding project team Staff time*	**Time frame**
Inception Workshop	●PCU	None	Within first two months of project start up
Inception Report	●PCU and Executing Agency	None	Immediately following workshop

Measurements of Means of Verification for Project Progress and Performance (measured on an annual basis)	●PCU ●Executing Agency		Annually
APR and PIR	●PCU and Executing Agencies ●CAF	None	Annually
Final External Evaluation	●PCU ●CAF ●External Consultants	25,000	At the end of project implementation
Terminal Report	●PCU	None	At least one month before the end of the project
Lessons learned	●PCU ●External Consultants as required	5,000	Yearly
Audit	●PCU ●External Auditor		Yearly
Total Indicative Cost - *Excluding project team staff time and CAF staff and travel expenses*		30,000	

10. Benefits

Describe the socioeconomic benefits to be delivered by the project at the national and local levels, as appropriate. How do these benefits translate in supporting the achievement of global environment benefits (GEF Trust Fund) or adaptation benefits (LDCF/SCCF)?

It has been estimated that approximately 90 million people living in the Guarani Aquifer region largely depend on the Guarani groundwater resources for their domestic, agricultural and industrial needs. The groundwater dependency of this huge population will likely increase in time, due to growing climatic variability coupled with ever growing demographic pressure. The project, with its attempts to establish the basic prerequisites for the sustainable management of this shared resource - i.e.: coordination institutional arrangements, and harmonized multipurpose monitoring of the aquifer's water resources quality and quantity - will accrue benefits in terms of social welfare and health of the population dependent on the aquifer's resources, and of groundwater dependent ecosystems sustainability. An estimated of 1.000 participants will enroll in these courses, and several mechanisms to ensure gender parity in enrollment will be but in place". Also, it is expected that the monitoring data sharing protocols referred in component 2 will include a chapter on harmonization, measurement and interchange of a set of priority gender sensitive indicators. Finally, apart from the incorporation of the most relevant of these indicators within specific chapter of the data sharing protocols a complete gender analysis of the SAP will be conducted as part of the project.

ANNEX A: PROJECT RESULTS FRAMEWORK (either copy and paste here the framework from the Agency document, or provide reference to the page in the project document where the framework could be found).

Project: Implementation of the Guarani Aquifer Strategic Action Program: Enabling Regional Actions

Project Development Objective: *Enhancing the long-term sustainability of the Guarani Aquifer System groundwater resources by facilitating the initial implementation of the Guarani Aquifer System SAP through the setting up multi-country technical management bodies and tools.*

The Guarani Aquifer System, with an estimated extent of 1,087,879 km2, is one of the largest global freshwater reserves and represents the main source of freshwater for around 90 million people in the four countries sharing the aquifer: Argentina, Brazil, Paraguay and Uruguay. The project "Protection and Sustainable Utilization of the Guarani Aquifer" (2003 - 2009, GEF, World Bank, OAS) allowed the four countries to substantially improve their common knowledge of this "invisible" resource. The project culminated in the preparation and adoption of a Strategic Action Program, indicating the priorities for action by the countries.

Following the finalization of the project, each country advanced separately and independently with the implementation of the national actions foreseen in the SAP, but did not made progress in those regional actions requiring a multi- country coordinated action aimed at ensuring continuity and harmonization in the generation and dissemination of information of common interest. Data on the evolution of the quality and hydrodynamics of the aquifer's groundwater are in fact essential in order to detect contamination processes or flow modifications due to anthropogenic factors – including transboundary impacts - and hence to enable the sustainable utilization of this precious resource.

The present project - nested within the La Plata Treaty framework – is intended to assist the countries in accelerating the implementation of the SAP regional actions, and setting up the technical coordination frameworks and the tools indispensable to guarantee the long-term sustainability of the resource, and for complying with the Guarani Agreement provisions.

Project Outcome Indicators				
Component	**Outcome**	**Indicator**	**Baseline**	**End of Project Target**

1. Consolidating transboundary technical cooperation (SAP Action 2)	1.1. The institutionalization of the technical multi-country committees created during the foundatinal project (PGAS) execution facilitates the coordinated management of the SAG.	Number of countries participating to the technical multi-country committees.	The lack of coordination among countries hinders efforts to mitigate transboundary impacts and improve the long-term sustainability of the aquifer's water resources.	All four countries
2. Design and field testing of monitoring networks and protocols (SAP Action 4)	2.1 The sustainable management of the Guarani transboundary aquifer enabled by the joint design and field testing of a regionally harmonized multi-purpose monitoring network and related protocols, a prerequisite for groundwater management. 2.2 Agreement among countries on harmonized monitoring data sharing protocols improves the likelihood of effective joint strategies for the mitigation of adverse transboundary impacts.	Number of countries sharing the aquifer adopting the network design and protocols. Number of countries agreeing on monitoring data exchange protocols.	Aquifer monitoring activities not systematically carried out in all countries, and not harmonized across countries. No such data exchange rules exist in the region.	All Guarani countries adopt the harmonized monitoring network design, protocols, and shared repository of data based on an updated version of the SISAG, developed during PGAS. All aquifer countries reach agreement on monitoring data exchange protocols and reporting mechanisms.

