Internal Ex-Post Evaluation for Grant Aid Project

conducted by Bangladesh Office: March, 2016

Country Name	Programme for Construction of Multipurpose Cyclone Shelters in the Area Affected by the Cyclone Sidr
Bangladesh	

I. Project Outline

Background	Cyclone Sidr, one of the largest cyclones ever recorded, hit Bangladesh from November 15 to 16, 2007 and damaged in 30 out of the country's 64 districts. According to the government announcement made by on December 17 that year, the number of people affected by the cyclone was 8,920,000, the number of fatalities was 3,363, and 871 persons were recorded as missing. Damage was especially severe in the four districts (Pirojpur, Patuakhali, Bagerhat and Barguna) where the cyclone made landfall. In these circumstances, JICA conducted needs assessment and gave construction of cyclone shelters the highest priority. There was also a report that many people were not accommodated to the shelters during Sidr. In view of these circumstances, the Bangladeshi government requested the Japanese Grant Aid for the construction of multi-purpose cyclone shelters, etc. in the four districts that were hardest hit.				
Objectives of the Project	To mitigate risk of cyclone damage for citizens and to improve the educational environment for students living near the multi-purpose cyclone shelters by construction of multipurpose-cyclone shelters planned for both evacuation sites and primary school in the four districts (Pirojpur, Patuakhali, Bagerhat and Barguna) that were hardest hit by Cyclone Sidr.				
Outputs of the Project	1. Project Site: Four districts (Pirojpur, Patuakhali, Bagerhat and Barguna) in Bangladesh 2. Japanese side • Construction of multi-purpose cyclone shelters (cyclone shelter cum primary school) ➢ 36 sites (Pirojpur: 11, Patuakhali: 10, Bagerhat: 5, Barguna: 10) in total 12,628 m^2 ➢ Main facilities: Classroom, teachers' room, storage boys toilet and girls toilet, corridor and stairs, rainwater cistern • Procurement of school furniture such as desk, chairs, and cabinet 3. Bangladesh side: • Clearance and removal of the existing structures at the construction sites				
Ex-Ante Evaluation	2008	E/N Date	June 9, 2008	Completion Date	August 10, 2010
Project Cost	E/N Grant Limit: 958 million yen, Actual Grant: 937 million yen				
Implementing Agency	Local Government Engineering Department (LGED), Ministry of Local Government, Rural Development and Cooperatives (MLGRDC)				
Contracted Agencies	(Consultant) Yachiyo Engineering Co., Ltd. (Contractor) Khan Enterprise, Md. Abdul Khaleque, Razu Enterprise, Friends Corporation, Farazi Enterprise, Progressive International, Md. Abdur Rashid Miah, Rhaman Traders, Mitushi Traders, Mamun Enterprise (Supplier) Japan International Cooperation System (JICS)				

II. Result of the Evaluation[1]

1 Relevance

This project has been highly consistent with Bangladesh's development policy, such as mitigation of cyclone damage risk under "the Poverty Reduction Strategy Paper (PRSP) (2005)" and "the 6th Five Year National Development Plan (2010-2014)", and development needs of construction of multi-purpose cyclone shelters in the cyclone affected areas in order to rescue life of people at the time of both ex-ante and ex-post evaluation. It is also consistent with Japan's ODA policy for social development and human security including disaster control under the Japan's Country Assistance Program for Bangladesh (2006) at the time of ex-ante evaluation.

Therefore, relevance of this project is high.

2 Effectiveness/Impact

As long as the three multi-purpose shelters in Barguna district are concerned, the project has achieved its objectives "to mitigate risk of cyclone damage for citizens and to improve the educational environment for students living near the multi-purpose cyclone shelters." It was confirmed that 14,000 people living within 1.5 km from 12 multi-purpose shelters in four districts (Bagerhat, Barguna, Patuakhali and Pirojpur) became to be able to evacuate to multi-shelters in case of emergency. As long as the three shelters in Barguna district are concerned, when the first big Tropical Cyclone Mahasen hit Bangladesh in May 2013 after project completion in 2010, more than 1,500 villagers near the shelters evacuated to the shelters on average for 1-2 days and human damage was significantly declined. This event was also supported by the mobilization of local administration and the trained volunteer network for massive evacuation since recently the government shifted its disaster control policy from response orientation to risk reduction[2]. In particular, this successful evacuation case in Barguna district

[1] Limitation of evaluation: Since the implementing agencies do not have the information on the current operation and maintenance of the target 36 multi-purpose cyclone shelters, this ex-post evaluation was obliged to collect the necessary information for evaluation through field survey to selected 3 shelters in Barguna district. Three visited shelters were selected from relatively accessible locations. In addition, telephone interview with school management committees and school head masters who use other 9 shelters in four districts of Bagerhat, Barguna, Patuakhali and Pirojpur was conducted. Therefore, the evaluation results of this project is based on the limited information of 12 out of 36 shelters of the project.

