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R2019-0208/1

August 12, 2019

Closing Date: Thursday, August 29, 2019
at 6:00 p.m.

FROM: Vice President and Corporate Secretary

Argentina - Matanza-Riachuelo Basin (MRB) Sustainable Development Project
Additional Financing

Project Paper

Attached is the Project Paper regarding a proposed additional loan to Argentina for a Matanza-Riachuelo Basin (MRB) Sustainable Development Project - Additional Financing (R2019-0208), which is being processed on an absence-of-objection basis.

Distribution:
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Report No: PAD3420

INTERNATIONAL BANK FOR RECONSTRUCTION AND DEVELOPMENT

PROJECT PAPER

ON A

PROPOSED ADDITIONAL LOAN

IN THE AMOUNT OF US$245 MILLION

TO

THE ARGENTINE REPUBLIC

FOR A

Matanza-Riachuelo Basin (MRB) Sustainable Development Project Additional Financing

August 8, 2019

Environment and Natural Resources Global Practice
Latin America and Caribbean Region

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CURRENCY EQUIVALENTS

(Exchange Rate Effective July 1, 2019)

Currency Unit	=	Argentine Peso (ARS)
ARS 42.37	=	US$1
US$0.023	=	ARS 1

FISCAL YEAR

January 1 – December 31

ABBREVIATIONS AND ACRONYMS

ACUMAR	Matanza-Riachuelo Basin Authority (*Autoridad de Cuenca Matanza Riachuelo*)
AF	Additional Financing
APL	Adaptable Program Loan
AySA	Argentina Water and Sanitation Utility (*Agua y Saneamientos Argentinos S.A.*)
CARP	Administrative Commission for the Plata River (*Comisión Administradora del Rio de la Plata*)
CBA	City of Buenos Aires
DA	Designated Account
ESMP	Environmental and Social Management Plan
FM	Financial Management
GoA	Government of Argentina
GRM	Grievance Redress Mechanism
IADB	Inter-American Development Bank
IFR	Interim Financial Report
IWWTP	Industrial Wastewater Treatment Plant
MIOPV	Ministry of Interior, Public Works and Housing (*Ministerio del Interior, Obras Públicas y Vivienda*)
M-R	Matanza-Riachuelo
MRB	Matanza-Riachuelo Basin
PAD	Project Appraisal Document
PBA	Province of Buenos Aires
PDO	Project Development Objective
PISA	Matanza-Riachuelo Basin Cleanup Plan (*Plan Integral de Saneamiento de la Cuenca Matanza-Riachuelo*)
PRI	Plans for Industrial Restructuring (*Planes de Reconversion Industrial*)
RAP	Resettlement Action Plan
RF	Results Framework
RPF	Resettlement Policy Framework

SA	Social Assessment
SDG	Sustainable Development Goal
SMEs	Small and Medium Enterprises
SOE	Statement of Expenditure
TA	Technical Assistance
TIP	Tannery Industrial Park
UCGP	Project Implementation Unit (*Unidad Coordinadora General de Proyecto*)
WWTP	Wastewater Treatment Plant

Regional Vice President:	Axel van Trotsenburg
Country Director:	Jordan Z. Schwartz
Sustainable Development Regional Director:	Anna Wallenstein
Practice Managers:	Valerie Hickey and Rita Cestti
Task Team Leaders:	Jiang Ru, Elba Lydia Gaggero, and Maria Catalina Ramirez

Argentina
Matanza-Riachuelo Basin (MRB) Sustainable Development Project Additional Financing

TABLE OF CONTENTS

BASIC INFORMATION – PARENT (Matanza-Riachuelo Basin (MRB) Sustainable Development Project - P105680)

Country	Product Line	Team Leader(s)		
Argentina	IBRD/IDA	Jiang Ru		
Project ID	Financing Instrument	Resp CC	Req CC	Practice Area (Lead)
P105680	Investment Project Financing	SLCEN (9272)	LCC7C (6297)	Environment & Natural Resources

Implementing Agency: Unidad Coordinadora General del Proyecto (UCGP), Ministry of Interior, Public Works and Housing

Is this a regionally tagged project?	

Bank/IFC Collaboration

No

Approval Date	Closing Date		Original Environmental Assessment Category	Current EA Category
09-Jun-2009	31-Mar-2022		Full Assessment (A)	Full Assessment (A)

Financing & Implementation Modalities

[ ] Multiphase Programmatic Approach [MPA]	[ ] Contingent Emergency Response Component (CERC)
[ ] Series of Projects (SOP)	[ ] Fragile State(s)
[ ] Disbursement-Linked Indicators (DLIs)	[ ] Small State(s)
[ ] Financial Intermediaries (FI)	[ ] Fragile within a Non-fragile Country
[ ] Project-Based Guarantee	[ ] Conflict
[ ] Deferred Drawdown	[ ] Responding to Natural or Man-made disaster
[ ] Alternate Procurement Arrangements (APA)	

Development Objective(s)

The overall development objective of the proposed APL program supports the Government's Integrated Basin Cleanup whilesimultaneously improving sanitary conditions along the banks of La Plata River and providing a long-term and cost-effectivesolution for safe disposal of wastewater from the Buenos Aires Metropolitan Area (AySAs concession area). The two stage APL programthat contributes to this objective and the allocation of works and activities under each APL has been specifically designed toensure that APL-1 can be free-standing, with no stranded assets at the end of the first stage.

The project (APL-1) development objectives contribute to the overall program development objective by (i) improving sewerageservices in the M-R River Basin and other parts of the Province and City of Buenos Aires by expanding transport and treatmentcapacity; (ii) supporting a reduction of industrial discharges to the M-R River, through the provision of industrial conversiongrants to small and medium enterprises; (iii) promoting improved decision-making for environmentally-sustainable land use anddrainage planning, and piloting urban drainage and land use investments, in the M-R River Basin; and (iv) strengthening ACUMAR#sinstitutional framework for ongoing and sustainable clean-up of the M-R River Basin.

Ratings (from Parent ISR)

	Implementation					Latest ISR
	29-Jun-2017	19-Dec-2017	16-May-2018	03-Oct-2018	22-Dec-2018	28-Jun-2019
Progress towards achievement of PDO	MS	MS	MS	MS	MS	MS
Overall Implementation Progress (IP)	MS	MS	MS	MS	MS	MS
Overall Safeguards Rating	S	S	S	S	S	S
Overall Risk	H	H	H	H	H	H

BASIC INFORMATION – ADDITIONAL FINANCING (Matanza-Riachuelo Basin (MRB) Sustainable Development Project Additional Financing - P171197)

Project ID	Project Name	Additional Financing Type	Urgent Need or Capacity Constraints
P171197	Matanza-Riachuelo Basin (MRB) Sustainable	Cost Overrun	No

	Development Project Additional Financing		
Financing instrument Investment Project Financing	Product line IBRD/IDA	Approval Date 29-Aug-2019	
Projected Date of Full Disbursement 31-Mar-2022	Bank/IFC Collaboration No		
Is this a regionally tagged project? No			

Financing & Implementation Modalities

[ ] Series of Projects (SOP)	[ ] Fragile State(s)
[ ] Disbursement-Linked Indicators (DLIs)	[ ] Small State(s)
[ ] Financial Intermediaries (FI)	[ ] Fragile within a Non-fragile Country
[ ] Project-Based Guarantee	[ ] Conflict
[ ] Deferred Drawdown	[ ] Responding to Natural or Man-made disaster
[ ] Alternate Procurement Arrangements (APA)	
[ ] Contingent Emergency Response Component (CERC)	

Disbursement Summary (from Parent ISR)

Source of Funds	Net Commitments	Total Disbursed	Remaining Balance	Disbursed
IBRD	718.03	608.89	109.14	85 %
IDA				%
Grants				%

PROJECT FINANCING DATA – ADDITIONAL FINANCING (Matanza-Riachuelo Basin (MRB) Sustainable Development Project Additional Financing - P171197)

FINANCING DATA (US$, Millions)

SUMMARY (Total Financing)

	Current Financing	Proposed Additional Financing	Total Proposed Financing
Total Project Cost	1,417.43	332.00	1,749.43
Total Financing	1,417.43	332.00	1,749.43
of which IBRD/IDA	718.03	245.00	963.03
Financing Gap	0.00	0.00	0.00

DETAILS - Additional Financing

World Bank Group Financing

International Bank for Reconstruction and Development (IBRD)	245.00

Non-World Bank Group Financing

Counterpart Funding	87.00
Borrower/Recipient	87.00

COMPLIANCE

Policy

Does the project depart from the CPF in content or in other significant respects?

[ ] Yes [✓] No

Does the project require any other Policy waiver(s)?

