

Ex-Ante Evaluation

**Private Sector Investment Finance Division 2,
Private Sector Partnership and Finance Department,
Japan International Cooperation Agency**

1. Name of the Project

- (1) Country: Federative Republic of Brazil ("Brazil" or "the Country")
- (2) Project Site/Target Area: Brazil
- (3) Project: Mato Grosso do Sul State Water Environment Improvement Project
- (4) Borrower: Ambiental MS Pantanal SPE S.A. ("MS Pantanal")
- (5) Signing Date: October 20, 2025

2. Background and Necessity of the Project

- (1) Current State and Issues of the Water and Sanitation Sector Development in Brazil

In Brazil, the water and sanitation sector has been developed through initiatives such as Federal Decree No. 24,643 of 1934, the National Water Supply and Sanitation System (1968), the National Health Plan (1971), and the Health Sector Modernization Program (1994). However, as of the 2022 survey, only 56% of the country's population had access to sewage collection services. Accelerating the expansion of sewage collection and appropriate sewage treatment, which form the foundation for environmental conservation, public health, and improved living conditions, remains a major long-term challenge for the Government of Brazil.

Against this backdrop, in 2020, the Brazilian federal government revised relevant legislation governing basic sanitation services, including sewage, urban cleaning, waste management, and urban drainage (Law No. 14,026 of June 15, 2020). This revision set targets of achieving 99% water supply coverage and 90% sewage collection and treatment coverage by 2033. The revised law further establishes a framework to support the development and implementation of PPP projects. It estimates that approximately BRL 73.7 billion (about 2.1 trillion yen) per year will be required from 2021 to 2033 to achieve universal access to water and sewage services in Brazil, actively promoting the mobilization of private capital into this sector.

The state of Mato Grosso do Sul ("MS State"), the implementation site for this project, has a population of approximately 2.75 million. Administratively located

in the central-western region of Brazil, its economy is supported by diverse industries including agriculture (soybeans, corn, other grains, livestock), manufacturing (food processing, leather industry, wood processing, etc.), and services (ecotourism, tourism). In MS State, only 58.02% of the total population receives sewage collection services, meaning over 1.1 million people still live without access to sewer systems or sewage collection facilities. Furthermore, disparities exist among municipalities within the state. The sewage treatment plant connection rate (the rate of connection to sewage systems equipped with treatment facilities) falls below the national average in 42 of the state's 79 municipalities. Among these, 11 municipalities have a 0% connection rate. This situation highlights the need for investment in sewage collection infrastructure development within the state. Furthermore, MS State encompasses three biomes, including the Pantanal, home to diverse and valuable species of flora and fauna, which serve as a major tourist resource for the region. From the perspective of preventing the inflow of untreated sewage from urban areas and preserving the region's tourism resources, the urgent expansion of sewage collection and treatment is highly desirable.

The borrower, MS Pantanal, was established as a subsidiary of Aegea Saneamento e Participações S.A. ("Aegea"), one of Brazil's largest water and wastewater utilities operating nationwide, and provides sewage services to 68 municipalities within the state through a concession agreement with the state-owned water and wastewater authority, SANESUL. The state government has set a target of achieving a 98% connection rate to sewage treatment plants by 2031. Through the operations of this company, the largest sewage service provider in the state, it is accelerating sewage infrastructure development projects to meet this target.

This project aims to expand or strengthen the sewage collection and treatment systems by financing the construction, expansion, and renewal of sewage-related facilities in the MS State through MS Pantanal. This will promote improvements in the state's water and sanitation environment and contribute to solving challenges in the basic sanitation sector in the country.

(2) Japan's and JICA's Cooperation Policy for the water and sanitation sector in Brazil

The priority areas identified in the Country Development Cooperation Policy for the Federative Republic of Brazil (April 2018) include "Urban Issues and Environmental/Disaster Prevention Measures". The JICA Country Analysis Paper

(January 2016) positions "Addressing Global Challenges" (Climate change Countermeasures, Environmental Conservation/Improvement, and Disaster Prevention) and "Building Circular Cities" are positioned as priority areas. The project aligns with these policies and analyses. It also aligns with JICA Global Agenda items 17. Natural Environment Conservation, 18. Environmental Management (JICA Clean City Initiative), and 19. Sustainable Water Resources Management and Water Supply. In addition, JICA has been advancing environmental improvement and conservation efforts through its support for Brazil's water and sanitation sector, including projects such as the "Santa Catarina Coastal Sanitation Improvement Project (ODA Loan)" and the "Billings Reservoir Watershed Improvement Project (ODA Loan)", and synergistic effects with these projects are anticipated. Furthermore, the "Kumamoto Water Initiative" announced by Prime Minister Kishida at the 4th Asia-Pacific Water Summit in April 2022 commits the Japanese government to providing approximately 500 billion yen in support over five years to accelerate global water-related initiatives, particularly in the Asia-Pacific region, aiming to achieve the SDGs by 2030 and carbon neutrality by 2050. The project contributes to that initiative.

3. Project Description

(1) Project Description

① Project Objective

This project aims to expand or strengthen the sewage collection and treatment system in the MS State, Brazil, by constructing, expanding, and upgrading sewage-related facilities, thereby contribute to improving water and sanitation conditions in the state.

② Project Details

The project provides loans for the construction, expansion and renewal of sewage collection and treatment facilities and related equipment in the MS State.

③ Project Beneficiaries (Target Group)

Municipalities and local residents within the MS State.

