

## Japanese ODA loan

### Ex-Ante Evaluation (for Japanese ODA Loan)

#### 1. Name of the Project

Country : The People's Republic of Bangladesh

Project: Matarbari Port Development Project (E/S)

Loan Agreement: June 14, 2018

#### 2. Background and Necessity of the Project

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

In the People's Republic of Bangladesh, with GDP having grown at an annual rate of a little more than 6% during the past ten years, the value of cargo exports and imports has risen at an average annual rate of approximately 12% during the same period (International Monetary Fund, 2017). 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 (JICA Final Report on Data Collection Survey on the Matarbari Port Development, 2017). Chittagong Port, which handles 98% of container cargo in Bangladesh (approx. 92% of port cargo in total, including bulk cargo), lacks sufficient cargo handling capacity to meet such a brisk cargo demand. Results show that the volume of cargo handled at the port 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). Currently, the port has the depth of 7.5 to 9.5 m (tidal data is based on the chart datum level [CDL]), which means that only vessels of up to 2,700 TEU class can enter. If the recent global trend toward larger vessels and future growth in cargo demand are taken into consideration, it seems likely that there will be demand for cargo transport by 2,700 TEU or larger vessels in Bangladesh, too, in the near future. However, the current depth of the port does not allow it to accept such medium- and large-sized vessels. While the Chittagong Port Authority plans to build new terminals around the port to address these issues, even the post-expansion cargo handling capacity would be unable to meet the growing cargo demand. In addition, geographical restrictions mean that the new terminals are expected to have a depth of only 12 m, so the port will continue to be unable to accept large vessels (Asian Development Bank [ADB], 2015). For the reasons mentioned above, the development of a new port with a deeper basin and channels than Bangladesh's existing ones is urgently required

in order to meet Bangladesh's future cargo demand.

Given this, the Government of Bangladesh is considering the development of a new port in the Matarbari area, which is located about 100 km south of Chittagong, and in Payra, which is located about 250 km south of Dhaka. The government's plan called for Payra Port to have a depth of 16 m and a cargo capacity of two million TEU. However, the area's geographical condition of being shallow for some distance from the port means that 60-km approach channel would need to be dredged, and the development and maintenance of such channel would be expected to incur considerable expenses. For such reasons, the feasibility of the project is uncertain.

In the Matarbari area, on the other hand, only the dredging of approach channel for about 10 km will enable vessels to reach a sea area with a depth of 20 m, so this area would require a considerably shorter length of dredging to secure a depth of 16 m than other areas would. Given that Matarbari is the only area with such a geographical advantage and that it has considerable room for future expansion, it is considered the most suitable area for developing a new port (JICA Final Report on Data Collection Survey on the Matarbari Port Development, 2017).

The Matarbari Port Development Project (hereinafter referred to as "the Project") aims to increase the country's overall cargo handling capacity, 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. This is positioned as one of the priority projects in the Government of Bangladesh's 7th Five-Year Plan (FY2016/17–FY2020/21) and Vision 2021.

The Project will also contribute to the realization of the Bay of Bengal Industrial Growth Belt (BIG-B) initiative, which is jointly 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 and other projects 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 (May 2014) identifies one of the bottlenecks for investment expansion as being that the volume of cargo that is handled has remained sluggish due to a lack of depth and facilities at international 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. More specifically, it mentions that the Government of Japan will cooperate chiefly in the BIG-B initiative and contribute to better connections throughout the regions by developing high-quality transportation networks and promoting the efficient movement of people and goods. The Project is, therefore, consistent with these policies and the analysis. With regard to JICA's initiatives for the country's port/harbor sector, a tentative plan to develop a new commercial port in the Matarbari area was formulated in the Data Collection Survey on Integrated Development for the Southern Chittagong Region (2015-2016), and a coal port is being developed under the yen-loan project called the "Matarbari Ultra Super Critical Coal-Fired Power Project" (approved in 2014).

The new port to be developed under the Project will contribute to enhancing Bangladesh's international competitiveness, including serving as a logistics center for energy and materials, both of which are essential to the country's industrialization. This is consistent with the priority efforts under "JICA's Position Paper on SDGs: Goal 9" ("Build resilient infrastructure, promote inclusive and sustainable industrialization, and foster innovation").

### (3) Other Donors' Activity

A master plan for Chittagong Port has already been developed with the support of ADB, which plans to support the development of new terminals for this port and other undertakings as proposed under the master plan. 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 Chittagong, Dhaka, and Ashuganj. In addition to the Government of Bangladesh's own funding, the Government of India is considering providing support for Payra Port.