[2] Death toll declined significantly last 2 decades in Bangladesh: Cyclone 1991; 140,000 deaths, Cyclone SIDR 2007: 3,400 deaths, Cyclone

proves that the three shelters in Barguna district played an important role in mitigating a risk of cyclone damage for citizens near the shelters. However, the people at risk often are not willing to evacuate from their households leaving their livelihoods and assets (livestock, handicrafts, food reserve, etc.). Construction of raised earthen platforms within the vicinity of the cyclone shelters would encourage them to bring their belongings and keep it safe there.

Regarding the project effect on improvement of the educational environment for students living near the multi-purpose cyclone shelters, it was expected that the average number of children per class room in the target schools would be reduced from 57.5 to 33.1 as a result of increase in the total number of class room in the target area by construction of the shelters. As long as 12 shelters in Barguna district are concerned, this target has not been achieved. Its possible reason may be that on the one hand, the total number of primary school children in the surrounding villages increased, on the other hand, the total number of class rooms in the surrounding villages remained steady. However, due to limited available information, the overall achievement on improvement of the educational environment in the target 38 shelters is unknown. The three shelters in Barguna district could accommodate 817 primary school children as the shelters were used for the government primary school since 2010 in ordinary time. The shelters are also used for nursery. Generally each shelter has 3 class rooms and operated in two shifts: the first shift in the morning for nursery and the second shift in the afternoon for primary school. According to the interview results with representatives of school management committees and school head masters of the primary schools at 12 shelters in the four districts, the construction of multi-purpose cyclone shelters provided the favorable educational environment for the students through the provision of wide class rooms, sanitation facilities (toilets), and drinking water facilities.

During the disaster emergencies, male, female and children stay together with their valuable belongings. Night time lighting becomes an issue to maintain law and order. Also during the normal time, several electrical appliances are used to help teaching and classroom environment. Therefore, access to the off-grid electricity supplies is an important element to integrate in the shelters. Safe water supply all-round the year is a must especially during the disaster emergency period, where renewable power sources, rainwater harvesting and overhead tank will be better choices.

Some positive impacts were observed in the target areas near the three multi-purpose shelters in Barguna district. Firstly, it was revealed that the shelters are also used for a wide array of usages such as awareness meeting and social-cultural gatherings. Secondly it is observed during the field survey that the feeling of security of citizens near the shelters has been improved. Previously people were very reluctant to use the shelters for emergency evacuation due to horrible living environment and almost no facilities to survive for couple of days. However, the services and facilities created in the new shelters such as water and sanitation facilities, emergency relief supply and general health facilities have changed the perception of people and they volunteered to come and take shelter during cyclones. Thirdly, the accessibility of primary education has been improved in the target areas. For example, total number of students increased by 41% (from 581 to 817 studens), enrollment increased by 91% (from 129 to 246 students), and the passing rate[3] increased by 3% (91% to 94%) in the three surrounding area of the three shelters in Barguna district. Also, in the surrounding villages of other 9 shelters located at four districts of Bagerhat, Barguna, Patuakhali and Pirojpur, total number of students increased by 23% (from 1,642 to 2,018). The enrollment also increased by 36% average (from 369 to 501 students). There was no negative impact on the natural environment and the project was not associated with any land acquisition and resettlement of people.

In light of the above, as long as the 12 multi-purpose shelters are concerned, it seems that the project has somewhat achieved one of the project's objectives, which it to mitigate risk of cyclone damage for citizens. However, the effectiveness on the improvement in the educational environment for students, which is the other project's objectives, is uncertain because of the limited information collected.

Therefore, the effectiveness/impact of this project is rated as fair.

Quantitative Effects

Indicators		(Before the project) 2008 Actual	(After the project) 2010 Target (Note 4)	2010 Actual	(Ex-post Evaluation) 2014 Actual
Indicator 1 (Note 1) Cyclone shelter evacuation population (person)					
a) For 38 shelters (Note 2)		2,300	64,500	N.A.	N.A.
b) For selected 12 shelters		N.A.	17,674	N.A.	14,000
Supplemental information 1 (Note 3) Number of primary school children (person)					
a) For 38 shelters		N.A.	6,470 (Average: 170/shelter)	N.A.	N.A.
b) For selected 3 shelters in Barguna district	Nishanbaria	119	(Average: 170/shelter)	114	137 (20%) (Note 5)
	Sonbunia	190		168	232 (38%) (Note 5)
	Skhina	301		299	448 (50%) (Note 5)
	Total	610 (Average: 203)		581 (Average: 193)	817 (41%) (Note 5) (Average: 272)
Supplemental information 2 (Note3) Number of enrollment in primary school (person)					
a) For 38 shelters		N.A.	N.A.	N.A.	N.A.
b) For selected 3 shelters in	Nishanbaria	N.A.	N.A.	17	30 (76%) (Note 5)

AILA 2009: 91 deaths, Cyclone MAHASEN: 17 deaths).

