

FRERMIP – Monitoring of EMP Implementation – Round 2

21/22 March 2016: Harirampur, Zafarganj, Chauhali

The EIA for FRERMIP (May 2014) contains the elaborate Environmental Management Plan (EMP; 68 pages) for the Project in its Chapter 10, and is for all three phases of the Project (pre-construction, construction and post-construction). As the pre-construction phase for the current three pilot areas has already been completed whereas post-construction starts after completion of the works, the focus for EMP compliance monitoring is currently on the construction phase only.

The Contractor's Contracts include an EMP as well, which although based on the PPTA/EIA report, is much shorter than the latter. In fact the Contractor's EMP is basically a listing of clauses (Section 2 of Chapter 6 of the Contractor's Contract) covering 4 pages only. The current monitoring focuses on whether the Contractor implements the works in compliance with its EMP obligations.

The present monitoring of EMP implementation form is compiled on the basis of the 'Monitoring Plan' as enclosed in Section 10.5 of the PPTA/EIA but it has been amended for specifically the present phase of Project implementation. This means that it focuses on the work of the present contractors, and it is presented in a format targeting both the PMO and SMO units and individuals that are expected to follow up on the observations and recommendations.

General Observations:

1. Although some site-specific EMP requirements have been achieved, Contractors do not yet comply with all of their contractual EMP obligations; they lag behind specifically in (i) employing a full-time environmental inspector and a nurse; (ii) in providing acceptable standards for water supply and waste management in worker's camps, (iii) lack of a formal Grievance Redress Mechanism, and (iv) in monthly reporting on environmental management.
2. As required by the Project design, a PMO officer, Mr Abdul Basher, has been assigned to be in charge of overall environmental management of the project.
3. As required by the Project design, BWDB's SMO officers (Site Engineers) are in-charge of supervising the Contractors in their on-site day-to-day environmental management, i.e. in Harirampur, Zafarganj and Chauhali.
4. Involved supervising BWDB officers and Contractors and their workers have not been trained in environmental management.
5. Some items in the Contractor's EMP are duplications (e.g. 2.1.1 and 2.3.4) or have limited relevance to environmental management (e.g. 2.4.2).
6. Compliance monitoring trips from Dhaka are tiring and time-consuming (door-to-door: 21/3: 13 hours; 22/3: 14 hours), whereas time on-site is insufficient to cover all aspects of the EMP.
7. Concern is expressed with regard to safe travel to and from project sites, i.e. long drives by car along narrow, crowded and curvy rural roads at considerable speed. Travel imposes safety risks for project staff and local road users. Particularly on unpaved sections speeding cars generate substantial dust being a nuisance to local road users.

General Recommendations:

1. Contractors must step up their performance on EMP implementation, first and foremost by (i) formally assigning a full-time environmental inspector and nurse, (ii) by improving water supply and waste management, (iii) establishing a formal Grievance Redress Mechanism (GRM), and (iv) by monthly reporting on their on-site environmental management.

2. Involved PMO, SMO and Contractor supervising staff and workers should be trained in environmental management as soon as possible.
3. ToRs should be developed for site inspectors in environmental management and medical staff, as well as an outline for a formal GRM and a template and instructions for monthly reporting by contractors on on-site environmental management. Reporting should start ASAP, i.e. in April 2016.
4. PMO is to adopt a system for sharing and following up on EMP compliance monitoring reports.
5. For future Contractor's contracts the EMP section should be revisited and amended, based on experience gained in implementing the pilot area works.
6. For future EMP compliance monitoring trips it will be considered to spend more time on-site and to stay overnight in the project areas.
7. PMO is to step up travel safety standards (wearing safety belts all-time; speed limits) and get drivers and passengers to adhere to these.

ISPMC – Dhaka; 24 March 2016

Dr Nurul Islam – National Environmental Specialist

Wandert Benthem – International Environmental Specialist

Circulation (recommended)

BWDB / PMO office – Dhaka ISPMC – Dhaka Consultant's Supervising Engineer – Manikanj	
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Attachments:

- EMP Compliance Monitoring Report Nr 2 – Harimampur (yellow-marked)
- EMP Compliance Monitoring Report Nr 1 – Zafarganj (green-marked)
- EMP Compliance Monitoring Report Nr 2 – Chauhali (blue-marked)

FRERMIP – Monitoring of EMP Implementation

This monitoring form includes three parts, i.e.:

