EMERGENCY 2007 CYCLONE RECOVERY & REHABILITATION PROJECT
ECRRP-PART-E: Monitoring & Evaluation (M&E)

FIELD VISIT REPORT Ref. No. M&E-DTL/BWDB/016

1. Period of Visit : 22 May - 23 May 2012

2. Location of Visit : Polder 41/7B under Barguna O&M Division
Polder 42 under Barguna O&M Division
Polder 39/1D under Barguna O&M Division
Polder 39/2A under Barguna O&M Division
Polder 40/1 under Barguna O&M Division

3. Participants of visit : Mr. A.H.M. Mahbubur Rahman, DTL, M&E Consultants,
Mr. Md. Matiur Rahman, Civil Engineer/ M&E Specialist
Dr. Md. Ashadul Alam, Environment Specialist
Mr. Selim Reza, Information Management and GIS Specialist
District Data Collectors

4. Met Officials during Visit :

BWDB

- Mr. Md. Jahir Uddin Ahmed, Executive Engineer, Barguna O&M Division, BWDB, Barguna
- Mr. Md. Abul Hossain, Sub-divisional Engineer, Barguna O&M Division, BWDB, Barguna
- Mr. Abdul Mannan, Sectional Officer, Barguna O&M Division, BWDB
- Mohd. Abu Hanif Miah, Sectional Officer, Barguna O&M Division, BWDB

DS CONSULTANTS, BWDB

- Mr. Dewan Shahidul Islam, Sr. Construction Engineer, DS Consultant, BWDB, Barguna
- Mr. Shakil Ahmed, Jr. Construction Engineer, DS Consultant, BWDB, Barguna, Patuakhali

Others

- Mr. Md. Arifur Rahman, Contractor's Representative / Engineer, Western Engineering (Pvt.) Ltd., Barguna Sadar, Barguna
- Mr. Ibrahim Khalil, Contractor's Representative, M/S Mahfuzul Hoque, Barguna Sadar, Barguna
- Mr. Nure-Alam Sikder, Contractor's Representative, M/S Parisa Construction, Bamna UZ, Barguna
- Mr. Aniruddah Nandi, Contractor's Representative, M/S Khondokar Mainul Islam JV, Barguna
- Local people of Polder 42 area, Barguna Sadar UZ, Barguna district.
- Local people of Polder 39/1D area, Kakchira, Bamna UZ, Barguna district.
- Local people of Polder 40/1 area, Pathorghata UZ, Barguna district

5. Activities of Visit : Monitoring of ongoing rehabilitation works of Polders 41/7B, 42, 39/1D, 39/2A and 40/1 in Barguna district.

6. Sites visited : Sites under Polders 41/7B, 42, 39/1D, 39/2A and 40/1

7. Observations of the M&E Consultants, ECRRP-E

A. Polder- 41/7B [Package N0. ECRRP/BWDB/ W-02] under Barguna O&M Division
Date of visit: 22.05.12

Visited embankment re-sectioning site between Km. 0+120 and Km. 1+790 under Polder- 41/7B at Betagi UZ, Barguna. No re-sectioning work of the reach has yet started.

Visited construction site of new sluice (3 vent- 1.5mx1.80m) site at Km. 3+500 over Bhorar Khal. Sand pilling works (482 nos. of sand piles @ 1.0m interval having each pile length of 6.0m and sand pile casing diameter was 300mm) was reported to be complete and results of SPT values have been submitted to BWDB design office to review foundation bearing capacity and giving clearance to go ahead with construction works. Partial procurement of sheet piles has been done. Earth work at both C/S and R/S was in progress. [Photo- 01]

Visited rehabilitation work of existing cyclone damaged Bhorar Khal Sluice (2 vent- 1.5mx1.80m) at Km. 3+400. The structure had been outflanked during the cyclone Sidr. Rehabilitation works include backfilling at wing and return walls, base of structure, placement of blocks over inverted filter, loose aprons with slopes at both C/S & R/S of structure and repairing of wing and return walls. A special type of design matching with technicality of the rehabilitation requirement has been made by the DS Consultants. It appeared that the contractor is in a fix as to how to execute the work of damaged structure per design. No doubt that the damage is such as the repair work is quite challenging. In the meantime, a very good time for construction has been lost due to negligence and hesitance of the contractor. The execution of work needs intense monitoring and guidance by design and highly experienced technical personnel. The M&E Consultants is of the opinion that once monsoon rainfall starts, the ditch will be filled with water making the site unfit for any work till the next dry season. [Photo- 02]