[ ] Yes [✓] No

INSTITUTIONAL DATA

Practice Area (Lead)

Environment & Natural Resources

Contributing Practice Areas

Water

Climate Change and Disaster Screening

This operation has been screened for short and long-term climate change and disaster risks

Gender Tag

Does the project plan to undertake any of the following?

a. Analysis to identify Project-relevant gaps between males and females, especially in light of country gaps identified through SCD and CPF

Yes

b. Specific action(s) to address the gender gaps identified in (a) and/or to improve women or men's empowerment

No

c. Include Indicators in results framework to monitor outcomes from actions identified in (b)

No

PROJECT TEAM

Bank Staff

Name	Role	Specialization	Unit
Jiang Ru	Team Leader (ADM Responsible)		SSAE1
Elba Lydia Gaggero	Team Leader	Environmental management/ Engineering	SLCEN
Maria Catalina Ramirez	Team Leader	Water and Sanitation	SLCWA
Ana Maria Grofsmacht	Procurement Specialist (ADM Responsible)		ELCRU
Alvaro Larrea	Procurement Specialist		ELCRU
Maria Elizabeth Grandio	Procurement Specialist		ELCRU
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Leanne Farrell	Environmental Specialist (ADM Responsible)	Environmental Specialist	SLCEN
Santiago Scialabba	Social Specialist (ADM Responsible)		SLCSO
Agostina Signorini	Team Member		LCC7C

Claudia Nin	Team Member		LCC7C
Eleonora Beatriz Camalli	Team Member	Communications. Social Safeguards	SLCSO
Federico A. Scodelaro	Team Member	Water & Sanitation. Environment. Environmental Saf	SLCEN
Graciela Dora Broda	Team Member		LCC7C
Maria Florencia Liporaci	Team Member	Operations	SLCEN
Maria Virginia Hormazabal	Team Member	Finance Officer	WFACS

Extended Team

Name	Title	Organization	Location
Luz Maria Gonzalez	Consultant - Financial Analysis		

I. BACKGROUND AND RATIONALE FOR ADDITIONAL FINANCING

A. Introduction

1. **This Project Paper seeks the approval of the Executive Directors for a proposed Additional Financing (AF) in the amount of US$245 million to the Argentine Republic for the Matanza-Riachuelo Basin (MRB) Sustainable Development Project (P105680)**. The proposed AF will cover cost overrun for activities under Component 1 and financing gaps for activities under Components 1 and 3 of the project. The AF will not modify the Project Development Objective (PDO), Results Framework (RF), implementation arrangements, environmental assessment category, and safeguard policies triggered. The closing date of the AF loan will coincide with the current closing date of the original loan, March 31, 2022.

2. **The PDOs as stated in the Loan Agreement** of the MRB Sustainable Development Project (P105680, IBRD Loan 7706-AR), are to "(a) improve sewerage services in the M-R River Basin, and other parts of the PBA [Province of Buenos Aires] and the CBA [Autonomous City of Buenos Aires] by expanding transport and treatment capacity; (b) support a reduction of industrial discharges to the M-R River, through the provision of CRI [Industrial Conversion Agreements by its initials in Spanish *Convenio de Reconversión Industrial*] Grants; (c) promote improved decision-making for environmentally-sustainable land use and drainage planning, and to pilot urban drainage and land use investments, in the M-R River Basin; and (d) strengthen ACUMAR's [Matanza River Basin Authority by its initials in Spanish *Autoridad de Cuenca Matanza Riachuelo*] institutional framework for the ongoing and sustainable clean-up of the M-R River Basin."[1]

B. Project Background

Strategic Context

3. **The Government of Argentina (GoA) requested the World Bank's support to this project, designed as the first phase of a two-phase Adaptable Program Loan (APL) that aims at tackling water pollution of the MRB, the most visible environmental issue in the country with a history of about 100 years.** The MRB is also socially important, as it is home to Argentina's largest concentrations of urban poor, with about 1.7 million of its 4.5 million inhabitants living with unsatisfied basic needs, representing about 38 percent of the total population of the basin.[2] According to the 2010 Census, about 880,000 people (19 percent of the basin's population) reside in informal settlements, often in flood-prone areas and/or near open garbage dumps with access to deficient basic services.

4. **Before the World Bank's engagement, the GoA had launched a number of initiatives since the 1990s to address flooding and pollution issues of the MRB, and received financing from other donors, including a loan of US$250 million from the Inter-American Development Bank (IADB) in the mid-1990s, to support the implementation of such initiatives.** With a focus on infrastructure investments,

[1] While there is no substantive difference between the PDOs in the datasheet and section VIII of this Project Paper which are quoted from the Project Appraisal Document (PAD) of the parent project, and the PDOs used in the project's Loan Agreement, this paragraph has quoted the PDOs from the Loan Agreement for clarity purposes.
[2] Matanza-Riachuelo Basin Authority (*Autoridad de Cuenca Matanza-Riachuelo*, ACUMAR) data, based on the 2010 Census.

implementation of these initiatives was continuously postponed for legal, economic, and political reasons. The GoA concluded that the lack of a clear mandate and accountability for action combined with an inadequate institutional and legal framework to coordinate the involvement of the relevant jurisdictions was the major obstacle to the implementation of such initiatives.

5. **The Supreme Court Ruling in 2006 over a high-profile lawsuit against the GoA, the Government of the Province of Buenos Aires (PBA), the Government of the Autonomous City of Buenos Aires (CBA), and 44 industries required the GoA, the PBA, and the CBA to take actions to improve the residents' quality of life**. This ruling led to the development of the MRB Integrated Cleanup Plan (*Plan Integral de Saneamiento de la Cuenca Matanza-Riachuelo*, PISA) and the creation of ACUMAR by national law for its implementation. Since then, the Supreme Court has actively supervised the implementation of PISA. At its request, the Ombudsman has established a working group of civil society representatives on a permanent basis to engage grassroots organizations and monitor the implementation of Supreme Court orders. Routine hearings have been organized where petitioners have raised concerns over the GoA's progress and accountability in implementing PISA. All these have made the cleanup of the MRB a national priority, with a top ranking on policy agendas of all concerned governments.

Project at Appraisal

6. **Approved on June 9, 2009, the MRB Sustainable Development Project supports efforts of the GoA to implement PISA to improve water quality of the basin in the long term**. At appraisal of the original loan, the MRB had suffered acute environmental and social degradation due to limited public infrastructure investment, inadequate environmental management, and poor urban and industrial planning. The river had poor water quality and was in anoxic condition and emitting methane and other noxious gases during the low-flow season. The MRB had limited capacity to collect, treat, and dispose of its industrial wastewater and domestic sewages. Its existing sewerage system had frequent overflows due to insufficient capacity, system failures, and floods caused by high flows in the rainy season and high water levels in the La Plata River. Toxic and organic pollutants were dumped into the Matanza- Riachuelo (M-R) River and seeped into aquifers. Floods also brought contaminated water into informal settlements of the MRB. Climate change impacts have also exacerbated the already critical situation and frequency and severity of floods. Considering projected climate change impacts and related variations in precipitation, the flood risks are expected to increase. Such a situation has created serious health risks, especially for the highly vulnerable social groups who have demanded government action to address these deteriorating conditions.

7. **The original size of the project loan (IBRD 7706-AR) was US$840 million. At the GoA's request, in May 2011 the World Bank canceled US$121.968 million from Component 1 of the original loan**. Because of this cancellation, the current size of the loan is US$718.032 million. As designed, the MRB Sustainable Development Project, that expect to benefit the 4.5 million inhabitants of the MRB, comprises four components:[3]

[3] Original components' amounts.

(a) Sanitation Component (US$1.3 billion, of which US$694 million IBRD financing) to support the expansion of transport and treatment capacity of sewerage services in the MRB and other parts of the province and CBA

(b) Industrial Pollution Abatement Component (US$75.4 million, of which US$60.3 million IBRD financing) to reduce industrial discharges to the MRB

(c) Environmental Territorial Management Component (US$81.9 million, of which US$65.5 million IBRD financing) to improve decision-making for environmentally sustainable territory management in the MRB

(d) Institutional Strengthening and Project Management Component (US$18.2 million, of which US$18.2 million IBRD financing) to strengthen institutional capacity of ACUMAR for effective implementation of PISA and support project management activities.

8. **Three restructurings were completed in 2015, 2017, and 2019 to refine the scope, financing arrangements, and the RF and to extend the project's closing date to March 31, 2022.** The first restructuring of the project, approved on December 24, 2015 and effective on March 22, 2016 with a one-year extension of the closing date (from March 31, 2016 to March 31, 2017), served as an interim restructuring to: (a) allow the new administrations (at national, provincial, and municipal levels) that took office on December 10, 2015 to take full ownership of the project; (b) incorporate changes in the scope of Component 2; and (c) allow time to achieve critical milestones. A second restructuring of the project, approved on March 17, 2017 included: (a) a five-year extension of the closing date from March 31, 2017 to March 31, 2022, to allow the project to complete all planned activities and achieve its PDO; (b) additional refinements to the description of Component 2; and (c) reallocation of loan proceeds among disbursement categories. The third restructuring of the project, approved on April 29, 2019, involved: (a) minor changes to the RF; (b) updates to the institutional arrangements following ACUMAR's move to the Ministry of Interior, Public Works, and Housing (*Ministerio del Interior, Obras Públicas y Vivienda*, MIOPV) during a general government restructuring; and (c) adoption of reporting requirement on environmental and social incidents.

Value Added of the World Bank

9. **At appraisal of the original loan, the World Bank recognized the scale and complexity of cleaning up the MRB.** Through the last decade's implementation of this high-profile project, the World Bank has demonstrated its value additions on the following fronts:

(a) **A trusted and long-term partner.** The World Bank has supported and continues supporting the GoA to overcome seemingly endless technical, institutional, financial, legal, and other challenges to implement this project of top national priority.

(b) **Focus on sustainable development.** The World Bank's emphasis on not only infrastructure investments but also institutional development and citizen engagements has supported and continues supporting the achievement of the sustainable development objectives of current and future PISAs.

(c) **Impartiality and convening power.** The World Bank has advocated for the role of ACUMAR and supported ACUMAR in developing and strengthening an institutional platform for stakeholders to collaborate effectively across agencies and national, provincial, and municipal jurisdictions.

