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PARAGUAY

IDB CLIMA: SANITATION PROGRAM FOR THE LAKE YPACARAÍ WATERSHED

(PR-L1193)

IDB CLIMA GRANT: SANITATION PROGRAM FOR THE LAKE YPACARAÍ WATERSHED

(PR-J0001)

GRANT AND LOAN PROPOSAL

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CONTENTS

ANNEXES	
Annex I	Development Effectiveness Matrix (DEM) —Summary
Annex II	Results Matrix
Annex III	Fiduciary Agreements and Requirements

REQUIRED LINKS	
Required link 1	Multiyear execution plan/Annual work plan
Required link 2	Monitoring and evaluation plan
Required link 3	Environmental and social review summary
Required link 4	Procurement plan

OPTIONAL LINKS	
Optional link 1	Socioeconomic viability
Optional link 2	Technical viability
Optional link 3	Financial and institutional viability
Optional link 4	Climate change analysis
Optional link 5	Public Utilities Policy analysis
Optional link 6	Gender and diversity analysis
Optional link 7	Theory of change
Optional link 8	Program Operating Regulations

ABBREVIATIONS	
CONALAYPA	Comisión Nacional de Gestión y Manejo de Lago Ypacaraí (National Commission for Management of Lake Ypacaraí)
DAPSAN	Department of Water and Sanitation
DGSA	Department of Socioenvironmental Management
DIGESA	General Department of Environmental Health
DINALAYPA	Dirección Nacional de Gestión y Manejo del Lago Ypacaraí y su Cuenca (National Department for Management of Lake Ypacaraí and Its Watershed)
DNCP	National Public Procurement Department
ESSAP	Empresa de Servicios Sanitarios del Paraguay (State-owned water utility in Paraguay)
ICB	International competitive bidding
JICA	Japan International Cooperation Agency
KPI	Key performance indicators
MADES	Ministry of Environment and Sustainable Development
MEF	Ministry of Economy and Finance
MOPC	Ministry of Public Works and Communications
MRV	Monitoring, reporting, and verification
NCB	National competitive bidding
NDC	Nationally determined contribution
PNACC	Plan Nacional de Adaptación al Cambio Climático (National Climate Change Adaptation Plan)
PSICLY	Plan de Saneamiento Integral de la Cuenca del Lago Ypacaraí (Lake Ypacaraí Watershed Comprehensive Sanitation Plan)
QCBS	Quality- and cost-based selection
SOTA	Specialized operational technical advisor

PROJECT SUMMARY

PARAGUAY
IDB CLIMA: SANITATION PROGRAM FOR THE LAKE YPACARAÍ WATERSHED
(PR-L1193)
AND
IDB CLIMA GRANT: SANITATION PROGRAM FOR THE LAKE YPACARAÍ WATERSHED
(PR-J0001)

<table>
<tr><th colspan="5">Financial Terms and Conditions</th></tr>
<tr><td colspan="3">Borrower:</td><td colspan="2">Flexible Financing Facility[a]</td></tr>
<tr><td colspan="3">Republic of Paraguay</td><td>Amortization period:</td><td>23 years</td></tr>
<tr><td colspan="3">Executing agency:</td><td>Disbursement period:</td><td>6 years</td></tr>
<tr><td colspan="3">The borrower, through the Ministry of Public Works and Communications (MOPC)</td><td>Grace period:</td><td>7.5 years[b]</td></tr>
<tr><td>Source</td><td>Amount (US$)</td><td>%</td><td>Interest rate:</td><td>SOFR-based</td></tr>
<tr><td rowspan="3">IDB loan (OC):</td><td rowspan="3">154,000,000</td><td rowspan="3">100</td><td>Credit fee:</td><td>[c]</td></tr>
<tr><td>Inspection and supervision fee:</td><td>[c]</td></tr>
<tr><td>Weighted average life:</td><td>15.25 years</td></tr>
<tr><td>Total:</td><td>154,000,000</td><td>100</td><td rowspan="2">Approval currency:</td><td rowspan="2">U.S. dollars</td></tr>
<tr><td>IDB CLIMA Grant (PR-J0001):[d] [e]</td><td>7,700,000</td><td>5% of the loan</td></tr>
<tr><th colspan="5">Project at a Glance</th></tr>
<tr><td colspan="5">Program objective/description: The general objective of the program is to help improve the environmental conditions of the Lake Ypacaraí watershed, promoting climate-resilient and low-carbon development and accelerating access to green and thematic debt markets for the water and sanitation sector. The specific objectives are to: (i) expand the coverage of sanitary sewerage and wastewater treatment in prioritized areas of the watershed to help meet the country's climate goals; (ii) contribute to the recovery of the watershed's degraded environmental areas; (iii) improve the management of water and sanitation services in prioritized areas of the watershed; and (iv) strengthen the MOPC's institutional capacities to improve management of the Lake Ypacaraí watershed, the design of pro-climate or pro-nature investments, and climate and biodiversity monitoring, reporting, and verification (MRV) within the water and sanitation sector.

This program is a pilot operation of the IDB CLIMA Pilot Program[d] and includes: (i) an investment loan drawing on resources from the Ordinary Capital (paragraph 2.1); and (ii) an IDB CLIMA grant drawing on resources from the IDB Grant Facility equivalent to 5% of the loan amount[e] (paragraph 2.2), provided that fulfillment of key performance indicator (KPI) targets is independently verified (paragraph 3.16).</td></tr>
<tr><td colspan="5">Special contractual conditions precedent to the first disbursement of the loan: The borrower, through the executing agency, has presented, to the Bank's satisfaction, evidence of: (i) the creation and startup of the project coordination unit within the MOPC, with the appointment and/or hiring, as appropriate, of a general program coordinator, a technical coordinator, a social specialist, an environmental specialist, a fiduciary coordinator for procurements and financial management, and a planning coordinator, all with the powers and responsibilities agreed upon with the Bank and established in the Program Operating Regulations; (ii) the approval and entry into force of the Program Operating Regulations, under the terms previously agreed on with the Bank, which will: (a) include, inter alia, the environmental and social requirements and the monitoring and evaluation plan with the protocol for verification of the key performance indicators (KPI) under the IDB CLIMA Pilot Program; and (b) incorporate, as annexes, the Environmental and Social Management System, the Environmental and Social Impact Study-Environmental and Social Action Plan, the Biodiversity Action Plan, and the Environmental and Social Action Plan; and (iii) the approval and publication of a law declaring eminent domain and initiating the process of expropriating land for the program (paragraph 3.6).

Special contractual conditions of program execution: (i) No later than one year from the date on which the Bank notifies the borrower and/or the executing agency of its agreement with fulfillment of the special conditions precedent to the first disbursement established in the loan contract, the borrower, through the executing agency, will present, to the Bank's satisfaction, evidence of legal possession of the land where the wastewater treatment plan will be sited, enabling the executing agency to build, operate, and maintain the wastewater treatment plant and its related facilities; (ii) prior to the award of each work under Component I of the program, the borrower, through the executing agency, will present, to the Bank's satisfaction, evidence of the execution of the respective interagency agreement between the executing agency and the municipal authorities and water and sanitation service providers mentioned in paragraph 3.5; and (iii) within two years from the entry</td></tr>
</table>

into force of the loan contract, the borrower, through the executing agency, will present, to the Bank's satisfaction: (a) the sanitation service delivery model for the program intervention area, as mentioned in paragraph 3.4; and (b) the connectivity strategy for connectivity to the sewerage system agreed on by the MOPC and the Bank (paragraph 3.7).

See the other special contractual conditions precedent to the first disbursement and the environmental and social execution conditions in Annex B to the environmental and social review summary (required link 3).

Contractual conditions precedent to disbursement of the IDB CLIMA grant.[d] The borrower has presented to the Bank: (i) information on the bank account into which the IDB CLIMA grant resources will be deposited; (ii) the report on the independent verification of the KPIs carried out by the reviewer, indicating that the three KPI targets were fully met; (iii) the indicative action plan mentioned in paragraph 3.21; and (iv) evidence that the operation has a combined amount of climate and biodiversity financing equal to at least 60% of the loan amount, calculated with the methodologies used by the Bank (paragraph 3.19). See other requirements of the IDB CLIMA Pilot Program in Section III.C.

Exceptions to Bank policies: None.

Strategic Alignment							
Objectives:[f]	O1 ☒			O2 ☒		O3 ☐	
Areas of operational focus:[g]	OF1 ☒	OF2-G ☒ OF2-D ☒	OF3 ☒	OF4 ☐	OF5 ☒	OF6 ☒	OF7 ☐

[a] Under the terms of the Flexible Financing Facility (FN-655-1), the borrower has the option of requesting changes to the amortization schedule, as well as currency, interest rate, commodity, and catastrophe protection conversions. The Bank will take operational and risk management considerations into account when reviewing such requests.

[b] Under the flexible repayment options of the Flexible Financing Facility, changes to the grace period are permitted provided that they do not entail any extension of the original weighted average life or the last payment date as documented in the loan contract.

[c] The credit fee and inspection and supervision fee will be established periodically by the Board of Executive Directors as part of its review of the Bank's lending charges in accordance with the applicable policies.

[d] The Bank's Board of Executive Directors approved, through Resolution DE-67/23, an amendment to the Regulations governing the Bank's Grant Facility to finance the IDB CLIMA Pilot Program. Pursuant to Resolution AG-11/23, the Bank's Board of Governors expressed its support for financing the IDB CLIMA Pilot Program.

[e] If, during the original disbursement term or extensions, the loan amount were to be reduced, the IDB CLIMA grant amount would be reduced proportionally to maintain the 5%.

[f] O1 (Reduce poverty and inequality); O2 (Address climate change); and O3 (Bolster sustainable regional growth).

[g] OF1 (Biodiversity, natural capital, and climate action); OF2-G (Gender equality); OF2-D (Inclusion of diverse population groups); OF3 (Institutional capacity, rule of law, and citizen security); OF4 (Social protection and human capital development); OF5 (Productive development and innovation through the private sector); OF6 (Sustainable, resilient, and inclusive infrastructure); and OF7 (Regional integration).

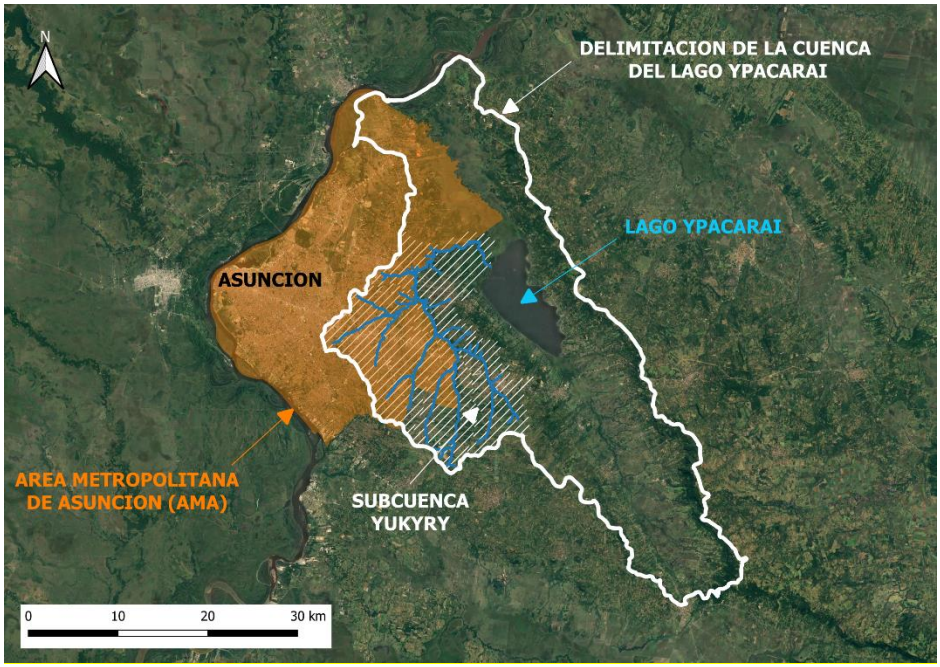
I. DESCRIPTION AND RESULTS MONITORING

A. Background, problem addressed, and rationale

1.1 This program is an operation that has been structured under the IDB CLIMA Pilot Program and includes: (i) an investment loan drawing on resources from the Ordinary Capital (paragraph 2.1); and (ii) an IDB CLIMA grant drawing on resources from the IDB Grant Facility equivalent to 5% of the loan amount (paragraph 2.2), provided that fulfillment of key performance indicator (KPI) targets is independently verified (paragraph 3.16).[1]

1.2 An icon of Paraguay, Lake Ypacaraí is one of its main natural resources and tourist destinations,[2] in addition to being the source of water supply for San Bernardino and an area encompassing farming and industrial activities. The lake's watershed covers an area of 103 km^2, spanning 21 municipios. An estimated 815,000 people live in the watershed, of which 80% reside in the Yukyry Creek sub-watershed.

