

## Project Ex-Ante Evaluation Form

### Japan International Cooperation Agency (JICA) Latin America Department, South America Division

#### 1. Basic Information

(1) Country Name: Republic of Paraguay

(2) Project Site/Target Region Name: Misiones Department and Ñeembucú Department

(3) Project Name: Project for Improving Integration and Socioeconomic Development Corridor in the Southwestern Region

L/A Signing Date: December 12, 2025

#### 2. Project Background and Necessity

(1) Current Status and Challenges in the Road Sector Development of the Country and Positioning of This Project

The Republic of Paraguay (hereinafter referred to as "Paraguay") is a landlocked nation located in the heart of South America. Its economic centers are the capital city of Asunción and the eastern region, where agriculture and livestock farming thrive. Logistics primarily rely on river transport utilizing the Paraguay and Paraná Rivers, along with road transport. However, of the total road network length of 78,511 km, only 15% is paved, while 85% consists of unpaved dirt roads (Ministry of Public Works and Communications (Ministerio de Obras Públicas y Comunicaciones, hereinafter "MOPC"), 2021). Furthermore, the poor road conditions make them highly susceptible to weather impacts; during rainfall, roads flood and become impassable.

This project targets roads centered on National Route 20 along the Paraná River, traversing the departments of Misiones and Ñeembucú in southwestern Paraguay. It connects the city of Yabebyry in Misiones Department to the port city of Pilar, the capital of Ñeembucú Department. The majority of sections of the target road are unpaved, resulting in time-consuming travel. In some sections, the narrow width makes it difficult for large vehicles to pass each other. Furthermore, although some measures have been implemented in flood-prone areas, such as raising the roadbed by adding gravel-mixed soil and replacing damaged culverts, these efforts have been reactive. During the rainy season, some sections flood, causing significant obstacles to vehicle traffic. Additionally, after the rain dries, the road surface becomes severely uneven, further hindering passage. This not only hinders logistics but also results in regional disparities, making it difficult for local

residents to access public services such as hospitals and schools.

The 2023 poverty rates (estimates of General Directorate of Statistics, Surveys and Censuses (herein after referred to as "DGEEC")) for the two target departments are 26.0% in Ñeembucú Department and 26.4% in Misiones Department, both exceeding Paraguay's national average poverty rate of 22.7%. The areas surrounding the target road, particularly the eastern and southern sides, are regions with significant poverty. Furthermore, the average population growth rate in the main cities of these two departments from 2012 to 2022 was 0.54%, significantly lower than Paraguay's overall growth rate of 1.20% during the same period. This suggests that population outflow may be occurring due to the high poverty rate. (Paraguay DGEEC, 2024).

The Paraguayan government is advancing strategic and planned development of the road network under the "Paraguay National Development Plan 2030" to improve land transport connectivity. Furthermore, within the country's "Transport Infrastructure and Services Master Plan" (2012-2032, updated in 2020), promoting transport infrastructure development is identified as a key policy to achieve the national goal of "Improving the Quality of Life for All Citizens." Project for Improving Integration and Socioeconomic Development Corridor in the Southwestern Region (hereinafter referred to as "this project") is positioned as a project to be realized. The plan of MOPC calls for investing US\$5.5 billion over the next five years by the end of its term, 2028. The Project is included in this investment plan and is positioned as one of the initiatives to establish Paraguay as a logistics hub within South America. Furthermore, from the perspective of improving domestic connectivity, this project is consistent with Goal 25 of the Nationally Determined Contribution (NDC) under the Paris Agreement, "Enhancing climate resilience to improve human mobility and domestic and international logistics," which targets 2030.