PART 1: General Project information, findings and recommendations

PART 2: Monitoring Contractor's EMP and Safety at Site Compliance

PART 3: Post-Construction: operation of flood and bank protection works & other interventions

PART 4: Pictures taken during the monitoring visit

Two Environmental Management Plans (EMP) are distinguished in implementing the ADB-financed Flood and Riverbank Erosion Risk Management Project (2014-2023), i.e. the:

- (i) EMP included as Chapter 10 in the EIA (of May 2014) as enclosed in Volume IV – 'Social Development and Safeguards' of the PPTA report for FRERMIP – this EMP distinguished three phases: Pre-Construction, Construction and Post-Construction and is meant to manage and mitigate all identified adverse impacts of the project).
- (ii) EMP as included in the Contractor's Contract, i.e. as Section 2 – 'EMP and Safety at the Site' of Chapter 6 – this EMP spells out all environmental management obligations of the Contractor on working sites and in worker's camps (the focus of PART 2).

PART 1 – General Project Information, Findings and Recommendations

1-A Location, key contacts and report

Location:	Harirampur	Monitoring report:	Nr 2
Date of visit:	21 March 2106	Date:	24 March 2016
Contract:	W-9 & W-10	By:	Dr Nurul Islam Mr Wandert Benthem
Contractor:	MM Builders		
Contractor's contact:	Mr Robayet – Contract Manager		
BWDB's contact:			
On-site ISPMC Consultant's contact:	Mr Mirza Harunar Rashid – Supervising Engineer Mirza_harunarrashid@yahoo.com Md. Saiful Islam – Site Engineer Islamsaiful1964@yahoo.com		

1-B Main Contract features

Current Contract	Protection of the left (north) bank of Padma River over 10 km by depositing sandbags and concrete blocks on eroding riverbanks near Harirampur. Main contract activities are clearance and establishment of work sites and worker's camps, sand mining, transport of sand to filling areas and cement block making sites; filling and depositing sand bags on/from barges; laying of concrete blocks. In total some 1,400 labourers have been employed, nearly all of these are men; few women have been employed for cooking/cleaning. Most labourers come from 10-20 km away and reside in camps.
Start of the works	January 2016
End of the works	May-June 2016

1C Persons met during this visit

	Party	Name	Position
1	Contractor	Mr Kawsar Ali	Lab Technician
2	Supervising Consultant	Mr Mirza Harunar Rashid Md. Saiful Islam	Supervising Engineer Site Engineer

1D Summary of observations

Significant adverse impacts of the physical construction works were not noted. As dredging takes place on selected sites (with high sand content) in the middle of river where it is several km wide, negative impact is believed to be limited to very local and temporary disturbance of the water downstream of the dredger only. Sandbag filling cannot be expected to have a negative impact on the environment but the works (maneuvering barges, movement of ships, sandbag dumping) will temporarily chase away fish and dolphins (*susu*) that return later, as was confirmed by local fishermen. The main adverse impact of the works is therefore in and around worker's camps (water supply and sanitation facilities), and from moving vehicles through noise and dust generated by these.

1E Summary of recommendations

<p>For BWDB / ISPMC:</p> <ol style="list-style-type: none"> 1. Prepare and conduct training of supervising and contractor staff in environmental management and monthly reporting on these. 2. Assist contractors in developing and introducing a formal Grievance Redress Mechanism and a meaningful template for monthly reporting on EMP implementation. 3. Develop and introduce a system for filing and sharing EMP compliance monitoring reports, and following up on these timely and effectively. 4. Step up code of safety conduct for drivers/passengers and monitor adherence. 	<p>To be achieved by:</p> <ol style="list-style-type: none"> 1. With immediate effect. 2. With immediate effect. 3. With immediate effect. 4. With immediate effect.
<p>For On-site Supervising Consultant:</p> <ol style="list-style-type: none"> 5. Familiarize with EMP requirements. 6. Follow-up on EMP compliance monitoring reports timely and effectively. 	<p>To be achieved by:</p> <ol style="list-style-type: none"> 5. With immediate effect. 6. With immediate effect.
<p>For Contractor:</p> <ol style="list-style-type: none"> 7. Employ one full-time inspector for supervising EMP compliance. 8. Prepare and submit monthly environmental report. 9. Install proper noise silencer on boat and dredger engines. 10. Improve on waste disposal in worker's camps, e.g. by installing waste bins, and deposing waste, and instructing workers through health awareness training. 11. Consider whether any safety equipment is needed for workers (PPE, guards), and acquire and distribute as needed. 12. Install proper signboards as needed. 	<p>To be achieved by:</p> <ol style="list-style-type: none"> 7. With immediate effect 8. Immediate after training has been conducted. 9. Asap 10. With immediate effect. 11. Asap 12. Asap

13. Install proper fencing as may be needed.	13. Asap
14. Improve waste water management around water points.	14. With immediate effect.
15. Improve sanitation facilities in line with villager's complaints.	15. With immediate effect.
16. Identify, introduce and operate an environmentally sound disposal system for discarded fuel and lubricants and other waste from machinery, as needed.	16. Asap.
17. Develop, introduce and operate a formal Grievance Redress Mechanism.	17. Asap.