(d) **Global technical expertise.** The World Bank has mobilized a wide range of technical expertise to support this technically challenging project. Experienced specialists from the World Bank's multiple departments (for example, environment, water, urban, social, procurement, and legal) have worked closely with internationally reputable technical experts to help the GoA identify and find practical solutions to complex technical challenges, including a first-ever construction technique in the world for the construction of diffusors of the Riachuelo Outfall.

(e) **Programmatic support to key development challenges.** The World Bank has strategically engaged in flood risk management in Argentina, which will help scale up this project's impacts. Specifically, successful implementation of this project and the Flood Risk Management Support Project for the City of Buenos Aires (P145686) will help convey over 70 percent of the city's untreated wastewater to the project-supported Riachuelo System through the Left Bank Collector for treatment and final disposal.

10. **It is noteworthy that the GoA has requested this AF operation when the country faces challenging macroeconomic conditions.** The major works supported by Component 1 of this project are the most important infrastructure investments in the MRB in 70 years. Together, the GoA's request for the World Bank's continued support signifies the GoA's full acknowledgements of the World Bank's invaluable contributions to this top priority project of the country.

C. Status of Project Implementation and Performance to Date

11. **After initial delays, project implementation has accelerated in the past few years.** As of July 18, 2019, the project has made substantial progress in all components. Progress toward achievement of the PDO and implementation performance have been rated Moderately Satisfactory since June 2017. In addition, as of July 2019, the project had a cumulative disbursement of US$608.89 million, that is, 85 percent of the loan proceeds.

Component 1: Sanitation

12. **This component supports the construction and independent engineering supervision of sanitation infrastructure for the collection, conveyance, treatment, and appropriate disposal of the wastewater of the concession area of the Argentina Water and Sanitation Utility (*Agua y Saneamientos Argentinos S.A.*, AySA).** The technical design of this component was refined during project implementation (see details in annex 1). Currently, Component 1 finances four major works contracts. Once the sanitation infrastructure is completed, about 35 percent of the effluent of AySA's concession area will be properly collected and treated benefiting 4.3 million people with an improved sanitation system.

(a) **The Left Bank Collector.** This includes 16.2 km of underground sewerage collectors, 12.6 km of secondary collectors, and complementary works on the left bank of the M-R River to convey the sewerage from AySA's concession area to the Riachuelo wastewater treatment plant (WWTP) in Dock Sud. To date, physical progress of the Left Bank Collector is about 50.3 percent. Complementary works are progressing as scheduled.

(b) **The Riachuelo WWTP.** This contract is fully financed with counterpart funds. Designed as a preliminary treatment plant, this WWTP will receive wastewater from the Left Bank Collector for treatment and discharge the treated wastewater through the Riachuelo Outfall. The contract has been suspended since late 2018 due to the contractor's financial problems. Physical completion rate before the suspension was estimated at 11 percent. AySA has confirmed that construction under this contract will resume before the end of August 2019.

(c) **The Riachuelo Outfall**. It is a 12-km underground sub-pluvial outfall that will help discharge the treated sewerage into the La Plata River. As of June 30, 2019, the execution rate of this contract was 55 percent with 6.5 km of the constructed tunnel certified.

(d) **The sludge treatment plant of the Sudoeste WWTP**. About 87 percent of its civil works and 39 percent of its electromechanical works are complete.

Component 2: Industrial Pollution Abatement

13. **During implementation, Component 2 was restructured to support (a) the development of a Tannery Industrial Park (TIP) and accompanying infrastructure in the Municipality of Lanus and (b) the construction of the industrial WWTP (IWWTP)**.[4] Both the TIP and the joint supervision contracts were signed in October 2018. As of June 30, 2019, TIP construction is ongoing with physical progress of 4.33 percent. The bidding process for the IWWTP is at the bid evaluation stage. It is expected that after completion of this TIP, the IWWTP will provide adequate treatment and disposal of 78 percent of the total tannery wastewater that will otherwise be discharged directly into the M-R River.

Component 3: Environmental Territorial Management

14. **As of June 2019, this component has supported technical assistance (TA) activities to develop knowledge and decision-making tools for ACUMAR.** Among these, the MRB Flood Contingency Plan completed in early 2019 has promoted interjurisdictional coordination on flood risk management to reduce flood damages to the MRB population. In addition to TA activities, this component is supporting ACUMAR to improve its environmental monitoring infrastructure. Phase II of ACUMAR's monitoring infrastructure is being designed, and its procurement will be initiated before the end of 2019.

15. **In terms of investment activities, the component has focused on the provision of water and sewerage infrastructure and household connections to low-income residents in the lower and middle sections of the basin.** Specifically, it has financed three works contracts:

[4] Details of this design change are provided in Annex 1.

(a) **Drinking water infrastructure in the city of Cañuelas.** These works were completed in April 2017. Since then it has been providing safe drinking water for nearly 12,000 persons.

(b) **Water and sewerage works in the city of Marcos Paz.** As of June 30, 2019, these works have had a physical progress of 94 percent. Their completion will benefit 45,000 residents of the city.

(c) **Water, sanitation, and drainage networks in Villa 21-24, informal settlements, in the CAB.** As of June 30, 2019, this contract has a physical progress of 47 percent. Its completion will benefit 25.000 residents of the informal settlements.

Component 4: Institutional Strengthening and Project Management

16. **This component supports project management and institutional strengthening of ACUMAR.** Under this component, the Project Implementation Unit (*Unidad Coordinadora General de Proyecto*, UCGP) has strengthened its capacity and effectively managed technical issues, safeguards, procurement, contract administration, and other tasks. Although the implementing agency of this project has been remapped recently because of government restructuring, the UCGP has been able to maintain a stable team of staff members who have developed their capacity over the years to manage this project in accordance with national and World Bank policies and procedures.

17. **For ACUMAR, this component is designed to support its institutional restructuring, the development of its communication strategy, the creation of its public information office, and technical and monitoring studies to advise on project implementation issues.** During implementation, ACUMAR has grown significantly in terms of its human resources and work programs. Its institutional structure has been developed and adjusted with full participation of national, provincial, and municipal stakeholders. Over the life of the project, this structure has empowered ACUMAR to deliver important achievements. For example, ACUMAR has been leading the cleanup of river banks in close collaboration with municipalities and cooperatives. It has developed and implemented a Solid Waste Management Strategy with MRB municipalities to reduce waste generation and improve solid waste management practices. From 2011 to June 2019, ACUMAR has removed 23,000 tons of waste from the main course of the M-R River and closed four major dumpsites with a total capacity of more than 15,000 m^3.

18. **On industrial control, ACUMAR has effectively exercised its authority to inspect and sanction polluters.** It has set up a mandatory and disclosed registry of the MRB's industries and businesses and evaluated pollution impacts of each individual establishment. So far, a total of 5,223 such establishments have been included in the registry. For the first time, such information has enabled ACUMAR and other government stakeholders to better plan industrial development and better monitor and control pollution from such development.

19. **At the strategic level, ACUMAR has led the update of PISA.** As noted earlier, PISA was first designed in 2009. It was revised in 2016 as a response to the judiciary demand of reviewing and adjusting PISA actions to continue improving the environment quality (air, water, and soil) of the MRB and the quality of life of the MRB population and to prevent flood damages with adequate and reasonable levels of forecasts. Currently, this component is supporting ACUMAR to develop a new PISA with a vision for year 2030 – PISA 2030 – through consultative processes. This new PISA will form the basis of ACUMAR's

work program for the next five years. It will also help align ACUMAR's actions with the country's broad development priorities under the 2030 Agenda for Sustainable Development and corresponding Sustainable Development Goals (SDGs).[5]

Overall Implementation Performance

20. **As noted earlier, the project's progress toward the achievement of the PDO and implementation progress has been rated Moderately Satisfactory since June 2017.** In addition, this project is in full compliance with all of its legal covenants.

21. **This project's financial management (FM) performance is Satisfactory**. The project has an overdue Project Financial Statement Audit Report (FY2018), which is expected to be received at the beginning of September 2019. Neither the loan nor the GoA, in general, is subject to any ongoing suspension of disbursements.

22. **The project is in full compliance with its environmental and social safeguards instruments.** The project has been assigned environmental screening category A according to OP/BP 4.01 (Environmental Assessment). Compliance with the safeguards policies has been rated Satisfactory throughout project implementation.

Rationale for Additional Financing

23. **The proposed AF will help the project to mobilize an additional US$332 million, US$322 million for Component 1 and US$9.4 million for Component 3,[6] to finance ongoing and planned activities under the original loan.** This financing gap was caused by (a) cost increases for works contracts under Component 1 and (b) budget constraints of the GoA for provision of counterpart financing. Without this AF, it is expected that the loan proceeds allocated to finance the works contracts under Component 1 will be fully disbursed before the end of calendar year 2019, bringing the total disbursement of the original loan to about 96 percent.

24. **The first factor of the financing gap, cost increases of works contract under Component 1, is mainly caused by the following:**

(a) **Time lags between appraisal and construction.** Due to technical and implementation complexity, the bidding process of such large contracts took over four years to complete. Actual initiation of construction activities happened only about one year after contract signing.

(b) **Multiple design and construction modifications.** Design changes are needed as piping and tunneling activities of large works contracts under Component 1 are being carried out in locations of challenging urban and underground settings. In addition, the Riachuelo Outfall involves innovative construction methods, one of which is a first-time-ever method used for

[5] SDGs 3 (Good Health and Well-being), 6 (Clean Water and Sanitation), 11 (Sustainable Cities and Communities), 12 (Responsible Consumption and Production), 15 (Life on Land), and 17 (Partnership for the Goals).
[6] An additional US$612,500 as front-end fees.

the construction of the outfall's risers. These challenges have resulted in multiple design and construction modifications with increased costs.