3 Passing rate: The average number of students who successfully finished the exams.

Barguna district	Sonbunia	N.A.	N.A.	38	42 (11%) (Note 5)
	Skhina	N.A.	N.A.	74	174 (135%) (Note 5)
	Total	N.A.	N.A.	129	246 (91%) (Note 5)
Supplemental information 3 Average number of children per class room in the target schools (including pre-school children)					
a) For 38 shelters (Note 2)		57.5	33.1	N.A.	N.A.
b) For selected 12 shelters		N.A.	N.A.	N.A.	53.6

Source: The Outline Design Report (2008) and interviews with the school management committees and school head master of selected schools.

Note 1: Number of population living within 1.5 km from multi-purpose shelters who can evacuate to shelters in case of emergency.

Note 2: The number of multi-purpose shelters was reduced from 38 (plan) to 36 (actual).

Note 3: The actual data for supplemental information 1 and 2 in 2010 and 2014 are based on the information of the three shelters in Barguna district where the survey team conduct the field visit.

Note 4: Each shelter was designed to accommodate 1,600-1,700 evacuees in case of emergency.

Note 5: The value in brackets is an increase ratio in actual number of primary school children from 2010 to 2014.

3 Efficiency

Although the project cost was within the plan (ratio against the plan: 98%), project period slightly exceeded the plan (ratio against the plan: 117%) because of delay in the construction works caused by lack of technical and financial capability of some local contractors. The outputs of the project were produced as planned.

Therefore, efficiency of this project is fair.

4 Sustainability

The Directorate of Primary Education (DPE) of Ministry of Primary and Mass Education (MoPME) is primarily responsible for operation and maintenance (O&M) of 36 multi-purpose shelters. Besides, Local Government Engineering Department (LGED) of Ministry of Local Government, Rural Development and Cooperatives (MLGRDC), Upazila Disaster Management Committee (UDMC), Upazilla Disaster Management Committee (UZDMC), Cyclone Preventive Program (CPP) and local communities have also some roles and responsibilities in O&M of the shelters such as needs assessment of maintenance and arrangement of maintenance budget. At school levels, the School Management Committee (SMC) and teachers perform day to day O&M activities of shelters including small maintenance, while the major building maintenance is subcontracted to the local contractors and service providers[4]. The implementation structure, which was considered desirable at the time of ex-ante evaluation, is sustained. The engaged departments and committees have sufficient manpower but due to inadequate budgetary allocation for maintenance the quality of the services are being deteriorated.

Regarding the technical aspect, the concerned O&M agency has sufficient skills and knowledge for O&M of shelters. The concerned O&M agency is LGED, which is the largest engineering department of Local Government for rural development, and it has adequate knowledge and experience to maintain shelters. LGED has already been taking care of more than 1500 shelters. On the other hand, most of the approach roads to the shelters are found in bad condition especially in rainy season so that it is not favorable for evacuation and is difficult for disabled people. LGED should look into the matter and take into consideration to improve the road condition before and after the cyclone shelter construction. Also this should have been checked and evaluated more during the detail design and site selection.

As for financial aspect, some problems are observed. The minor maintenance activities such as minor repairing of tube wells, windows, doors, furniture, etc. are done by the SMCs or school authority utilizing their own funds and donations by the parents and communities. However, for major maintenance, the existing O&M budget allocation is not enough. Therefore, SMC can liaison with the local Disaster Management Committees (DMCs) to access the social safety net programmes as an alternative financing option for O&M.

For the current status of operation and maintenance, as long as the three shelters in Barguna district are concerned, no major damage were observed since all three facilities were comparatively new and no such big disasters happened since its construction in early 2010. However, small day to day maintenance and little structural maintenance activities such as repair of roof, windows, doors, pipe connection with water tank, etc. are due for a while. These damages were already reported to LGED and Upazila Education Officer (UEO) but no action has been taken due to unavailability of budgetary allocation. Moreover, SMCs are not equally active for all the schools. This may have happened due to the limited orientation on shelter management issues. To improve on this, there should be a shelter management guideline from the respective Local Government where the delegated roles and responsibilities are clearly defined.