3. Stakeholders' involvement, SAP update, dissemination and capacity building (SAP actions 2, 5, 7)	3.1 Full and gender balanced participation of stakeholders and of civil society, dissemination of general SAG and project specific information, reinforcement of capacity, and integration of gender and of SAG dependent ecosystem services considerations into the SAP, enhance the effectiveness, long-term sustainability and replication of project results.	Number, disaggregated by sex, of participants to dissemination events, private sector dialogues, and training modules. SAP update prepared	Lack of public participation to groundwater management. Present SAP endorsed ten years ago	At least 1000 participants SAP update endorsed by countries.

Project Output Indicators					
Outcome	**Output**	**Indicator**	**Baseline**	**End of Project Target**	**Verification Source**
1.1. The institutionalization of the technical multi-country committees created during PGAS execution facilitates the coordinated management of the SAG.	1.1.1 The Monitoring Network and Models Committee in charge of data exchange strategies, and the Capacity Building and Dissemination Committee, established based on agreed upon TORs.	Number of countries participating	No such technical coordination mechanisms exist.	All 4 countries participate	The four countries endorsement of the Act establishing the Committee.

2.1 The sustainable management of the Guarani aquifer system (GAS) enabled by the joint design and field pilot testing of a regionally harmonized multi-purpose monitoring network and related protocols, a prerequisite for groundwater management.	2.1.1 Review and update of the GAS Monitoring Network design defined during the PGAS, endorsed by the Monitoring and Models Committee, and pilot field testing.	Level of countries' agreement on the final network design and protocols.	The existing design requires updating based on present capacities at the national and sub-national levels.	Full agreement of countries on network design, operational and maintenance protocols.	Monitoring network design document endorsed by countries.
2.2 Agreement on monitoring data sharing protocols among countries improve the likelihood of effective joint strategies for the mitigation of adverse transboundary impacts.	2.2.1 Monitoring data sharing protocols prepared by the Monitoring Network and Models Committee.	Number of countries adopting the common protocol.	No such protocols exist	All aquifer countries adopt the Monitoring Data Sharing Protocol	The adopted Protocol

3.1 Full and gender balanced participation of stakeholders, of civil society and indigenous people, dissemination of general SAG and project specific information, reinforcement of capacity, and integration of gender, ecosystems and climate consideration into the SAP, enhance the effectiveness, long-term sustainability and replication of project results.	3.1.1. Establishment of the Capacity Building and Dissemination Committee, implementing the stakeholders involvement plan, coordinating SAP update activities, public awareness and capacity building regional events on groundwater management, environmental and gender issues, involving civil society organizations, indigenous peoples, local committees, basin councils, the private sector and other stakeholders 3.1.2 Gender mainstreamed within the context of the Guarani SAP, through a gender analysis of SAP priority actions and policy recommendations, and the conduct of national training workshops on gender analysis and sex-disaggregated data collection. 3.1.3 Review the SAP in order to ensure that information on the ecosystem services dependent on the SAG will be available for each of the countries, as a sound basis for solving controversies at the water-food-energy-ecosystems nexus. 3.1.4 Private sector involvement through structured dialogues in the four countries	Number of countries partyicipating to the Committee. Number of regional events SAP integrating gender consideration completed. Number of gender related capacity reinforcements events. SAG dependent ecosystems identified and mapped at regional scale Climate considered in SA update	Public awareness of groundwater resources management needs and socio-economic and environmental implications still lacking. IW SAPs still lacking consideration of gender equality aspects. Lack of sex-disaggregated water data in the region Present SAP lacks sufficient focus on the protection of SAG dependent Present SAP does not include consideration of Climate variability and change. Private sector unaware	At least 4 major regional events organized with gender balanced participation "Gendered SAP" submitted to countries for adoption. At least 1 gender training in each Project country "Updated SAP" submitted to countries for adoption. Private sector dialogues held in all four proejetc countries	Reports of awareness raising and capacity building events. Reports of awareness raising and capacity building events Documentation of formal submission to countries of the updated SAP. Training reports. Documentation of formal submission to countries of the updated SAP. Dialogue reports

ANNEX B: RESPONSES TO PROJECT REVIEWS (from GEF Secretariat and GEF Agencies, and Responses to Comments from Council at work program inclusion and the Convention Secretariat and STAP at PIF).

GEF Secretariat Comments	Agency response

4. Co-financing. Are the confirmed amounts, sources and types of co-financing adequately documented, with supporting evidence and a description on how the breakdown of co-financing was identified and meets the definition of investment mobilized, consistent with the requirements of the Co-Financing Policy and Guidelines?
7th of November 2019 (cseverin): No, please address following points:

1) Please provide cofinancing letter for UNESCO.

2) Please note that at thsi stage in project development, the status of the type of financing can NOT be unknown, please identify which kind UNESCO will be providing and make sure this is properly reflected in the portal. Further, please expand on how investments mobilized was identified, the one line response included is insuffcient.