25. **Currently, the implementation of these large works contracts is well advanced with most technical challenges identified and addressed.** As such, it is expected that there will be no significant cost increases for these contracts after this AF.

26. **The second factor, budget constraints, is related to the deterioration of the macroeconomic situation in Argentina and the devaluation of the local currency over years.** As works contracts have included payments in foreign currencies (U.S. dollars and euros), a devaluated peso, from US$1 to ARS 3.70 at project approval to about ARS 43 in June 2019, has further limited the GoA's capacity to provide sufficient and timely budget support even to this high-profile project in the last two years.

27. **Table 1 summarizes financing information of the project and the proposed AF operation.** Financing gaps for three works contracts and two supervision contracts of Component 1 are: (a) the Left Bank Collector, US$113.5 million; (b) the Riachuelo Outfall, US$139 million; (c) the sludge treatment plant of Sudoeste WWTP, US$54.5 million; and (d) supervision contracts for (a) and (b), US$15 million. As noted earlier, procurement delays, design changes, and budget constraints have contributed to cost increases of these large-scale and technically complex contracts. The proposed AF will provide needed resources to ensure full completion of these ongoing contracts.

Table 1. Project Costs and Financing Needs (US$, million)

Components	Estimated Costs at Appraisal (PAD)			TOTAL Estimated Costs at this AF	Budgeted Fund at this AF (incl. incurred)		AF Needs	
	TOTAL	World Bank[a]	Counterpart funds[a]		World Bank (Parent Project)	Counterpart funds (Parent)[e]	World Bank AF	Counterpart Funds
1. Sanitation Component	**1,007.0**	**693.8**	**313.2**	**1,626.0**	**618.95**	**685.1**	**234.95**	**87.0**
Left Bank Collector	160.0	110.2	49.8	533.0	242.40	177.1	79.50	34.0
Right Bank Collector	275.0	189.5	85.5	b	-	-	-	-
Industrial Collector	34.0	23.4	10.6	c		-	-	-
Riachuelo WWTP	142.0	97.8	44.2	329.0	-	329.0	-	-
In and Out pumping stations	122.0	84.1	37.9	d	-	-	-	-
Riachuelo Outfall	274.0	188.8	85.2	602.0	303.50	159.5	100.00	39.0
Sludge treatment Plant, Sudoeste				134.0	60.00	19.5	40.50	14.0
Supervision of Left bank Collector				14.0	7.80	-	6.20	-
Supervsion of Riachuelo Outfall				14.0	5.25	-	8.75	-
2. Industrial Pollution Abatement	**75.4**	**60.3**	**15.1**	**68.0**	**60.00**	**8.0**	**-**	**-**
3. Environmental Territorial Management	**81.9**	**65.5**	**16.4**	**42.0**	**30.60**	**2.0**	**9.39**	**-**
4. Institutional Strengthening and PM	**18.2**	**18.2**	**-**	**8.3**	**6.30**	**2.0**	**-**	**-**
Price contingencies (20%)	236.5	-	236.5					
Physical contingencies (10%)	118.3	-	118.3					
Front End Fee	2.1	2.1		2.7	2.10	-	0.61	
TOTAL	***1,539.4***	***839.9***	***699.4***	***1,747.0***	***718.0***	***697.1***	***245.0***	***87.0***

a. Including contingencies; b. Removed from the "descentralized soultion"; c. Postponed; d. Included in the WWTP costs; e. Estimated

28. **An allocation of US$9.4 million is proposed for Component 3 under this AF.** As Table 1 shows, funding reallocations for Components 3 and 4 during previous restructurings reflected high financing needs of Component 1 activities. It was also related to challenges faced by ACUMAR in the initial years of project implementation to mobilize stakeholders' consensus on priority investments. With the World Bank's facilitation, selected priority investments are implemented under Component 3. It is expected that the proposed US$9.4 million allocation from this AF will help ACUMAR further strengthen its decision-making capacity, continue improving the MRB's flood early warning and environmental monitoring and control systems, and support additional priority investments in low-income urban areas with high flood risks. As such, the proposed investments will lead to better flood risk management and reduced vulnerabilities caused by climate change in general and heavy rainfall in particular.

II. DESCRIPTION OF ADDITIONAL FINANCING

AF Activities

29. **As shown in Table 1, the AF will provide needed resources to Components 1 and 3 activities.** For Component 1, the proposed AF will finance the completion of three ongoing works contracts and two ongoing supervision contracts: (a) Left Bank Collector; (b) Riachuelo Outfall; (c) sludge treatment plant of the Sudoeste WWTP; and (d) supervision contracts for (a) and (b). All activities under Component 3 will be eligible for financing. However, the proposed AF will focus on subcomponents on 'Institutional Development for Flood Control' and 'Investments in Basic Infrastructure to Support Territorial Development' with the following activities:

(a) **Development and implementation of a Strategic Environmental Plan (*Plan Estratégico Ambiental*).** The plan will be developed with all concerned stakeholders to update and operationalize the hydrological master plan and the flood contingency plan for the MRB. It is expected that this plan will consolidate findings of the MRB Flood Contingency Plan and other existing studies and support new studies to develop countermeasures to help the communities, municipalities, and the MRB prepare for and adapt to flood events under a changing climate. In this regard, municipal governments will be supported to develop their local flood contingency plans, and selected communities will be supported to improve their capacity to respond to flood events. Economic, environmental, social, and institutional studies will be performed to select priority countermeasures. For the first time, gender-disaggregated data will be collected, and gender-specific actions will be proposed to ensure that gender issues are fully mainstreamed in the proposed countermeasures. As part of plan development, workshops will be organized to allow the institutional and social validation of the plan and a communication strategy will be developed to ensure timely disclosure of information to all stakeholders.

(b) **Feasibility studies of critical macro-drainage investments.** As part of these studies, alternative analyses, complementary baseline studies, and environmental and social impact assessment studies will be performed.

(c) **Establishment of an integrated flood early warning system.** This system is expected to help achieve effective coordination among all number jurisdictions of the MRB for the early detection of potential flood events, which are expected to increase due to climate change.

(d) **Basic infrastructure for intra-household connections to the water and sanitation infrastructure.** As noted during the implementation of the project, poor households and communities often face financial challenges to invest in such connections. As such, this AF will continue to support priority investments that will help low-income households to gain access to the water and sanitation infrastructure.

Institutional Arrangements

30. The MIOPV, through its project executing and financial teams will continue implementing the MRB Sustainable Development Project.

III. KEY RISKS

31. **The project's overall risk remains High due to (a) macroeconomic and (b) fiduciary management risks.** At this AF, all risk ratings were carefully reviewed and assessed. Based on extensive discussions, adjustments to individual risk ratings were made accordingly.

High Risks

32. **Macroeconomic risk to this project remains High because the GoA's capacity to provide timely and adequate budget allocations to this high-priority project may be constrained by the overall macroeconomic situations of the country.** This risk is particularly critical to the Riachuelo WWTP contract as it is fully financed by the GoA. To mitigate this risk, the World Bank will closely monitor and maintain high-level dialogues with the GoA on its budget allocation to this project.

33. **Fiduciary risk is rated High as the project's procurement risk remains High.** The size and complexity of the works contracts under Component 1 have led to delays in procurement and construction and substantial changes in the contract scope and costs. Multiple agencies involved in project implementation have further complicated the understanding of roles, responsibilities, and reporting requirements for various procurement activities, and affected the client's ability to efficiently manage procurement contracts. Mitigation measures include the use of specialized engineering firms to supervise large works contracts, the inclusion of specialized engineers (for example, for tunneling) to provide technical support, and the use of the Systematic Tracking of Exchanges in Procurement to manage procurement planning and implementation.

Substantial Risks

34. **In addition to these High risks, the project has three risks rated Substantial: political and governance, technical, and environmental and social.**

35. **Political and governance risk is lowered from High to Substantial at this AF because project implementation so far has illustrated the GoA's firm commitments to this project through two different administrations in the past decade.** It is expected that the persistent pressure of the Supreme Court, a proactive civil society, and vocal MRB residents will mitigate the potential political and governance risk that the upcoming election might lead to a change of priority for this project.

36. **Technical design risk is lowered from High to Substantial at this AF as complex and large works contracts under Component 1 are well advanced.** Currently, the design and piloting of diffusors of the Riachuelo Outfall is progressing satisfactorily. In addition, the project's supervision firms, AySA and the World Bank team, have closely monitored and collectively developed solutions to technical challenges experienced during project implementation.

37. **Another technical risk is associated with the slower-than-expected improvement in AySA's sewerage coverage and effective sewerage connection rates**,[7] which will prevent the project from fully achieving its expected economic and financial benefits (see Section IV.A Economic and Financial Analysis for details).[8] At appraisal of the project, the sewerage coverage rate was 57 percent in the MRB and AySA's Water and Sanitation Master Plan had a high-level objective of achieving 90 percent around 2015. As of 2018, AySA has been able to increase this coverage rate to 68 percent. In the same year, the effective sewerage connection rate is estimated to be around 70 percent based on census data. This risk is mitigated with the current service expansion plan of AySA, which has included concrete investments to increase the sewerage coverage rate to 85 percent by 2023, and ACUMAR's programs on sewerage connections of low-income households.