The two target departments, compared to the national average, have a higher proportion of the workforce in primary industry, while the number of workers in secondary and tertiary industries is relatively low, making them regions lacking major industries. However, particularly in Ñeembucú Department, over 500,000 hectares of wetlands exist, recognized as suitable for rice cultivation, with potential for increased production. Yet, by now, developed cultivation areas are limited to specific regions where roads suitable for transporting rice by large trucks have been constructed (Ministry of Agriculture and Livestock, Paraguay, 2005). Large-scale rice producers have expressed willingness to invest in land

conversion and rice mill construction in this region, anticipating improved connectivity and transportation efficiency once infrastructure like roads is developed. Implementation of this project is expected to attract private capital and expand employment. Additionally, the road is anticipated to function as an alternative route to the Paraná River for transport, which can become difficult to navigate during the dry season, thereby contributing to a more stable logistics network. Cerrito is a mecca for sport fishing, attracting many tourists from Brazil and abroad during the summer. The current access road is prone to flooding during rainfall, negatively impacting the tourism industry. Raising the roadbed through this project can have a positive impact on the tourism sector.

## (2) Japan's and JICA's Cooperation Policy for the Road Sector and the Positioning of This Project

The Government of Japan designated "Sustainable Economic Development" and "Social Development" as priority areas in its Country Assistance Policy for the Republic of Paraguay (June 2021). In the Project Implementation Plan, support for the road sector is positioned as part of "Sustainable Economic Development." This project is positioned within the "Economic Infrastructure Development Program for National Land Development and Regional Integration" under these priority areas. The JICA Country Analysis Paper for the Republic of Paraguay (Revised November 2014) identifies the "Transportation" sector as one of the key issues. Furthermore, JICA's Global Agenda (Thematic Project Strategy) for the "Transportation" sector promotes "Building Global Networks," and the implementation of this project aligns with these policies and analyses. Furthermore, the project is expected to contribute to SDG Goal 1 (No Poverty), Goal 8 (Decent Work and Economic Growth), Goal 9 (Industry, Innovation and Infrastructure), Goal 10 (Reduced Inequalities), Goal 11 (Sustainable Cities and Communities), and Goal 13 (Climate Action). Therefore, there is a high necessity to support the project's implementation.

Improving Paraguay's logistics connectivity and transportation efficiency will enhance residents' living conditions. It is also expected to increase investment in the target area and expand the production of rice, soybeans, and other grain.

## (3) Activities of Other Aid Agencies

Ongoing road sector projects in the target area by other donors include: - Paving works on National Route 19 between bypass of Alberdi City and Pilar City by Plata Basin Financial Development Fund (Fondo Financiero para el Desarrollo de los Países de la Cuenca del Plata, hereinafter referred to as "FONPLATA"),

and the construction of local road sections by the Latin American and Caribbean Development Bank (Banco de Desarrollo de América Latina y el Caribe, formerly Corporación Andina de Fomento, hereinafter "CAF") and FONPLATA. The total assistance amounts to approximately US\$100 million. Furthermore, for Paraguay as a whole, support totaling US\$2.33 billion has been provided by the Inter-American Development Bank (hereinafter referred to as "IDB"), the International Bank for Reconstruction and Development, CAF, FONPLATA, and others.

### **3. Project Overview**

#### **(1) Project Overview**

##### **① Project Objective**

This project aims to improve logistics connectivity and enhance transportation efficiency in southwestern Paraguay through road improvements, thereby contributing to increased agricultural production and socio-economic development in the region.

##### **② Project Details**

###### **a) Civil Works:**

- Main Road: Approximately 144 km (one lane per direction)
- Access Road: Approximately 10 km (one lane per direction)
- Bridges: 4 locations
- Small bridges (span  $\leq$  6m): 27 locations
- Toll station: 1 location
- Axle load measurement stations: 4 locations

(a) Consulting Services: Detailed design, bid assistance, construction supervision, support for environmental and social considerations and traffic safety measures, etc. (Shortlist method)

##### **③ Beneficiaries of this project (Target Group)**

a) Direct beneficiaries: Estimated number of road users in 2022 (approx. 21,000)

b) Final beneficiaries: resident population in 2022 in Misiones and Neumberg Provinces where the target road passes (approx. 220,000)

#### **(2) Total Project Cost**

¥44,061 million

#### **(3) Project Implementation Schedule (Cooperation Period)**

Scheduled from December 2025 to September 2032 (total 82 months).