## 3. Project Description

### (1) Project Objective(s)

The objective of the Project is to strengthen the port logistics capacity of Bangladesh by constructing a new commercial port in the Matarbari area of the Chittagong Division, thereby contributing to an acceleration of logistics with neighboring countries.

### (2) Project Site / Target Area

Cox's Bazar District, Chittagong Division

(3) Project Component(s)

- 1) Civil work (construction of terminals (multipurpose terminals dedicated to container cargo), access roads, etc.)
- 2) Procurement of loading and unloading equipment, etc. (quay gantry cranes, etc.)
- 3) Development of related facilities and procurement of mechanical equipment (tugboats, pilot boats, etc.)
- 4) Consulting services (detailed design, tender assistance, construction supervision, environmental and social consideration, etc.)

This Engineering Service (E/S) Loan for the Project (hereinafter referred to as the “E/S Loan”) covers the following aspects of component 4) above: detailed design and tender assistance.

(4) Estimated Project Cost (Loan Amount)

181,280 million yen (Loan Amount: 2,655 million yen)

The total project cost will be recalculated during the detailed design phase covered by the E/S Loan.

(5) Schedule

June 2018 – December 2020 (31 months in total). The E/S Loan will be completed upon its disbursement (December 2020).

(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

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 yen-loan project called the “Matarbari Ultra Super Critical Coal-Fired Power Project” (approved in 2014). After construction of the new port is completed, its facilities will be used jointly between the coal port and the new commercial port.

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 (implemented in a sensitive area and 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: Confirmed in the preparatory survey for the loan for the construction phase of the Project.

④ Anti-Pollution Measures: Confirmed in the cooperation and preparatory survey for this loan.

⑤ Natural Environment: Confirmed in the preparatory survey for the loan for the construction phase of the Project.

⑥ Social Environment: Confirmed in the preparatory survey for the loan for the construction phase of the Project.

⑦ Other / Monitoring: Confirmed in the preparatory survey for the loan for the construction phase of the Project.

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

Activity Components/Reason for Categorization: Gender mainstreaming needs will be confirmed during the appraisal process for the loan for the construction phase of the Project.

### (9) Other Important Issues: N/A

4. Targeted Outcomes
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#### (1) Quantitative Effects

##### 1) Performance Indicators (Operation and Effect Indicators)

Indicator	Baseline (Actual value in 20__)	Target (20__) (Expected value two years after project completion)
Number of containers handled (TEU/year)	To be determined during the appraisal process for the loan for the construction phase of the Project.	
Volume of cargo handled (tons/year)		

## (2) Qualitative Effects

Revitalization of logistics with neighboring countries (to be determined during the appraisal process for the loan for the construction phase of the Project).

## (3) Internal Rate of Return

To be determined during the appraisal process for the loan for the construction phase of the Project.

## 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 yen-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 in the Republic of the Philippines revealed that, when the construction of a new port is planned to solve an existing port's problems, it is important to clarify the division of functions between the two, to develop a policy or plan for operating each port organically and to give the port users incentives for using the new port in an effort to stimulate demand for its use. The results of the ex-post evaluation of the yen loan for the La Union Port Development Project in the Republic of El Salvador revealed that, when high maintenance and dredging expenses are likely to be incurred in relation to the operation and maintenance of a new port, it is important to consider ways of maintaining the sustainability of the project. This

can be done by anticipating the risk of maintenance and dredging expenses fluctuating and by predicting the volume of soil accumulated with reliable accuracy in the planning stage.

Since this Project is intended to construct a new port in an area located away from the existing Chittagong Port, it divides the functions between the new port and other ports throughout the country and considers port operation strategies for helping to promote use of the new port. Such strategies include positioning the new port along the Bengal routes, dividing the functions between the new port and others in neighboring countries, and ensuring the efficiency of the new port's operation by CPA. With respect to maintenance and dredging expenses, since a large volume of soil is expected to accumulate, the Project carefully considers the volume that will accumulate in the approach channel and countermeasures for preventing this and verifies the cost effectiveness of such countermeasures.

## 7. Evaluation Results

The Project is consistent with Bangladesh's development challenges and policies and with the assistance policies and the analysis of the Government of Japan and JICA. Additionally, the Project aims to contribute to increasing the country's cargo handling capacity by developing Matarbari Port and promoting investments and industry by furthering logistics in Bangladesh and its neighboring countries. It also aims to contribute to enhancing the country's international competitiveness, mainly by establishing the new port as a logistics center for energy and materials, both of which are essential for the sustained industrialization in the country. Furthermore, it is expected to contribute to achieving SDG 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

To be determined during the appraisal process for the loan for the construction phase of the Project.

### (2) Timing

To be determined during the appraisal process for the loan for the construction phase of the Project.