3) Please ensure that the budget line project management is cofinanced. Havign such activities solely financed by GEF is not optimal. Therefore please make changes that will reflect upon the fact that GEF will not be carrying the cost of project management by itself.

1) UNESCO Co-Financing Letter

Organización de las Naciones Unidas para la Educación, la Ciencia y la Cultura

Oficina de Montevideo
Oficina Regional de Ciencias para América Latina y el Caribe

Mr. René Gómez Garcia Palao,
Senior Executive/CAF GEF Coordinator

Montevideo, 13th November, 2019

Reference: **PHI-095/19**

Subject: **Project Co-financing Commitment "CAF GEF Implementation of the Guarani Aquifer Strategic Action Programme: Enabling Regional Actions"**

Dear Mr. Gómez García Palao,

I am writing to you regarding the above mentioned Global Environment Facility (GEF) funded project.

The UNESCO International Hydrological Programme for Latin America and the Caribbean (LAC) has led global action to protect groundwater through many initiatives including groundwater maps for the Americas and impacts of climate change on groundwater. Also UNESCO IHP-LAC has an extensive track record in transboundary water management and cooperation through data collection, assessment, hydrodiplomacy on transboundary surface and groundwater resources (e.g. ISARM Americas and PccP programmes).

Convinced of the importance of enhancing the long-term sustainability of the groundwater resources of the Guarani Aquifer System, we are pleased to hereby confirm the commitment of UNESCO IHP-LAC to act as executing agency and contributing to the above mentioned GEF funded project, with US$ 1.200.000. This contribution will be implemented through actions and activities funded by the IHP aimed at water resources management in the Guarani Aquifer System; and in the project beneficiary countrires in kind also referring to time of specialized personnel, logistic support, office space, studies and other facilities, as well as the relevant existing data base and documentation.

Yours sincerely,

Miguel Doria
Regional Hydrologist for

10. Stakeholders. Does the project include detailed report on stakeholders engaged during the design phase? Is there an adequate stakeholder engagement plan or equivalent documentation for the implementation phase, with information on Stakeholders who will be engaged, the means of engagement, and dissemination of information? 7th of November 2019 (cseverin): Please include reference in portal submission to costed stakeholder engagement as described in the Budget. Further, please include wording that will describe how the project, at project inception, will provide a costed, more strategic and targeted stakeholders' involvement plan, which will inform the design of stakeholder participation activities needed for the production of each project output. (ie. A costed Stakeholders Involvement Plan will be prepared and submitted for adoption at the first Steering Committee Meeting of the project.)	Done, please see page. 2 (Table B), page 22, page 56. A costed Stakeholders Involvement Plan will be prepared and submitted for adoption at the first Steering Committee Meeting of the project

