

Japanese ODA Loan

Ex-Ante Evaluation (for Japanese ODA Loan)

South Asia Division 4, South Asia Department

Japan International Cooperation Agency

1. Name of the Project

(1) Country: The People's Republic of Bangladesh

(2) Project: Construction of Dual Gauge Double Line Between Joydebpur-Ishurdi Section Project (I)

(3) Project Site / Target Area: Gajipur District, Tangail District, Shiraganj District, Pabna District, Natore District

Loan Agreement: June 27, 2025

2. Background and Necessity of the Project

(1) Current State and Issues of the Development of the Railway Sector and the Priority of the Project in Bangladesh

Robust economic growth within Bangladesh and its neighboring countries has led to a substantial increase in demand for both passenger and freight transportation, with the nation's railway transportation demand exhibiting an annual growth rate of approximately 8%. However, Bangladesh's rail network has been unable to accommodate this escalating demand due to several constraints, including the prevalence of single-track lines, particularly on major routes, and the coexistence of incompatible track gauges on either side of the Jamuna-Padma-Meghna River system that traverses the nation's central region from north to south.

The railway segment connecting Joydebpur Station, situated near Dhaka, to Ishurdi Station in the western part of Bangladesh constitutes a critical link of the Trans-Asian Railway, facilitating connectivity between various cities in the northern and western regions of Bangladesh and Kolkata, India. Despite being equipped with double-gauge tracks to enhance interoperability, this section remains single-tracked. The volume of rail traffic passing through Joydehpur-Ishurdi showed a remarkable growth of 5.92% per annum on average for passengers and 9.48% on average for freight from 2013 to 2017. Consequently, despite a single-track capacity of 25 trains per day on the Joydebpur-Ishurdi section, the actual operation has been compelled to accommodate 36 trains daily to meet the surging demand, resulting in frequent delays due to exceeding the line capacity. Indeed, the punctuality of train services on this section stood at a

mere 20-65% in 2019, underscoring a significant deterioration in service levels attributable to recurrent delays.

This project, “Construction of Dual Gauge Double Line Between Joydebpur-Ishurdi Section Project (I)” (hereinafter referred to as the “Project”), aims to enhance railway transportation capacity by double-tracking the main line between Joydebpur and Ishurdi, which connects the east and west sides of the country. This loan for the Project shall be utilized to the eastern section (Joydebpur-Jamuna Railway Bridge), which is a priority section of the Project.

This project will enhance logistics capacity between the western part of the country and Dhaka, thereby improving connectivity within the country and with neighboring countries and is expected to promote the economic development in the entire region, including the local economy. This project is positioned as the top priority with the Jamuna Railway Dedicated Bridge in the Master Plan of Railways.

(2) Japan’s and JICA’s Policy Cooperation Policy and Operations in the Development of the Railway Sector

The JICA Country Analysis Paper for Bangladesh (March 2023) identifies “Connectivity improvement for Industrial infrastructure development” as a key development issue in Bangladesh. The Project also contributes to the goal of the “Building a global network” cluster in the “Transportation” part of JICA Global Agenda, which is to “realize a society in which urban areas with populations of 3 million or more are smoothly connected”. Japan’s Country Assistance Policy for Bangladesh (February 2018) has set its major objective as the acceleration of economic growth, further defining initiatives in promoting efficient transportation for people and goods and eliminating regional disparities through the development of high-quality transport infrastructure. Therefore, the Project is consistent with this analysis and policy.

Additionally, from the aspect of enhancing the efficiency and connectivity of the transport network with neighboring countries, the Project will contribute to strengthening “Multi-layered Connectivity” (the Bay of Bengal-Northeast India industrial value chain concept in cooperation with India and Bangladesh), which is the third pillar of the New Plan for a “Free and Open Indo-Pacific (FOIP)” (March 2023).

JICA’s past support in the railway sector includes ODA loans for the Dhaka-Chittagong Railway Development Project (Loan Agreement signed in FY2007)

and Project for the Jamuna Railway Bridge Construction Project (III) (Loan Agreement signed in FY2024).