(2) Estimated Project Cost: \$155 million (JICA loan \$70 million)

(3) Schedule: October 2026 to November 2037

(4) Borrower and Executing Agency: MS Pantanal

(5) Coordination and Sharing of Roles with Other Donors:

1) Japan's Assistance Activities: N/A

2) Other Donor's Activity: N/A

(6) Environmental and Social Considerations

Environmental and Social Considerations

- ① Category: B
- ② Reason for Categorization: This project is not likely to have significant adverse impact on the environment due to the fact that the project sector and project characteristics are not likely to exert impact and the project is not located in a sensitive area under the JICA Guidelines for Environmental and Social Considerations (announced in January 2022).
- ③ Environmental Permits: While an Environmental Impact Assessment (EIA) report is not required under the Brazilian domestic law for this project, the construction of sewage treatment plants and pumping stations requires the preparation and approval of a simplified environmental assessment report or a preliminary environmental survey for each subproject, subject to the decision of the environmental authorities.
- ④ Anti-Pollution Measures: Effluent from the sewerage facilities will be treated to meet the country's domestic discharge standards before being discharged into rivers. No particular impact is anticipated from the discharge of treated water.
- ⑤ Natural Environment: The project area does not fall within or adjacent to sensitive areas such as national parks, and adverse impacts on the natural environment are expected to be minimal. Furthermore, it has been agreed that subprojects in areas designated as "sensitive areas" under Annex 3 of the JICA Guidelines for Environmental and Social Considerations will be excluded as Category A projects.
- ⑥ Social Environment: While land acquisition will occur during the planning and implementation of this project, no involuntary physical resettlement is anticipated. Furthermore, this project is not expected to overlap with indigenous communities' lands. Should involuntary resettlement become necessary, the borrower has agreed to develop a Resettlement Action Plan (RAP) for the relevant subproject.
- ⑦ Other/Monitoring: For this project, the Borrower will formulate and implement a monitoring plan for each subproject based on the Environmental and Social Management Framework agreed upon during the review process, in accordance with relevant Brazilian laws and regulations and the JICA Guidelines for Environmental and Social Considerations.

(7) Cross-Cutting Issues: This project may contribute to climate change mitigation by developing wastewater treatment facilities incorporating renewable energy. Furthermore, developing wastewater treatment facilities that consider the impacts of climate change may contribute to climate change adaptation.

(8) Gender Category: Gender Informed [GI]

Reason for Classification: Although gender mainstreaming needs were examined during the screening, the project did not result in a plan for gender mainstreaming initiatives that includes specific indicators.

(9) Other Important Issues: N/A

4. Targeted Outcomes

(1) Quantitative Effects

Indicator	Baseline (April 2024)	Target 3 year after the project completion (2033)
Amount of wastewater Treated (m3/day)	85,209	160,688
Sewage treatment plant connection percentage (Coverage) (%)	65.25%	85%
Number of connected Houses (houses)	365,485	689,236
Sewage water quality standards*	4.39	4.00 or higher

* The indicator refers to the Measured Final Effluent Quality Indicator and is calculated based on the following ① and ②.

① The sum of IpH+IT+IMS+IDB0520+IOG **

** If acidity is $5 \leq \text{pH} \leq 9$, IpH = 1; otherwise, IpH = 0

** If water temperature $\leq 40^\circ\text{C}$, IT = 1; otherwise, IT = 0

** If settleable solids $\leq 1 \text{ mL/L}$, IMS = 1; otherwise, IMS = 0

** If BOD (Biochemical Oxygen Demand) \leq environmental regulation or $\leq 120 \text{ mg O}_2/\text{L}$, IDB0520 = 1; otherwise, IDB0520 = 0

** If grease $\leq 50 \text{ mg/L}$, IOG = 1; otherwise, IOG = 0

② The values calculated in ① above summing up each sewage treatment plant / Number of sewage treatment plants

As a reference value, the leakage occurrence rate and indicators related to service delivery efficiency set as a performance factor will be verified.

(2) Qualitative Effects: Improvement in residents' health status and living environment through sewerage system expansion.

5. Prerequisites and External Conditions

N/A

6. Lessons Learned from Past Projects

In the post-project evaluation of the "Sanitation Improvement Project for Baixada Santista Metropolitan Region (I) (II)", a Japanese ODA Loan to Brazil (2016), it was confirmed that a change in municipal policy after commencement of the project led to a temporary suspension order for some works. Furthermore, due to the severe water shortage that occurred throughout the state in 2014, the implementing agency prioritized budget allocation for water shortage countermeasures. As a result, project expenditures did not proceed as originally planned, and delays in starting construction caused increases in material and equipment prices and necessitated design revisions. This led to costs and time exceeding projections, leaving parts of the project unfinished. It is pointed out that maintaining close communication with the implementing agency and promptly identifying and appropriately addressing risks such as project delays and cost increases is crucial for ensuring the project's effectiveness.

The review of this project confirmed that the specifications for the facilities to be constructed and maintained under this project comply with local guidelines and represent technology with sufficient experience in construction, operation, and maintenance. Furthermore, the borrower and its affiliated companies possess the appropriate capacity and construction capabilities to implement the project's capital investments. Consequently, delays due to cost escalation or technical risks were confirmed to be limited. Additionally, internal systems for obtaining licenses from authorities related to facility construction and operation are in place, and no significant concerns were identified.

7. Evaluation Results

As described above, this project is in line with the Brazil's development challenges, development policies, and Japan's cooperation policy, and is recognized as necessary, has an appropriate project plan and has a good prospect of being accomplished. The support through a Private Sector Investment Finance loan is highly significant.

8. Plan for Future Evaluation

(1) Indicators to be Used

As indicated in Section 4.

(2) Future Evaluation Schedule

Ex-post-evaluation is planned approximately 3 years after project completion.

END