The project will be considered complete upon commencement of facility operation (March 2031).

(4) Project Implementation Structure

1) Borrower: Republic of Paraguay

2) Guarantor: None

3) Implementing Agency: Ministry of Public Works and Communications (MOPC)

4) Operating and Maintenance Agency: Ministry of Public Works and Communications (MOPC)

(5) Coordination and Role Sharing with Other Projects and Donors: None

(6) Environmental and Social Considerations, Cross-cutting Issues, Gender Classification

1) Environmental and Social Considerations

① Category Classification: B

② Basis for Category Classification: This project does not fall under the large-scale road sector projects listed in the "JICA Guidelines for Environmental and Social Considerations" (published April 2010). It does not fall under the large-scale road sector category outlined in the guidelines, and its adverse environmental impacts are not considered significant. Furthermore, it does not fall under the characteristics prone to causing impacts or the vulnerable areas specified in the guidelines.

③ Environmental Permits: The Environmental Impact Assessment (EIA) report for this project is scheduled for approval by the Ministry of Environment and Sustainable Development in August 2026.

④ Pollution Control Measures: During construction, certain impacts on air quality, water quality, waste, soil contamination, noise, and vibration are anticipated. Mitigation measures planned include water sprinkling, turbid water drainage, installation of temporary toilets, preparation of temporary construction waste storage areas, proper waste treatment and management, installation of noise barriers, and avoidance of heavy machinery operation at night. No significant impacts are anticipated during operation, but plans include enhanced vehicle maintenance to comply with emission regulations and implementation of environmental monitoring for air quality, noise, and vibration.

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.

⑥ Social Environment: This project will require the acquisition of 4 million m<sup>2</sup> of land and result in the involuntary relocation of 69 households and 122 residents. Land acquisition and compensation/payment will be conducted based on the Land Acquisition and Resettlement Plan prepared in accordance with Paraguayan domestic procedures and JICA Guidelines for Environmental and Social Considerations. Following a review of the project plan based on opinions raised by affected residents at explanatory meetings, no significant opposition to the project was ultimately expressed by affected residents.

⑦ Other/Monitoring: During construction, the contractor will conduct environmental monitoring for pollution control and natural environment, while MOPC will handle socio-environmental monitoring. Operational monitoring will continue for two years after completion. Municipalities will monitor road waste, while MOPC will monitor all other items.

#### (7) Cross-cutting Issues

① Climate Change Measures: This project contributes to climate change adaptation measures as it includes road elevation to account for future flooding. The estimated population benefiting from these adaptation measures is approximately 813,000.

② AIDS/HIV and Infectious Disease Measures: None in particular.

#### (8) Gender Classification: [Not Applicable] ■GI (Gender Mainstreaming Needs Assessment/Analysis Project)

<Activity Content/Reason for Classification>

Specific initiatives and the establishment/planning of indicators contributing to gender mainstreaming, based on social and gender surveys/analysis, were not achieved. Note that MOPC plans to release gender-related guidelines in March, 2026. Following these guidelines, contractors will be required to employ female workers, conduct capacity-building training for women, and install facilities such as changing rooms and shower rooms for women.

#### (9) Other Special Notes

Japanese companies' technologies may be adopted for subgrade improvement, road markings, and reinforcement materials for concrete pavement at toll stations in this project. Furthermore, National Route 4 (existing road), which allows east-west traversal, connects the eastern grain-

producing region with Japanese immigrant communities to the port of Pilar in the west. However, traffic congestion occurs during crop harvest seasons. Furthermore, according to grain transporters, this project's relatively flat terrain reduces fuel consumption and tire wear. Consequently, this project may be considered as an alternative route to Route 4, and some benefits to the Japanese community are also anticipated.

