

Ex-Ante Evaluation (for Japanese ODA Loan)

1. Project Name

Country: The People's Republic of Bangladesh

Project: Hazrat Shahjalal International Airport Expansion Project (II)

Loan Agreement: August 12, 2020

2. Background and Necessity of the Project

(1) Current State and Issues of the Development of the Aviation Sector in Bangladesh  
The People's Republic of Bangladesh has achieved economic growth at an average pace of about 6% per annum since 2000. Against this backdrop, the airport's annual average air passengers has increased by approximately 8% from 2010 to 2018. Hazrat Shahjalal International Airport (hereinafter "Dhaka International Airport") is used by about 75% of domestic and international passengers departing from and arriving in Bangladesh, and plays an important role as the core infrastructure that supports the rapid growth of the socioeconomic activities in the country.

The number of international passengers at Dhaka International Airport reached 7.07 million in 2018 and is expected to exceed the annual passenger capacity limit of 8 million for the existing international terminal in 2020. By 2035, international passengers are expected to reach 20 million. Also, the airport's annual average air cargo volume has risen by approximately 11% from 2010 to 2018 and is expected to reach the annual air cargo capacity limit (approximately 420,000 tons) for the existing cargo terminal building in 2020. Thus, in order to meet increasing air traffic demands, the Master Plan for the Dhaka International Airport Expansion Project (2015) developed by the Government of Bangladesh (GoB) requires the construction of a third international passenger terminal, a cargo terminal, a new multi-story parking facility, and surrounding infrastructure including the approach road to the national highway, as well as an expansion of airport security equipment.

By expanding airport functions, including the construction of the third international passenger terminal, cargo terminal, and related facilities at Dhaka International Airport, the Hazrat Shahjalal International Airport Expansion Project (hereinafter "the Project") will aim to increase airport capacity to handle the rapid increase in air traffic demand, improve airport access and passenger terminal convenience, and improve safety by strengthening security functions among other measures. The Project is also positioned as highly urgent in the GoB's Seventh Five-Year Plan (FY2016/17-2020/21).

(2) Japan and JICA's Policy and Operations in the Aviation Sector

The JICA Country Analysis Paper of the People's Republic of Bangladesh (March

2019) lists economic infrastructure development as a key development issue, and gives vitalizing domestic and international transport and becoming a hub for regional economic and commercial activities as priority issues in its analysis. Also, the Country Development Cooperation Policy for Bangladesh (February 2018) specifies the priority objectives of accelerating economic growth as well as promoting the efficient movement of people and goods and eliminating regional disparities by developing high-quality transport and transportation infrastructure. Thus, the Project is consistent with this analysis and policy. The Project will also spur growth in the Bangladesh economy through expanding capacity and improving both the convenience and safety of Dhaka International Airport, contributing to SDG 9 (Industry, Innovation and Infrastructure). Additionally, in terms of improving regional connectivity, the Project contributes to the pursuit of economic prosperity of the Free and Open Indo-Pacific (FOIP) Strategy.

To date, major assistance by JICA in the aviation sector has included assistance in developing and expanding the international airport in Chattogram, Bangladesh's second largest city, through the Chittagong Airport Development Project (ODA loan project, Loan Agreement Signed in FY1996 and completed in 2003). In addition, airport security equipment including baggage inspection equipment, air traffic control simulators, and airport fire trucks to the existing international passenger terminals at Dhaka International Airport was provided in the Grant Aid Assistance Project for Improvement of Airport Safety and Security Systems (2014-2017), and ongoing assistance to strengthen passenger and cargo inspection systems is being provided through the Technical Cooperation Project for Security Improvement of International Airports (2017-present).

### (3) Other Donors' Activity

In the late 1990s, the Government of France provided the Aeronautical Institute of Bangladesh with training equipment. In 2013, the Danish International Development Agency (DANIDA) supported the improvement of basic facilities, as well as the safety and security systems, of Dhaka International Airport. The Government of the United Kingdom, in cooperation with the Government of the United States, also provided the Airport Armed Police with technical support in enhancing security in 2017. Since airport security will continue to be an issue of utmost importance after the third international passenger terminal is built, projects aimed at strengthening security in the existing terminals as implemented by other donors are expected to be utilized in this Project as well.

## 3. Project Description

### (1) Project Objective(s)

The objective of the Project is to meet future demand of air transportation and to

improve airport capacity, convenience and safety, by constructing a third international passenger terminal, cargo terminal and other infrastructure and facilities at Dhaka International Airport, thereby contributing to further economic growth in Bangladesh.

(2) Project Site/Target Area

Dhaka

(3) Project Component(s)

1) Civil works and procurement of equipment: Construction of the third international passenger terminal, cargo terminal, and other ancillary facilities

2) Consulting Service: Detailed Design, Tender Assistance, Construction Supervision, Technology Transfer, etc.

(4) Estimated Project Cost (Loan Amount)

264,457 million Yen (Loan Amount: 80,000 million Yen)

(5) Schedule

June 2017 – April 2025 (95 months in total). The Project will be completed when the facilities are put in place (April 2024).

(6) Project Implementation Structure

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

2) Guarantor: N/A

3) Executing Agency: Civil Aviation Authority, Bangladesh, Ministry of Civil Aviation and Tourism (CAAB)

4) Operation and Maintenance System: The operation and maintenance of the Project is provided by CAAB.