(3) Other Donors' Activities

The major donor for the railway sector in Bangladesh is the Asian Development Bank (ADB). ADB provides support for the reform of the railway sector, including a project for the conversion of certain sections of the railway into dual-gauge tracks as well as the privatization of container transport sector in the Bangladesh Railway (BR) and revision of its fares under the Railway Sector Investment Program (2007-2017). In addition, under the South Asia Subregional Economic Cooperation program, ADB supported the development of the railway network between Chattogram and Cox's Bazar. In recent years, the Export-Import Bank (Exim Bank) of India has provided support for procurement of rolling stocks and the construction of new lines and railway bridges, while the Exim Bank of China has provided support for the Padma Bridge Railway Link Project.

3. Project Description

(1) Project Description

① Project Objective

The objective of the Project is to enhance railway capacity by double tracking of the existing rail between Joydebpur and Ishurdi, thereby contributing to economic development through improved connectivity within Bangladesh and with neighboring nations.

② Project Components

1) Construction of the dual gauge double line (civil engineering works including bridge construction (approx. 170 km), track construction, signaling and communication facilities, and renovation and new construction of stations)

2) Consulting services (detailed design, tender assistance, construction supervision, environmental and social consideration procedures, and monitoring assistance)

This loan will support the construction phase of 1) and 2) above. The detailed design and bidding assistance in 2) will be implemented under the project's E/S loan (approved in FY2022).

③ Project Beneficiaries

Direct beneficiaries: Total annual passenger traffic on this route: approx.

15.85 million passengers

Final beneficiaries: Bangladeshi citizens (approx. 172 million (World Bank, 2023))

(2) Estimated Project Cost

321,339 million Yen (Japanese ODA loan: 92,077 million Yen)

(3) Schedule

March 2023 – June 2031 (100 months in total).

The Project will be completed when the facilities are put in place (June 2030).

(4) Project Implementation Structure

1) Borrower: The Government of the People's Republic of Bangladesh

2) Guarantor: N/A

3) Executing Agency: BR

(5) Collaboration and Sharing of Roles with Other Donors

1) Japan's Activity: This project is a double-tracking of the existing railway line connecting the east and west sides of the railway bridge constructed under the yen loan "Jamuna Railway Bridge Construction Project" and is expected to further enhance transportation capacity.

2) Other Donors' Activity: ADB is strengthening BR's operation and maintenance capacity through the "Railway Sector Investment Program" and the "Railway Rolling Stock Operation and Improvement Project". In addition, regarding rolling stock, BR plans to procure 80 locomotives and 1,507 passenger and freight cars over the five-year period from 2022 to 2027 with the cooperation of ADB and the European Investment Bank. Of these, 60 locomotives and 1,272 passenger and freight cars have already been procured. Some of these locomotives and rolling stock will be used in the project section.

(6) Environmental and Social Consideration

① Category: ☒A ☐B ☐C ☐FI

② Reason for Categorization: The Project falls into the railways and bridges sector under the JICA Guidelines for Environmental and Social Considerations (published in April 2010).

③ Environmental Permit:

The Environmental Impact Assessment (EIA) report was approved by the Bangladesh Department of the Environment (hereinafter referred to as "DOE") in June 2020. In Bangladesh, environmental permits

must be renewed every year, and the current permission was renewed in June 2024 and reapproved in August 2024.

④ Anti-Pollution Measures:

During construction, air quality, noise and vibration, and water quality will be addressed by sprinkling water, installing fencing, and installing low-noise and low-vibration machinery. Construction with large noise is expected to minimize the impact by taking measures such as construction during the daytime and installation of sedimentation ponds and wastewater treatment systems at the construction site to avoid noise disturbance to the community. At the time of service, water quality is expected to deteriorate due to wastewater from toilets and other facilities at each station, but the impact is planned to be mitigated through the installation of wastewater treatment systems and other measures.