GEF Secretariat Comments	Agency response

2. Project description summary. Is the project structure/ design appropriate to achieve the expected outcomes and outputs as in Table B and described in the project document? Secretariat Comment at PIF/Work Program Inclusion 23rd of January 2019: The SAP finalized in January 2009, specifically mentions an Immediate Implementation Stage that the involved countries would be undertaking directly following the signing of the SAP. The identified route towards implementation was then to be followed by formulation of a common framework for convergence of actions towards safeguarding GAS, which then would inform the Future Implementation Stage. The submitted proposal does not clearly indicate how far the countries have gotten in these different processes, nor how the proposed interventions will be delivering towards this. Please elaborate. Considering that the information leading to the SAP has been collected and analyzed more than 10 years ago, it would be appropriate to update the SAP accordingly, vis a vis both national and regional activities. Such activities seem to be appropriate for re-activating the countries around implementation of the GAS SAP. Please include an overview on how far national and regional implementation is on the SAP priorities. Considering the importance involvement of all stakeholders, especially the private sector towards sustainable use of the Aquifer resources, it seems odd that the section on private sector engagement is empty. Moreover, the proposed intervention does not seem to be leveraging any private sector co-financing, which could potentially be a red flag for long -term sustainability. Please include description on what private sector stakeholder consultation and analysis have been undertaken, as well as the road map for continued engagement. The strength of the SAP is that it among others, identify potential areas for investment and associated financing. Please elaborate on how the proposed project will be assisting the nations in leveraging financing for addressing the different identified priorities, as well as set the scene for interventions from other stakeholders, eg, that may have been engaged in the TDA/SAP formulation project. Under Component 3, in the paragraph on IWLEARN, please include the fact that the project will be delivering atleast one experience note and one results note. Successful implementation of SAP activities towards furthering regional cooperation should happen through a regional organization. Please elaborate on how this project will be working through and strengthening the capacity of a regional organization (eg CIC), potentially working under the Plata Treaty Framework, The concept include a few references to this, but this needs to be elaborated upon. and be clearer. Further, please include reference letter from the	Agency Response In the Component 3, was included that at least 1% of the GEF grant will be allocated to support the IWLEARN activities described. See page 3. After finalization of the SAP, countries focused on the negotiation of the “Guarani Agreement”, seen as the optimal legal framework for transboundary cooperation and SAP implementation. In 2018 the Agreement was finally ratified by Argentina, Brazil and Uruguay. Paraguay is still in the process of ratification of the Agreement, and it will finally enter into force thirty days after the forth instrument of ratification have been deposited. While this was ongoing, countries initiated a limited action in line with SAP provisions, but fragmented and lacking regional strategic coordination. Text describing these actions has been added to the Baseline at pages 18 and 19 of the CEO Request for Endorsement. The proposed project is intended to cover the “immediate implementation” stage foreseen in the SAP. By submitting this project proposal to the GEF, countries have confirmed the full current validity of the 2009 SAP. Text clarifying this has been added at page 17. Gender aspects, not at the time considered by the SAP, will be mainstreamed into the SAP (output 3.1.2), through the collection and analysis of WWAP sex-disaggregated indicators developed by UN and the use of UNESCO’s WWAP Gender and Water Toolkit in training and capacity building sessions aimed to water professionals, policy-makers, ONGs and other stakeholders. For response to "include an overview on how far national and regional implementation is on the SAP priorities", please see response to point 1. Given the “enabling” nature of this bridging project aimed at reviving countries’ commitment to the SAP by the Guarani Agreement, and at implementing initial and critical regional actions, the project is exclusively directed to creating the prerequisite regional basis for SAP national implementation by strengthening of institutional capacities (harmonized monitoring) and regional cooperation frameworks (Institutionalization of multi-country committees). Given its “enabling” regional nature, private sector participation and financing is not foreseeable. However, the key to sustainability might lay in the engagement of civil society (mobilized around water, sustainable local development and gender issues), which will pledge for responsible investment. Civil society will be involved during the capacity building and the gender diagnosis processes. The project builds upon the favorable momentum for resuming regional SAP implementation created by the Guarani Agreement, the most significant transboundary treaty related to aquifers worldwide, and one of the flagship achievements of the GEF IW focal area. The aim is to set up the regional frameworks (see response to point 4) that will foster national SAP investments and compliance with the Agreement provisions. The gender diagnostic will also collaborate to identify safety concerns in sanitation and wastewater treatment and inadequate current water supply/ availability in both quality and quantity in the households of different areas and thus pinpoint investment opportunities. The project will be delivering at least one experience note and one results note, already foreseen, see Logframe page 37 output 3.1.3 As foreseen in the SAP, the execution of the project will be almost totally responsibility of the four countries (National Executing Agencies) through the multi-country Technical Committees, to be established at the start of the

4. Co-financing. Are the confirmed amounts, sources and types of co-financing adequately documented, with supporting evidence and a description on how the breakdown of co-financing was identified and meets the definition of investment mobilized, consistent with the requirements of the Co-Financing Policy and Guidelines? Secretariat Comment at PIF/Work Program Inclusion 23rd of January 2019: An annex have been included in the submission that outlines upcoming funding in the GAS under CAFs implementation to be at $64.4 mio. Considering this, it is a remarkable low cofinancing CAF is bringing to the project (only $400k has been listed). Please note that the endorsement letter from Brazil, does not mention providing cofinancing to the project, contrary to the other three countries. Please provide cofinancing letter from Brazil. Further, please include cofinancing from private sector towards ensuring the long term sustainability of the shared water resources in the GAS> 12th of September 2019 (cseverin): Partly Addressed. Considering the important role Brazil plays in the Guarani region, please provide the cofinancing letter, including the actual amounts, and reflect on its contribution throughout the project documents. 8th of October 2019 (cseverin): Partly Addressed. please ensure that all cofinancing letters (if not provided in English) is followed by an English translation..	Agency Response Brazil's co-financing letter was received from the Regional Development Ministry and reflected on its contribution throughout the project documents. See Annex 1.  

GEF Secretariat Comments	Agency response

2. Project description summary. Is the project structure/ design appropriate to achieve the expected outcomes and outputs as in Table B and described in the project document?

Secretariat Comment at PIF/Work Program Inclusion

23rd of January 2019: The SAP finalized in January 2009, specifically mentions an Immediate Implementation Stage that the involved countries would be undertaking directly following the signing of the SAP. The identified route towards implementation was then to be followed by formulation of a common framework for convergence of actions towards safeguarding GAS, which then would inform the Future Implementation Stage. The submitted proposal does not clearly indicate how far the countries have gotten in these different processes, nor how the proposed interventions will be delivering towards this. Please elaborate.

Considering that the information leading to the SAP has been collected and analyzed more than 10 years ago, it would be appropriate to update the SAP accordingly, vis a vis both national and regional activities. Such activities seem to be appropriate for re-activating the countries around implementation of the GAS SAP. Please include an overview on how far national and regional implementation is on the SAP priorities.

Considering the importance involvement of all stakeholders, especially the private sector towards sustainable use of the Aquifer resources, it seems odd that the section on private sector engagement is empty. Moreover, the proposed intervention does not seem to be leveraging any private sector co-financing, which could potentially be a red flag for long -term sustainability. Please include description on what private sector stakeholder consultation and analysis have been undertaken, as well as the road map for continued engagement.