Figure 1. Lake Ypacaraí watershed



1.3 **Development problem.** The lake watershed's degraded environmental conditions caused mainly by excess nutrients (nitrogen and phosphorus),[3] thus resulting in

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1 See footnotes (d) and (e) of the Project Summary.

2 According to the National Tourism Office, the tourism sector's contribution to Paraguay's GDP was 1.9% on average between 2016 and 2021 (https://senatur.gov.py/recursos/guia_inversiones_paraguay.pdf).

3 Phosphorous is a key nutrient for the development of bacteria, algae, and aquatic plants; in excess, it can lead to eutrophication, which degrades water quality and adversely affects biodiversity.

cyanobacteria blooms and high concentrations of pathogenic microorganisms,[4] which contaminate the lake, erode the aquatic ecosystem's biodiversity, and pose a major risk to human health through contact or ingestion. This phenomenon has been evidenced more frequently since 2010 and has resulted in the permanent closure of the beaches and aquatic activities.[5] Climate change exacerbates the impact of these episodes on the lake and its wetlands,[6] accelerating their degradation and increasing greenhouse gas emissions. Five main causes have been identified for this problem:

1.4 **Cause 1. Low sewerage coverage and wastewater treatment lead to greenhouse gas emissions and promote eutrophication.** According to the Lake Ypacaraí Watershed Comprehensive Sanitation Plan (PSICLY), only 7.5% of the Lake Ypacaraí watershed's inhabitants have sewerage networks and wastewater treatment, and the challenge of connecting households to the network persists. Without sewerage networks, effluents are discharged into watercourses or cesspits,[7] thus contaminating the lake and the Patiño aquifer, which, in addition to interacting hydrologically with the lake, is the main source of supply for the Asunción metropolitan area. The PSICLY estimated that domestic wastewater is the main source of total phosphorus (69%), total nitrogen (62%), and biochemical oxygen demand (BOD5) (70%), followed by livestock, industry, and diffuse pollution. Evidence shows that the lack of adequate water and sanitation accounts for 60% of episodes of diarrhea, 13% of acute respiratory infections, and 16% of child malnutrition (Prüss-Ustün et al., 2019). Evidence also correlates the emergence of cyanobacteria with higher temperature and excess nutrients, with climate change contributing to an increase in the probability that they will appear (Paerl et al., 2008; Bouvy et al., 2003; Oliver et al., 2016; O'Neil et al., 2012; and Aguilera et al., 2018).[8] Sanitation interventions with high coverage (above 75% of the community) reduce the risk of diarrhea by 45%, and network-based solutions have a greater impact than those at the household level (40% versus 16%).

1.5 Low coverage is mainly due to the lack of prioritization for investments in the sector. Despite its growth during 2008-2019, representing 0.08% of GDP, it is still low compared with other countries with similar population and income characteristics, (Dominican Republic at 0.09%, Costa Rica at 0.11%, Guatemala at 0.14%, and Ecuador at 0.37%). In order to eliminate the water and sanitation access gap in Paraguay, an estimated US$500 million must be invested annually

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4 According to the Lake Ypacaraí Watershed Comprehensive Sanitation Plan (PSICLY), between 2012 and 2013 cyanobacteria concentration exceeded the level of moderate risk to human health (100,000 cel/ml). Between 2014 and 2021, the presence of fecal coliforms surpassed acceptable limits for recreational use, with values greater than 500 CFU/100 ml.

5 Contamination of the lake prevents the recreational use of the beaches due to an existing swimming ban based on the health risks. The likelihood of contracting waterborne diseases and infant mortality decrease when water and sanitation services are available (Wagstaff and Claeson (2004), Schady (2015), and Galiani, Gertler, and Schargrodsky (2003)).

6 https://www.science.org/doi/10.1126/science.1155398.

7 Septic tanks are a major source of greenhouse gas emissions. Song, X., Zhang, Y., & Wang, S (2023). "Methane emissions from municipal wastewater collection and treatment systems"

8 The Third National Communication indicates that the gap in access to sewerage networks and wastewater treatment is a factor that increases the much of the population's vulnerability to health risks, exacerbated by climate change, given that it multiplies the degradation of water for human consumption.

between 2019 and 2030.[9] Low investment generates losses equivalent to 1.6% of GDP (DAPSAN, 2023). To progressively improve the lake's quality, according to the PSICLY, investments of US$425 million in sanitation for the watershed's population will be needed without considering the investments needed for industrial wastewater treatment and agricultural contamination. In addition, the country lacks a green taxonomy to identify investments and obtain climate financing. The Ministry of Economy and Finance (MEF) and the Ministry of Environment and Sustainable Development (MADES) are working on the development of a green taxonomy, which would make it possible to structure and issue thematic debt obligations to obtain concessional lending for these needs.

1.6 **Cause 2. The progressive deterioration of wetlands reduces their purifying capacity.** The ecosystem services of the lake and wetlands are threatened by: (i) raw industrial wastewater discharge (slaughterhouses, meat processing plants, tanneries, and food and beverage production);[10] (ii) lack of protection of environmental areas and diffuse pollution from urban solid waste and agricultural activities; (iii) land-use change due to urban development and a reduction in forested areas and wetlands, which intensifies erosion and sediment transportation; and (iv) exacerbation of climate change hazards (increased frequency of heat waves and forest fires and prolonged droughts). The lake is vulnerable to climate change due to: (i) its shallow depth (average of two meters), which prevents thermal stratification and favors eutrophication; (ii) is fed by surface flows and precipitation; and (iii) progressive degradation of the adjacent wetland ecosystem and its purifying ability. The National Climate Change Adaptation Plan (PNACC) warns about the threat of climate change on biodiversity, affecting the functioning and resilience of ecosystems. Interventions that restored wetlands showed a 36% higher level of ecosystem service provision compared with degraded wetlands.[11] Water retention and active revegetation are restoration interventions for degraded wetlands.[12]

1.7 **Cause 3. Weak management of water and sanitation services.** There is an atomization of water providers (sanitation boards, private water companies, and ESSAP) and almost no sanitation service providers.[13] In Capiatá, Areguá, and Itauguá, there are 33, 16, and 25 sanitation boards, respectively, and over 100 water suppliers. The management of sanitation boards has performed acceptably in water service, with positive returns, high micrometering, and collection rates exceeding 90% (paragraph 1.36), although without records on nonrevenue water and challenges to improve commercial, financial, and operational management. In 2023, the Itauguá sanitation board—with higher profitability compared with the other two—had a net margin of 2.2%, corresponding

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9 National Drinking Water and Sanitation Plan, Paraguay 2023.

10 According to the PSICLY, industrial wastewater in the watershed totals about 1,400 t/year of biochemical oxygen demand, 160 of nitrogen, and 22 of phosphorus, all in the Yukyry Creek sub-watershed (JICA-MADES-DIGESA, 2006).

11 Meli (2014). Restoration enhances wetland biodiversity and ecosystem service supply, but results are context dependent: A meta-analysis.

12 Schuster (2024). Freshwater wetland restoration and conservation are long-term natural climate solutions.

13 Two systems are run by ESSAP. San Lorenzo (54,000 connected inhabitants) and San Bernardino (6,400 inhabitants) and a system in Itauguá operated by a sanitation board, for some 744 inhabitants. At present, a system is being built for 9,500 inhabitants (1.2% of the watershed's population) in Pirayú.

to an investment of US$5.4 per connection. It was also found that the sanitation boards need to improve accounting practices by adapting them to international standards and equipment to modernize the technical and commercial registry.

1.8 In terms of gender, women's representation on sanitation board steering committees stands at 21%, and their average participation is 19%.[14] In Paraguay, 10% of people have a disability.[15] Law 2479/2004 sets a 5% labor participation quota in public institutions for persons with disabilities, which is not met in more than 95% of cases,[16] even though 80% of persons with disabilities are unemployed and live in poverty. To boost the participation of women and persons with disabilities on sanitation boards, it is necessary to: (i) strengthen the technical capacities of the sector[17] and in DAPSAN methodologies to promote their participation on sanitation boards; and (ii) reduce the perception of risk in public participation,[18] since it has been seen that women who aspire to or hold decision-making positions may face various forms of violence (both physical and psychological).[19]

1.9 **Cause 4. Weak institutional capacity for lake management.** There are several entities involved in the water and sanitation sector, with overlapping competencies and institutional weaknesses, which makes effective implementation of climate actions difficult. Responsibility for lake management, preservation, and use lies with the National Commission for Management of Lake Ypacaraí (CONALAYPA),[20] which is supported by the National Department for Management of Lake Ypacaraí and Its Watershed (DINALAYPA) under the MOPC. Given their recent creation, the watershed management agencies (CONALAYPA and DINALAYPA) face challenges related to the development of their regulatory framework, administrative structure, and staff numbers, capacity, and competencies. At CONALAYPA, reform needs were identified, such as adjusting the definition and participation of municipal representatives, broadening its terms and objectives to accommodate the long-term vision of the PSICLY and national climate targets, and adapting the process for appointing the national director and members of the agency. In addition, the MOPC and these actors have scarce capacity to monitor and report on the environmental impacts of the policies and investments that they execute, to design and implement water and sanitation projects with effective climate adaptation and mitigation measures, limiting opportunities for access to markets with thematic debt.

1.10 **Cause 5. Weak institutional capacity to identify, design, implement, and report water and sanitation investments targeting climate and biodiversity**. The MOPC lacks a system to prioritize investments based on their climate and natural impacts, and its climate change-related MRV capabilities are scant.

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14 Information received from DAPSAN.

15 2012 census, latest available data.

16 Pacheco, Claudia (2017). El acceso de personas con discapacidad a la administración pública en Paraguay. Un estudio en 12 entidades de la Capital (Access of persons with disabilities to public administration in Paraguay. A study in 12 entities of the capital). Asunción: Arandurã.