(7) Cooperation and Sharing of Roles with Other Donors

1) Japan's Activity:

Through the Project for Security Improvement of International Airports (2017-present), technical assistance is being provided to enhance passenger and cargo inspection systems at Dhaka International Airport and other airports. Additionally, a Dhaka International Airport station is scheduled to be built in the Dhaka Mass Rapid Transit Development Project (Line 1) (Engineering Service ODA Loan, Loan Agreement Signed FY2017; Phase 1 approved FY2019). The opening of Line 1 is expected to improve access between downtown Dhaka and the airport.

2) Other Donors' Activity: N/A

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

1) Environmental and Social Consideration

① Category: B

② Reason for Categorization: The Project is not located in a sensitive area, nor has it sensitive characteristics, nor falls it into sensitive sectors under the Guidelines, and its potential adverse impacts on the environment are not likely to be significant.

③ Environmental Permit:

The Environmental Impact Assessment (EIA) Report for the Project was approved by the Department of Environment in June 4<sup>th</sup>, 2017.

④ Anti-Pollution Measures:

Although the construction is assumed to affect air quality and noise only within the airport, the impacts will be mitigated by taking measures such as water sprinkling, equipment maintenance, and the use of low noise type equipment. Waste and wastewater produced by the construction will be disposed in accordance with the national legal system in order to avoid the impact on health and environment. After the commencement of services, it is assumed that the volume of wastewater will increase as the number of aircrafts and passengers rises; however, wastewater will be purified by a new wastewater treatment facility, which is expected to satisfy the national standard for wastewater disposal.

⑤ Natural Environment:

The target area does not apply to a vulnerable area, such as national park, or its surrounding, and the expected influence on the local natural environment is minimum.

⑥ Social Environment:

Since this project is implemented in a restricted area within the existing premises, no land acquisition or resettlement will occur. However, structures owned by private-sector businesses and CAAB at the planned build site for the third international passenger terminal are expected to be transferred to the contractor either before project commencement or before construction starts on the particular area. While there have been some design changes since the Phase I project review (the cargo terminal), no additional land acquisitions will be necessary, and it has been confirmed that appropriate environmental and social considerations will be taken after the design changes as well.

⑦ Other / Monitoring:

In this project, the monitoring of air quality, noise, etc., during construction will be done by the contractor, and the monitoring of air quality, water quality, noise, etc., after the commencement of service will be done by the executing agency.

2) Cross-Cutting Issues:

Some universal design and barrier-free elements (e.g. installation of tactile walking surfaces for the visually impaired, priority lanes for the disabled, toilets and elevators with wheelchair access) have been adopted in the construction of the third international passenger terminal by the Project.

3) Gender Category: GI(S) (Projects integrated with gender activities)

<Activity Description/Reasons for Categorization> The third international passenger terminal building being built in the Project employs design and facilities that take women's convenience into consideration, such as separate male and female prayer

rooms and sari guards for escalators etc. Facilities for female workers will also be provided during construction work.

(9) Other Important Issues: N/A

#### 4. Targeted Outcomes

##### (1) Quantitative Effects

Performance Indicators (Operation and Effect Indicator)

Indicator	Baseline (Actual Value in 2015)	Target (2026) [Expected value 2 years after project completion]
Number of international air passengers of Dhaka International Airport (million passengers per annum)	5.57	12.81
Amount of international air cargo of Dhaka International Airport (thousand ton per annum)	258.01	507.44

##### (2) Qualitative Effects

Enhance convenience of Dhaka International Airport for air passengers through improvement of congestion in terminal building, ensure international standard of safety, enhance security of Dhaka International Airport and increase foreign direct investment to Bangladesh

##### (3) Internal Rate of Return

Based on the conditions indicated below, the project's Economic Internal Rate of Return (EIRR) will be 14.94%. The Financial Internal Rate of Return (FIRR) will be 3.14%.

###### [EIRR]

Cost: Investment cost for the Project, operation and maintenance costs (all excluding tax)

Benefits: User benefits (e.g. Time savings for air passengers)

Project Life: 25 years

###### [FIRR]

Cost: Investment cost for the Project, operation and maintenance costs

Benefits: Airport income (passenger service charges, landing charges, passenger boarding bridge fees, cargo security inspection charges), non-aviation income (tenant fees, etc.)

Project Life: 25 years

#### 5. External Factors and Risk Control

- (1) Preconditions: N/A
- (2) External Factors: The construction period shall not be affected by major natural disasters and other factors.

#### 6. Lessons Learned from Past Projects

The ex-post evaluation of the ODA Loan Bangkok International Airport Expansion Project for Thailand (evaluated in 1990) and other projects have revealed the need to pay close attention to the schedule plan and design in expansion projects that involve complex processes while the existing airport remains in service, as well as to ensuring the safe operation of aircraft and passenger convenience.

As the existing passenger terminal will also remain operational throughout the Project, the contractor has prepared a construction plan which ensures safety during the construction work without interfering with aircraft takeoff and landing or airport operations.

#### 7. Evaluation Results

Necessity for assistance in Project implementation is high. The Project is both consistent with Bangladesh development issues and policy and with the Japanese Government and JICA assistance policy and analysis. Also, it will spur growth in the Bangladesh economy through expanding capacity and improving both the convenience and safety of Dhaka International Airport, contributing to SDG 9 (Industry, Innovation and Infrastructure).

#### 8. Plan for Future Evaluation

##### (1) Indicators to be Used

As described in (1)-(3) of Section 4.

##### (2) Timing

Ex-post evaluation: Two years after the project completion