38. **Environment and social risks are considered Substantial mainly because of inherent environmental and social risks associated with the size and complexity of the sanitation works under Component 1**. Additional social risks rise from socially sensitive project locations (for example, Villa 21-24), potential miscommunications with or lack of participation of civil society, and resettlement risks associated with a complementary road work under the Riachuelo Outfall contract. These risks and potential adverse impacts are being managed through a proper implementation of sound Environmental and Social Management Plans (ESMPs) prepared for each subproject and Resettlement Action Plans (RAPs) prepared for relevant subprojects. In addition, broader social engagement and communication plans are being implemented by AySA and ACUMAR in a manner satisfactory to the World Bank, including grievance redress mechanisms (GRMs). Finally, risks associated with potential resettlements are being managed according to the Resettlement Policy Framework (RPF) prepared under the project.

Moderate Risks

39. **The risk rating of sector strategies and policies Moderate. Two risks are lowered from Substantial to Moderate in this AF: institutional capacity for implementation and sustainability and stakeholders.** The first risk is lowered as all implementing agencies have been capable of implementing all assigned tasks in a satisfactory manner. The smooth transfer of the project executing and financial management teams to the MIOPV in early calendar year 2019 shows the GoA's willingness to continue with strong implementation arrangements.

40. **The stakeholder risk is lowered as ACUMAR has become an effective platform for MRB agencies from all levels of the Government to collaborate effectively for PISA implementation.** In addition, ACUMAR and AySA have established robust GRMs under the project and have been able to use such GRMs to receive concerns from stakeholders and properly address registered concerns till now. Due to the high profile of this project, this risk will be closely monitored and assessed as the project will continue receiving high attention among a broad range of public and private stakeholders, including agencies at the national and local levels, nongovernmental organizations, civil society, and private citizens.

[7] Effective sewerage connection rates measure the percentage of households that have connected to the available sewerage systems.
[8] It is noted that poor households often have challenges to make such connections.

IV. APPRAISAL SUMMARY

A. Economic and Financial Analysis

41. **Focused on Component 1 activities, the updated economic and financial analysis has followed the same methodology used at the preparation of the project.** Benefits are quantified using the same techniques: hedonic price and willingness to pay. The same discount rate of 11 percent and a project lifetime of 30 years are used. The financial assessment on AySA as the entity in charge of operating and maintaining the works under Component 1 was updated with latest data to test the financial sustainability of the interventions.

42. **Overall results of the updated economic assessment for the project including the AF show that the project will maintain positive impacts on the economic development of the Buenos Aires Metropolitan Area.** Despite unexpected increases of the costs of the works and a lower sewerage coverage rate than originally estimated, the project still shows a positive return of 15 percent and an expected net benefit of US$0.3 billion. Though the updated economic rate of return is lower than the 22 percent expected at appraisal of the original loan, it remains well above the 11 percent discount rate used at preparation and much higher than the 6 percent discount rate used by recent World Bank projects.[9]

43. **Results of an updated sensitivity analysis to additional cost overruns, further delays and lower sewerage connection rates show that the project after the AF will only have positive benefits when the effective sewerage connection rate is higher than 70 percent.** Cost overruns and additional delays show medium to low impacts on the results. It is important to point out that, in addition to sewerage cover rates, effective sewerage connection rates are important for the economic viability of the project not only because of its direct benefits to households, but also because of its importance for the achievement of the water quality goals.

44. **Results of the updated financial analysis are in line with findings from the original appraisal of financial performance of AySA as the infrastructure operator.** AySA has maintained its high technical expertise to operate and maintain the infrastructure. It is noted that during project preparation and early years of project implementation, AySA relied heavily on transfers from the central government to partially finance its operation costs and fully finance its investments. Nevertheless, from 2014 to 2018, AySA has increased its real tariffs by about 110 percent. As a result, AySA's cost recovery has improved from 45 percent in 2010 to 61 percent in 2018 although its operating deficit has persisted. On the other hand, AySA's expenditures have increased by 94 percent in real terms, partially offsetting the revenue increase. Such an increase in expenditures is partially explained by the Government's decision to expand AySA's concession area to serve a total of 14.8 million people in the Buenos Aires Metropolitan Area.

45. **AySA has improved its operating performance during the implementation period. Its revenue collection rate remains above 92 percent despite having a larger concession area now and serving more low-income households.** It has reduced its unaccounted-for water from 44 percent to 40 percent. Its metered users have increased from 12 percent to 17 percent. Additional improvements are expected in the coming years as AySA has started billing on a monthly basis (from every two months), which will likely

[9] Calculated using the 2016 World Bank Guidance Note.

increase AySA's revenue collection rate. As the metered consumption will be billed based on actual consumption, it is expected that usage efficiency and billing revenues will be further improved.

B. Technical

46. **The proposed AF will not make any changes to the current technical design of the project.** Its support to Component 1 will help the completion of ongoing works, which are being constructed satisfactorily. The AF support to Component 3 is mainly for (a) in-depth studies built on completed TA activities and (b) continuation of investments that have been piloted under the original project. In terms of risks, the project's technical risk is rated Substantial as noted in the risk section. This risk has been managed carefully through close monitoring and supervision of the external consulting firms, AySA, project executing team, and technical experts hired by the World Bank.

C. Financial Management (FM)

47. **The project has satisfactory FM arrangements that meet the World Bank's minimum requirements.** The main FM risks include multiple agencies being involved in project implementation. After mitigation, the project's residual FM risk is rated Moderate.

48. **The AF has no impact on the project's FM arrangements**. The existing project executing team through the projects financial team, is responsible for the project's FM activities, including accounting and financial reporting, disbursements, and documentation of expenditures to the World Bank, and external auditing arrangements. The project's financial team has administrative capacity and experienced staff skilled in World Bank-financed activities. It oversees the preparation of the annual and interim financial reports (IFRs) for the project, in line with the World Bank's requirements. For that purpose, AySA produces and submits to the project financial team its financial information for the components under its management. The UEPEX system will be used to produce the requisite financial statements following public sector accounting standards in Argentina. The project's financial team will continue preparing the semiannual IFRs and submit these reports to the World Bank within 45 days after the end of each semester.

49. **The financial auditing arrangement of the project will continue after the AF.** The accounts of the AF and the original loan will be audited annually. The external audit report including the Management Letter will be submitted to the World Bank within six months after the end of each fiscal year (June) and thereafter disclosed.

50. **There is no change in disbursement arrangements**. The following disbursement methods will be used: Reimbursement, Direct Payment, and Advance. The project's financial team will continue submitting withdrawal applications to the World Bank and handle all disbursement issues. The AF proceeds will be transferred from the World Bank to a new segregated Designated Account (DA) in U.S. dollars managed by the project financial team, which will be opened at the National Bank of Argentina (*Banco de la Nación Argentina*), and later converted to a peso-denominated operating account opened at the same bank. The funds in the peso-denominated operating account will then be used to make the following payments: (a) eligible expenses in accordance with the Loan Agreement and (b) transfer of funds to a specific AySA account destined exclusively to receive the funds transferred by the project executing team. Additionally,

AySA will operate a second operating account in pesos to make local counterpart payments. There will be no transfers of loan funds to any other entities.

51. **The DA to be used for the AF will have a fixed ceiling of US$40 million**. Subsequent advances will be made against submission of statements of expenditure (SOEs), reporting on the use of the previous advances. The frequency for reporting eligible expenditures paid from the DA will be by semester. The SOEs will also be used for Reimbursements. Direct Payments will be documented by Records.

52. **The project will have a disbursement deadline date four months after the closing date**. The minimum application size will be US$8 million equivalent. The proceeds of the Loan will be disbursed against the disbursement categories listed in Table 2.

Table 2. Disbursement Categories

Category	Amount of the Loan Allocated (expressed in US$)	Percentage of Expenditures to be Financed (inclusive of taxes, except for any taxes levied for financial transactions)
(1) Works under Part 1(a) of the Project (except for Parts 1(a)(iii) and 1(a)(v) of the Project), consultant's services under Part 1(b) of the Project.	235,000,000	100%
(2) Eligible Expenditures for Parts 3(a) to 3(f) of the Project, and Works and consulting services under Part 3(g) of the Project	9,387,500	100%
(3) Front-end Fee	612,500	Amount payable pursuant to Section 2.03 of this Agreement in accordance with Section 2.07 (b) of the General Conditions
(4) Premia for Interest Rate Caps and Interest Collars	0	Amounts payable pursuant to Section 4.05 (c) of the General Conditions
Total amount	245,000,000	

53. The World Bank will reimburse the expenditures for payments made up to one year before the signing date of the AF's Loan Agreement. These expenditures will not exceed US$49 million equivalent.

D. Procurement

54. **New procurement under the AF will be conducted according to the World Bank's 'Procurement Regulations for IPF Borrowers', issued in July 2016 (and revised in August 2018), for the supply of goods, works, and non-consulting and consulting services**. The World Bank's Standard Procurement Documents will govern the procurement of World Bank-financed Open International Competitive Procurement. For procurement involving National Open Competitive Procurement, the borrower will use Standard Procurement Documents acceptable to the World Bank. These procurement arrangements will be detailed in the updated Operational Manual, acceptable to the World Bank before signing.

55. **A Project Procurement Strategy for Development and an initial Procurement Plan have been prepared for the proposed AF.** It is expected that AF activities under Component 3 will follow new

procurement processes (see Section II for detailed AF activities). Based on the market analysis and lessons learned from experiences of similar procurement activities, it was concluded that the new procurement approach is straightforward, applying the current country thresholds, which were defined as completely valid and applicable for this project.

