

Ex-Ante Evaluation (for Japanese ODA Loan)

1. Name of the Project

Country: The People's Republic of Bangladesh

Project: Matarbari Port Development Project (I)

Loan Agreement: May 29, 2019

2. Background and Necessity of the Project

(1) Current State and Issues of the Port/Harbor Sector and the Priority of the Project in Bangladesh

In Bangladesh, with GDP having grown at an annual rate of a little more than 6% during the past ten years, the value of cargo trade has risen at an average annual rate of approximately 11% during the same period (International Monetary Fund, 2018). Furthermore, container cargo demand in Bangladesh, which stood at 1.62 million TEU in 2014, is expected to reach 9.85 million TEU in 2040 (Japan International Cooperation Agency (JICA) Data Collection Survey on the Matarbari Port Development, 2017). In response to the increase in cargo demand, results show that the volume of cargo handled at Chittagong Port, which handles 98% of container cargo in Bangladesh, increased from 1.34 million TEU in 2010 to 2.35 million TEU in 2016, indicating that the port is already handling a volume of cargo that exceeds the design capacity (1.75 million TEU). The current water depth of the port (the lowest water level (Chart Datum Level) is adopted as the tidal datum) is between 7.5 m and 9.5 m. In light of the recent worldwide trend of growth in the size of vessels and the future increase in cargo demand, the port is unable to accept medium and large vessels exceeding 2,700 TEU which will be indispensable in the near future. In order to meet future cargo demand, it is urgent to develop a new port and harbors with sufficient depth to accept medium and large vessels.

Based on the situation above, the Matarbari Port Development Project (hereinafter referred to as the "Project") is planned to be implemented. The Project aims to increase the overall cargo handling capacity of Bangladesh, help to meet the expected rapid increase in cargo demand, and allow the port to accept increasingly large vessels by constructing a new commercial port with a depth of 16 m in the Matarbari area as well as the access roads that will be indispensable to promoting use of the new port. The Project is positioned as one of the highest-priority projects in the Seventh Five-Year Plan (FY2016/17–FY2020/21) and Vision 2021 which sets out long-term development challenges to be achieved between 2010 and 2021. The Project will also contribute to the realization of the Bay of Bengal Industrial Growth Belt

(hereinafter referred to as the “BIG-B”) initiative, which is advocated by the Governments of Japan and Bangladesh, and the Government of Bangladesh has decided to prioritize the development of energy hubs and industrial complexes, etc. with Matarbari Port as their core.

(2) Japan and JICA’s Cooperation Policy and Operations in the Port/Harbor Sector

The JICA Country Analysis Paper for Bangladesh (March 2019) identifies one of the important issues for economic growth as being that the volume of cargo handled has remained sluggish due to a lack of depth and facilities at gateway ports and has cited the development of national transportation networks, including ports and harbors, as a priority issue. Moreover, Japan’s Country Assistance Program for Bangladesh (February 2018) identifies one of Bangladesh’s priority areas as being to accelerate economic growth so that everyone can benefit as Bangladesh strives to become a middle-income country. It mentions that the Government of Japan will cooperate chiefly in the BIG-B initiative and contribute to better connections throughout the region by developing high-quality transportation networks and promoting the efficient movement of people and goods. The Project is, therefore, consistent with the analysis and policy. It also promotes investment in the vicinity of Matarbari Port by establishing the new port as a logistics center for energy and materials, both of which are essential for sustained industrialization in Bangladesh. Furthermore, it is expected to contribute to achieving SDGs goal 9, “Build resilient infrastructure, promote inclusive and sustainable industrialization and foster innovation.”

(3) Other Donors’ Activities

A master plan for Chittagong Port has already been developed with the support of the Asian Development Bank (ADB), which plans to support the development of new terminals for this port and other undertakings. In addition, ADB is also supporting a project to develop a railway between Dhaka and Cox’s Bazar. Furthermore, the World Bank is supporting the strengthening of the inland water transportation capabilities of Chattogram , Dhaka, and Ashuganj.

3. Project Description

(1) Project Objective(s)

The objective of the Project is to strengthen port logistics capacity in Bangladesh by constructing a new commercial port in the Matarbari area in

Chattogram Division, thereby contributing to the acceleration of logistics with neighboring countries.

(2) Project Site / Target Area

Cox's Bazar District, Chattogram Division

(3) Project Component(s)

- 1) Civil work (construction of terminals, access roads, etc.)
- 2) Procurement and installation of cargo handling equipment
- 3) Development of port-related facilities and equipment
- 4) Consulting services

(4) Estimated Project Cost (Loan Amount)

220,066 million Yen (Loan Amount: 38,866 million Yen)

(5) Schedule

June 2018 - December 2025 (91 months in total).