17 Women's participation in these organizations improves how they operate.

18 UN Women & USAID (2016).

19 World Bank (2020). Diagnóstico de género en Paraguay (Gender Diagnostic Assessment in Paraguay).

20 Created under Law 6489/2020.

The Department of Socioenvironmental Management (DGSA) is responsible for implementing six adaptation objectives and six priority-sector mitigation measures identified in the nationally determined contribution (NDC). The DGSA does not have a set mandate to implement mitigation or adaptation measures and, therefore, does not monitor and report in this connection. These restrictions limit Paraguay's ability to meet its commitments to the United Nations, as well as the potential issuance of thematic debt. The DGSA will coordinate the biennial transparency report to be submitted to the United Nations Framework Convention on Climate Change, although it does not have a specific protocol. In addition, it is essential to strengthen MADES to effectively address environmental challenges, promote sustainable development, and ensure the protection of natural resources. This will require greater financial resources, improved staff capacity, and strengthened implementation and enforcement of environmental policies.

1.11 **Program design.** Major investments, coordination of actors and polluting agents, capacity-building, and the adoption of a climate change focus in activities raises the challenge of adopting a programmatic long-term approach to rehabilitating Lake Ypacaraí. The PSICLY proposes a stage-based development approach (over a 30-year time horizon) with a multisector scope and progressive progress as the institutional framework and capacities for planning, management, and coordination between the entities involved are improved. This first stage, which covers about one-third of the water and sanitation investment needs (estimated at US$425 million in the PSICLY, paragraph 1.5) will target the implementation of infrastructure works; the strengthening of policies, capacities, and planning mechanisms with climate change considerations; the identification of opportunities for private sector participation in future phases of the program; and management and coordination, with a focus on climate action and biodiversity. This will make it possible to: (i) expand sewerage coverage and wastewater treatment in the cities that send the most wastewater to the lake; (ii) recover degraded environmental areas vulnerable to climate change; (iii) improve the management of water and sanitation services and of the watershed; (iv) develop capacities that enable the country to access green and/or thematic debt markets, demonstrating the strong commitment and climate ambition of the government to achieve biodiversity and climate change adaptation and mitigation results;[21] and (v) implement a pioneering MRV system of biodiversity and climate impact in the water and sanitation sector, establishing a new standard of transparency and accountability in the country. These two latter interventions will be developed in coordination with MADES and the MEF in Paraguay (in the areas managed by the SNIP and the debt unit), to ensure that the strengthening of these capacities is reflected in future investments of this kind and in the design or revision of possible frameworks for the issuance of thematic debt. In later stages, sewerage networks, the wastewater treatment plant, and other nonstructural measures will be expanded. The program will finance, as part of Component I, pre-investment studies for this program and subsequent stages of the PSICLY. The program will benefit from the technical cooperation PR-T1363, in execution, which will develop the initial evaluations to

[21] The MOPC currently has general environmental technical specifications, but these do not include climate change considerations. Financing will be provided to update the general environmental technical specifications to incorporate climate change adaptation and mitigation aspects in the design of water and sanitation projects. Updating these specifications will help align investment projects with the country's climate objectives, helping to generate a portfolio of projects to the scale needed for potential issuances in green debt markets.

achieve KPIs 1 and 2, addressing knowledge gaps and identifying strategies for MRV systems to incentivize access to thematic markets.

1.12 **Bank experience in the sector.** The Bank has extensive experience in sanitation projects. In 2019, it launched the Optimal Sanitation Initiative, to design comprehensive, innovative, and efficient solutions. This loan adopts the main concepts of this initiative, such as connectivity, behavior change, and improved governance and management. In addition, it is part of the Bank's long-term support in Paraguay, which has financed the following: Comprehensive Sanitation Program for the Bay and Metropolitan Area of Asunción (3393/OC-PR, 3394/BL-PR), Water and Sanitation Program for the Chaco Region and Intermediate Cities (2589/BL-PR), and Water and Sanitation System Construction Project for Small Cities and Rural and Indigenous Communities (3601/OC-PR), which have expanded sewerage coverage and wastewater treatment to cover 233,000 inhabitants. The projects Water and Sanitation Project for Metropolitan Ciudad del Este (4913/OC-RG) and Water and Sanitation Project Metropolitan Asunción-Lambaré Watershed (5027/OC-PR) have been launched and will close the wide gap in sanitation.

1.13 **Lessons learned.** Lessons on the evaluation and execution of similar operations in Paraguay (3393/OC-PR, 3394/BL-PR, 2589/BL-PR) and in the region were considered: (i) within two years of the effective date of the loan contract (paragraph 3.7), define a connectivity strategy; (ii) require a minimum period of six years to execute the program, given the average budget and procurement timelines (paragraph 2.1); (iii) contract works under the design-build-operate model to reduce the likelihood of design changes due to the lag in time between the completion and start of works, to ensure at least two years of operation of the wastewater treatment plant by the contractor, and to thus secure the transfer of knowledge during this period, as part of the institution-strengthening and capacity-building (technical, personnel, and resources) plan required for sustainability (paragraph 1.33); (iv) anticipate the acquisition of land for the program so that bidding processes can commence once the loan agreement comes into force (paragraphs 2.11 and 3.7); and (v) launch communication and participation processes with the population, to anticipate and address possible complaints and grievances from those living near the sites where works are planned and to disseminate the operation's expected results and the deadlines to achieve them.

1.14 **Coordination with other donors.** The Bank is the government's main reference in water and sanitation and a strategic lever for resources. The loans 2222/OC-PR and 2589/BL-PR were cofinanced using nonreimbursable resources from the Spanish Cooperation Fund for Water and Sanitation in Latin America and the Caribbean. The Spanish Development Promotion Fund cofinances loans 5027/OC-PR and 3601/OC-PR and the Japan International Cooperation Agency (JICA) loan 4913/OC-RG. In partnership with the Spanish Agency for International Development Cooperation, it has channeled nonreimbursable resources from the European Union's Latin America Investment Facility, which financed the PSICLY. Related to the IDB CLIMA Pilot Program, the Bank has recently coordinated actions to complement the International Monetary Fund's program of lending to Paraguay through the Policy Coordination Instrument and the Resilience and Sustainability Service Agreement. This will complement the adaptation and

mitigation measures to preserve forests and expand its green energy matrix with the measures to improve and sustain the water resources included in this operation.

1.15 **Compliance with the Public Utilities Policy (GN-2716-6).** The program is consistent with the principles of GN-2716-6 and meets its financial sustainability conditions, especially in the event that a rate system were implemented based on consumption or users' ability to pay, thus making the service more affordable, and an economic evaluation is in place. In addition, there is an institutional framework that segregates duties and promotes efficiency (optional link 5).

1.16 **IDB CLIMA Pilot Program eligibility requirements**. This pilot operation of the IDB CLIMA Pilot Program meets its eligibility criteria (AB-3386) and operational guidelines (GN-3168-6). It reflects climate ambition through blended climate and biodiversity financing of at least 60% of the loan investments,[22] and activities align with the thematic areas of biodiversity and climate ambition and fulfillment of MRV in preparation for accessing the debt market. The general objective of the program is aligned with the general objective of the IDB CLIMA Pilot Program and includes at least three specific objectives aligned with the specific objectives of the IDB CLIMA Pilot Program in accordance with optional link 4. Component 1 of the program contributes to specific objectives 1 and 2 of the IDB CLIMA Pilot Program by financing climate-resilient sanitation infrastructure and nature-based solutions that will reduce greenhouse gas emissions and improve biodiversity. Component 3 of the program directly supports specific objectives 2 and 3 of the IDB CLIMA Pilot Program by improving the capacity of the MOPC to design projects with a climate and biodiversity focus and MRV systems.

1.17 **The Bank's country strategy**. The operation is consistent with the IDB Group country strategy with Paraguay (GN-2958), through strategic area (iii): productive and resilient infrastructure; and crosscutting challenge (b): sustainability of natural capital. It supports the expected outcome to "increase access to water and sanitation services."

1.18 **Strategic alignment.** The program is consistent with the IDB Group Institutional Strategy (CA-631) through its core objectives to: (i) reduce poverty and inequality by expanding access to sewerage networks; and (ii) address climate change by financing infrastructure that will help reduce CO_2 emissions, boost the lake's resilience, and lower its vulnerability to climate change impacts. It is also aligned with the following areas of operational focus: (i) biodiversity, natural capital, and climate action; (ii) gender equality and inclusion; (iii) institutional capacity, rule of law, and citizen security; (iv) sustainable, resilient, and inclusive infrastructure; and (v) productive development and innovation. The program is aligned with the Water and Sanitation Sector Framework Document (GN-2781-13), through the line of action, "promote universal access to quality water and sanitation services with equity, inclusion, and affordability," and the line of action, "the design of policies and programs incorporates disaster and climate change risk management and promotes water security." It is also consistent with the Climate Change Sector

[22] According to the joint climate financing methodology of the multilateral development banks.

Framework Document (GN-2835-13) in the themes of adaptation and building climate resilience and decarbonization.

1.19 **Paris alignment.** The program has been reviewed using the Joint MDB Assessment Framework for Paris Alignment and the IDB Group Paris Alignment Implementation Approach (GN-3142-1). It has been deemed to be: (i) aligned with the adaptation target of the Paris Agreement; and (ii) universally aligned with the mitigation target of the Paris Agreement.

1.20 **Climate finance.** In all, 85.9% of program resources are considered climate finance since they are invested in adaptation and mitigation activities, according to the joint methodology of the multilateral development banks.

1.21 **Climate change actions.** In terms of mitigation, the operation contributes to reducing greenhouse gases through the: (i) reduction/elimination of septic tank emissions (CH_4); and (ii) energy optimization of sewerage networks (CO_2).[23] In terms of adaptation, it includes actions prioritized in the PNACC: (i) conservation of wetlands, their purifying services, and flow regulation, including an adaptive management plan; (ii) nutrient control (nitrogen and phosphorus) to reduce eutrophication (objective 10 of the PNACC); and (iii) nonstructural measures and nature-based solutions to enhance the resilience of new infrastructure to flooding (objective 3 of the PNACC), consistent with the Circular Economy Action Plan for Lake Ypacaraí. This program will not only address environmental challenges in the lake's watershed but also lay the foundation so that Paraguay can gain access to financing in green debt markets. Aligned with the objectives of the IDB CLIMA Pilot Program, it will strengthen capacities to design, implement, and monitor projects with biodiversity and climate impact, including MRV systems and improved project design, capacities that will enable Paraguay to structure and issue green debt, aligning the financing strategy with its environmental commitments.

1.22 **Actions to promote public-private synergies.** In addition to the design-build-operate and performance-based contracts and the specialized operational technical advisor (SOTA), the program will finance actions to identify opportunities for private sector participation in activities such as the expansion of minor networks (under arrangements similar to those developed in Asunción by ESSAP), the agglomeration of sanitation boards and water sellers in the watershed, and long-term wastewater treatment plant operation and maintenance. To identify and structure these models, actions will be coordinated with the Bank's public-private partnership unit, with IDB Invest, and with IDB Lab.

1.23 **Women's equality and inclusion actions.** This provides for training at DAPSAN on: (i) equality between men and women, as well as inclusion; and (ii) participation of persons with disabilities and women in the project's stages. At the community level, it provides for: (i) a plan to strengthen the participation of women and persons with disabilities in the public sphere in order to promote their economic autonomy and decision-making, such as: (a) nontraditional trades (plumbing, masonry, operation and maintenance of water and sanitation systems); (b) entrepreneurship and management of small and medium-sized enterprises;

[23] The Energy Performance and Carbon Emissions Assessment and Monitoring Tool was used to estimate the reduction of greenhouse gas emissions (CO_2eq).

(c) sanitation board management; (d) self-esteem and leadership; and (e) prevention of violence against women; and (ii) inclusion of universal accessibility concepts in upgrades to urban public spaces (optional link 6).