1F. Circulation (recommended)

BWDB / PMO office - Dhaka ISPMC - Dhaka Contractor's Resident Engineer - Harirampur Consultant's Supervising Engineer - Manikganj Consultant's Site Engineer - Harirampur	
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PART 2 – Monitoring Contractor's EMP and Safety at Site Compliance

Scoring key: 4 = excellent; 3 = good; 2 = fair; 1 = poor; 0 = non-compliant

EMP Clause	Item	Score	Comment
2.1.1	Inspector		
	Employing one full-time EMP inspector	0	No inspector employed as yet - see also 2.3.4
	Set of environmental standards at site	1	The Contractor's contract is on-site but staff not familiar with EMP or its requirements; Contractor's staff have not been trained in environmental management.
	Monthly EMP reporting	0	No EMP reporting started - see also 2.3.4
2.1.2	Air & noise		
	Spraying water on dry surfaces (roads and work sites)		Not noted; limited vehicle movement anyway
	Noise cancellation at work sites	0	Boat and dredger engines rather noisy (no or limited noise silencer)
2.1.3	Land use		
	Topsoil removal and replacement at work sites		Not noted / not known whether applicable
	Restoring surface vegetation at work sites		As above
2.1.4	Pollution		
	Preventing spills of lubricants and fuel		Not assessed
	Waste disposal at work sites		Not noted / assessed. It is assumed that limited waste is being produced anyway; assumed mostly food leftovers that are dumped in the river

EMP Clause	Item	Score	Comment
	Waste disposal at worker camps	1	Solid waste in camp sites (paper / plastic / kitchen spoils) is not collected; there are no waste bins on site. Liquid waste flows in open pit depressions amidst dormitory/tent sites, attracting flies and other nuisance. Toilet facilities are considered poor. Villagers openly complain about bad smells.
2.1.5	Disruption of agricultural activities		
	Minimizing disturbance	2/3	Contractor hires office building and land for worker's camp from local farmer, reportedly.
	Compensation arrangements		As above
2.2.1	Navigation		
	Preventing navigation routes of riverine traffic	3	No obstructions noted.
	Clearance permits for protection works and sand mining	3	Protection works require ECC from DoE and PMO has received clearance already. For sand mining, contractor has sub-contracted. Sub-contractor has received clearance from the district authority concerned, reportedly. See also 2.2.4.
	Compliance to GoB navigation and safety standards		Not assessed as yet.
	Coordination with BWDB & BIWTA on dredging operations		No problems or concerns noted.
2.2.2	Roads		
	Road inspections		Not assessed.
	Road use & maintenance	2	Most vehicle movement is on existing road system: these are normally narrow crowded rural roads where speeds should be low; speeding causes risks to road users and dust being a nuisance.
2.2.3	Excavation of earth in slope protection		
	Excavation in accordance with approvals		Excavation for slope preparation as per approved engineering design - no environmental problem in this regard.
2.2.4	Sand mining		
	Mining in accordance with approvals	3	See 2.2.1 - approval of sand mining is not the concern of the contractor since he is sub-contracting it to a dredging firm; legal permit has been given by local authority.
2.3.1	Safety equipment to prevent accidents / injuries		
	Helmets & life jackets / buoys	2	Some equipment (helmets/vests) has been acquired and is available in inspection barge (not used though). Workers on dredgers and sand filling barges do not wear or use safety equipment.
	Traffic control signboards	0	None recorded.
	Guards / walkways / etc	0	Walkways on sand filling barges are available but there are no guards
2.3.2	First aid		
	First-aid nurse	2	First-Aid kit is available and staff have received some training, according to the Contractor