Visited the construction of new Napiter Khal Sluice (1vent- 1.5mx1.80m) site at Km. 33+900. Casting of base slab of box, C/S and R/S aprons, wing and return walls have been done and the site is extremely in good condition for doing the remaining works. [Photo-03] Unfortunately, there is no labor and no work for a long time. The site appeared abandoned. The target date of completion of work is 24th May, 2012. The performance of the contractor is very much disappointing. Penal action as per contract should be initiated against the contractor.

B. Polder- 42 [Package N0. ECRRP/BWDB/ W-07] under Barguna O&M Division
Date of visit: 22.05.12

i) Rehabilitation/Physical works:

The rehabilitation program of Polder 42 includes:

i) Re-sectioning of Embankment - 14.45 Km (Km.2.60-Km.4.00=1.40 Km; Km.4.70-Km.5.80=1.10 Km; Km.9.30-Km.10.50 =1.20 Km; Km12.80-Km.14.90=2.10 Km; Km.19.75-Km.25.00= 5.25 Km; Km.26.10-Km.27.50= 1.40 km)

ii) Construction of Water Control Structure (New) - 7 nos. of Sluices at 7 different locations (At Km. 0+000, Km.10+300, Km.20+300, Km.20+500, Km.22+500 Km,23+200 & Km.24+400)

iii) Repair/ Rehabilitation of Water Control Structure- 12 nos. of Sluices at 11 different locations (At Km.4+600, Km. 5+200, Km. 8+000, , Km. 10+500, Km. 17+400, Km. 2+000, Km. 3+000, Km. 7+200, Km. 7+600, Km. 11+400 & Km. 26+100)

Visited re-sectioning work of embankment spot at Km. 21+600 (Reach Km. 19+750 to Km. 25+000) at Sadar UZ, Barguna. Re-sectioning work from Ch. 19+750 Km to Ch. 25+000 was in progress on the existing embankment that was repaired by BWDB own resources after SIDR.

ii) Earthwork & Quality of works:

Quality of earthwork is poor in terms of the following:

- No base stripping has been done before filling earth. [Photo-04}
- Dug belling has not been done properly.
- No profile has been erected.
- Designed berm width has not been maintained rather existing berm has been spoiled by borrowing earth. [Photo-05]
- Earth is being excavated so close to the R/S toe line that it would be very difficult, if not impossible to bring the dyke to design profile of 1:5 slopes in the R/S. The work done profile is much less than R/S design slopes of 1:5.
- For re-sectioning works, slopes should be benched to form a series of horizontal steps. Then the embankment should be filled to the lines and grades as per design section. This procedure is not being followed.

Progress of works is slow and only 41% progress of earth work has been achieved so far. The Contractor, DS Consultants and the Field Officials were advised to expedite progress, rectify defects and to ensure quality of works.

Physical progress of water control structures is negligible.

C. Polder- 39/1D [Package No. ECRRP/BWDB/W-10] under Barguna O&M Division.
Date of visit: 23.05.12

i) Rehabilitation/Physical works:

The rehabilitation works of the polder include:

i) Re-sectioning of embankment: Length- 10.865 Km (Km.0.300-Km.3.550=3.250Km; Km.51.460-Km.52.275=0.815Km; Km.52.550-Km.57.200=4.650Km; Km.65.000-Km.66.150=1.150Km & Km.59.950-Km.60.950= 1.000 km)

ii) Construction of retired embankment: Length- 0.900 Km (Km.59.050 - Km.59.950)

iii) Construction of Water Control Structure (New) - 11 nos. of Sluices at 11 different locations (Km. 0+000, Km.0+200, Km.2+500, Km.52+000, Km.53+000, Km.54+100, Km.54+900, Km.57+600, Km.60+200, Km.65+000 & Km.66+800)

iv) Repair/ Rehabilitation of Water Control Structure- 4 nos. of Sluices at 4 different locations (Km.51+000, Km. 54+100, Km. 63+000 & Km. 66+200)

Visited re-sectioning of embankment sites at Km.0+300 of the reach from Km.0+300 to Km. 3+550 and at Km. 52+275 of the reach from Km.51+460 to Km.52+275. Earth work of the reaches has mostly completed but turfing is yet to be done.