1.24 **Innovation and digitalization actions.** The following activities have been identified: (i) performance-based contracts in sewerage networks to encourage household connectivity; (ii) behavior change strategies to incentivize payment for services and connectivity;[24] (iii) nature-based solutions; (iv) use of building information modeling for project design and management; (v) new technologies for registry, commercial, and operational information systems; and (vi) water quality and methane emissions monitoring systems with remote sensing, for which a pilot will be run with the European Space Agency.[25]

B. Objectives, components, and cost of the program

1.25 **General objective of the program.** The general objective of the program is to help improve the environmental conditions of the Lake Ypacaraí watershed, promoting climate-resilient and low-carbon development and accelerating access to green and thematic debt markets for the water and sanitation sector.

1.26 **The specific objectives of the program are to:** (i) expand the coverage of sewerage networks and wastewater treatment in prioritized areas of the watershed to help meet emission reduction commitments under the NDC; (ii) contribute to the recovery of the watershed's degraded environmental areas; (iii) improve the management of water and sanitation services in prioritized areas of the watershed; and (iv) strengthen the MOPC's institutional capacities to improve management of the Lake Ypacaraí watershed, the design of pro-climate or pro-nature investments, and climate and biodiversity monitoring, reporting, and verification (MRV) within the water and sanitation sector.

1.27 **Component I. Investments (US$135.5 million).** This component contributes to specific objectives 1 and 2 of the program by financing the construction of the sanitary sewerage network (370 km), impulsion lines (48 km),[26] and pumping stations; intrahousehold connections for vulnerable population; the wastewater treatment plant; nature-based solutions; retrofitting of urban public spaces with universal accessibility criteria and green interventions of sustainable drainage systems; nonstructural measures (industrial reconversion plans, regulation and control of diffuse pollution sources, and solid waste management); environmental education plan; the supervision of works; and pre-investment studies for this operation and subsequent stages of the PSICLY. This component includes water retention interventions on Lake Ypacaraí and Yukyry wetland, thus enhancing their natural purifying capacity and contributing to improved water quality.

1.28 **Component II. Improved management of services (US$10 million).** This component contributes to specific objective 3 of the program by financing

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[24] In the Lazos de Agua initiative, the Bank, together with other partners, has implemented pilots using social art to change water and sanitation-related behaviors.

[25] The pilot is part of the Global Development Assistance: Accelerating Impact program implemented by the European Space Agency, together with the World Bank, Asian Development Bank, and IDB.

[26] Includes the San Bernardino impulsion line.

actions to define the administration, management, and operation and maintenance models and to support water and sanitation service providers by hiring a SOTA.[27] The SOTA will support the implementation of management improvement plans that would include commercial management systems, the acquisition of equipment to modernize the technical and commercial registry, the design of the loss management and control unit, rate studies, training, and the development of behavioral change campaigns to improve rate payment, promote sustainable consumption, and expand connectivity.

1.29 **Component III. Institution-strengthening (US$3.5 million).** This component contributes to specific objective 4 of the program, by financing actions for the institution-strengthening of the MOPC, MADES, and ERSSAN. This component includes: (i) proposed organizational structure of the watershed authority and sustainability and coordination mechanisms; (ii) capacity-building program; (iii) Lake Ypacaraí monitoring system; (iv) training on equality, inclusion, and equal community participation for DAPSAN, and a training plan to strengthen the participation of women and persons with disabilities on sanitation boards and in nontraditional trades (paragraph 1.23); (v) update of design guidelines to include climate change adaptation and mitigation in water and sanitation project formulation, including training in their application; and (vi) climate and biodiversity MRV system for the water and sanitation sector.

1.30 **Program administration (US$5 million).** Financing will be provided for administrative, recurrent,[28] and supervision expenses, external audits, and program evaluations.

C. Key results indicators

1.31 The Results Matrix includes the program's outputs and outcomes. Table I-1 presents the key results indicators.

1.32 **Beneficiaries.** An estimated 27,341 households will directly benefit from access to sewerage services and wastewater treatment for the prioritized areas of Capiatá, Itauguá, and Areguá, along with 1,600 households benefiting from the improved sanitation system in San Bernardino. Water and sanitation service providers and sector entities will be strengthened to be able to undertake climate and environmental actions. The interventions to improve the lake's environmental conditions will benefit the population that resides in the watershed (815,000 people) for recreational use, tourism, and other activities.

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[27] A high-performing water and sanitation service provider will be contracted to support the sanitation boards in their process of consolidating the sewerage service.

[28] This includes recurrent expenses linked to remuneration, allocation, and/or fees established by law that may be made to the project coordination unit team in accordance with the requirements established in the laws and regulations of the Republic of Paraguay. Financing for recurrent expenses will be consistent with the document "Modernization of policies and practices that restrict the use of resources on investment loans" (GN-2331-5).

Table I-1. Main results Indicators

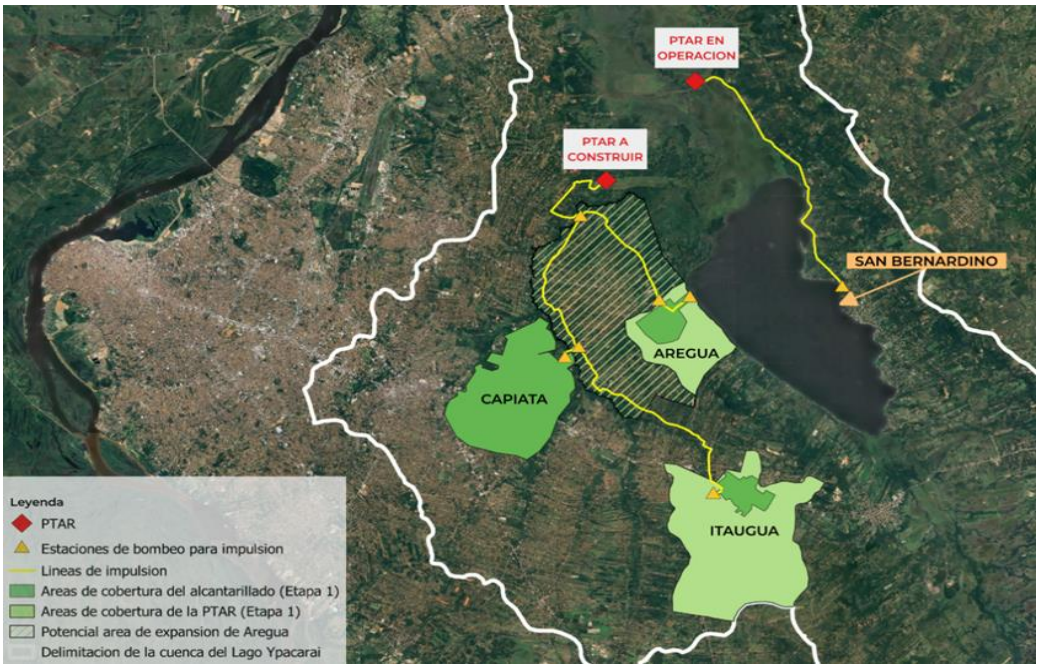
Outcome indicators	Unit of measurement	Baseline	Target
Households with access to safely managed sanitation in the towns targeted by the program.	Households	186	28,941
Degraded wetland areas under public domain reclaimed and with adaptive management plan	%	0	100
Sanitation service delivery model in operation	Model	0	1
Lake Ypacaraí watershed water quality and quantity monitoring system in operation	Watershed	0	1

1.33 **Technical viability analysis.** The works arise from an analysis of alternatives proposed in the PSICLY (2016) and Lake Ypacaraí Circular Economy Action Plan (2023). Priority is given to the construction of sewerage networks in Capiatá, Itauguá, and Areguá since they were considered priority areas in the PSICLY. Water from the future wastewater treatment plant will be reused to increase the contribution to the wetland and the lake and retaining works built in its wetlands. Detailed designs will be performed during the program under design-build contract arrangements. Technical cooperation resources will be used to conduct technical studies to further define the foregoing issues and to develop the infrastructure in stages. Although the designs remain at the preliminary draft level, the available studies help verify their feasibility and estimate the investment and contingency costs with a good degree of confidence (optional link 2).

1.34 **Economic viability.** A cost-benefit analysis was performed to determine the program's rate of return. The benefits were quantified through the population's willingness to pay for having sewerage networks and wastewater treatment, avoided emissions, and avoided costs for septic tank cleaning. The costs used were investment and operation and maintenance costs. Using a discount rate of 12%, the project is viable with an economic internal rate of return of 14.1% and a net present value of US$13.1 million (optional link 1). A sensitivity analysis was performed to determine the robustness of the results.

1.35 **Institutional viability.** The institutional capacity analysis indicates that DAPSAN has the capacity to execute the program, considering the experience in executing loans 4913/OC-RG and 5027/OC-PR. The main recommendations to strengthen the executing agency include: (i) training in project management and fiduciary policies; (ii) financial software; (iii) the inclusion in the Program Operating Regulations of financial processes with estimated timeframes; (iv) an environmental coordinator and a social coordinator in the executing agency; and (v) training in International Federation of Consulting Engineers contract management. In addition, the diagnostic assessment of the sanitation boards identified the need to design a loss management and control unit to help reduce costs, improve accounting practices adapted to international standards, with personnel trained to ensure the completeness of the information and facilitate the evaluation processes and decision-making. Implementation of these strategies will be handled through the SOTA with resources from Component I (paragraph 1.27) (optional link 3).

Figure 2: Map of areas benefiting from sanitary sewerage and the wastewater treatment plant for Capiatá, Itauguá, and Areguá



1.36 **Financial viability.** The financial, operational, and commercial diagnostic assessment showed that the Itauguá, Areguá, and Capiatá sanitation boards have positive returns, with average margins of earnings before interest, taxes, depreciation, and amortization of 17%. Between 2021 and 2023, these sanitation boards had average margins of earnings before interest, taxes, depreciation and amortization of 15.6%, 19.6%, and 14.6%, respectively. Conditions hold and tend to improve with the implementation of management improvement plans. The program does not affect the service providers' financial structure because the costs are passed on to the users via the water and sanitation invoices applied by the providers. The operation and maintenance costs of the new sewerage network and wastewater treatment services will generate an increase in the price of the current bill. These increases result in a water and sanitation bill that does not exceed 1% of household income in any of the areas covered by the three sanitation boards.[29] It should be noted that existing users (744 inhabitants of Itauguá) pay rates for sewerage network and wastewater treatment services, and the collection level exceeds 90% (optional link 3).

1.37 **Viability of the service provider system.** The analysis of alternatives for the delivery of sanitation services concludes that the most viable alternative is the joint delivery of water and sanitation services, via concession contracts to the sanitation boards in the three municipios, and a private company in charge of operation and maintenance of pumping stations, impulsion lines, and the wastewater treatment plant, through a concession contract pursuant to Law 1614.[30] A trust will be hired

[29] Water and sanitation services are considered affordable if the expenditure per household does not exceed 5% of total income (DIA, 2020).

[30] Law 1614, General Law on the Regulatory and Rate Framework for Public Sanitary Sewer and Water Services for the Republic of Paraguay.

to distribute the rate revenue to each sanitation board and the private concessionaire. The executing agency will present to the Bank the model designed for this alternative (paragraph 3.4). In addition, support will be provided from the public-private partnerships area of the IDB and IDB Invest, to assist the MOPC with risk management and financial sustainability, and to finance the subsequent stages of the PSICLY.

II. Financing Structure and Main Risks

A. Financing instruments

2.1 **Type and financing structure of the loan.** The operation will be structured as an investment loan for specific projects, since its scope is limited, it has logical interdependence of the components and physical and technical individuality, and its preliminary design and cost are defined. The total loan amount will be up to US$154 million to be financed with the Bank's Ordinary Capital. The original period for loan disbursement will be six years.