EMP Clause	Item	Score	Comment
	Qualified medical doctor		Not recorded
	Health inspection & vaccination to workers	0	No awareness campaign on health issues (e.g. AIDS/HIV, sanitation) has been given or is planned.
2.3.3	Accidents		
	Reporting of accidents within 24 h	0	No reporting on environmental / health / safety issues is taking place
2.3.4	Full-time Safety Inspector		
	Employed / on-site	0	No inspector employed as yet - see also 2.1.1
	Monthly safety report	0	No reporting taking place as yet - see also 2.1.1
2.4.1	Site management		
	Clearing obstructions, grading, working / storage sites	1	No fencing around worker's camp noted.
	Protection of existing structures		Not noted.
	Maintenance of temporary roads		Not noted.
	Building maintenance		Not noted.
	Site fencing		Not or only partial existing.
	Equipment management		Not assessed.
2.4.2	Lay-out drawings		
	Submission on demand		Not assessed.
2.4.3	Sanitation conditions & waste management		
	Water supply	1	Few standpipes are available but there is no concrete platform around and drainage pipe away from these to divert wastewater that could pollute source. Open pit wastewater dump amidst tents or near toilets. Unhealthy conditions.
	Sanitation (toilets etc)	1	Some 30 latrines provided (= 1400 / 30 = 50 persons/latrine), that all lack proper doors; drainage into open pits (that appear full) that cause nuisance to villagers in surroundings. Villagers complain openly.
	Waste management	1	No waste bins available for paper / plastic.

PART 3 – Post-Construction: operation of flood and bank protection works & other interventions

Nr	Important Environmental Component (IEC) / impact	Mitigation measure	Monitor frequency	Score	Comment
	Water resources				
1	Condition of new and rehabilitated embankments (crest level, width, slope)	Check & report			
2	Performance of drainage sluice & fish pass	Check & report			
3	Condition of riverbank	Check & report			

Nr	Important Environmental Component (IEC) / impact	Mitigation measure	Monitor frequency	Score	Comment
	protection works				
4	River planform	Check & report			
	Land and agriculture resources				
5	Crop yield	Check & report			
6	Crop damage	Check & report			
7	Irrigation expansion	Check & report			
	Fisheries resources				
8	Operation of Fish Sanctuaries	Check & report			
9	Fish habitat - status	Check & report			
10	Fish migration	Check & report			
11	Fish diversity	Check & report			
12	Fish production	Check & report			
13	Pond fish culture	Check & report			
14	Public awareness	Check & report			
15	Training needs	Check & report			
	Other ecological resources				
16	Survival rate of planted saplings	Check & report			
17	Operation of Wildlife Sanctuaries	Check & report			
18	Bird counts	Check & report			
19	Other wildlife counts	Check & report			
	Socio-economic				
20	Communication?	Check & report			
21	Protection of municipal area including markets and homesteads?	Check & report			
22	Employment?	Check & report			
23	Income generation?	Check & report			

PART 4 – Pictures taken during the visit



1. Sand mining from a dredger in the middle of Padma River



2. As Picture 1



3. Life-jackets aboard inspection barge (un-used)



4. Interviewing local villagers about fisheries impacts



5. Washing at tubewell in worker's camp



6. Wastewater dump near worker's dormitory (tent)



7. Toilet facilities for 1400 labourers



8. Village women complaining about smell from toilets

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- (i) EMP included as Chapter 10 in the EIA (of May 2014) as enclosed in Volume IV – 'Social Development and Safeguards' of the PPTA report for FRERMIP – this EMP distinguished three phases: Pre-Construction, Construction and Post-Construction and is meant to manage and mitigate all identified adverse impacts of the project).
- (ii) EMP as included in the Contractor's Contract, i.e. as Section 2 – 'EMP and Safety at the Site' of Chapter 6 – this EMP spells out all environmental management obligations of the Contractor on working sites and in worker's camps (the focus of PART 2).

PART 1 – General Project Information, Findings and Recommendations

1-A Location, key contacts and report

Location:	Zafarganj	Monitoring report:	Nr 1
Date of visit:	22 March 2106	Date:	24 March 2016
Contract:	By:	Dr Nurul Islam Mr Wandert Benthem
Contractor:	Western Engineering Ltd – Nuruzzman Khan – Parisha Trade System Ltd.		
Contractor's contact:	Md Shah Alam – Site Engineer (1) Md Yousuf – Site Engineer (2)		
BWDB's contact:			
On-site ISPMC Consultant's contact:	Mr Mirza Harunar Rashid – Supervising Engineer Mirza_harunarrashid@yahoo.com Mr Nurul Amnin – Site Engineer nurulamin93@yahoo.com		