(6) Project Implementation Structure

- 1) Borrower: The Government of the People's Republic of Bangladesh
- 2) Guarantor: N/A
- 3) Executing Agency: Chittagong Port Authority (CPA) and the Roads and Highways Department (RHD) of the Ministry of Road Transport and Bridges
- 4) Operation and Maintenance System: CPA and RHD

(7) Cooperation and Sharing of Roles with Other Donors

1) Japan's Activity

In order to support the detailed design of the Project, the Matarbari Port Development Project (E/S) was implemented in FY2018. The Project involves constructing a new commercial port using part of the port's facilities (access channel, basin, breakwaters, and groins), which will be constructed under the Japanese ODA Loan project called the Matarbari Ultra Super Critical Coal-Fired Power Project (approved in 2014, 2016, 2017, and 2018). After the construction of the port, the facilities will be shared by the Project and the Matarbari Ultra Super Critical Coal-Fired Power Project.

2) Other Donors' Activity

N/A

(8) Environmental and Social Consideration / Poverty Reduction / Social Development

1) Environmental and Social Consideration

① Category: A

- ② Reason for Categorization: The Project falls into the port/harbor sector (likely to have significant adverse effects due to its characteristics) under the JICA Guidelines for Environmental and Social Considerations (published in April 2010).
- ③ Environmental Permit: The Environmental Impact Assessment (EIA) report on the Project was approved by the Department of Environment, Ministry of Environment and Forests of Bangladesh on November 26, 2018 (port/harbor) and December 6, 2018 (road).
- ④ Anti-Pollution Measures: During the construction work, measures for air quality, water quality, and noise and vibration, etc., such as water sprinkling, covering vehicle platform, installation of pollution diffusion prevention film, installation of wastewater treatment equipment, restrictions on nighttime construction, use of low noise/vibration equipment, etc., will be taken in order to satisfy the emission standards and environmental standards in Bangladesh. In accordance with domestic laws and regulations as well as local government ordinances, the waste discharged from vessels after opening will be temporarily stored at waste management facilities prepared by the executing agency in port facilities, and will be appropriately treated by local governments and private companies. Vessels will be requested to exchange ballast water appropriately in accordance with the Ballast Water Management Convention, and the executing agency will control ballast water in accordance with domestic laws and regulations. Measures, such as limiting the speed around residential areas, etc., will be taken against noise and vibration generated on the access roads after opening.
- ⑤ Natural Environment: The port and access road construction sites do not fall under protected areas, such as national parks, etc., or important habitats. At a location 15 km south of the port site, there is Sonadia Ecologically Critical Area (hereinafter referred to as the "ECA") designated by the Government of Bangladesh. However, the impact on the area is expected to be reduced because there is a sufficient distance from the port and the access channel, and the above-described water pollution control measures will be taken in the event of discharge of dredged sediment. The access roads will be constructed in the vicinity of the Moheshkhali Forest and Hill Reserve

and the Fasiakhali Wildlife Sanctuary, but the impact on the precious ecosystem in the reserve and sanctuary will be reduced by implementing awareness-raising programs for workers. In addition, more than 5,000 mangroves are expected to be cut down for the construction of the access roads, but alternative tree planting will be conducted, using the number and area of mangroves as an indicator. In the project site and its surrounding area, no valuable species have been confirmed, but in preparation for the case that valuable species are confirmed, awareness-raising activities will be carried out for workers, and nighttime construction will be restricted to reduce the use of lighting equipment and noise so that appropriate monitoring will be conducted.

- ⑥ Social Environment: The Project involves land acquisition of approximately 107 ha and 201 ha and involuntary resettlement of 297 and 680 residents by the construction of the port, including the soil disposal site, and the access roads, respectively. The land acquisition, compensation, and support will be in accordance with the national procedures of Bangladesh and the resettlement plan formulated based on JICA guidelines. With the loss of many salt fields and shrimp farms, there has been a growing demand among affected residents for support for the recovery of their livelihoods. In response to the demand, implementation of a livelihood recovery support program is planned. At present, no particular objection to the Project has been made by affected residents. Although no particular impact of the Project on coastal fisheries and on the induction of inundation and flooding in the surrounding area is anticipated, monitoring will be conducted under the supervision of the executing agency, and livelihood recovery support will be provided as necessary.
- ⑦ Other / Monitoring: In the Project, the contractor will monitor the impact on air quality, water quality, noise, vibration, and ecosystem during construction, under the supervision of the executing agency. The executing agency will monitor the impact on water quality, waste, noise, vibration, and ecosystem after opening. NGOs entrusted by the executing agency will monitor changes in the surrounding water condition, the impact on livelihoods, and the livelihood recovery condition during construction and after opening, under the supervision

of the executing agency.

