#### Japanese ODA Loan

# Ex-Ante Evaluation(for Japanese ODA Loan)South Asia Division 4, South Asia DepartmentJapan International Cooperation Agency

#### 1. Name of the Project

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

(2) Project: Hazrat Shahjalal International Airport Expansion Project (III)

(3) Project Site / Target Area: Dhaka Division (Population: 14.71 million people, according to 2022 census)

Loan Agreement: December 24, 2023

# 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 annual average air passengers of Hazrat Shahjalal International Airport (hereinafter "Dhaka International Airport") has increased by approximately 7% between 2010 to 2019. Furthermore, Dhaka International Airport is used by about 90% of international and about 50 % of domestic 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 7.32 million in 2019. While the COVID-19 pandemic led to a large decrease in demand in 2020 and 2021, demand recovered sharply in 2022 by registering a record-high 7.92 million international passengers, with the existing Terminal 1 and 2 nearing their annual passenger capacity limit of 8 million. By 2030 and 2035, international passengers are expected to reach 15.5 million and 20 million respectively. In addition, the airport's annual average air cargo volume has reached its annual air cargo capacity limit (approximately 330,000 tons) for the existing cargo terminal building, with the airport handling in 2021. Air cargo demand is expected to increase further, with a demand of 820,000 tons and 1.12 million tons predicted for 2030 and 2035 respectively. 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

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 Eighth Five-Year Plan (FY2020/21-2024/25).

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

The JICA Country Analysis Paper of the People's Republic of Bangladesh (March 2023) lists strengthening of industrial structure as a key development issue, and puts forth connectivity improvement through industrial infrastructure development as a priority issue in its analysis. It also contributes to improved connectivity that is targeted by the "Building a global network" cluster within the JICA Global Agenda for Transportation (June 2022). 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, while eliminating regional disparities by developing high-quality transport and transportation infrastructure. Thus, the Project is consistent with this analysis and policy. Further to this, by indicating that it will work towards the realization of the industrial supply chain concept for the Bay of Bengal and Northeastern India region, this project aligns with the New Plan for a "Free and Open Indo-Pacific (FOIP)" (March 2023) that addresses "multi-layered connectivity" as a pillar of cooperation.

To date, major assistance by JICA in the aviation sector include the Chittagong Airport Development Project (ODA loan project, Loan Agreement Signed in FY1996 and completed in 2003), the Grant Aid Assistance Project for Improvement of Airport Safety and Security Systems (ODA grant project, Grant Agreement signed in FY2013), the Technical Cooperation Projects for Security Improvement of International Airports (2017-2021) and Improving Ground Handling Capacity of Hazrat Shahjalal International Airport (2021-2024).

(3) Other Donors' Activities

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.

#### **3.** Project Description

- (1) Project Description
- ① Project Objective

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 Hazrat Shahjalal International Airport, thereby contributing to further economic growth in Bangladesh.

2 Project Components

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

2) Consulting Service: Detailed Design, Tender Assistance, Construction Supervision, Technology Transfer related to Airport Operation (Short List Method), etc.

- Project Beneficiaries (Target Group)
  Dhaka Division (Population: 14.71 million people, according to 2022 census)
- (2) Estimated Project Cost

301,231 million Yen (Japanese ODA Loan: 76,635 million Yen)

(3) Schedule

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

- (4) Project Implementation Structure
  - 1) Borrower: The Government of the People's Republic of Bangladesh
  - 2) Guarantor: N/A

3) Executing Agency / Implementation Structure: 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.

(5) Collaboration and Sharing of Roles with Other Donors

1) Japan's Activity

Through the Project for Security Improvement of International Airports (2017present), 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
- (6) 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 Report for the Project was approved by the Department of Environment in June 2017. The permit was updated in July 2023, in accordance with the rule that environmental permits are required to be updated annually in Bangladesh.

(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. Upon 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 within the existing airport premises, no land acquisition or resettlement will occur.

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., upon commencement of service will be done by the executing agency.

(7) Cross-Sectoral Issues

Disability consideration: 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.

(8) Gender Category

<Details of Activities/Reason for Categorization> Agreed to adopt concrete measures and gender mainstreaming needs during appraisal, such as designs and facilities including separate male and female prayer rooms, sari guards for escalators, and facilities for female workers.

(9) Other Important Issues: N/A

4. Targeted Outcomes	
(1) Quantitative Effects	

1) Outcomes (Operation and Effect Indicators)

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	11.84
Amount of international air cargo of Dhaka International Airport (thousand ton per annum)	258	611

(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 14.5%. The Financial Internal Rate of Return (FIRR) will be 8.6%.

[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: 33 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: 33 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 the existing airport remaining in service, as well as to ensuring the safe operation of aircraft and passenger convenience, to limit the impacts of construction on existing operations.

As the existing passenger terminal will also remain operational throughout this Project, the contractor has prepared a construction plan that ensures safety during the construction work, which has been executed with no interferences with existing aircraft takeoff and landing or airport operations identified.

#### 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) Future Evaluation Schedule

Ex-post evaluation: Two years after the project completion

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