

Ex-Ante Evaluation (for Japanese ODA Loan)

1. Name of the Project

Country: The People's Republic of Bangladesh
Project: Chittagong City Outer Ring Road Project
Loan Agreement: March 24, 2010
Loan amount: 9,096 million Yen
Borrower: The Government of the People's Republic of Bangladesh

2. Background and Necessity of the Project

(1) Current State and Issues of the Road Transport Sector in Bangladesh

In Bangladesh, the road network is an important means of transportation. Between 1998 and 2006, the number of registered vehicle increased at an annual rate of around 6%. In the future, it is anticipated that both the number of vehicles and traffic demand will increase even more due to the impact of economic development and population growth. On the other hand, traffic congestions occur frequently because in addition to the fact that the systematic road network connecting each urban center is still under development, arterial roads within the major urban centers (particularly in the city of Dhaka and Chittagong) have not been developed sufficiently. This problem requires urgent attention.

(2) Development Policies for the Road Transport Sector in Bangladesh and the Priority of the Project

The development of the road sector in Bangladesh is put forward as one of the most important issues in the Poverty Reduction Strategy Paper (PRSP) for the country to achieve economic growth and poverty reduction. At a national level, development of the road transport system is being carried out with a focus on connecting the economic growth centers with the suburban road network in accordance with the National Land Transport Policy; on the other hand, at each urban center level, it is planned that the road network will be developed in accordance with each urban development plan.

In addition, this project is placed as one of the top priority in Chittagong city development strategy. Chittagong, the second-largest city in Bangladesh, and having the largest Export Processing Zone (EPZ) in the country, the largest port facilities, and an international airport, is expected to play an important role in the future development of the country. Against this background, the Chittagong Metropolitan Master Plan (CPMP) has been drawn up. For the purpose of implementing the plan, the Detailed Area Plan (DAP) was formulated in 2008, where development of key arterial roads is planned in order of precedence. With the plan of building a road network connecting the above-mentioned EPZ, airport and so on for the purpose of facilitating distribution and at the same time alleviating traffic congestion in the central part of the city, this project is positioned as one of the highest priority projects in the DAP.

Furthermore, as Bangladesh is highly vulnerable to natural disasters and the Chittagong city area, among other places, is particularly susceptible to cyclones, etc., and given the fact that this project is going to construct embankment cum road along the coastline of the city, this project is also designated as one of the highest priority projects for flood countermeasure.

(3) Japan and JICA's Policy and Operations in the Road Transport Sector

Based on Country Assistance Program for Bangladesh (May 2006) drawn up by Government of Japan, JICA positions the road transport sector in Bangladesh as a priority area of economic infrastructure development that is one of the development tasks concerning economic growth and this project is in accord with the above-mentioned policy. The following are the major past aid

records within the road sector:

- Loan aid: Jamuna Multipurpose Bridge Project, Jamuna Bridge Access Roads Project, Greater Faridpur Rural Infrastructure Development Project, Eastern Bangladesh Rural Infrastructure Development Project, and the Eastern Bangladesh Bridge Improvement Project
- Grant aid: Meghna Bridge Construction program, Meghna Gumti Bridge Construction program, and the Portable Steel Bridge Construction on Feeder & Rural Roads program

(4) Other Donors' Activity

In addition to JICA, two other major donor organizations, the World Bank and Asian Development Bank (ADB), are coordinating to carry out aid projects as follows:

- The World Bank is implementing a project concerning rural transport infrastructure development and carrying out a maintenance improvement project with the relevant agencies. Furthermore, the World Bank is going to implement a large-scale railway development project, and accordingly planning to implement a railway-related infrastructure development project in Dhaka and its vicinity.
- ADB is also lending intensive support to the road sector at Chittagong, formulating a project plan for a high-standard road between Dhaka and Chittagong, and constructing a port access road which connects the Port of Chittagong with the Dhaka-Chittagong national highway.

(5) Necessity of the Project

The purpose of this project is to facilitate the economic development of Chittagong and eventually contribute to the economic development of Bangladesh by alleviating traffic congestion on the existing trunk roads in Chittagong city, as well as reducing the damage caused by such natural disasters such as cyclones and tidal waves. As this project is also in line with the priority area specified in the foreign aid policy of JICA, therefore, the necessity and relevance of JICA's support of this project is high.

3. Project Description

(1) Project Objectives

The objective of the Project is to alleviate traffic congestion in Chittagong city while simultaneously improving the City's disaster preparedness by constructing a ring road which has a bank-protection function, and then to reduce the infrastructure bottleneck that is hindering economic growth, thereby helping to attract more investments into the region and promoting further economic growth.