2.2 **IDB CLIMA grant.** This operation, as part of the IDB CLIMA Pilot Program, includes a grant (PR-J0001) for up to US$7.7 million from the IDB Grant Facility, equal to 5% of the loan, provided that achievement of the KPI targets is independently verified (paragraph 3.16) and the disbursement conditions indicated in Section III.C. are met. If, during the original disbursement term or any extensions, the amount of the loan were to be reduced, the IDB CLIMA grant amount would be reduced proportionally to maintain the 5%.

2.3 **Cost.** Program costs are broken down in Table 2.1.

Table 2.1. Estimated costs (US$ millions)

Components	IDB	Total	%
Component I. Investments	135.50	135.50	87.99
Component II. Improved management of services	10.00	10.00	6.49
Component III. Institution-strengthening	3.50	3.50	2.27
Administration	5.00	5.00	3.25
Total	**154.00**	**154.00**	**100.00**

Note: The planned cost amounts include local taxes in accordance with the Bank's policy.

Table 2.2. Program disbursement schedule (US$ millions)[1]

Financing	Year 1	Year 2	Year 3	Year 4	Year 5	Year 6	Total
IDB	4,484,776	15,179,986	27,432,197	42,527,857	43,814,162	20,561,022	154,000,000
Percentage (%)	2.91%	9.86%	17.81%	27.62%	28.45%	13.35%	100.00%

2.4 **Disbursement schedule.** The loan disbursement schedule is presented in Table 2.2. Disbursement of the IDB CLIMA grant will be made in accordance with paragraph 3.19.

B. Environmental and social risks

2.5 Under the Environmental and Social Policy Framework, the program is classified as a category “A” operation because some works, including a wastewater treatment plant, will take place in the Lake Ypacaraí Watershed Managed Resources Reserve, a critical habitat. Construction will affect wetland land cover and use, impacting biodiversity and ecosystem services. The works will generate risks of soil contamination, alteration of water flow and geomorphology, waste, sludge, noise, dust, vectors, vibrations, traffic, disturbance to neighbors, and temporary impacts on businesses. The wastewater treatment plant will require the acquisition of rural land from a private owner. No other acquisitions or physical or economic displacements are anticipated. The program includes sewerage in the historic district of Areguá, a cultural heritage site, with the support of the Department of Culture. No damage is expected if the appropriate measures are followed. There are three Indigenous communities in the area of indirect influence that will not be affected.

2.6 The operation's environmental and social risk is “high” due to: significant direct and indirect impacts associated with land-use change in critical habitat; contextual risks due to possible opposition to the program, especially in relation to the installation of the wastewater treatment plant in a protected area and its discharge into the lake; and performance risks associated with coordination between the wide range of actors involved in the sanitation sector and management of the lake and its wetlands.

2.7 The disaster risk and climate change classification is “moderate” because although the program area faces high levels of threats from river flooding, forest fires, heat waves, and water shortages, the infrastructure presents moderate criticality and vulnerability. The current conditions of natural hazards or vulnerability of the communities are not expected to increase as a result of the projected sanitation infrastructure.

2.8 An environmental and social impact assessment and its environmental and social management plan (ESIA-ESMP) were developed, along with a disaster risk and climate change management plan, a biodiversity action plan, and a stakeholder participation plan, which include the program's environmental and social management system. The versions suitable for publication were disclosed on the IDB and MOPC websites on 4 June 2024, prior to the analysis mission. Four stakeholder consultations were held from 5 to 8 August: three with institutional and social actors in Itauguá, Capiatá, and Areguá and one with environmental and civil society organizations in Asunción. The participants’ concerns mainly referred to clarifications on the design and siting of the wastewater treatment plant; the coverage of the sewerage system; the possible rejection of the population to pay for the connection to the network; the risk of contamination of the lake from the works; possible damage to the historic district of Areguá due to the use of heavy machinery; program governance, responsibilities of the sanitation boards, and whomever assumes the costs and

operation and maintenance of the network; and the need to publish the results of measurements and open new lines of research, including analysis of the use of sludge produced by the future wastewater treatment plant and algae blooms in the lake. The consultation report and updated versions of the socioenvironmental documents were disclosed on the Bank's website.

C. Fiduciary risks

2.9 Three medium/high-level fiduciary risks were identified: (i) during the first quarter of execution, delays in hiring a financial specialist with knowledge of the IDB's financial guidelines and experience in projects, which could cause delays in the use and accounting of funds; (ii) delays in hiring a procurement specialist with knowledge of IDB procurement policies and experience in projects, during the first quarter of execution, which could cause delays in the process to select the management firm and audits; and (iii) budget allocation and reprogramming processes are not carried out in due time and form, which could generate delays in the execution of resources and impact subsequent disbursement requests. The first two risks will be mitigated by the appointment and/or contracting by the executing agency of a fiduciary coordinator on matters of financial management and procurements and with the management firm that will support the executing agency (paragraph 3.2). The latter risk will be mitigated by establishing and maintaining dialogue with the MEF.

D. Other key issues and risks

2.10 Other risks classified as "high" have been identified: (i) delays in the execution of works in the event of a failure to reach an agreement with stakeholders (sanitation boards, neighbors, nongovernmental organizations, etc.); (ii) delays in the execution of works due to delays in obtaining legal possession of the land for the wastewater treatment plant; (iii) higher costs derived from project design flaws; and (iv) lack of interagency coordination (DAPSAN/MADES/municipios/governments).

2.11 The first risk will be mitigated by holding preliminary meetings with stakeholders and informing them of the work schedule. The second will be mitigated by two special contractual conditions, one special condition precedent to the first disbursement (eligibility of the loan) related to initiation of the expropriation process (paragraph 3.6) and another special execution condition related to obtaining legal possession of the land within no later than the first year from the eligibility date of the loan (paragraph 3.7), as well as actively coordinating so the executing agency, upon approval of the operation, takes all the steps to initiate the expropriation process (paragraph 3.10). The third risk will be mitigated by launching design and construction bidding processes with guidelines based on environmental and social analyses. The fourth risk will be mitigated by the coordination mechanisms established in the Program Operating Regulations.

2.12 Risks classified as "medium high" in terms of integrity-environment, taking into consideration factors such as: (i) a small local market and slowdown in the public works market in neighboring countries that may attract companies without adequate technical or financial capacity; and (ii) vulnerabilities with respect to fiduciary management personnel that may weaken internal controls over

processes such as procurement and contract administration, thus heightening the risk that prohibited practices may occur.

2.13 To mitigate those risks: (i) bidder due diligence procedures will be designed for the evaluation and negotiation stages following a risk management approach; (ii) special transparency requirements and obligations for bidders and contractors (including key subcontractors) will be included in the bidding documents, requiring information on their beneficial owners and complete information on supply chains; (iii) detailed procedures in the key processes will be set out in internal manuals in the Program Operating Regulations; (iv) synergies will be explored with the National Public Procurement Department (DNCP) to make use of existing tools for integrity risk indicator alerts throughout the procurement cycle; and (v) a proactive and robust crisis management and communication strategy will be implemented for key milestones.

III. Implementation and Management Plan

A. Summary of implementation arrangements

3.1 **Borrower and executing agency.** The borrower will be the Republic of Paraguay, and the executing agency will be the borrower through the Ministry of Public Works and Communications (MOPC). The MOPC will execute the program through Department of Water and Sanitation (DAPSAN), which will be responsible for meeting the operation's objectives and for overall program coordination.

3.2 **Execution mechanism of the program.** The executing agency, through DAPSAN, will create a project coordination unit that will have the support of a management firm. The project coordination unit will have the coordinators listed in paragraph 3.6 and the specialists from the management firm mentioned in the Program Operating Regulations. The project coordination unit will work in coordination with: (i) the MOPC's line units on fiduciary and communications matters; (ii) DINALAYPA for water retaining works and nonstructural measures aimed at cleaning up Lake Ypacaraí; (iii) the DGSA will be responsible for implementation and management of the environmental, social, and climate change aspects related to the program, as well as fulfillment, reporting, and execution of the KPIs mentioned in paragraph 3.16; and (iv) the municipal authorities and sanitation boards for management improvement issues, for which purpose they will enter into the agreement mentioned in paragraph 3.5. In the event of changes in the MOPC's organizational structure, action may be taken through any areas, divisions, offices, or units with similar attributions and competencies that may, in the future, replace those mentioned in paragraph 3.2, with the Bank's prior approval.

3.3 **Program Operating Regulations.** The program will be governed by Program Operating Regulations, which will include at least: (i) the legal-institutional framework; (ii) program description; (iii) PCU structure and organization; (iv) the use of resources and eligibility of investments; (v) fiduciary policies and procedures; (vi) environmental and social impact assessment and its environmental and social management plan (ESIA-ESMP); (vii) the monitoring and

evaluation mechanism; and (viii) execution arrangements and interagency coordination mechanisms within the MOPC.

3.4 **Service delivery model**. In the first two years following the entry into force of the loan contract, the executing agency will present to the Bank a sanitation service delivery model (sewerage and treatment) for the program intervention area, which includes at a minimum, the institutional, legal, financial, regulatory, and operation and maintenance considerations, under the terms previously agreed on with the Bank. For implementation of the model and to strengthen management capacities and promote the financial sustainability of the sanitation boards, the specialized operational technical advisor (SOTA) mentioned in paragraph 1.28 will provide support. For more context on the service delivery model, see paragraph 1.37.

3.5 **Agreements.** The executing agency will sign interagency agreements with the municipal authorities and providers of water and sanitation services in each beneficiary city, formalizing their participation, which are to include, at least, among other aspects mentioned in the Program Operating Regulations, the coordination mechanism for executing the program (including the licenses and permits required for the works), each party's responsibilities, the provider's commitment to appoint a technical counterpart team, the conditions for transferring the works, and commitments for the related operation and maintenance and sustainability. The Program Operating Regulations will include, as an annex, a model agreement.

3.6 **Special contractual conditions precedent to the first disbursement of the loan.** The borrower, through the executing agency, has presented, to the Bank's satisfaction, evidence of: (i) the creation and startup of the project coordination unit within the MOPC, with the appointment and/or hiring, as appropriate, of a general program coordinator, a technical coordinator, a social specialist, an environmental specialist, a fiduciary coordinator for procurements and financial management, and a planning coordinator, all with the powers and responsibilities agreed upon with the Bank and established in the Program Operating Regulations; and (ii) the approval and entry into force of the Program Operating Regulations, under the terms previously agreed on with the Bank, which will: (a) include, inter alia, the environmental and social requirements and the monitoring and evaluation plan with the protocol for verification of the key performance indicators (KPI) under the IDB CLIMA Pilot Program; and (b) incorporate, as annexes, the Environmental and Social Management System, the Environmental and Social Impact Study-Environmental and Social Action Plan, the Biodiversity Action Plan, and the Environmental and Social Action Plan; and (iii) the approval and publication of a law declaring eminent domain and initiating the process of expropriating land for the program. The first two conditions are key to assuring the Bank of proper execution of the program by the executing agency. The third condition is included to encourage the executing agency to initiate activation of the law that launches the expropriation process as soon as possible (paragraphs 2.11 and 3.10).