56. **The capacity assessment of the implementing agencies has recommended annual supervision missions in the field for the post review of procurement actions.** For prior review activities, supervision will be carried out from World Bank offices directly.

E. Social (including Safeguards)

57. **As the proposed AF will support ongoing works and activities that are already planned or are being implemented, it will not trigger any new social safeguards policies, require modifications to completed social assessments (SAs), or change the safeguard instruments of the project.**

58. **Given the complexity of the project, two complementary SAs were prepared for ACUMAR and AySA as documented in the original PAD.** Both SAs were developed based on available project information and extensive consultations with relevant stakeholders. Based on the findings of its SA, AySA updated its Social Management Plan that comprises four components: (a) Social Participation, (b) Stakeholder Analysis, (c) Communication, and (d) Independent Monitoring. AySA's new Social Management Plan received a no-objection from the World Bank in January 2015. AySA also published all environmental and social instruments and all reports of social communication activities on its website. During implementation, AySA has systematically submitted to the World Bank, twice a year, reports on the implementation of its Social Management Plan. Complementarily, ACUMAR launched its Strategic Communication Plan in 2015, which established the guidelines for improving its interactions with and commutation to the public in terms of transparency, responsiveness, and openness. This plan has been operationalized through an updated ACUMAR website that includes an Open Data platform and a functional GRM.

59. **Specific resettlement impacts covered by the policy were not identified during the original project preparation.** Instead, an RPF was prepared as a precaution to (a) risks associated with works under Component 1, which are of high complexity in terms of technical and location issues and (b) risks associated with potential investment activities under Components 2 and 3 that might affect a small number of houses in low-income areas or even informal settlements or potentially restrict the use of private land. Among other things, the RPF spells out eligibility criteria, forms of compensation, and dispute resolution mechanisms that will be available to potentially affected people and specific guidance to prepare RAPs before the start of the works. The RPF was approved by the World Bank in 2015. As the proposed AF will support ongoing works and activities already foreseen and started under the original loan, the RPF does not require any change. Resettlement risks associated with complementary road works under the Riachuelo Outfall contract have been clearly identified and addressed in the abbreviated RAP approved and disclosed by the World Bank on July 17, 2019.[10]

60. **The project's social performance has been consistently Satisfactory throughout implementation.** The project has robust citizen engagement and consultation mechanisms, which include

[10] The identified plans were prepared according to the RPF.

several multisectoral instances of decision making and coordination, including round tables with community actors to discuss and decide on sensitive issues pertaining highly vulnerable communities. These instances have produced changes in AySA's institutional protocols, among others, to facilitate service delivery to some of the vulnerable households in the basin. A wide range of social services have been provided through multiple social teams from different institutions, including AySA´s social communication and community action team, ACUMAR's social participation team, and the City of Buenos Aires' Housing Institute. These teams have been able to work coordinately to implement the project's safeguards instruments and handle complex social situations, while promoting broad community participation. Such efforts, led by AySA and ACUMAR, have been key for the successful implementation of the project and have managed to generate community support amidst a complex social and political scenario. To better capture the project's efforts to communicate back to the community on any issues raised effectively and timely, the project's third restructuring has introduced a citizen engagement indicator focused on the response rate within 48 hours of receipt of a complaint.

61. **Gender impacts of poor sanitation are being studied in Argentina with limited data from few case studies.** A rapid gender analysis performed during AF preparation confirmed that female residents in low-income urban areas and informal settlements of the MRB are affected differently by poor water and sanitation conditions and flood events when compared to male residents. A flood risk map developed under the original project shows, for example, that in the lower MRB basin, many women are heads of households and exposed to high flood risks. A study performed under a World Bank-financed project in the Vega and Cildañez Basins also confirmed that floods affect women differently and worsen their already vulnerable situations of lower education levels and lower employment rates.[11] Based on this analysis, the AF will support ACUMAR to further study the gender dynamics in the MRB under the proposed Strategic Environmental Plan and develop gender-specific actions to ensure that gender issues are fully mainstreamed in its future interventions.

F. Environment (including Safeguards)

62. **As the proposed AF will support ongoing works and activities that are already planned or being implemented under the project, it will not trigger any new safeguards policies, will not change the Environmental Assessment Category A, and will not change the safeguard instruments of the project, including its Environmental and Social Management Framework and ESMP**.

63. **The project's environmental performance has been consistently satisfactory.** AySA, ACUMAR, and their contractors have followed the approved ESMPs to carry out project activities. In addition, implementation of ESMPs for each subproject of Components 1 and 3 has been closely monitored by the World Bank team through the review of advance reports, monitoring meetings, and visits to works sites. Project implementation has proven that the project's safeguard instruments are effective and adequate for the management of safeguards issues of a diverse set of subprojects. These instruments will be applied to all AF activities.

64. **The estimated climate co-benefits of this proposed AF amounts to US$53.63 million, i.e. 21.9% of the proposed AF loan amount.** Specifically, project investments under Component 1 will help the GoA to properly manage sewerage of the City and Province of Buenos Aires and thus reduce potential health

[11] The project is the Flood Risk Management Support for the City of Buenos Aires Project (P145686).

risks associated with sewerage overflow during flood events. Project support under Component 3 will help the GoA continue improving its flood early warning and environmental monitoring and control systems for the MRB and support additional priority investments in low-income urban areas with high flood risks. Together, such investments under the AF will addresses the vulnerability of the MRB to the exacerbated risk of floods associated with a changing climate.

G. Other Safeguard Policies (if applicable)

65. **OP 7.50 (Projects on International Waterways) is triggered as the Riachuelo Outfall will discharge treated sewerage into the La Plata River (*Rio de la Plata* in Spanish), a waterway shared by Argentina and Uruguay.** Notifications to and exchanges with Uruguay were made through the bilateral Administrative Commission for the La Plata River (*Comisión Administradora del Rio de la Plata*, CARP) between 2001 and 2009. CARP did not express any objection to the project. Once the Riachuelo Outfall is in operation, Argentina, through AySA, will comply with its analysis and monitoring obligations to CARP.

V. WORLD BANK GRIEVANCE REDRESS

66. **Communities and individuals who believe that they are adversely affected by a World Bank (WB) supported project may submit complaints to existing project-level grievance redress mechanisms or the WB's Grievance Redress Service (GRS).** The GRS ensures that complaints received are promptly reviewed in order to address project-related concerns. Project affected communities and individuals may submit their complaint to the WB's independent Inspection Panel which determines whether harm occurred, or could occur, as a result of WB non-compliance with its policies and procedures. Complaints may be submitted at any time after concerns have been brought directly to the World Bank's attention, and Bank Management has been given an opportunity to respond. For information on how to submit complaints to the World Bank's corporate Grievance Redress Service (GRS), please visit http://www.worldbank.org/en/Projects-operations/products-and-services/grievance-redress-service.
For information on how to submit complaints to the World Bank Inspection Panel, please visit www.inspectionpanel.org

VI SUMMARY TABLE OF CHANGES

	Changed	Not Changed
Components and Cost	✓	
Legal Covenants	✓	
Implementing Agency		✓
Project's Development Objectives		✓
Results Framework		✓

Loan Closing Date(s)		✓
Cancellations Proposed		✓
Reallocation between Disbursement Categories		✓
Disbursements Arrangements		✓
Safeguard Policies Triggered		✓
EA category		✓
Institutional Arrangements		✓
Financial Management		✓
Procurement		✓
Implementation Schedule		✓
Other Change(s)		✓

VII DETAILED CHANGE(S)

COMPONENTS

Current Component Name	Current Cost (US$, millions)	Action	Proposed Component Name	Proposed Cost (US$, millions)
Sanitation	619.01	Revised	Sanitation	854.00
Industrial Pollution Abatement	64.36	Revised	Industrial Pollution Abatement	60.00
Environmental Territorial Management	26.24	Revised	Environmental Territorial Management	40.00
Institutional Strengthening and Project Management	6.32	No Change	Institutional Strengthening and Project Management	6.32
TOTAL	**715.93**			**960.32**

Expected Disbursements (in US$)

Fiscal Year	Annual	Cumulative
0000	0.00	0.00
2009	0.00	0.00

2010	0.00	0.00
2011	2,678,757.09	2,678,757.09
2012	782,596.52	3,461,353.61
2013	1,538,487.22	4,999,840.83
2014	582,603.48	5,582,444.31
2015	176,355,897.06	181,938,341.37
2016	30,716,838.27	212,655,179.64
2017	110,578,102.72	323,233,282.36
2018	166,708,000.08	489,941,282.44
2019	102,390,254.38	592,331,536.82
2020	150,000,000.00	742,331,536.82
2021	150,000,000.00	892,331,536.82
2022	67,985,963.18	960,317,500.00

SYSTEMATIC OPERATIONS RISK-RATING TOOL (SORT)

Risk Category	Latest ISR Rating	Current Rating
Political and Governance	High	Substantial
Macroeconomic	High	High
Sector Strategies and Policies	Moderate	Moderate
Technical Design of Project or Program	High	Substantial
Institutional Capacity for Implementation and Sustainability	Substantial	Moderate
Fiduciary	High	High
Environment and Social	Substantial	Substantial
Stakeholders	Substantial	Moderate
Other		
Overall	High	High

LEGAL COVENANTS – Matanza-Riachuelo Basin (MRB) Sustainable Development Project (P105680)