During visit, a good nos. of temporary sheds was found within the design base width of embankment particularly on the river side. It was learnt from the squatters that no squatter list has been prepared. Because of the presence of the squatters, it was difficult to maintain design slope on both sides of the embankment. Overall physical progress of works of Polder is 60%.

ii) Quality of Earthwork

Following deficiencies of earthwork was noticed:

- Inadequate berm width was kept both in the C/S & R/S of the embankment.
- R/S slope of the embankment was found short of design provision of 1:3.

iii) Water Control Structures

New inlet structure (1vent- 600mm diameter) site at Km. 0+300 Km. It was learnt from local people that vertical lift gate of the inlet structure is not functioning properly due to leakage. So, desired retention of water for irrigation purpose has not fully effective. Sr. Construction Engineer, DS Consultant assured that the supplier of the gate will be asked to fix it properly.

New construction of Gholaghata Regulator (1vent - 1.5mx1.80m) site at Km. 0+000 Km. RCC work up to super structure level has been done. Protective work, construction of diversion channel, installation of gates etc. are yet to be done. Backfilling was in progress. Local earth was being used for backfilling. Overall quality of the structure construction is fairly good although there are some patches of plastering works on concrete surface. [Photo-06]

D. Polder- 39/2A [Package No. ECRRP/BWDB/W-03] under Barguna O&M Division.
Date of visit: 23.05.12

Visited construction of the additional Bamna Regulator (2vent- 1.5mx1.80m) at Km.07+700 by the side of the cyclone damaged existing Regulator (2vent- 1.5mx1.80m) at the same location.

New Bamna Regulator: Sand pilling works (317 nos. of sand piles out of 444 nos. @ 1.0m interval each having length of 6.0m and dia. 300mm) was reported to be complete. No physical activity was going on although very good time for construction works prevailed. This is due to sheer negligence of the contractor. [Photo-07]

Rehabilitation of existing Bamna Regulator: The structure had been outflanked during the cyclone Sidr. Rehabilitation works include driving thick sheets to intercept seepage flow, backfilling at wing and return walls, base of structure, placement of CC blocks over inverted filter, loose aprons with slopes at both C/S & R/S of structure and repairing of wing and return walls. A special type of design matching with technicality of the rehabilitation requirement has been made by the DS Consultants. It appeared that the contractor is in a fix as to how to execute the work of damaged structure per design. No doubt that the damage is such as the repair work is quite challenging. In the meantime, a very good time for construction has been lost due to negligence and hesitance of the contractor. The execution of work needs intense monitoring and guidance by design and highly experienced technical personnel. The M&E Consultants is of the opinion that once monsoon rainfall starts, the ditch will be filled with water making the site unfit for any work till the next dry season. [Photo-08]

E. Polder- 40/1 [Package No. ECRRP/BWDB/W-10] under Barguna O&M Division.

i) Rehabilitation of Physical works:

The rehabilitation works under the polder included:

(i) Construction of retired embankment- 1.50 Km (Km.11.00 - Km.12.50)

(ii) Re-sectioning of embankment- 15.650Km (Km.3.500 to Km.11.000 and Km.15.300-Km.22.860)

(iv) Construction of Water Control Structure (New) - 5 nos. of Regulators at 5 different locations (Km. 3+400, Km.4+00, Km.13+300, Km.18+800 & Km.19+600)

(v) Repair/ Rehabilitation of Water Control Structure- 4 nos. of Sluices/ Regulators at 3 different locations (Km.7+000, Km. 9+700 & Km. 20+300)

Retired Embankment: Construction of the retired embankment has been dropped from the package. Instead, massive protective works has been planned under a different package not yet taken up. As a result, this portion of embankment remains open permitting flow of saline water during high tides. The rehabilitation works of the polder will remain incomplete unless embankment with protective works is immediately built in the open section.