#### 4. Project Effects

##### (1) Quantitative Effects

##### 1) Outcomes (Operational/Effectiveness Indicators)

Indicator Name	Baseline (2022) Before Project Implementation	Target Value (2033) Two years after project completion
Average Daily Traffic Volume (PCU (Note 1)/day) for Target Section (Note 2)		
Main Line (Note 3)	131	802
Cerrito Access Road (Note 4)	171	541
Average Travel Speed for Target Section (km/h)		
Main Line (Note 3)	30	80
Cerrito Access Road (Note 4)	35	64
Average Travel Time (hours)		
Pilar to Cerrito	4.4	1.7
Main Line (Note 3)	6.1	2.3

(Note 1) PCU: Passenger Car Unit

(Note 2) Calculated using distance-weighted average

(Note 3) Pilar-Yabebyry section

(Note 4) San Antonio-Cerrito

## 2) Impact

Improved logistics connectivity enhances the living environment for local residents.

## (2) Qualitative Effects

Enhanced mobility comfort and traffic safety in the target area, improved export competitiveness, and promotion of economic development in surrounding regions.

## (3) Internal Rate of Return

Based on the following assumptions, the Economic Internal Rate of Return (EIRR) for this project is 12.8%.

Note: Although this project involves a toll road, the toll levels are low, and sufficient revenue to cover project costs and operational/maintenance expenses is not anticipated. Therefore, the financial internal rate of return (FIRR) is not calculated.

### 【EIRR】

Costs: Project costs, operation and maintenance costs (both excluding taxes)

Benefits: Travel time reduction, travel cost reduction, dirt road maintenance cost reduction

Project Life: 26

## 5. Assumptions and External Conditions

(1) Prerequisites: Land acquisition and resident relocation proceed as planned.

(2) External Conditions: No significant policy changes following the presidential election scheduled for April 2028.

Additionally, no major natural disasters such as floods occur.

## 6. Lessons from Past Similar Projects and Their Application to This Project

In the past Japanese yen credit project for Paraguay, the "Eastern Region Export Corridor Improvement Project," road use had to commence once paving was completed in the first section of the existing road widening works. However, fatal traffic accidents occurred due to excessive speed and driver negligence. Lessons learned include the installation of speed reduction signs and consideration for traffic safety education. Building on these lessons, this project will strengthen soft measures like implementing traffic safety education and



enhance hard measures such as installing LED road lighting at intersections.

The Ex-post evaluation results of "Local Road Improvement Project" (2022) of Paraguay provided the following lesson: "To appropriately assess project effectiveness, when setting indicators during review, consider indicators directly aligned with project objectives. Additionally, discuss specific methods for collecting baseline and actual data, including timing and funding sources, and reach agreement with the implementing agency."Therefore, for this project, MOPC itself agreed to collect traffic volume data annually, and the Project Eecuting Unit (Unidad Ejecutora del Proyecto, hereinafter referred to as "UEP" agreed to actually drive and measure average travel time and average journey time.

## **7. Evaluation Results**

This project aligns with Paraguay's development challenges and policies, as well as Japan's and JICA's cooperation policies and analyses. It contributes to improving logistics connectivity and residents' living environments through road development in the southwest region. It is considered to contribute to SDG Goal 1 (No Poverty), Goal 8 (Decent Work and Economic Growth), Goal 9 (Industry, Innovation and Infrastructure), Goal 10 (Reduced Inequalities), Goal 11 (Sustainable Cities and Communities), and Goal 13 (Climate Action). Therefore, there is a high necessity to support the project's implementation.

## **8. Future Evaluation Plan**

### **(1) Indicators for Future Evaluation**

As outlined in Section 4.

### **(2) Future Evaluation Schedule**

Two years after project completion: Ex-Post Evaluation

End

Attachment: Map of Project for Improving Integration and Socioeconomic Development Corridor in the Southwestern Region

## Map of Project for Improving Integration and Socioeconomic Development Corridor in the Southwestern Region



Source: UN Geospatial ([South America | Geospatial, location data for a better world \(un.org\)](#))

Source: UN Geospatial ([Paraguay | Geospatial, location data for a better world \(un.org\)](#)) compiled by JICA

