

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

### 1. Name of the Project

Country: The People's Republic of Bangladesh

Project: Disaster Risk Management Enhancement Project

Loan Agreement: June 29, 2016

Loan Amount: 16,996 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 Disaster Management Sector in Bangladesh

The People's Republic of Bangladesh faces the Bay of Bengal and 90% of the land is situated in the world's largest delta, a low-lying area at an elevation of 10m or less above sea level. Approximately 20% of the land is inundated in rainy season. Beside that a cyclone strikes the country nearly every year. Meteorological and climatic factors, as well as topographical factors, cause a high frequency of natural disasters. According to the Emergency Events Database (EM-DAT), the total number of deaths due to natural disaster in the past 30 years from 1985 through 2014 was more than 170 thousand and that of the affected people of natural disaster was over 262 million. Bangladesh's annual average economic loss in the same period was approximately 570 million dollars, which accounted for about 0.9% of the average GDP in the same period. Bangladesh is one of the most vulnerable countries to natural disaster in the world. Also, a major earthquake that occurred in Nepal, its neighbor country, in April 2015 elevated the sense of vigilance against earthquakes.

The Disaster Management Act was enforced in 2012 in Bangladesh under the support of international development agencies. The act provides that disaster risk reduction and emergency measures shall be comprehensively implemented under the initiative of the Ministry of Disaster Management and Relief (MoDMR). However, the disaster risk management system is still fragile and the inter-ministerial formulation of disaster risk reduction plans and guidelines and the lateral communication system among relevant ministries and agencies to disaster risk reduction have not been appropriately established. As for infrastructure recovery and rehabilitation, although disaster risk reduction measures based on independent criteria have been taken in each ministry or agency, there are many cases where an investment in disaster risk reduction is not made due to insufficient coordination among ministries and agencies, and the neighboring areas are at high risk of suffering disaster because of the government's failure to carry out timely repairs. An example of investment in disaster risk reduction may be cited the fact that although a budget for an embankment road has been prepared, a budget for repairing the foundation of the embankment is not secured. There is a room for improvement in the effective and efficient use of a disaster risk reduction budget. In terms of communication system and equipment utilized in disaster, the government's enhanced disaster information transmission system is acknowledged since the

residents' evacuation rate has increased at the time of occurrence of a recent cyclone. On the other hand, the information-gathering network in the afflicted area during disaster is fragile, which is an obstacle to accurate emergency action or early recovery. Moreover, the procedures or rules for post-disaster recovery and rehabilitation have not been established, thus prompt recovery cannot be taken.

#### (2) Development Policies for the Disaster Risk Management Sector in Bangladesh and the Priority of the Project

The People's Republic of Bangladesh has set a goal of becoming a middle-income country by the year 2021, aiming to increase domestic and foreign investment. Vulnerability to disaster is a major impediment to sustainable social and economic development in various forms. For example, vulnerability to disaster will not only raise the risk of investment but increase the cost of restoring damaged infrastructure, boost demand for material and equipment necessary to rescue and relief victims buried under a building which has collapsed in a disaster, and deprive the poor of a means of livelihood. In order to reduce vulnerability to disaster and build a resilient society, the government has decided to incorporate priority actions agreed upon in the Sendai Framework for Disaster Risk Reduction in the goal and activities of The Seventh Five Year Plan (FY2015/16 to 2019/20), strengthen the capacity of the whole staff, and reduce disaster risk. The Disaster Risk Management Enhancement Project (hereinafter referred to as "the Project") has been positioned as a priority project to enhance the capacity for proper management of natural disaster risk toward the activities to be conducted in line with the Sendai Framework. The activities include disaster risk reduction, emergency response and enhancement of quick and effective recovery/rehabilitation system.

#### (3) Japan and JICA's Policy and Operations in the Disaster Risk Management Sector

The priority goal in the Country Assistance Policy for Bangladesh (June 2012) is to support effective disaster risk reduction and response to climate change to overcome social vulnerability. Also, JICA designated "disaster risk reduction and response to climate change" as a priority subject in the JICA Country Analysis Paper for Bangladesh (April 2013). The Project is in line with this policy and analysis. JICA cooperated in the disaster risk management sector through ODA loan assistance Emergency Disaster Damage Rehabilitation Project (2008) and Haor Flood Management and Livelihood Improvement Project (2014).