Re-sectioning of Embankment: Visited re-sectioning site at Km. 4+800. Progress of overall earthwork is reported to be 25% only.

ii) Quality of Earthwork

The quality of earthwork is also poor in terms of the following:

- Dug belling has not been done properly. No profile has been erected. Consequently, work is being done haphazardly.
- Required berm width has not been maintained.
- R/S slope has not been developed as per design provision of 1:5.
- For re-sectioning works, the slopes should be benched to form a series of horizontal steps. The embankment shall then be filled to the lines and grades as per design section.

The Contractor, DS Consultants and the BWDB field officials were advised to expedite progress with rectification.

F. Compliance of Environmental Management Plan

After the cyclone Sidr, the damaged polders have become vulnerable to flooding with chances of damages to lives and properties. Environmental hazards would be more acute if the polder is not rehabilitated compared to the hazards caused by construction works.

The Design and Supervision (D&S) Consultants of BWDB however identified construction hazards in the IEE Reports with corresponding measures summarized in the Environmental Management Plan (EMP) to minimize environmental hazard during rehabilitation works. Compliance status of EMP is stated below:

a) *Posting of Signboard, Maintenance and Protection of Traffic* – Signboards describing package activities were found at Polder- 39/1D, 39/2A and 40/1. No diversion road signboards were seen at construction/ re-construction sites. Safety barriers were not erected and danger warning signs were not displayed at any sites. These should be done.

b) *Construction of Labour Shed/Camp* – *Labour Sheds/Camps* were found at Bhorar Khal structure site under Polder 41/7B, Old Bamna structure site under Polder 39/2A and at Gholaghata Regulator under Polder 39/1D.

c) *Campsite Waste Disposal* – No campsite waste disposal facility is provided by the contractor.

d) *First Aid Kit/Box* – First Aid Kit/Box was only found at construction of a new sluice site at Km. 56+700 of Polder 39/1D. Some first aid medicines were found at Bhorar Khal structure sites of Polder 41/7B.

e) *Tube Well for Water Supply* – No tube well for water supply was seen at any sites visited. Labours have to bring water from long distance. Tube-wells should be installed at a major construction sites.

f) *Sanitation Facility* –Latrines were constructed by the contractors at structure construction sites.

g) *Dust/Air Pollution* – Generally, the air quality in the vicinity of construction sites was good, no pollution due to dust was observed except Old Bamna site. Stockpile of sand was generating dust pollution. Watering of dusty products and covering of stockpiles such as sand should be ensured.

h) *Noise Pollution* – No noise pollution was observed during field visit. Noise pollution was reported to experience the surroundings at the time of sand pilling works of construction of water controlled structures. Sound reducing devices with machines are recommended to the D&S Consultant of BWDB.

i) *Water Quality* – No noticeable water pollution was observed. No sources (spillages, leakages of polluting materials) of surface water pollution were noticed.

To
Md. Jahirul Islam, Ph.D
Project Director, ECRRP: PCMU
Programming Division, Planning Commission
Ministry of Planning

Date : **20.06.2012**
Your Ref : **Nil**
Our Ref : **ECRRP-E(M&E)/FVR/BWDB/252**
Dealt by : **M&E Consultant Field Visit Team**
Subject : Field Visit Report of the M&E Consultants on BWDB works for period 19-25 May 2012.

Dear Sir,

I have the pleasure to forward here with the M&E Consultants' Field Visit Report on BWDB Polders 41/7B, 39/2A, 42, 39/1D and 40/1 under Barguna O&M Division, BWDB for favor of your kind information and disposal.

With thanks.