The strength of the SAP is that it among others, identify potential areas for investment and associated financing. Please elaborate on how the proposed project will be assisting the nations in leveraging financing for addressing the different identified priorities, as well as set the scene for interventions from other stakeholders, eg, that may have been engaged in the TDA/SAP formulation project.

Under Component 3, in the paragraph on IWLEARN, please include the fact that the project will be delivering atleast one experience note and one results note.

Successful implementation of SAP activities towards furthering regional cooperation should happen through a regional organization. Please elaborate on how this project will be working through and strengthening the capacity of a regional organization (eg CIC), potentially working under the Plata Treaty Framework, The concept include a few references to this, but this needs to be elaborated upon. and be clearer. Further, please include reference letter from the

Agency Response

In the Component 3, was included that at least 1% of the GEF grant will be allocated to support the IWLEARN activities described. See page 3.

After finalization of the SAP, countries focused on the negotiation of the “Guarani Agreement”, seen as the optimal legal framework for transboundary cooperation and SAP implementation. In 2018 the Agreement was finally ratified by Argentina, Brazil and Uruguay. Paraguay is still in the process of ratification of the Agreement, and it will finally enter into force thirty days after the forth instrument of ratification have been deposited.

While this was ongoing, countries initiated a limited action in line with SAP provisions, but fragmented and lacking regional strategic coordination. Text describing these actions has been added to the Baseline at pages 18 and 19 of the CEO Request for Endorsement.

The proposed project is intended to cover the “immediate implementation” stage foreseen in the SAP.

By submitting this project proposal to the GEF, countries have confirmed the full current validity of the 2009 SAP. Text clarifying this has been added at page 17. Gender aspects, not at the time considered by the SAP, will be mainstreamed into the SAP (output 3.1.2), through the collection and analysis of WWAP sex-disaggregated indicators developed by UN and the use of UNESCO’s WWAP Gender and Water Toolkit in training and capacity building sessions aimed to water professionals, policy-makers, ONGs and other stakeholders.

For response to "include an overview on how far national and regional implementation is on the SAP priorities", please see response to point 1.

Given the “enabling” nature of this bridging project aimed at reviving countries’ commitment to the SAP by the Guarani Agreement, and at implementing initial and critical regional actions, the project is exclusively directed to creating the prerequisite regional basis for SAP national implementation by strengthening of institutional capacities (harmonized monitoring) and regional cooperation frameworks (Institutionalization of multi-country committees). Given its “enabling” regional nature, private sector participation and financing is not foreseeable. However, the key to sustainability might lay in the engagement of civil society (mobilized around water, sustainable local development and gender issues), which will pledge for responsible investment. Civil society will be involved during the capacity building and the gender diagnosis processes.

The project builds upon the favorable momentum for resuming regional SAP implementation created by the Guarani Agreement, the most significant transboundary treaty related to aquifers worldwide, and one of the flagship achievements of the GEF IW focal area. The aim is to set up the regional frameworks (see response to point 4) that will foster national SAP investments and compliance with the Agreement provisions. The gender diagnostic will also collaborate to identify safety concerns in sanitation and wastewater treatment and inadequate current water supply/ availability in both quality and quantity in the households of different areas and thus pinpoint investment opportunities.

The project will be delivering at least one experience note and one results note, already foreseen, see Logframe page 37 output 3.1.3

As foreseen in the SAP, the execution of the project will be almost totally responsibility of the four countries (National Executing Agencies) through the multi-country Technical Committees, to be established at the start of the

4. Co-financing. Are the confirmed amounts, sources and types of co-financing adequately documented, with supporting evidence and a description on how the breakdown of co-financing was identified and meets the definition of investment mobilized, consistent with the requirements of the Co-Financing Policy and Guidelines? Secretariat Comment at PIF/Work Program Inclusion 23rd of January 2019: An annex have been included in the submission that outlines upcoming funding in the GAS under CAFs implementation to be at $64.4 mio. Considering this, it is a remarkable low cofinancing CAF is bringing to the project (only $400k has been listed). Please note that the endorsement letter from Brazil, does not mention providing cofinancing to the project, contrary to the other three countries. Please provide cofinancing letter from Brazil. Further, please include cofinancing from private sector towards ensuring the long term sustainability of the shared water resources in the GAS> 12th of September 2019 (cseverin): Partly Addressed. Considering the important role Brazil plays in the Guarani region, please provide the cofinancing letter, including the actual amounts, and reflect on its contribution throughout the project documents. 8th of October 2019 (cseverin): Partly Addressed. please ensure that all cofinancing letters (if not provided in English) is followed by an English translation..	Agency Response Brazil's co-financing letter was received from the Regional Development Ministry and reflected on its contribution throughout the project documents. See Annex 1.