(2) Project Site/Target Area

Chittagong city

(3) Project Components

- 1) Construction of the embankment cum road (14.7km) and 3 feeder roads (6.9km in total)
- 2) Development of site for resettlement
- 3) Consulting services (detailed design, assistance with bidding, construction management, improvement of skills of the implementing agency, etc.)

(4) Estimated Project Cost (Loan Amount)

16,645 million yen (Loan Amount: 9,096 million yen)

(5) Schedule

March 2010 - February 2017 (in total 84 months). To be completed with commencement of service (February 2016)

(6) Project Implementation Structure

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

- 2) Executing agency: Chittagong Development Authority (CDA)
- 3) Operation and Maintenance System: The same as 2)

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

1) Environmental and Social Consideration:

a) Category: A

b) Reason for Categorization:

This project is categorized as A because it is located in a sensitive area and likely to have significant adverse impact on the environment under the “Japan Bank for International Cooperation Guidelines for Confirmation of Environmental and Social Considerations” (April 2002) in terms of its characteristics.

c) Environmental Permit:

Environmental Impact Assessment (EIA) report concerning this project has been approved by the Department of Environment, Ministry of Environment and Forests in July 2009.

d) Anti-Pollution Measures:

During the construction work for this project, a range of measures will be put in place including watering, covering the construction equipment and materials with an anti-scattering cover, and appropriate management of delivery vehicles and heavy construction machinery. In addition, in relation to the influence of soil contamination and water pollution associated with mound layering, soil surveying of the sand/gravel quarry will be conducted. With regard to the noise when the road is placed in service, such measures as speed restrictions in the residential areas and the installation of buffer zones through roadside planting will be put in place.

e) Natural Environment:

It is assumed that negative impact on the natural environment will be minimal.

f) Social Environment:

This project involves large-scale land acquisition (108 ha) and relocation of residents (7,308 people). Land acquisition, resettlement and compensation will be implemented in line with the procedures that are stipulated in the domestic laws of Bangladesh.

g) Others/Monitoring:

During this project, monitoring for noise, vibration, water quality, air quality, land acquisition, relocation of the residents and so on are carried out by executing agency.

2) Promotion of Poverty Reduction: None

3) Promotion of Social Development (e.g. gender perspective, measures for infectious diseases including HIV/AIDS, participatory development, consideration for persons with disability, etc.): None

(8) Collaboration with Other Donors: None

(9) Other Important Issues: None

4. Targeted Outcomes

(1) Performance Indicators (Operation and Effect Indicator)

Indicator	Coverage	Baseline (Actual value in 2009)	Target (2018) (Expected value 2 years after project completion)
Annual average daily traffic (number of vehicles/day)	Main road: 14.7km	NA	19,200
	Existing road (Aziz Road)	33,958	21,700
Travel Time (minute) (average of both directions)	Existing road (The starting point of this project – city center: 17.4 km)	Morning: 32 Daytime: 35 Night: 40	28
Travel speed (km/hour) (average of both directions)	Existing road (The starting point of this project – city center: 17.4 km)	Morning: 32.2 Daytime: 29.8 Night: 26.0	42.4
Natural disaster-related impassable days per year (day/year)	Main road: 14.7 km	NA	0

(2) Internal Rate of Return

Based on the conditions indicated below, Economic Internal Rate of Return (EIRR) for this project is 23.9%

[EIRR]

Cost: Project expenses (excluding tax), management, operation and maintenance

Benefits: Alleviation of traffic congestion in Chittagong city; Reduction of cyclone damage

Project life: 20 years

5. External Factors and Risk Control

Delays in civil engineering work, etc. due to natural disasters such as floods

6. Lessons Learned from Past Projects

Based on past experience of similar projects, the importance of ground/soil-property survey and staff in charge of the site at the maintenance/administration stage has been pointed out. On the basis of these, it is planned not only to carry out a full survey of ground/soil-property at the detailed design stage, but also to give assistance through our consulting service while implementing the project with capacity development program for the staff of the executing agency, the organization in charge of the operation and maintenance.

Furthermore, based on past experience of projects that involved the large-scale resettlement, it has been pointed out that it is necessary to take appropriate measures to ensure that those residents who are targeted for relocation have sufficient means of livelihood/standard of living. With this project, not only planned to mobilize consultants and specialized NGO for this issue so that compensation and livelihood improvement measures can be carried out in an appropriate manner in accordance with the Resettlement Action Plan, but also, even after the completion of the project, it is planned to create a section inside the executing agency which deals with environmental and social issues so as to fully monitor the livelihood of the relocated people.

7. Plan for Future Evaluation

(1) Indicators to be used

- 1) Annual average daily traffic (number of vehicles/day),
- 2) Reduction of the travel time (minutes)
- 3) Improvement of average travel speed (km/h)
- 4) Reduction of natural-disaster-related impassable days per year (day/year)

5) EIRR (%)

(2) Timing

Two years after the completion of the project