3.7 **Special contractual conditions for program execution:** (i) No later than one year from the date on which the Bank notifies the borrower and/or the executing agency of its agreement with fulfillment of the special conditions precedent to the first disbursement established in the loan contract, the borrower, through the executing agency, will present, to the Bank’s satisfaction, evidence of legal possession of the land where the wastewater treatment plan will be sited, enabling

the executing agency to build, operate, and maintain the wastewater treatment plant and its related facilities; (ii) prior to the award of each work under Component I of the program, the borrower, through the executing agency, will present, to the Bank's satisfaction, evidence of the execution of the respective interagency agreement between the executing agency and the municipal authorities and water and sanitation service providers mentioned in paragraph 3.5; and (iii) within two years from the entry into force of the loan contract, the borrower, through the executing agency, will present, to the Bank's satisfaction: (a) the sanitation service delivery model for the program intervention area, as mentioned in paragraph 3.4; and (b) the connectivity strategy for connectivity to the sewerage system agreed on by the MOPC and the Bank. The first condition is necessary to mitigate the risk linked to the delay in obtaining legal possession of the land for the wastewater treatment plant (paragraph 2.10). The other conditions are required to reduce delays in the commencement of construction, to guarantee the sustainability of services, and to ensure that households are effectively connected to the sanitation service.

3.8 **Procurement**. Procurement will follow the IDB Policies for the Procurement of Goods and Works (GN-2349-15) and the Policies for the Selection and Contracting of Consultants (GN-2350-15). All procurements will be included in the procurement plan. The executing agency agreed with the Bank on a procurement plan with procurement for the first 18 months of execution (required link 4). No advance procurement is planned. All procurement processes will be subject to ex ante review by the Bank.

3.9 **Maintenance and sustainability.** The sustainability of the wastewater treatment plant helps to maintain the reduction in pollutants in Lake Ypacaraí, as well as contribute to the sustainability of KPI#1 of the IDB CLIMA Pilot Program, related to measurements of the concentration of phosphorus. In this regard, the executing agency will: (i) maintain program works and goods according to generally accepted technical standards; and (ii) present, to the Bank's satisfaction, during the first quarter of each calendar year and up to five years following the expiry of the original disbursement period or extensions, an annual maintenance and sustainability plan for works and goods, which should include, at minimum, among other aspects mentioned in the Program Operating Regulations, information on the status of works and goods, the budget that will be assigned for maintenance for this year, the operation and maintenance process, the sustainability measures taken, and the monitoring reports on the quality of the effluents treated at the wastewater treatment plant in accordance with applicable rules and regulations. The first maintenance and sustainability plan will be presented in the year in which the first program works are completed. The borrower and/or the executing agency will commit to refrain from taking any measure, nor allow any measure to be taken in the scope of its competence that could affect the sustainability of the program goods and works or the scope of their respective associated results.

3.10 **Land.** The main parcel of land under the program is for the wastewater treatment plant, but others may be needed for the pumping stations and sewerage impulsion lines. For the wastewater treatment plant site, the executing agency will carry out an expropriation process governed by Paraguayan law. The expropriation process begins with a law declaring eminent domain and initiates the expropriation process (paragraph 3.6). The financing of land with Bank resources, as applicable, will be

consistent with the document “Modernization of Policies and Practices that Restrict the Use of Resources in Investment Loans” (GN-2331-5).

3.11 **Disbursements.** The Financial Management Guidelines for IDB-financed Projects (OP-273-12) will be followed. Disbursements subsequent to the first will be subject to substantiation of 80% of the previous advance.

3.12 **Audit.** The executing agency will submit the program's annual audited financial statements to the Bank within 120 days from the end of the fiscal year. The audit will be conducted by a Bank-eligible independent audit firm. The scope and other related issues will be governed by document OP-273-12 or the policy in effect during execution. The borrower will submit to the Bank the audited assurance report referred to in paragraph 3.23.

B. Summary of arrangements for monitoring results

3.13 **Monitoring.** The monitoring structure for the program will include the procurement plan, the multiyear execution plan, the annual work plan, the Results Matrix, the progress monitoring report, and the risk management plan, in accordance with the monitoring and evaluation plan.

3.14 **Evaluation.** The executing agency will procure: (i) a midterm evaluation of the program, to be submitted 90 days after 50% of the loan proceeds have been disbursed; and (ii) a final evaluation of the program, to be submitted 90 days after the date of the last disbursement of the loan proceeds. The final evaluation of the program will include an ex post economic evaluation; the related methodology is detailed in the monitoring and evaluation plan (required link 2). Evaluations will be conducted in accordance with the Bank’s project completion report format.

C. Requirements relating to the IDB CLIMA Pilot Program

3.15 **IDB CLIMA roadmap.** A summary of the roadmap, developed and validated with the MEF, is included in optional link 4.

3.16 **KPIs.** The KPIs that the borrower must meet in full in order to access the IDB CLIMA grant disbursement relate to final outcome indicators and are as follows:

- KPI#1: 90% of effluent samples at the outlet of the wastewater treatment system financed by Component I of the program have phosphorus concentrations less than or equal to 4 mg/l.[31]

- KPI#2: 100% of the water and sanitation projects made viable by the National Public Investment System (SNIP) have incorporated climate change measures.[32]

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[31] In excess, phosphorus can lead to eutrophication, degrading water quality and affecting biodiversity. Monitoring the concentration of phosphorus in the wastewater plant’s effluents is key to ensuring that the waters discharged into the wetland meet legally established levels, protecting the ecological integrity of the ecosystem and guaranteeing compliance with environmental regulations.

[32] Financing will be provided to update the technical specifications to include aspects of climate change adaptation and mitigation in the design of water and sanitation investment projects.

- KPI#3: At least one report on climate change measures in the water and sanitation sector has been submitted by the MOPC to the MEF and MADES through a new climate monitoring and reporting system.[33]

3.17 **KPI verification protocol.** Each of the three KPIs has a verification protocol defined in the monitoring and evaluation plan, which will be included in the Program Operating Regulations. This protocol includes: (i) a definition of the KPI; (ii) the target against which achievement will be evaluated; (iii) a schedule for verification, consistent with the time frame in which the data will be available; (iv) terms of reference for verification of KPI achievement; and (v) other relevant methodological information.

3.18 **Independent external verification of KPIs.** Through the executing agency, the borrower will hire an independent individual consultant or firm (the "Reviewer"), pursuant to the terms agreed on with the Bank and in accordance with GN-2350-15, to verify achievement of the targets for the three KPIs (paragraph 3.16). This verification will take place in the last year of the original loan disbursement period or extensions, provided that the Bank has disbursed 90% of the loan proceeds. In addition, the Reviewer will verify compliance with the contents of paragraph 3.19(iv).

3.19 **Contractual conditions precedent to disbursement of the IDB CLIMA grant.**[(d)] The borrower has presented to the Bank: (i) information on the bank account into which the IDB CLIMA grant resources will be deposited; (ii) the report on the independent verification of the KPIs carried out by the reviewer, indicating that the KPI targets were fully met; (iii) the indicative action plan mentioned in paragraph 3.21; and (iv) evidence that the operation has a combined amount of climate and biodiversity financing equal to at least 60% of the loan amount, calculated with the methodologies used by the Bank.

3.20 **IDB CLIMA grant disbursement.** The IDB CLIMA grant will be disbursed in the final year of the original loan disbursement period or extensions in a single tranche.

3.21 **Use of the IDB CLIMA grant.** The borrower will use the IDB CLIMA grant in interventions relating to biodiversity, climate change, and/or sustainability, as set out in the indicative action plan to be prepared in the format provided by the Bank. The borrower will not use the IDB CLIMA grant to directly or indirectly finance interventions relating to projects or activities included in Annex I of the Bank's Environmental and Social Policy Framework (IDB Environmental and Social Exclusion List), nor to finance activities in which the Bank has determined that a prohibited practice occurred.

3.22 **Monitoring.** During the original loan disbursement term or extensions, the Bank will continuously monitor: (i) KPI implementation progress; (ii) progress of the program's blended financing for biodiversity and climate; and (iii) compliance with contractual provisions associated with the IDB CLIMA grant. Monitoring will be

[33] KPI#2 and KPI#3 reflect the lack of capacity for preparing investment proposals in the water and sanitation sector that mainstream climate considerations and for monitoring and reporting climate impacts. Improving these areas is key to strengthening the MOPC's capacity to issue green debt in the future.

based on the borrower's existing monitoring system in accordance with the monitoring and evaluation plan.

3.23 **Audit and ex post supervision**. The borrower will submit to the Bank an audited assurance report on the use of IDB CLIMA grant resources within two years as from the date of disbursement of the IDB CLIMA grant. For this purpose, the auditor will begin the audit no later than 90 days prior to the two-year anniversary of the date of disbursement of the IDB CLIMA grant. The report will be prepared by the same audit firm responsible for the final audit of the loan (paragraph 3.12). This audit will be financed using the Bank's technical cooperation resources. The borrower will retain documents and records relating to IDB CLIMA grant interventions for a period of three years after the original disbursement period or extensions.

Development Effectiveness Matrix		
Summary	PR-L1193	
I. Corporate and Country Priorities		
Section 1. IDB Group Institutional Strategy Alignment		
Operational Focus Areas	-Biodiversity, natural capital, and climate action -Gender equality and inclusion of diverse population groups -Institutional capacity, rule of law, citizen security -Sustainable, resilient, and inclusive infrastructure -Productive development and innovation through the private sector	
[Space-Holder: Impact framework indicators]		
2. Country Development Objectives		
Country Strategy Results Matrix	GN-2958-1	Improve the coverage and quality of infrastructure.
Country Program Results Matrix	GN-3207	The intervention is included in the 2024 Operational Program.
Relevance of this project to country development challenges (If not aligned to country strategy or country program)		
II. Development Outcomes - Evaluability		Evaluable
3. Evidence-based Assessment & Solution		9.4
3.1 Program Diagnosis		1.9
3.2 Proposed Interventions or Solutions		3.5
3.3 Results Matrix Quality		4.0
4. Ex ante Economic Analysis		10.0
4.1 Program has an ERR/NPV, or key outcomes identified for CEA		1.5
4.2 Identified and Quantified Benefits and Costs		3.0
4.3 Reasonable Assumptions		2.5
4.4 Sensitivity Analysis		2.0
4.5 Consistency with results matrix		1.0
5. Monitoring and Evaluation		9.5
5.1 Monitoring Mechanisms		4.0
5.2 Evaluation Plan		5.5
III. Risks & Mitigation Monitoring Matrix		
Overall risks rate = magnitude of risks*likelihood		Medium High
Environmental & social risk classification		A
IV. IDB´s Role - Additionality		
The project relies on the use of country systems		
Fiduciary (VPC/FMP Criteria)	Yes	Budget, Treasury, Accounting and Reporting. Procurement: Information System, Price Comparison.
Non-Fiduciary		
The IDB's involvement promotes additional improvements of the intended beneficiaries and/or public sector entity in the following dimensions:		
Additional (to project preparation) technical assistance was provided to the public sector entity prior to approval to increase the likelihood of success of the project		

Evaluability Assessment Note:

The general objective of the operation (ESP) is to contribute to improve the environmental conditions of the Ypacaraí Lake basin, promoting climate resilient and low-carbon development, and accelerating access to thematic and green debt markets for the Water and Sanitation (W&S) sector. The specific objectives are to: (i) increase sanitary sewerage and wastewater treatment (WWT) coverage in prioritized areas of the basin contributing to meet the country's climate goals; (ii) contribute to the recovery of degraded environmental areas of the basin; (iii) improve the management of H&S services in prioritized areas of the basin; (iv) strengthen the institutional capacities of the MOPC to improve the management of the Ypacaraí Lake basin, the design of pro-climate or pro-nature investments, and climate and biodiversity monitoring, reporting and verification within the W&S sector. The operation is financed through a USD154 million loan and is an IDB-CLIMA pilot project, which, if a series of KPIs are achieved, will disburse a grant (PR-J0001) of USD7.7 million.