GEF Secretariat Comments	Agency response

1. The SAP finalized in January 2009, specifically mentions an Immediate Implementation Stage that the involved countries would be undertaking directly following the signing of the SAP. The identified route towards implementation was then to be followed by formulation of a common framework for convergence of actions towards safeguarding GAS, which then would inform the Future Implementation Stage. The submitted proposal does not clearly indicate how far the countries have gotten in these different processes, nor how the proposed interventions will be delivering towards this. Please elaborate.	After finalization of the SAP, countries focused on the negotiation of the "Guarani Agreement", seen as the optimal legal framework for transboundary cooperation and SAP implementation. In 2018 the Agreement was finally ratified by Argentina, Brazil and Uruguay. Paraguay is still in the process of ratification of the Agreement, and it will finally enter into force thirty days after the forth instrument of ratification have been deposited. While this was ongoing, countries initiated a limited action in line with SAP provisions, but fragmented and lacking regional strategic coordination. Text describing these actions has been added to the Baseline at pages 18 and 19 of the CEO Request for Endorsement. The proposed project is intended to cover the "immediate implementation" stage foreseen in the SAP.
2. Considering that the information leading to the SAP has been collected and analyzed more than 10 years ago, it would be appropriate to update the SAP accordingly, vis a vis both national and regional activities. Such activities seem to be appropriate for re-activating the countries around implementation of the GAS SAP.	By submitting this project proposal to the GEF, countries have confirmed the full current validity of the 2009 SAP. Text clarifying this has been added at page 17. By submitting this project proposal to the GEF, countries have confirmed the full current validity of the 2009 SAP. Text clarifying this has been added at page 17. Gender aspects, not at the time considered by the SAP, will be mainstreamed into the SAP (output 3.1.2), through the collection and analysis of WWAP sex-disaggregated indicators developed by UN and the use of UNESCO's WWAP Gender and Water Toolkit in training and capacity building sessions aimed to water professionals, policy-makers, ONGs and other stakeholders.
3. Please include an overview on how far national and regional implementation is on the SAP priorities	Please see response to point 1.

4. Considering the importance involvement of all stakeholders, especially the private sector towards sustainable use of the Aquifer resources, it seems odd that the section on private sector engagement is empty. Moreover, the proposed intervention does not seem to be leveraging any private sector co-financing, which could potentially be a red flag for long -term sustainability. Please include description on what private sector stakeholder consultation and analysis have been undertaken, as well as the road map for continued engagement.	Given the “enabling” nature of this bridging project aimed at reviving countries’ commitment to the SAP after the ratification of the Guarani Agreement, and at implementing initial and critical regional actions, the project is exclusively directed to creating the prerequisite regional basis for SAP national implementation by strengthening of institutional capacities (harmonized monitoring) and regional cooperation frameworks (Institutionalization of multi-country committees). Given its “enabling” regional nature, private sector participation and financing is not foreseeable. However, the key to sustainability might lay in the engagement of civil society (mobilized around water, sustainable local development and gender issues), which will pledge for responsible investment. Civil society will be involved during the capacity building and the gender diagnosis processes.
5. The strength of the SAP is that it among others, identify potential areas for investment and associated financing. Please elaborate on how the proposed project will be assisting the nations in leveraging financing for addressing the different identified priorities, as well as set the scene for interventions from other stakeholders, eg, that may have been engaged in the TDA/SAP formulation project.	The project builds upon the favoureable momentum for resuming regional SAP implementation created by the final ratification of the Guarani Agreement, the most significant trasboundary treaty related to aquifers worldwide, and one of the flagship achievements of the GEF IW focal area. The aim is to set up the regional frameworks (see response to point 4) that will foster national SAP investments and compliance with the Agreement provisions.
6. Under Component 3, in the paragraph on IWLEARN, please include the fact that the project will be delivering at least one experience note and one results note	Already foreseen, see Logframe page 37 output 3.1.3

7. Successful implementation of SAP activities towards furthering regional cooperation should happen through a regional organization. Please elaborate on how this project will be working through, and strengthening the capacity of a regional organization (eg CIC), potentially working under the Plata Treaty Framework, The concept include a few references to this, but this needs to be elaborated upon. and be clearer. Further, please include reference letter from the given regional organization that recognizes that this project will be executed through them.	As foreseen in the SAP, the execution of the project will be almost totally responsibility of the four countries (National Executing Agencies) through the multi-country Technical Committees, to be established at the start of the project. Among them the committee named in the SAP "Unidad de Articulacion del SAG" (SAP articulation unit), which was the only one established soon after SAP endorsement. CeReGAS will be the regional organization that will coordinate the project execution and host the PCU. The UNESCO Regional office in Montevideo will be responsible for procurement and administration only. A letter of CeReGAS confirming acceptance of this role is attached. Text clarifying execution arrangements has been added at pages 27, 28 and 29 of the CEO Endorsement Request. To ensure an effective coordination with the CIC and with the parallel GEF MSP aimed at enabling the full implementation of the La Plata Basin SAP, the CIC has been included in the SC of the project. In Annex CEREGAS Letter
8. Please note that the endorsement letter from Brazil, does not mention providing cofinancing to the project, contrary to the other three countries. Please provide cofinancing letter from Brazil.	Brazil's co-financing letter will be provided once the sectorial liaison of the Regional Development Ministry it is formalized
9. Further, please include cofinancing from private sector towards ensuring the long-term sustainability of the shared water resources in the GAS	See responses at point 4 and 5