Sincerely yours,

A.H.M.Mahbubur Rahman
Acting Team Leader,
M&E Consultants, ECRRP-E

Encl.: Field Visit Report

Copy to:
1. Mr. Md. Iqbal Hussain, PD, BWDB, ECRRP-Component C
2. Ms. Reefat Sultana, Infrastructure Specialist, WB, Dhaka.
3. Mr. Zahir Uddin Ahmed, Executive Engineer, Barguna O&M Division, BWDB
4. Team Leader, DS Consultants, ECRRP-C, BWDB

j) *Drainage Congestion/Water Logging* – Drainage congestion/water logging problem will arise due to non-completion of structures before the monsoon. Incomplete execution of the construction/re-construction of sluices of the polder may cause environmental hazards.

k) *Soil erosion* – Soil erosion is the main source of environmental pollution due to poor compaction of earthwork. So earthwork should be compacted layer by layer by hammer after maintaining optimum moisture content. Big clods should be broken.

l) *Stripping of Top Soil* – There is no practice to strip the topsoil from borrowed lands, stockpiling and replacing the same on the upper layer of constructed/re-constructed embankment. The M&E team explained the importance of utilizing topsoil.

m) *Tree Cutting*–No tree cutting was observed. Embankment widening may need cutting of trees. The M&E team advised BWDB to replenish tree plantation at least 3 folds the number of trees felled to preserve the environment.

G. Conclusions and Recommendations:

i) The tasks, responsibilities and obligations of Component PD, Executive Engineers and DS Consultants in respect of contract management should be clearly defined to ensure that the DS Consultants can properly perform the role of 'Engineer' per sub-clause 2.1 of FIDIC, Part II- Engineer's Duties.

ii) Quality of work is generally poor particularly earthwork for re-sectioning. All concerned should put emphasis in maintaining specification.

iii) Quality Assurance Plan (QAP) adopted for the civil works should be made available to the construction supervisors of all sites. DS Consultants should ensure that QAP is strictly adhered to.

iv) M&E Consultants reported in many of the previous FVRs about the poor quality of works with recommendations to make rectification measures. Particular among those are; no base stripping, not keeping the required berm, not developing the design slope, not reaching the design crest height, not making the required compaction etc. There has been no feedback regarding rectification works. In the meantime, intermediate payments are being recommended by the 'Engineer' for the (unspecified) works. PD, BWDB should ensure that contractors are not deriving full benefit of the unspecified works. If necessary, PD may constitute a committee to overview the entire scenario to establish transparency.

v) The Progress of work at BWDB Polders 41/7B, 42, 39/1D & 40/1 is slow as also faulty. Corrective measures as suggested should be undertaken immediately and utmost care should be given to get the work done as per design and specification following terms of contract.

vi) Issues mentioned in compliance of EMP should be adhered to.

vii) No squatter list has been prepared for re-sectioning length of embankment in Polder 39/1D but there is a good nos. of squatters living in re-sectioned portion. Because of the presence of the squatters, re-sectioning work per design profile has been affected. Re-settlement of squatter issue may be settled and embankment should built as per design profile.

A.H.M. Mahbubur Rahman
Deputy Team Leader,
M&E Consultants, Component E
ECRRP

Photo-1: Deteriorated condition of damaged Bhorar Khal in Polder 41/7B. Still sheets have been placed with support. No activity was noticed in the rehabilitation of the critical structure.

Photo-2: Almost abandoned condition of construction of additional new Bhorar khal Regulator at Polder 41/7B.

Photo-3: New construction of Napiter khal Regulator in Polder41/7B. The critical concrete work up to foundation level has been done. The site was found abandoned due to negligence of contractor.

Photo-4: No base stripping has been done in the re-sectioning of embankment in Polder 42.

Photo-5: Designed berm width has not been maintained, instead existing berm has been spoiled in Polder 42.

Photo-6: Construction of new Gholaghata regulator in Polder 39/1D. The progress is satisfactory.

Photo-7: Deteriorated condition of damaged Old Bamna sluice in Polder No.39/2A. No activity in the field. Immediate rehabilitation is essential.

Photo-8: Poor progress of the new Bamna regulator adjacent to the Old Bamna regulator in Polder No.39/2A.