Therefore, there are some problems in the financial aspect and current status of operation and maintenance, the sustainability of this project effect is fair.

5 Summary of the Evaluation

The evaluation result of this project has a limitation of available information and data since evaluation of effectiveness/impact and sustainability is based on the information collected from 12 out of 36 shelters of the project, in particular it heavily relies on the information of three shelters in Barguna district.

As long as the three multi-purpose shelters in Barguna district are concerned, the project has achieved its objective of “to mitigate risk of cyclone damage for citizens”. It was confirmed that 14,000 people living within 1.5 km from 12 multi-purpose shelters in four districts (Bagerhat, Barguna, Patuakhali and Pirojpur) became to be able to evacuate to multi-shelters in case of emergency. As long as the three shelters in Barguna district are concerned, it was confirmed that they played an important

[4] None of the shelters has required major maintenance by the time of ex-post evaluation, while this sentence is mentioned for future case.

role in mitigating a risk of cyclone damage for citizens near the shelters when the first big Tropical Cyclone Mahasen hit Bangladesh in May 2013. Also, according to the interview results, the project effect on improvement of the educational environment for students living near the multi-purpose cyclone shelters has been realized through the provision of wide class rooms, sanitation facilities (toilets), and drinking water facilities by the project. The project has positive impacts on improvement of the feeling of security of citizens, and the accessibility of primary education in the target areas near three shelters in Barguna district. However, one of the achievements of this project's objective, which is to improve the educational environment for students, is uncertain because of the limited information. Therefore, effectiveness/ impact of this project can be judged to be fair.

Regarding sustainability, there are some problems in the financial aspect and operation due to limited O&M budget and current status of operation and maintenance; hence the sustainability of this project effect is fair.

As for efficiency, the project period slightly exceeded the plan because of delay in the construction works caused by lack of technical and financial capability of some local contractors. Therefore, efficiency of this project is fair.

In the light of the above, this project is evaluated to be partially satisfactory.

III. Recommendations & Lessons Learned

Recommendations to implementing agency:

Community recommendations to make the facility more usable and sustainable in the long run:

(1) Capacity Development of SMC

- Lack of ownership on the shelter management procedures among the community/ SMC was identified. Basically these committees should have orientation on shelter management and there should be management guideline from Local Government.
- The SMC has lack of capacity in terms of maintenance and shelter management during emergency Therefore it is necessary to provide some training on shelter management both for normal and disaster period.
- In order to cope with the above issues, the SMC should seek the assistance from local Disaster Management Committees (DMC) to improve shelter maintenance as the safety net programmes are mostly being implemented through these committees e.g. food for work, test relief. The maintenance works may also be done through these channels as the direct budgetary allocation is fairly inadequate.

(2) Improvement in commitment of LGED and Local Government Institutes in O&M of shelters

- Government is reluctant to provide budget for cyclone shelters with relatively good condition. It happens basically due to the lack of budget. LGED should propose periodical maintenance budget from the government. On the other hand, the SMC collects the small scale budget from its own source, like by means of community participation.
- Involvement of Local Government Institutes in the shelter management is found low so it is required to be improved more. The shelters must be linked with Local Government as there are Disaster Management Committees in the local level. This can accelerate the periodical maintenance using the local government funds.

(3) Improvements in accessibility to shelters

- During the design and construction of the cyclone shelters, it may be wise to consider the smooth power/ water supply in the shelter during both normal and emergency periods. In such case, the LGED can revise the detail design and also recommend to the consultant. This lesson can be adopted in the ongoing projects of WB and IDB to be implemented by LGED.
- The road network towards the shelters for quick and safe evacuation should be considered and evaluated more carefully during the detail design and site selection. Most of the roads are found in bad condition especially in rainy season so it is not favorable for evacuation. LGED should look into the matter and take into consideration for the improvement of the road condition before and after the cyclone shelter construction.
- An aspect of the safety and accessibility for physically disabled people during the evacuation was absent in the design of shelter construction. As a result, physically disabled people cannot access easily to shelters. LGED should consider a design to ensure the safety of disabled people at the time of construction plan.

Lessons learned for JICA:

- Power supply is one of the concerns both in emergency and normal time. Therefore the provision of power supply system or solar panel system, which enables continuous electricity supply even when the power grid system is not functioning, should be considered during the project design.

General condition Entrance cyclone shelters

Outlook of Cyclone Shelters.

Damaged rain water cistern system.

Guide wall and slope from the Dias.

Meeting with Head master and SMC

Conversation with Head master and SMC

Conversation with Head master and SMC

Conversation with local HHs living close to the shelter