#### (4) Other Donors' Activity

The World Bank extends assistance for infrastructure recovery/improvement in the coastal area while the Asian Development Bank supports the prevention of riverbank erosion on Jamuna and Meghna Rivers. The United Nations Development Program (UNDP) extended policy-level assistance and built data collection system for early prediction and warning to establish the framework of the country's disaster management system. UNDP's activities were terminated in 2015. In order to realize disaster risk reduction, it is necessary to create a mechanism to formulate an implementation plan and continuously conduct activities based on the framework.

#### (5) Necessity of the Project

The Project is in line with the assistance policy and the analysis of the Government of Japan and JICA, and will contribute to enhancing risk management of natural disaster and improving the existing infrastructure. There is a great need for JICA to support the implementation of the Project.

### **3. Project Description**

#### (1) Project Objective

The objective of the Project is to enhance comprehensive disaster risk management of the Government of Bangladesh by recovering and rehabilitating infrastructures at high risk for natural disasters, providing equipment for emergency communication and relief, and establishing the scheme for quick and effective recovery and rehabilitation works and its implementation, thereby contributing to build Bangladeshi society more disaster-resilient towards sustainable development.

#### (2) Project Site/Target Area: Throughout Bangladesh

#### (3) Project Components

Following project components will be carried out within the inter-ministerial framework coordinated by MoDMR.

- 1) Enhancing disaster risk reduction (infrastructure recovery/rehabilitation) (hereinafter referred to as “Component 1”): Recovery/rehabilitation of basic infrastructure for daily life such as embankments, bridges, and roads that may increase disaster risk in the neighboring area due to insufficient recovery after the disaster occurred in the past.
- 2) Enhancing disaster emergency response (improvement of equipment) (hereinafter referred to as “Component 2”): Providing equipment for residents’ evacuation, understanding disaster damage and affected situation and radio communication equipment and field communication vehicle to strengthen disaster relief system.
- 3) Enhancing quick and effective recovery/rehabilitation system after the disaster (Recover/rehabilitation of infrastructure that might be damaged by future disaster) (hereinafter referred to as Component 3): To establish a mechanism to enable quick and full-scale recovery/rehabilitation in the event of a disaster and to quickly recover/rehabilitate embankments, bridges, roads, cyclone/flood shelters, and other structures by using the mechanism.
- 4) Consulting services (detailed design involved in infrastructure recovery/rehabilitation and equipment procurement, tender assistance, construction supervision, coordination among relevant ministries and agencies to disaster risk reduction)

#### (4) Estimated Project Cost (Loan Amount)

20,692 million Yen (Loan Amount: 16,996 million Yen)

#### (5) Schedule

June 2016 - June 2022 (73 months in total). The Project will be completed when all facilities are put into service (June 2021).

(6) Project Implementation Structure

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

2) Guarantor: None

3) Executing Agencies: MoDMR serves as a coordinator among relevant ministries and agencies to disaster risk reduction. The executing agencies of each project component are shown below:

① Component 1 : Bangladesh Water Development Board (BWDB) under the Ministry of Water Resources and Local Government Engineering Department (LGED) under the Ministry of Local Government, Rural Development & Cooperatives

② Component 2 : Department of Disaster Management (DDM) under MoDMR and Fire Service and Civil Defence (FSCD) under the Ministry of Home Affairs

③ Component 3 : Department of Disaster Management (DDM) under MoDMR, Bangladesh Water Development Board (BWDB) under the Ministry of Water Resources, and Local Government Engineering Department (LGED) under the Ministry of Local Government, Rural Development & Cooperatives

4) Operation and Maintenance System: The management of the Project is conducted by DDM, BWDB, LGED and FSCD. Since each agency has sufficient capacity and experience in improving infrastructure and maintaining equipment, there is no particular problem. In terms of the field communication vehicle, which to be introduced for the first time in Bangladesh, the supplier will provide technical assistance in operating, maintaining, and managing the vehicle.