10. The baseline scenario sections seems to be focusing on describing the natural scientific issues and factors in and around the Aquifer. Baseline scenarios should be including description on the suite of projects and activities that delivers the baseline for the proposed set of interventions.	The baseline for the proposed MSP consists of the SAP, whose current validity has been confirmed (see point 2), of the Guarani Agreement, and of the regional and national actions undertaken by the countries since SAP endorsement. See responses to point 1, 4, 5 A beneficiary-oriented assessment and intervention, needed to construct baselines scenarios will be available as soon as the gender diagnosis process is completed. The data set will be complemented with the available information at the Brazilian Gender Statistics System of the National Secretariat of Women's Policies (that depends on the Ministry of Human Rights) and other national sources that might be identified during the stakeholders engagement phase of the implementation process.
11. Is there an elaboration on the proposed alternative scenario as described in PIF/PFD sound and adequate? Is there more clarity on the expected outcomes and components of the project and a description on the project is aiming to achieve them? Please see comments provided under question 2	Please see page 19 point 3
12. Please elaborate on the incremental cost reasoning, including more solid description of the investments that provide the baseline whereupon the proposed investment will be building.	Please see page 23 point 4, and page 17 point 6. *Increased coordination among the aquifer's countries will positively reflect on the ability to enhance synergies among the many ongoing fragmented sectorial actions (baseline contributions) in countries in the SAG region. See. Pag. 38*
13. Please expand on the innovative aspects of the proposed set of interventions	Please see page 23 point 6

14. Information on the Aquifer has been included. Please explain if it possible to include geo referenced information on the project intervention sites

Guarani Aquifer System Extreme Points in Each Country

Country	NORT		SOUTH		EAST		WEST	
	Latitude S	Length W	Latitude S	Length W	Latitude S	Length W	Latitude S	Length W
ARGENTINA	25°31'6.29"	57°34'47.67"	31°56'2.87"	58° 9'43.70"	26°14'56.70"	53°38'18.68"	28° 3'0.59"	61°47'34.22"
BRASIL	16°49'48.62"	53°47'59.13"	31° 4'12.64"	55°21'11.20"	21° 2'46.57"	46°47'32.94"	22° 4'19.09"	56°23'14.22"
PARAGUAY	22°16'15.94"	56° 7'3.80"	27°34'15.62"	56°24'49.24"	24°21'27.71"	54°15'29.44"	27°11'8.98"	58°39'27.57"
URUGUAY	30° 5'11.92"	56°52'30.17"	32°29'17.83"	56° 2'26.57"	31° 4'12.64"	55°21'11.20"	31°52'57.92"	58°11'32.74"

NOTE: Keep in mind that these points are approximate and correspond to the final products of the SAG Project (2003-2009), so through subsequent studies may have changed.

15. One of the strong features of GEF investments and in particular for GEF IW investments is to built local capacity and capacity of regional bodies, such as CIC, to manage transboundary water resources. The coordination description suggests that execution will happen through UNESCO. Please make needed changes to reflect that the project will be executed through a regional institution.

Please include description of relevant GEF funded projects tin the region that will be coordinated with.

Please see above under Project Description Summary point 5

16. All four countries have endorsed the project. However, Paraguay and Argentina have changed focal points. Hence, please obtain new endorsement letters and include these in resubmission.	Please see Annex Memory Report Guarani Aquifer Meeting – Montevideo March 2019
17. please include results of the gender analysis, which gaps have been identified and how these will be addressed during project implementation.	The representation gap, related to the institutional factor, will be addressed through the promotion of gender balance in decision – making and participation in capacity building of the institutions in charge of water and gender issues and other relevant actors. There is no baseline or indicators whatsoever to attempt a gender.-gap analysis in access and control over water ressources. With the only exception of the abovementioned Gender Statistics System of the National Secretariat of Women's Policies in Brazil, there is no production of gender sensitive data or intra-household disaggregated information related to water. The baseline as well as the gaps assessment will be overcame through the collection and analysis of WWAP sex-disaggregated indicators developed by UN and the use of UNESCO's WWAP Gender and Water Toolkit in training and capacity building sessions aimed to water professionals, policy-makers, ONGs and other stakeholders.
18. Please elaborate on how private sector will be engaged early in the project implementation process, to ensure participation towards successful implementation of the SAP.	Given the "enabling" nature of this bridging project aimed at reviving countries' commitment to the SAP by the Guarani Agreement, and at implementing initial and critical regional actions, the project is exclusively directed to creating the prerequisite regional basis for SAP national implementation by strengthening of institutional capacities (harmonized monitoring) and regional cooperation frameworks (Institutionalization of multi-country committees). Given its "enabling" regional nature, private sector participation and financing is not foreseeable. However, the key to sustainability might lay in the engagement of civil society (mobilized around water, sustainable local development and gender issues), which will pledge for responsible investment. Civil society will be involved during the capacity building and the gender diagnosis processes.
19. Please consider if factors such as lack of private sector engagement, climate change, lack of national baseline projects presents a risk for the successful implementation of the project.	See comment above