⑤ Natural Environment:

Although the Project area is not a national park, it passes through the Chalan Beel wetland area, and several VU species have been confirmed in the trees, birds, and mammals. In this project, 75,279 trees are planned to be cut down. VU species will be transplanted under the direction of the Forestry Department, and other trees will be planted as compensation trees in alternative areas. In addition, the impact is expected to be minimized by prohibiting construction during the breeding season for endangered fish species and by enclosing breeding areas.

⑥ Social Environment:

The Project is expected to acquire approximately 718 ha of land and resettle 2,991 households, and legal procedures for land acquisition have already been partially initiated. The executing agency intends to proceed with the land acquisition in accordance with the resettlement plan based on the Bangladesh domestic procedures and the JICA Guidelines for Environmental and Social Considerations. No specific objections to the Project have been raised by the affected residents.

⑦ Other/Monitoring

Under the supervision of BR, the contractor will monitor air quality, noise and vibration, water quality, and ecosystems during construction. Then, BR will monitor for noise, ecology, and livelihood impacts during

the in-service period.

(7) Cross-Sectoral Issues

The Project is expected to contribute to a modal shift from road to rail transport of cargo and passengers through the construction of dual gauge double line. The climate change mitigation effect of the Project (approximate GHG emission reduction) is equivalent to about 677,540 tons/year of CO₂ in 2040.

(8) Gender Category: GI (S) (Gender Activities Integration Project)

<Details of Activities/Reason for Categorization>

In Bangladesh's public transportation systems, a lack of sufficient convenience for women acts as an obstacle to women using these systems. The Project will adopt a design that considers women's needs, including the installation of toilets and prayer rooms for women at major stations to be renovated under the Project. Consequently, this is categorized as a Gender Activities Integration Project.

(9) Other Important Issues: N/A

4 . Targeted Outcomes

(1) Quantitative Effects

Outcomes (Operation and Effect Indicators)

Indicator	Baseline (Actual value in 2024)	Target (2032) [2 years after project completion]
Volume of passenger transportation (million man-km/day)	882	2,630
Volume of freight (million ton-km/day)	-	1,383
Number of running train (per day)	23	56
Travel time (minutes)	360	240-270

(2) Qualitative Effects

Facilitate transportation within the country and to neighboring countries, reduce road congestion, and improve regional disparities by enhancing rail transportation volume.

(3) Internal Rate of Return

Based on the assumptions listed below, the economic internal rate of return (EIRR) for the Project is 15.3%, and the financial internal rate of return (FIRR) is

0.65%.

【EIRR】

Cost : Project costs, operation/maintenance costs and fuel costs (excluding tax)

Benefit : Reduction in time costs, vehicle operation costs and maintenance costs for existing roads, increase in safety (reduction in number of traffic accidents) and effects of reducing greenhouse gases

Project Life : 40years

【FIRR】

Cost : Project costs, operation/maintenance costs and fuel costs

Benefit : Fare revenues and freight revenues

Project Life : 40years

5. External Factors and Risk Control

(1) Preconditions : N/A

(2) External Factors: No significant policy changes will occur under the interim government established in August 2024, nor under the new government that is scheduled to be formed after the upcoming general election.

6. Lessons Learned from Past Projects

The results of the ex-post evaluation (in 2019) of the “Dhaka-Chittagong Railway Development Project” in Bangladesh, it was pointed out that appropriate packaging is essential for smooth project implementation, and this finding will be taken into account in the Project.

7. Evaluation Results

The Project is consistent with the development issues and development policies of Bangladesh, as well as the assistance policies and analyses of the Government of Japan and JICA. Through the construction of dual gauge double line, the Project will contribute to economic development by improving the efficiency of both the domestic transport network and the network between Bangladesh and neighboring countries, thereby contributing to SDG 9 (build resilient infrastructure, promote sustainable industrialization and foster innovation) and SDG 13 (take urgent action to combat climate change and its impacts). Therefore, the need to support the implementation of the Project is high.

8. Plan for Future Evaluation

(1) Indicators to be Used

As indicated in Sections 4.

(2) Future Evaluation Schedule

Ex-post evaluation: Two years after the Project completion

END