Loan/Credit/TF	Description	Status	Action
IBRD-77060	Finance Agreement :Loan agreement 7707-AR | Description :The Borrower, through SAyDS, shall cause AySA to carry-out a pre-feasibility study of alternatives to the construction of the RightBank collector (Colector Margen Derecha) | Due Date :30-Mar-2011	Complied with	No Change
IBRD-77060	Finance Agreement :Loan agreement 7707-AR | Description :AySA to carry out separate site environmental impact assessments for the Right Bank collector and the industrial collector | Due Date :22-May-2012	Complied with	No Change
IBRD-77060	Finance Agreement :Loan agreement 7707-AR | Description :Resettlement is not expected under APL1, if it becomes necessary, Borrower will prepare resettlement plan | Frequency :Quarterly	Not yet due	No Change
IBRD-77060	Finance Agreement :Loan agreement 7707-AR | Description :Borrower shall carry out Comp 1 according to Env. Mgt. Plan and Components 2 and 3 according to agreed Env. Frameworks. | Frequency :Quarterly	Complied with	No Change
IBRD-77060	Finance Agreement :Loan agreement 7707-AR | Description :Borrower shall provide Env. Mgt. Plan for Berazategui Treatment Plant. | Due Date :30-Nov-2013	Complied with	No Change
IBRD-77060	Finance Agreement :Loan agreement 7707-AR | Description :AySA shall hire firms to supervise construction. | Due Date :30-Nov-2013	Complied with	No Change
IBRD-77060	No later than two months after the Effective Date, the Borrower, through MIOPV shall update and adopt the Operational Manual in a manner and with contents acceptable to the Bank.	Not yet due	New

LEGAL COVENANTS – Matanza-Riachuelo Basin (MRB) Sustainable Development Project Additional Financing (P171197)

Sections and Description
Borrower shall ensure timely provision of counterpart funding through its budget allocations to the project.
Borrower shall continue improving water quality of the M-R Basin with concrete targets agreed among stakeholders.

Conditions

Type	Description
Effectiveness	The Additional Condition of Effectiveness consists of the following, namely, that for purposes of complying with Section I.E (a) of Schedule 2* to the Loan Agreement, the Borrower, through MIOPV, has furnished to the Bank evidence satisfactory to the Bank. *The Borrower, through MIOPV, shall operate and maintain, at all times during Project implementation Project executing and financial teams with composition, terms of reference, structure and functions and responsibilities acceptable to the Bank.
Type	Description
Disbursement	No withdrawal shall be made under Category(1) unless the AySA Agreement has been executed in a manner and with contents acceptable to the Bank.

VIII. RESULTS FRAMEWORK AND MONITORING

Results Framework

COUNTRY: Argentina

Matanza-Riachuelo Basin (MRB) Sustainable Development Project Additional Financing

Project Development Objective(s)

The overall development objective of the proposed APL program supports the Government's Integrated Basin Cleanup whilesimultaneously improving sanitary conditions along the banks of La Plata River and providing a long-term and cost-effectivesolution for safe disposal of wastewater from the Buenos Aires Metropolitan Area (AySAs concession area). The two stage APL programthat contributes to this objective and the allocation of works and activities under each APL has been specifically designed toensure that APL-1 can be free-standing, with no stranded assets at the end of the first stage.

The project (APL-1) development objectives contribute to the overall program development objective by (i) improving sewerageservices in the M-R River Basin and other parts of the Province and City of Buenos Aires by expanding transport and treatmentcapacity; (ii) supporting a reduction of industrial discharges to the M-R River, through the provision of industrial conversiongrants to small and medium enterprises; (iii) promoting improved decision-making for environmentally-sustainable land use anddrainage planning, and piloting urban drainage and land use investments, in the M-R River Basin; and (iv) strengthening ACUMAR#sinstitutional framework for ongoing and sustainable clean-up of the M-R River Basin.

Project Development Objective Indicators by Objectives/ Outcomes

Indicator Name	DLI	Baseline	Intermediate Targets					End Target
			1	2	3	4	5	
Improve sewerage services in the M-R River Basin by expanding transport and treatment capacity								
Annual discharge of sewage adequately treated from the Riachuelo System (Left Margin Collector, Dock Sud Pretreatment Plant and Riachuelo Outfall) (Cubic		0.00						378,432,000.00

Indicator Name	DLI	Baseline	Intermediate Targets					End Target
			1	2	3	4	5	
meters/year)								
Support a reduction of industrial discharges to the M-R River								
Volume (mass) of COD pollution load reduction achieved under the project (Tones/year)		0.00						12,437.00
Number of enterprises in the matching grants program that have reduced their discharge loads according to their PRIs (Number)		0.00	1.00	1.00	1.00	2.00	3.00	3.00
Promote environmentally-sustainable land use and drainage planning in the M-R River Basin								
Development of a Flood Contingency and Emergency Response Plan for the Basin (Yes/No)		No	No	No	No	Yes	Yes	Yes
Strengthen ACUMAR's institutional framework for ongoing and sustainable clean-up of the M-R Basin								
ACUMAR is fully staffed against its new organigram, operates with its own operating budget and is fully able to fulfill the functions vested in it by law. (Yes/No)		No	No	No	Yes	Yes	Yes	Yes

Intermediate Results Indicators by Components

Indicator Name	DLI	Baseline	Intermediate Targets					End Target
			1	2	3	4	5	
Component 1: Sanitation								
Linear kilometers of the Left Bank collector (including Baja Costanera bypass collector and the secondary network) completed (Kilometers)		0.00	3.00	10.00	17.00	24.00		28.80
Linear kilometers of the Riachuelo outfall completed (Kilometers)		0.00	0.00	1.00	3.00	6.00	9.00	11.90
Component 2: Industrial Pollution Abatement								
Number of annual field audits conducted by ACUMAR, including sampling/lab tests of enterprises of the basin. (Number)		0.00						800.00
Component 3: Environmental Territorial Management								
Number of beneficiaries with improved access to water and sanitation services in poor settlements and low-income neighborhoods. (Number)		0.00	0.00	0.00	5,000.00	15,000.00	30,000.00	50,000.00
Component 4: Institutional Strengthening and Project Management								
Development of a new organigram and staffing		No	No	Yes	Yes	Yes	Yes	Yes

Indicator Name	DLI	Baseline	Intermediate Targets					End Target
			1	2	3	4	5	
plans for ACUMAR (Yes/No)								
Percentage of complaints and grievances received on the Riachuelo System works by AySA that are responded within 48 hours (Percentage)		0.00						100.00
Percentage of complaints and grievances on the Riachuelo System that are resolved. (Percentage)		0.00						100.00

Monitoring & Evaluation Plan: PDO Indicators

Indicator Name	Definition/Description	Frequency	Datasource	Methodology for Data Collection	Responsibility for Data Collection
Annual discharge of sewage adequately treated from the Riachuelo System (Left Margin Collector, Dock Sud Pretreatment Plant and Riachuelo Outfall)		Annual (cumulative)	Client - Lot 1 and Lot 3 finalized and fully operational		
Volume (mass) of COD pollution load reduction achieved under the project	This indicator measures the volume (mass) of Chemical Oxygen Demand (COD) pollution load reduction achieved through process modification to reduce the	Annual (cumulative)	Client - Volume of Industrial Wastewater treated in the IWWTP and		

	load of pollutants requiring treatment, and / or through application of wastewater treatment techniques to reduce the load of contaminants prior to discharge. The baseline for this indicator is the actual COD load at the start of project.		measurement of COD of raw wastewater and treated wastewater in the IWWTP		
Number of enterprises in the matching grants program that have reduced their discharge loads according to their PRIs		Annual (cumulative)	Client - Audits on the results of the PRIs of the enterprises in the matching grants program		
Development of a Flood Contingency and Emergency Response Plan for the Basin			Client - Reporting on the advance in the development (procurement process) of the Plan and, once finalized, implementation of the Plan		

ACUMAR is fully staffed against its new organigram, operates with its own operating budget and is fully able to fulfill the functions vested in it by law.		Annual	Client - From ACUMAR reports		

Monitoring & Evaluation Plan: Intermediate Results Indicators

Indicator Name	Definition/Description	Frequency	Datasource	Methodology for Data Collection	Responsibility for Data Collection
Linear kilometers of the Left Bank collector (including Baja Costanera bypass collector and the secondary network) completed		Annual (cumulative)	Client - From AySA reports on physical advance of Lot 1 works' contract		
Linear kilometers of the Riachuelo outfall completed		Annual (cumulative)	Client - From AySA reports on physical advance of Lot 3 works' contract		
Number of annual field audits conducted by ACUMAR, including sampling/lab tests of enterprises of the basin.		Annual (cumulative)	Client - From ACUMAR reports		
Number of beneficiaries with improved access to water and sanitation services in poor settlements and low-income neighborhoods.		Annual (cumulative)	Client - Based on physical advance of water &		

			sanitation works' contracts in poor settlements		
Development of a new organigram and staffing plans for ACUMAR		Annual	Client - From ACUMAR reports		
Percentage of complaints and grievances received on the Riachuelo System works by AySA that are responded within 48 hours		Yearly	Client		Client
Percentage of complaints and grievances on the Riachuelo System that are resolved.		Yearly	Client		Client