2) Cross-Cutting Issues

This is a large-scale infrastructure development project that is being implemented in an area where there are fears concerning the spread of HIV as workers are concentrated in a single construction site for a long time. Therefore, plans call for all related workers, including drivers, who enter the construction site to be educated on the prevention of HIV infection.

3) Category of Gender: [N/A] GI (Gender Mainstreaming Needs Assessment and Analysis Project)

Activities / reason for Categorization:

Although the preparatory survey examined gender mainstreaming needs, it did not result in the implementation of specific activities that contribute to gender equality and women's empowerment.

(9) Other Important issues

N/A

4. Targeted Outcomes

(1) Quantitative Effects

1) Performance Indicators (Operation and Effect Indicators)

Indicator	Baseline (Actual value in 2017)	Target (2026) [Expected value 2 years after project completion]
Number of containers handled (TEU/year)	N/A	259,000
Volume of general and bulk cargo handled (tons/year)	N/A	770,000
Number of container vessels in port (ships/year)	N/A	75
Number of general and bulk cargo vessels in port (ships/year)	N/A	25
Maximum hull form in port (container vessels) (TEU)	N/A	4,400
Maximum hull form in port (general and bulk cargo vessels) (tons)	N/A	70,000

(2) Qualitative Effects

Logistics with neighboring countries will be promoted. Investment in the vicinity of Matarbari Port will be promoted.

(3) Internal Rate of Return

According to the following preconditions, the Project's Economic Internal Rate of Return (EIRR) will be 11.4%. The Financial Internal Rate of Return (FIRR) will be 1.6%.

[EIRR]

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

Benefit: Reduction in marine transportation costs, reduction in demurrage costs, reduction in travel time, reduction in travel costs, and reduction in inland transportation costs

Project Life: 40years

[FIRR]

Cost: Project costs and maintenance/operation costs

Benefit: Operating revenue of the port

Project Life: 40years

5. Preconditions / External Conditions

(1) Preconditions

N/A

(2) External conditions

The access channel, basin, and breakwaters will be developed smoothly as part of the Japanese ODA Loan project called the "Matarbari Ultra Super Critical Coal-Fired Power Project." No development project plans for the port's vicinity or their implementation will prevent the Project from being implemented.

6. Lessons Learned from Past Projects

The results of the ex-post evaluation of the Batangas Port Development Project and the Subic Port Development Project by the Japanese ODA Loan Japanese ODA Loan for the Republic of the Philippines revealed that, when the construction of a new port is planned, it is important to clarify the division of functions between the existing port and the new port, to develop a policy or plan for operating each port organically, and to give incentives for using the new port in an effort to stimulate demand for its use. The Project has confirmed the division of functions with other domestic ports through the Data Collection Survey on the Matarbari Port Development. In addition, CPA will examine port operation strategies that will promote the use of the new port, such as the division of functions with ports in neighboring countries and ensuring the efficiency of the new port operated by CPA, etc. A part of the strategies will be

implemented through technical assistance by JICA.

The results of the ex-post evaluation of the La Union Port Development Project in the Japanese ODA Loan project for the Republic of El Salvador revealed that it is important to consider ways of maintaining the sustainability of the project. This can be done by anticipating the risk of fluctuation in maintenance and dredging expenses and by predicting the volume of soil accumulated with reliable accuracy in the planning stage. Since it is expected that the volume of soil accumulated is large in the Project, the volume was predicted with the advice of domestic experts. Under the supervision of consultants of the Japanese ODA Loan project called the Matarbari Ultra Super Critical Coal-Fired Power Project and this Project, the executing agencies of both projects will continue monitoring of the volume of soil accumulated and maintenance and dredging expenses, and will verify the countermeasures and cost-effectiveness.

7. Evaluation Results

The Project is consistent with Bangladesh's development issues and policies and with the assistance policies and analyses of the Government of Japan and JICA. Through the development of Matarbari Port, the Project will contribute to the increase in the volume of cargo handled and the promotion of logistics within Bangladesh and with surrounding countries, thereby contributing to SDGs goal 9, "Build resilient infrastructure, promote inclusive and sustainable industrialization and foster innovation." Thus, the necessity for JICA to support the Project is substantial.

8. Plan for Future Evaluation

(1) Indicators to be Used

As indicated in sections 4. (1) to (3).

(2) Timing

Ex-post evaluation: Two years after the project completion