The operation presents an adequate diagnosis of the problems associated with the deteriorating environmental conditions of the Ypacaraí Lake basin. Among the causes identified and addressed by the project are low sewerage and wastewater treatment coverage, wetland deterioration and weak institutional capacity for lake management and W&S services. In addition, the project identifies factors that hinder access to thematic and green debt markets for the sector.

The program strategy includes, among other interventions, the construction of a treatment plant, sanitation networks, water regulation works and institutional strengthening measures. The results matrix (RM) is consistent with the specific objectives and adequately reflects the vertical logic of the project. The output and outcome indicators present their respective baseline values, targets and means of verification.

The economic evaluation is based on a cost-benefit analysis that also considers possible future phases in the watershed remediation strategy. The project is economically viable in its base scenario and in the scenarios considered in the sensitivity study.

The M&E plan proposes a retrospective evaluation based on a "before and after" analysis of the RM indicators. In addition, supplementary impact evaluations, which have not yet been designed, are being considered. The M&E arrangements have a properly identified budget. Regarding the IDB-CLIMA evaluation aspects, the three required KPI indicators were established, as well as its means of verification consistent with the IDB-CLIMA Operational Guide.

RESULTS MATRIX

Project objectives:	The general objective of the program is to help improve the environmental conditions of the Lake Ypacaraí watershed, promoting climate-resilient and low-carbon development and accelerating access to green and thematic debt markets for the water and sanitation sector. The specific objectives are to: (i) expand the coverage of sanitary sewerage and wastewater treatment in prioritized areas of the watershed to help meet the country's climate goals; (ii) contribute to the recovery of the watershed's degraded environmental areas; (iii) improve the management of water and sanitation services in prioritized areas of the watershed; and (iv) strengthen the MOPC's institutional capacities to improve management of the Lake Ypacaraí watershed, the design of pro-climate or pro-nature investments, and climate and biodiversity monitoring, reporting, and verification (MRV) within the water and sanitation sector.

GENERAL DEVELOPMENT OBJECTIVE

Indicators	Unit of measurement	Baseline value	Baseline year	Expected year of achievement	Target	Means of verification	Comments
Annual CO_2eq (CO_2 and CH_4) emissions avoided by the program.	Tons of CO_2eq	0	2024	2031	10,305	Annual operational emissions reports prepared by the service provider.	Goal estimated using the Energy Performance and Carbon Emissions Assessment and Monitoring Tool. See link.
Lake Ypacaraí has acceptable environmental conditions for recreational use.	Lake	0	2024	2040	1	Monthly reports from MADES on the lake's water quality.	The lake will be considered suitable for recreational use when the average concentration of fecal coliform is <500 CFU/100ml at least 90% of the year.

SPECIFIC DEVELOPMENT OBJECTIVES

Indicators	Unit of measure-ment	Base-line value	Base-line year	Year						End of project	Means of verification	Comments
				1	2	3	4	5	6			
Strategic objective 1: Expand the coverage of sanitary sewerage and wastewater treatment in prioritized areas of the watershed to help meet the country's climate goals												
Households with access to safely managed sanitation in the communities targeted by the program.	Households	186	2024						28,941	28,941	Registry of users of the sanitation boards and ESSAP.	"Safely managed" means that households are connected to the sewerage network and their wastewater is treated.
Effluent samples at the outlet of the wastewater treatment system that have phosphorus concentrations less than or equal to 4 mg/l.	%	0[1]							90	90	Report of sampling campaigns.	The indicator and target are aligned with national effluent discharge regulations. (KPI#1 IDB CLIMA)
Strategic objective 2: Contribute to the recovery of the watershed's degraded environmental areas												
Degraded areas of the Yukyry wetland under public domain recovered and with an adaptive management plan.	%	0	2024						100	100	Flora inventory reports, a technical document issued by MADES that approves the wetland management plan.	Recovered areas are those where the species composition corresponds to the native composition.
Sanitation plan for Lake Ypacaraí updated and officially approved by the MOPC	Plan	0	2024			1				1	Administrative act of approval	The update includes the establishment of a baseline for measuring the impact on the lake's water quality of implementation of the plan's stages.
Strategic objective 3: Improve the management of water and sanitation services in prioritized areas of the watershed												
Sanitation service delivery model in operation.	Model	0	2024						1	1	Service contract.	It will be considered to be in operation when the service contracts have been signed in accordance with the corresponding regulations.
Sanitation customers billed by the sanitation boards benefited[2] from the program.	Customers	186							27,341	27,341	Sanitation board registry.	
Sanitation boards that increase their revenue by at least 15%.	Sanitation boards	0	2023						3	3	Sanitation board report.	

[1] It is zero because there is no wastewater treatment plant at present.

[2] Capiatá, Itauguá, and Areguá.

Indicators	Unit of measure-ment	Base-line value	Base-line year	Year						End of project	Means of verification	Comments
				1	2	3	4	5	6			
Women who participate on the steering committee of the sanitation boards.	%	20	2024						33	33	Sanitation board report.	Measured with respect to the total number of steering committee members. The steering committee comprises: one president, one vice-president, one secretary, one treasurer, and one member. Link
Women and persons with disabilities certified in technical training courses in nontraditional trades.	%	0							25	25	Certificates issued by the training institution.	Measured with respect to the total number of people who complete the courses. "Certified" means that they have successfully completed the courses. See link.
Strategic objective 4: Strengthen the MOPC's institutional capacities to improve management of the Lake Ypacaraí watershed, the design of pro-climate or pro-nature investments, and climate and biodiversity monitoring, reporting, and verification (MRV) within the water and sanitation sector												
Lake Ypacaraí watershed water quality and quantity monitoring system in operation.	Watershed	0	2024						1	1	Watershed authority report.	It is considered to be in operation when all of the installed stations are generating reports.
Technical personnel in the sector with developed technical competencies.	People						50		50	100	Certificates issued by the training institution.	"Technical competencies" in watershed planning and management means that they have successfully completed the courses.
Institutional arrangement of the Lake Ypacaraí Watershed Authority in force.	Authority								1	1	Published national regulations.	"In force" means approved by the corresponding national regulations.
Water and sanitation projects made viable by the National Public Investment System that include climate change measures.[3]	%								100	100	Report issued by National Public Investment System.	Measured as of the effective date of the update to the general environmental technical specifications (KPI#2 IDB CLIMA).

[3] To fulfill this KPI, the water and sanitation projects approved by the SNIP should incorporate measures such as: climate risk evaluations, design adaptations to improve resilience to climate threats, energy efficiency, and use of renewable energies and nature-based solutions when applicable. The exact definition of the measures should be developed in coordination with the relevant ministries and aligned with national climate policies.

Indicators	Unit of measure-ment	Base-line value	Base-line year	Year						End of project	Means of verification	Comments
				1	2	3	4	5	6			
Reports on climate change measures in the water and sanitation sector submitted by the MOPC to the MEF and MADES through a climate MRV.[4]	Reports								1	1	Reports issued by the DGSA.	(KPI#3 IDB CLIMA).

OUTPUTS

Indicators	Unit of measure-ment	Baseline value	Baseline year	Year						End of project	Means of verification	Comments
				1	2	3	4	5	6			
Component I. Investments in environmental sanitation												
Wastewater treatment plant built.	Plants	0	2024					1		1	Works supervision reports	.
Impulsion lines built.	km	0			12	12	12	12		48		Including pumping stations
Networks built in the cities prioritized by the program.	km	0			30	46	74	100	120	370		Including household connections and intrahousehold connections for the vulnerable population
Water retaining works implemented for the lake and wetlands.	Works	0					2			2		
Wetland restoration and adaptive management plan designed and implemented.	Plan	0						1		1		
Plan designed and implemented for the retrofitting of urban spaces with universal accessibility criteria.[5]	Plan	0					1			1		
Lake Ypacaraí Sanitation Plan updated, including pre-investment studies for the second stage of the Watershed Sanitation Plan.	Plan	0				1				1	Consulting reports	
Nonstructural measures designed.	Measures	0				1	1	1		3		
Milestone 1: Industrial reconversion plan designed for the watershed.	Plan	0				1				1		

[4] The MRV system will fulfill the recommendations of reports of the International Capital Market Association (ICMA) and is aligned with thematic bond standards.

[5] Design that ensures the ability to enter, move around and stay in, and use the place in a standardized, autonomous, comfortable, and safe way. This may include ramps, accessible toilets, handholds, audible signals, tactile paving, and pictograms, among other features.

Indicators	Unit of measure-ment	Baseline value	Baseline year	Year						End of project	Means of verification	Comments
				1	2	3	4	5	6			
Milestone 2: Diffuse pollution regulation and control plan designed for the watershed.	Plan	0					1			1		
Milestone 3: Solid waste management plan designed for prioritized municipios in the watershed.	Plan	0						1		1		
Environmental education plan designed and implemented for the watershed with a gender and inclusion approach.	Plan	0			1					1		Recurring output.
Component II. Improved management of water and sanitation services												
Sanitation service delivery model designed.	Model	0			1					1	Consulting report	
Improvement plans implemented for the management of water and sanitation services with a customer focus.	Plan	0	2024			1	2			3	SOTA report	One plan per sanitation board is considered.
Milestone 1. Contract executed to improve the commercial management of customers.	Contract	0					3			3		
Milestone 2. Water and sanitation rate study prepared.	Study	0				1	2			3		
Milestone 3. Operation and maintenance equipment acquired for the sanitation systems.	Equipment	0	2024				3			3		
Milestone 4. Behavior change and communication campaigns implemented for payment and connectivity with gender and diversity considerations.	Campaign	0						1	1	2		
Component III. Institution-strengthening												
Proposed organizational structure of the watershed authority and mechanisms for sustainability and coordination with other stakeholders.	Document	0	2024			1				1	Consulting reports	
Sector capacity-building program designed and implemented.	Program	0		1						1		Recurring output
Lake Ypacaraí watershed water quality and quantity monitoring system implemented.	System	0			1					1	Watershed authority report.	

Indicators	Unit of measure-ment	Baseline value	Baseline year	Year						End of project	Means of verification	Comments
				1	2	3	4	5	6			
Training courses designed and implemented on gender and diversity and community participation for DAPSAN.	Course	0			1					1	DAPSAN implementation report	
Plan designed and implemented to strengthen the participation of women and persons with disabilities in the public sphere.	Plan	0							1	1		Plan aimed at the population benefiting from the program's water and sanitation services. Public sphere refers to spaces that allow for social interaction, spanning material, political, social, and cultural matters. It will be considered implemented when the plan's milestones are met.
Milestone 1. Technical training courses implemented for women and persons with disabilities.	Courses	0			1		1		1	3		
Milestone 2. Courses designed and implemented for the prevention of gender-based violence.	Courses	0			1		1		1	3		
Updated general technical, environmental, and social specifications that include climate change adaptation and mitigation in the preparation of water and sanitation projects.	Specifications	0	*2024*					1		1	Consulting reports	
Climate and biodiversity MRV system designed and implemented within the water and sanitation sector.	System	0			1					1	Regulations issued	Recurring output “Implemented” means that the system came into force through the corresponding regulations.