1-B Main Contract features

Current Contract	Protection of the left (east) bank of Jamuna River over 2 km by depositing sandbags (2016) and concrete blocks (2017) on eroding riverbanks near Zafarganj. Main contract activities are clearance and establishment of work sites and worker's camps, sand mining, transport of sand to filling areas and cement block making sites; filling and depositing sand bags on/from barges; laying of concrete blocks. In total some 400 labourers have been employed, nearly all of these are men; few women have been employed for cooking/cleaning.
Start of the works	March 2016
End of the works	May-June 2016

1C Persons met

	Party	Name	Position
1	Contractor	Md Shah Alam Md Yousuf	Site Engineer (1) Site Engineer (2)
2	Supervising Consultant	Mr Mirza Harunar Rashid	Supervising Engineer

1D Summary of observations

Significant adverse impacts of the physical construction works were not noted. As dredging takes place on selected sites (with high sand content) in the middle of river where it is several km wide, negative impact is believed to be limited to very local and temporary disturbance of the water downstream of the dredger only. Sandbag filling cannot be expected to have a negative impact on the environment but the works (maneuvering barges, movement of ships, sandbag dumping) will temporarily chase away fish and dolphins (*sunuk*) that return later, as was confirmed by local fishermen. The main adverse impact of the works is therefore in and around worker's camps (water supply and sanitation facilities), and from moving vehicles through noise and dust generated by these.

1E Summary of recommendations

<p><i>For BWDB / ISPMC:</i></p> <ol style="list-style-type: none"> 1. Prepare and conduct training of supervising and contractor staff in environmental management and monthly reporting on these. 2. Assist contractors in developing and introducing a formal Grievance Redress Mechanism and a meaningful template for monthly reporting on EMP implementation. 3. Develop and introduce a system for filing and sharing EMP compliance monitoring reports, and following up on these timely and effectively. 4. Step up code of safety conduct for drivers/passengers and monitor adherence. 	<p>To be achieved by:</p> <ol style="list-style-type: none"> 1. With immediate effect. 2. With immediate effect. 3. With immediate effect. 4. With immediate effect.
<p><i>For On-site Supervising Consultant:</i></p> <ol style="list-style-type: none"> 5. Familiarizing with EMP requirements. 6. Follow-up on EMP compliance monitoring reports timely and effectively. 	<p>To be achieved by:</p> <ol style="list-style-type: none"> 5. With immediate effect. 6. With immediate effect.
<p><i>For Contractor:</i></p> <ol style="list-style-type: none"> 7. Employ one full-time inspector for supervising EMP compliance 8. Prepare and submit monthly environmental report 9. Install proper noise silencer on boat and dredger engines. 10. Improve on waste disposal in worker's camps, e.g. by installing waste bins, and depositing waste, and instructing workers through health awareness training. 11. Consider whether any safety equipment is needed for workers (PPE, guards), and acquire and distribute as needed. 12. Install proper signboards as needed. 	<p>To be achieved by:</p> <ol style="list-style-type: none"> 7. With immediate effect 8. Immediate after training has been conducted. 9. Asap 10. With immediate effect. 11. Asap 12. Asap

13. Install proper fencing as may be needed.	13. Asap
14. Improve waste water management around water points.	14. With immediate effect.
15. Improve sanitation facilities in line with villager's complaints. 6 latrines for 400 workers (1:66) seem insufficient; aim at 1:25.	15. With immediate effect.
16. Identify, introduce and operate an environmentally sound disposal system for discarded fuel and lubricants and other waste from machinery, as needed.	16. Asap.
17. Develop, introduce and operate a formal Grievance Redress Mechanism.	17. Asap.

1F. Circulation (recommended)

BWDB / PMO office - Dhaka ISPMC - Dhaka Contractor's Resident Engineer - Zafarganj Consultant's Supervising Engineer - Manikganj Consultant's Site Engineer - Zafarganj	
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PART 2 – Monitoring Contractor's EMP and Safety at Site Compliance