20. Please include description of relevant GEF funded projects tin the region that will be coordinated with.	As foreseen in the SAP, the execution of the project will be almost totally responsibility of the four countries (National Executing Agencies) through the multi-country Technical Committees, to be established at the start of the project. Among them the committee named in the SAP "Unidad de Articulacion del SAG" (SAP articulation unit), which was the only one established soon after SAP endorsement, and that has since evolved into the CeReGAS, a permanent regional Category 2 UNESCO Center funded by Uruguay. CeReGAS will be the regional organization that will coordinate the project execution and host the PCU, as foreseen by the SAP. The UNESCO Regional office in Montevideo will be responsible for procurement and administration only. To ensure an effective coordination with the CIC and with the parallel GEF MSP aimed at enabling the full implementation of the La Plata Basin SAP, the CIC has been included in the SC of the project.
21. Please elaborate on the socioeconomic benefits that the project will be providing.	The shortage of water-related indicators by person challenges the possibility of benefits prediction. Nevertheless, the benefits might yet be unquantifiable but well-known as a result of previous experiences and literature. The achievement of information-based joint managed underwater resources will, among other impacts, lead to long-term clean water access. This becomes increased communities' resilience, enhanced local self-sufficiency for productive and household uses, nutritional improvements, enteric health, child growth and development, poverty alleviation, women and girls empowerment and better allocation of their time.
22. All four countries have endorsed the project. However, Paraguay and Argentina have changed focal points. Hence, please obtain new endorsement letters and include these in resubmission.	Although Argentina, Brazil and Paraguay changed their Focal Points, at the last Meeting in Montevideo on march 25 and 26´2019, the four countries, with the presence of their focal points, reiterated support for the project. View meeting memory.

ANNEX C: Status of Utilization of Project Preparation Grant (PPG). (Provide detailed funding amount of the PPG activities financing status in the table below:

PPG Grant Approved at PIF: **USD 50,000**			
Project Preparation Activities Implemented	***GETF/LDCF/SCCF/CBIT Amount ($)***		
	Budgeted Amount	***Amount Spent Todate***	***Amount Committed***

Finance and administration specialist	USD 5,000	0	USD 5,000
Project design specialist	USD 27,000	USD 27,000	
Travel expenses	USD 6,000	0	USD 6,000
Study to define implementation mechanism	USD 5,000	0	USD 5,000
Traductions (two years)	USD 7,000		USD 7,000
Total	USD 50,000	USD 27,000	USD 23,000

ANNEX D: CALENDAR OF EXPECTED REFLOWS (if non-grant instrument is used)

Provide a calendar of expected reflows to the GEF/LDCF/SCCF/CBIT Trust Funds or to your Agency (and/or revolving fund that will be set up)

N/A

ANNEX E: Project Map(s) and Coordinates

Please attach the geographical location of the project area, if possible.

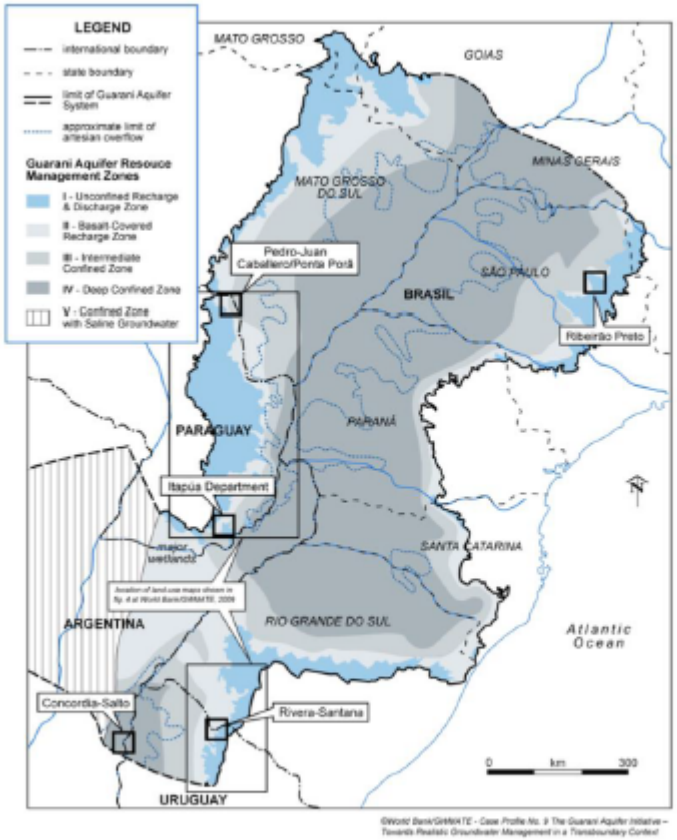


Fig. 1: The Guarani Aquifer and its management zones.

Guarani Aquifer System Extreme Points in Each Country

Country	NORT	SOUTH	EAST	WEST

	Latitude S	Length W	Latitude S	Length W	Latitude S	Length W	Latitude S	Length W
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