Country: Paraguay **Division**: WSA **Operation no.:** PR-L1193 **Year**: 2024

Fiduciary Agreements and Requirements

Executing agency: Ministry of Public Works and Communications (MOPC)

Operation name: IDB CLIMA: Sanitation Program for the Lake Ypacaraí Watershed

I. Fiduciary Context of the Executing Agency

1. Use of country systems in the operation[1]

☒ Budget	☐ Reports	☒ Information system	☐ National competitive bidding
☒ Treasury	☐ Internal audit	☒ Shopping	☐ Other
☒ Accounting	☐ External control	☐ Individual consultants	☐ Other

2. Fiduciary execution mechanism

☒	Special features of fiduciary execution	The MOPC will execute the program through DAPSAN, which will be responsible for fulfillment of the objectives of the operation and overall coordination of the program. The executing agency, through DAPSAN, will create a project coordination unit that will comprise a general program coordinator, a technical coordinator, a social specialist, an environmental specialist, a fiduciary coordinator for procurements and financial management, and a planning coordinator. It will also be supported by a management firm. This project coordination unit will work in coordination with the MOPC line units on fiduciary issues.

3. Fiduciary capacity

Fiduciary capacity of the executing agency	Based on a prior analysis using the Institutional Capacity Assessment Platform and DAPSAN's fiduciary knowledge, it was concluded that this new project coordination unit will require support and strengthening of the personnel assigned and to be hired, which is key in the technical and fiduciary areas. This situation is considered to a crosscutting risk factor for achievement of the program's objectives within the framework of the initially estimated scopes, periods, and costs. This will be mitigated as indicated in point 4.

[1] Any system or subsystem approved subsequently could be used for the operation, under the terms of the Bank's validation.

4. Fiduciary risks and risk response

Area (financial management/ procurement)	Risk	Level of risk	Risk response
Human resources	If, within the first quarter of execution, a financial specialist with knowledge of the IDB's financial guidelines and experience in projects is not available, then delays and/or errors in the processing of financial transactions, in the use of funds, and in the accounting of funds could arise, leading to ineligible expenditures and incorrect decisions due to erroneous financial reports.	Medium-high	This will be mitigated by having the support of a financial specialist provided to the project coordination unit by DAPSAN.
Institutional	If budget allocation and reprogramming processes are not carried out in due time and form, this would delay the execution of resources and negatively impact subsequent disbursement requests.	Medium-high	This will be mitigated by opening and maintaining dialogue with the MEF.
Human resources	If, within the first quarter of program execution, a procurement specialist with knowledge of the IDB's procurement policies and experience in projects is not available, then delays in the process to select the management firm and audits could arise, which would negatively impact execution.	Medium-high	This will be mitigated by having the support of a procurement specialist provided to the project coordination unit by DAPSAN.

5. Policies and guidelines applicable to the operation: Financial: GN-2811-1 (OP-273-12). Procurement: GN-2349-15 and GN-2350-15, OP-272-3, and subsequent updates.

6. Exceptions to policies and guidelines: N/A

II. Considerations for the Special Provisions of the Loan Contract

Special conditions precedent to the first disbursement: (i) the creation and startup of the project coordination unit and the appointment of coordinators, including the fiduciary coordinator for procurements and financial management, under terms agreed upon with the Bank; (ii) the approval and entry into force of the Program Operating Regulations, under the terms previously agreed on with the Bank; and (iii) the approval and publication of the law declaring eminent domain and activating the process for expropriation of the parcels of land for the program.
Exchange rate: For the purposes of Article 4.10 of the General Conditions, the parties agree that the exchange rate to be used will be the rate stipulated in Article 4.10(b)(ii). For these purposes, the agreed upon exchange rate will be the exchange rate on the effective date on which the borrower, the executing agency, or any other person or corporation with delegated authority to incur expenditures, makes the respective payments to the contractor, vendor, or beneficiary.
The project coordination unit will submit annual financial statements with specific terms of reference acceptable to the Bank within 120 days after the close of each financial year. The final audit report will be submitted within 120 days from elapse of the final disbursement period.

III. Agreements and Requirements for Procurement Execution

☒	Bidding documents	For the procurement of works, goods, and nonconsulting services executed in accordance with the procurement policies (GN-2349-15), the Bank's standard bidding documents or those agreed between the executing agency and the Bank for the procurement in question will be used. The selection and contracting of consulting services will be carried out in accordance with the policies for the selection of consultants (GN-2350-15), and the standard request for proposals issued by the Bank will be used in international bidding processes. For procurement below the national thresholds, there are documents agreed on by the National Public Procurement Department (DNCP) and the Bank, which can be downloaded from the DNCP website. The project team leader is responsible for reviewing the technical matters relating to procurement.
☒	Use of country systems	The public procurement information system will be used to publish all international competitive bidding (ICB) and national competitive bidding (NCB) processes. The subasta a la baja electrónica (electronic auction) procedure may be used to procure goods and nonconsulting services for amounts below the threshold set by the Bank for ICB, following the approval of the Bank's Board of Executive Directors. The procurement plan will indicate the procurement to be executed through the country system in the approved scope. If the scope of the Board’s approval for the use of the country system is expanded, the system will be applicable to this operation.

<table>
<tr><td>☒</td><td>Recurring expenses</td><td>To ensure the necessary conditions are in place for the project coordination unit to discharge its duties, utilities and communication expenses, bank fees, advertisements, photocopies, postage, and other expenses will be financed. These expenses will be financed within the Bank-approved annual budget and incurred following the executing agency’s procedures, provided that they do not violate the fundamental principles of competition, efficiency, and economy. The costs of external consultants and incremental personnel costs incurred by the MOPC specifically related to program execution will be financed.</td></tr>
<tr><td>☒</td><td>Procurement supervision</td><td>The supervision method will be ex ante following the country's standard practice. Procurements executed using the country system will be supervised using the country’s national supervision system. The applicable amounts for international bidding processes are as follows:
<table>
<tr><td></td><td>Works</td><td>Goods/services</td><td>Consulting services</td></tr>
<tr><td>Project coordination unit</td><td>US$5,000,000</td><td>US$500,000</td><td>US$200,000</td></tr>
</table></td></tr>
<tr><td>☒</td><td>Records and files</td><td>The executing agency will keep record-keeping systems that will include complete and orderly documentation of the procurement processes of all precontractual, contractual, and postcontractual stages. The record-keeping provisions stipulate that records will be kept in accordance with the Bank's procurement policies.</td></tr>
</table>

Main procurement items

Description of the procurement	Selection method	New procedures/tools	Estimated date	Estimated amount US$
Works				
Wetland and lake retaining system	ICB		12/1/2026	8,745.75
Main and secondary sewers – Capiatá sewerage network			12/1/2026	31,050
Pumping stations and impulsion lines			11/1/2026	31,081.05
Wastewater treatment plant			10/1/2026	22,200

Description of the procurement	Selection method	New procedures/tools	Estimated date	Estimated amount US$
Nonconsulting services				
Wetland restoration	NCB		12/1/2030	1,000
Firms				
Design of program projects	QCBS		12/1/2028	1,000
Project design next steps			12/1/2028	1,000
Design and implementation of an environmental education plan			12/1/2028	1,500
International Federation of Consulting Engineers engineering services for the wastewater treatment plant			9/1/2026	2,070
International Federation of Consulting Engineers engineering services for the pumping stations and impulsion lines			10/1/2026	3,108.11
Management firm			6/1/2026	3,965
SOTA			5/1/2027	10,000

To access the procurement plan, click here.

Procedures	Justification of use
Electronic reverse auction	Equipment. The national Electronic Auction Procedure subsystem is approved by the Bank for use for amounts estimated below the ICB threshold. In this case, the estimated amount is US$50,000.

IV. Financial Management Agreements and Requirements

☒	Programming and budget	The project coordination unit will centralize coordination of execution with the support of a management firm. Budget

		programming, administration, and execution will be carried out by the project coordination unit under the zero-based budgeting system.
☒	Treasury and disbursements	Disbursements will be made through advances, which must be corroborated by the submission of a monthly financial plan for a period of up to six months and another for a longer term, thus making it possible to determine the actual demand for the program, as indicated in the multiyear execution plan, the annual work plan, and the procurement plan. The second and subsequent disbursements will be subject to substantiation of at least 80% of the advance given. A special bank account will be used for the program's exclusive use. The disbursement mechanism will be electronic through Interface Fiduciaria, and the currency to manage the operation will be the U.S. dollar.
☒	Accounting, information systems, and reporting	The accounting principle used by the country is the accrual basis; however, for the accountability process of IDB-financed projects, it is the cash basis. The project coordination unit will have access to the Integrated Financial Administration System. The country systems do not issue the necessary reports for the Bank, which are prepared through different systems, which entails additional work for the project coordination unit. To supplement the policies and guidelines applicable to the program, the Program Operating Regulations will be used with the documented definition of workflows and internal controls.
☒	Internal control and internal auditing	In terms of internal control, in the latest report of the Modelo Estándar de Control Interno del Paraguay (Internal Control Standard Model of Paraguay), the MOPC achieved a HIGH INITIAL maturity level, confirming the existence of a control environment that enables the implementation of operational processes in the internal control system. The results show that a well-designed control environment has been established and that the internal control system structure needs to be strengthened to effectively manage the risks arising from its implementation. Even at an early stage, the presence of a functional internal control system allows for more controlled risk management and establishes a sound framework for continuous improvement.
☒	External control and financial reports	The executing agency will select and contract the external audit services in accordance with the terms of reference previously agreed on with the Bank. These will set out the type of review, timing, and scope. The executing agency will submit annual program audit reports. The financial statements include: the statement of cash received and disbursements made, the statement of cumulative investments, the notes to the financial statements, and project management's statement (executing agency). The audit report will include an assessment of the internal control system. The closing date will be 31 December, and the

		deadline for submission will be 120 days from 31 December; for the final report it will be 120 days after the date of the last disbursement. The independent audit firm will be selected at the eligible or eligible plus level, and the related fees will be covered by loan proceeds. The external auditor selected and the auditing standards to be applied will be acceptable to the Bank.
☒	Financial supervision of the operation	The Bank's financial specialist will conduct onsite and desk reviews. The auditor will verify that the resources are executed in accordance with the Bank's rules and policies and the terms and conditions stipulated in the Program Operating Regulations. Fiduciary oversight visits will include verification of the fiduciary arrangements used for program management and monitoring of the implementation of recommendations issued by the independent audit firm when applicable.

DOCUMENT OF THE INTER-AMERICAN DEVELOPMENT BANK

PROPOSED RESOLUTION DE-__/24 and DE-__/24

Paraguay. Loan ____/OC-PR and Nonreimbursable Financing ____/GR-PR
to the Republic of Paraguay. IDB CLIMA: Sanitation Program for
the Lake Ypacaraí Watershed

The Board of Executive Directors

RESOLVES:

That the President of the Bank, or such representative as he shall designate, is authorized, in the name and on behalf of the Bank, to enter into such contract or contracts as may be necessary with the Republic of Paraguay, as borrower, for the purpose of granting it: (1) a financing to aimed at cooperating in the execution of the program "IDB CLIMA: Sanitation Program for the Lake Ypacaraí Watershed" for the amount of up to US$154,000,000 from the resources of the Bank's Ordinary Capital, and will be subject to the Financial Terms and Conditions and the Special Contractual Conditions of the Project Summary of the Loan Proposal; and (2) a nonreimbursable financing subject to the achievement and verification of key performance indicators, in accordance with the requirements established in the "Results-Driven Pilot Program that Rewards Development Effectiveness in Biodiversity and Climate Investment Loan Operations (IDB CLIMA Pilot Program)" (documents AB-3386 and GN-3168-6). Such nonreimbursable financing will be for the amount of up to US$7,700,000 from the resources of the IDB Grant Facility, and will be subject to the Contractual Conditions of the Project Summary of the Loan Proposal.

(Adopted on ___ _____ 2024)

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