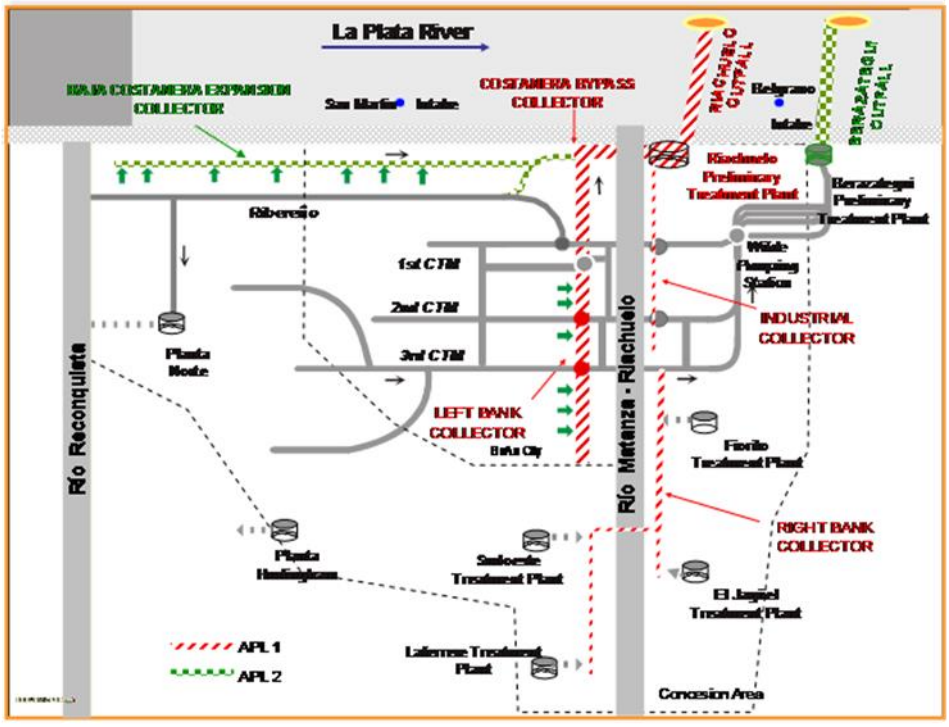
ANNEX 1. EVOLUTION OF TECHNICAL DESIGN

Argentina
Matanza-Riachuelo Basin (MRB) Sustainable Development Project Additional Financing

Component 1

1. Based on both ACUMAR's 2007 PISA and AySA's 2008 Water and Sanitation Master Plan (*Plan Director*), the original design of Component 1 adopted a 'zero discharge solution' and aimed at diverting wastewater discharges from all point sources in the MRB away from the M-R River. This design included (a) a Left Bank Collector in the lower part of the MRB to capture, collect, and convey sewerage coming from the existing sewerage system of the Buenos Aires Metropolitan Area and (b) a Right Bank Collector in the middle and upper parts of the MRB to collect and convey discharges from four WWTPs – Sudoeste, El Jaguel, Fiorito, and Laferrere. Given the design complexity, the project at appraisal proposed to carry out additional studies to confirm during implementation the inclusion of the proposed Right Bank Collector or alternative investments. Figure 1.1 shows the original design scheme of Component 1 activities.

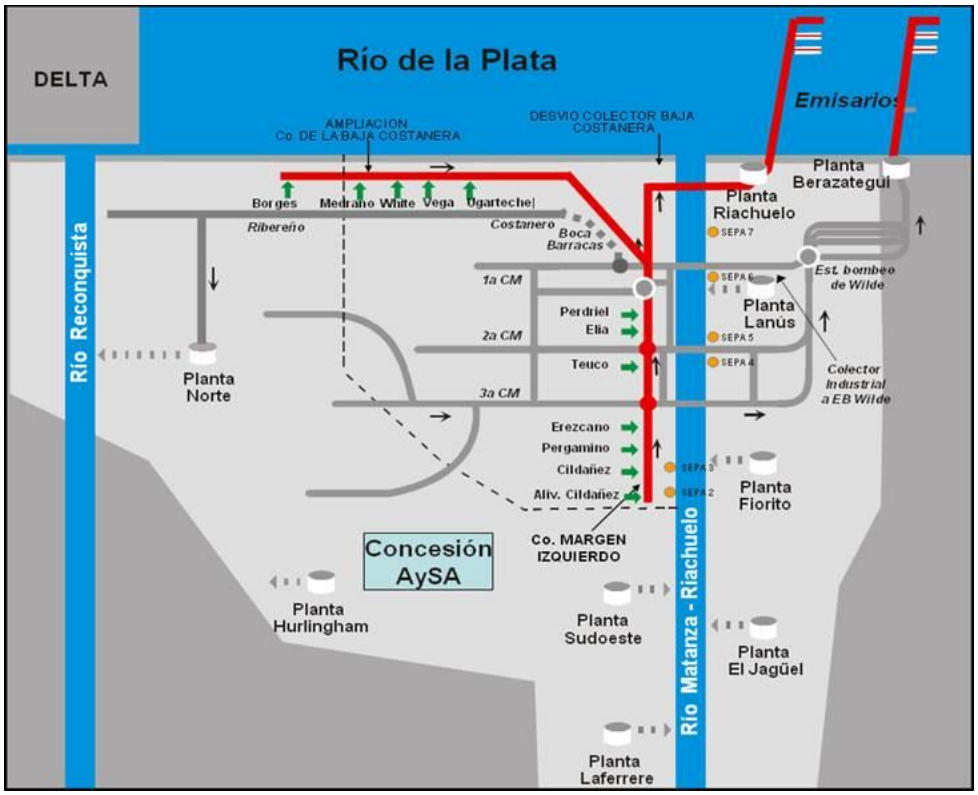
Figure 1.1. Design Scheme of Component 1 at Approval in 2009



2. In compliance with the Loan Agreement, in 2010, AySA carried out a pre-feasibility study on alternatives to the construction of the Right Bank Collector. The study proposed a decentralized alternative to build or upgrade the abovementioned four WWTPs to provide adequate sewerage treatment services directly. In 2011, a panel of experts established by the World Bank reviewed the study results and found the proposed 'decentralized solution' acceptable. In the same year, the GoA adopted

the decentralized alternative and requested that Component 1 of the project finance a new sludge treatment module for the Sudoeste WWTP as part of the selected alternative. AySA has been implementing this selected alternative as part of its pluriannual plan mainly with funding from the GoA. Figure 1.2 illustrates the design of Component 1 for both this project and the second phase of the APL program after 2011. At that time, the second phase focused on the Baja Costanera Expansion Collector while the Berazategui WWTP was being financed by BNDES and the Berazategui Outfall was being financed by the IADB.

Figure 1.2. Design Scheme of Component 1 after 2011



3. Additional changes adopted during implementation include (a) postponing the construction of side stream elevated pool aeration until the completion of all trunk infrastructure; (b) using the proposed industrial collector, as indicated in AySA's preliminary design, to convey treated industrial wastewater from the IWWTP to the to-be-completed Left Bank Collector; and (c) making minor modifications to the construction and upgrade of the proposed WWTPs under the decentralized alternative.

4. It is important to highlight that such modifications to the decentralized solution were made along with the evolution of PISA over time. During project implementation, the knowledge of the basin has improved enormously with better data collection and analysis (including mathematical models) partially financed by the project. With a better understanding of pollution sources, the GoA has been able to better identify pollution issues and thus better design and plan interventions. Based on in-depth knowledge of the basin, participation of stakeholders, and different progress rates in each PISA pillar, the GoA has updated PISA in 2016 and now is developing a new PISA 2030.

5. **APL program**. The project was appraised as the first phase of a two-phase APL. The second phase of the APL program would have financed the construction of additional major works, including (a) the Baja Costanera Expansion Collector, (b) the Berazategui WWTP, and (c) the Berazategui subaquatic outfall. Since approval of the project, AySA has made progress on those works by mobilizing financing from the Brazilian Development Bank to complete the construction of the Berazategui WWTP and from the IADB for the construction of the Berazategui Outfall. This progress shows the strong commitments of the GoA and AySA to implement all components of its Water and Sanitation Master Plan as originally envisaged in the second stage of the APL.

Component 2

6. At approval, Component 2 supports (a) ACUMAR to implement TA activities to develop restructuring plans for priority polluting industries and improve its monitoring and enforcement capacity to control industrial pollution and (b) a matching grant program to support small and medium enterprises (SMEs) to invest in cleaner production processes and reduce their pollution discharges to the M-R River. For the matching grant program, the project was successful in financing three SMEs. However, because of financial and technical challenges faced by the SME sector in Argentina, the resources under the program were underutilized.

7. In response, the project in its first restructuring, in 2015, changed the focus of this component from supporting individual polluting SMEs to supporting the tannery sector – a sector dominated by SMEs that discharge large quantities of organic and toxic loads to the M-R River. At the time of the first restructuring it was agreed that this component would support the development of a TIP and accompanying infrastructure in the municipality of Lanus. Loan proceeds would be used for the construction of the IWWTP while ACUMAR would finance the TIP. In addition, the IWWTP would be connected to AySA's sewerage system through an industrial collector. This TIP and accompanying infrastructure were expected to provide adequate treatment and disposal of 78 percent of the total tannery wastewater that would otherwise be discharged directly into the M-R River. As a start, 22 tanners agreed to move to the TIP, and three tanners outside the TIP agreed to use the IWWTP to treat their wastewater.

8. At the time of the second structuring in 2017, it was agreed that this component would also finance the construction of the TIP and an independent consulting firm to supervise the construction of the TIP and IWWTP. In addition, before construction of the industrial collector, the treated wastewater from the IWWTP would be transported to an existing AySA WWTP, located next to the TIP and IWWTP, for further treatment and final disposal.

ANNEX 2. PROJECT MAP