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

1) Environmental and Social Consideration

① Category: FI

② Reason for Categorization

The Project is classified as Category FI according to the JICA Guidelines for Environmental and Social Considerations (April 2010), because its subprojects cannot be specified prior to JICA's approval of funding and those subprojects are expected to have a potential impact on the environment.

③ Other / Monitoring

In the Project, BWDB and LGED responsible for infrastructure recovery will categorize subprojects on the basis of the internal legal system of the People's Republic of Bangladesh and the JICA Guidelines for Environmental and Social Considerations (April 2010) and take measures necessary for the relevant category while assistance of a consultant hired with yen loan will be provided. None of the subprojects will fall under the Category A.

(8) Other Important Issues

As for equipment to enhance disaster emergency response, Japanese technology, or an all-in-one field communication vehicle, may be introduced.

#### 4. Targeted Outcomes

##### (1) Quantitative Effects

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

Indicator	Baseline (Actual Value in 2015)	Target (2023) 【Expected value 2 years after project completion】
Component 1		
Number of infrastructures recovered and rehabilitated through inter-ministerial coordination	(Note 1)	Increase (Note 1)
Component 2		
Number of Project Implementation Office in upazila in the target 12 districts with dual system for information communication (number of offices)	0	Increase (Note 2)
Number of fire stations in the target 12 districts with dual system for information communication (number of stations)	41	153
Component 3		
Number of infrastructures recovered and rehabilitated through inter-ministerial coordination (number of projects)	0	Increase (Note 5)
Number of recovery projects (more than 100 million Japanese yen) completed within one (1) year after disaster occurs (Note 4)	0	Increase (Note 5)

Note 1 : Original and target value will be set through baseline survey immediately after the approval of subprojects.

Note 2 : Target value will be set through a baseline survey expected in April 2017.

Note 4 : The cost of a recovery project mentioned above is an indication only. The cost of the recovery project will be surveyed and determined before the Project starts.

Note 5 : The indicator will be confirmed only after disaster occurred. Therefore, actual days taken will be recorded instead of setting target value.

###### 2) Internal Rate of Return

The Economic Internal Rate of Return (EIRR) is not calculated because it is difficult to identify subprojects before implementing the Project.

##### (2) Qualitative Effects

- 1) Reduction of disaster risk to human life, property, socioeconomic activities, etc. and improvement of information transmission before, during, and after the disaster
- 2) An increase in efficiency of public administration for disaster prevention (starting early emergency activities, conducting prompt recovery/rehabilitation activities, efficient

allocation of budget)

## **5. External Factors and Risk Control**

N/A

## **6. Lessons Learned from Past Projects**

### (1) Lessons Learned from Past Projects

From the ex-post evaluation of Sri Lanka Tsunami Affected Area Recovery and Takeoff Project, we drew a few lessons as shown below. A lot of infrastructure restoration support projects are carried out around the same time after the disaster. Therefore, it will take longer than usual to perform a procurement procedure because there is a shortage of material and equipment/contractors or the implementing agency's staff is very busy. It is desirable to take this into consideration when we set the project period. Also, it should be considered to adopt an appropriate procurement procedure while minimizing the implementing agency's workload and ensuring the quality of work

### (2) Application of Lessons Learned to the Project

In order to enhance quick and effective recovery/rehabilitation system, the consultant hired for the Project will help organize the work flow through the implementation of Component 3, bearing in mind a shortage of resources including the staff and a reduction of workload.

## **7. Plan for Future Evaluation**

### (1) Indicators to be Used:

Component 1: Number of infrastructures recovered and rehabilitated through inter-ministerial coordination

Component 2 : Number of Project Implementation Office in upazila in the target 12 districts with dual system for information communication, Number of fire stations in the target 12 districts with dual system for information communication

Component 3: Number of infrastructures recovered and rehabilitated through inter-ministerial coordination, Number of recovery projects (more than 100 million Japanese yen) completed within one (1) year after disaster occurs

### (2) Timing: Two years after the project completion