Scoring key: 4 = excellent; 3 = good; 2 = fair; 1 = poor; 0 = non-compliant

EMP Clause	Item	Score	Comment
2.1.1	Inspector		
	Employing one full-time EMP inspector.	0	Not employed as yet – see also 2.3.4
	Set of environmental standards at site.	0	A Contractor Contract (including the EMP) was not available on site.
	Monthly EMP reporting.	0	Is not taking place as yet – see also 2.3.4.
2.1.2	Air & noise		
	Spraying water on dry surfaces (roads and work sites.		Not seen. Vehicles movement on unpaved roads seems limited.
	Noise cancellation at work sites.		Not noted or assessed.
2.1.3	Land use		
	Topsoil removal and replacement at work sites.	3	A land lease has been concluded with a land owner; the contractor is in the process of constructing a permanent Contractor office.
	Restoring surface vegetation at work sites.		Not noted.
2.1.4	Pollution		
	Preventing spills of lubricants and fuel.	0	Used oil and lubricants are drained in the soil, reportedly
	Waste disposal at work sites.		Not assessed or noted

EMP Clause	Item	Score	Comment
	Waste disposal at worker camps.	1	No wastebins available; wastewater in worker's camp is drained in open pit.
2.1.5	Disruption of agricultural activities		
	Minimizing disturbance.		Not noted / recorded.
	Compensation arrangements.		A land lease has been entered.
2.2.1	Navigation		
	Preventing navigation routes of riverine traffic.		No constraints noted or recorded.
	Clearance permits for protection works and sand mining.	3	Protection works require ECC from DoE and PMO has received clearance already. For sand mining, contractor has sub-contracted. Sub-contractor has received clearance from the district authority concerned, reportedly. See also 2.2.4.
	Compliance to GoB navigation and safety standards.		Not assessed.
	Coordination with BWDB & BIWTA on dredging operations.		Not assessed.
2.2.2	Roads		
	Road inspections.		Not recorded.
	Road use & maintenance.	1	Roads are not sprinkled; however, vehicle movement is limited anyway.
2.2.3	Excavation of earth in slope protection		
	Excavation is accordance with approvals.		Not discussed or noted.
2.2.4	Sand mining		
	Mining in accordance with approvals.	3	See 2.2.1 - approval of sand mining is not the concern of the contractor since he is sub-contracting it to a dredging firm; legal permit has been given by local authority.
2.3.1	Safety equipment to prevent accidents / injuries		
	Helmets & life jackets / buoys.		Some equipment available (life jackets) in Contractor's office but not (yet) used
	Traffic control signboards.		Signboards are being prepared.
	Guards / walkways / etc.		Not noted or discussed.
2.3.2	First aid		
	First-aid nurse.		Discussed but not recorded.
	Qualified medical doctor.		Not recorded.
	Health inspection & vaccination to workers.		Not discussed.
2.3.3	Accidents		
	Reporting of accidents within 24 h.		Not discussed.
2.3.4	Full-time Safety Inspector		
	Employed / on-site.		Not available yet - see also 2.1.1
	Monthly safety report.		Not available yet - see also 2.1.1
2.4.1	Site management		

EMP Clause	Item	Score	Comment
	Clearing obstructions, grading, working / storage sites.		Not noted.
	Protection of existing structures.	3	
	Maintenance of temporary roads.	2	Dust generation on temporary road to worker's camp.
	Building maintenance.	3	Building under construction
	Site fencing.	3	Most sites have been fenced.
	Equipment management.		Not assessed.
2.4.2	Lay-out drawings		
	Submission on demand.		Not assessed.
2.4.3	Sanitation conditions & waste management		
	Water supply.	1	1 unprotected borehole is available.
	Sanitation (toilets etc).	2	6 toilets are available
	Waste management.	1	No wastebins are available; wastewater is drained in an open pit.

PART 3 – Post-Construction: operation of flood and bank protection works & other interventions

Nr	Important Environmental Component (IEC) / Impact	Mitigation measure	Monitor frequency	Score	Comment
	Water resources				
1	Condition of new and rehabilitated embankments (crest level, width, slope)	Check & report			
2	Performance of drainage sluice & fish pass	Check & report			
3	Condition of riverbank protection works	Check & report			
4	River planform	Check & report			
	Land and agriculture resources				
5	Crop yield	Check & report			
6	Crop damage	Check & report			
7	Irrigation expansion	Check & report			
	Fisheries resources				
8	Operation of Fish Sanctuaries	Check & report			
9	Fish habitat - status	Check & report			
10	Fish migration	Check & report			
11	Fish diversity	Check & report			
12	Fish production	Check & report			

Nr	Important Environmental Component (IEC) / impact	Mitigation measure	Monitor frequency	Score	Comment
13	Pond fish culture	Check & report			
14	Public awareness	Check & report			
15	Training needs	Check & report			
	Other ecological resources				
16	Survival rate of planted saplings	Check & report			
17	Operation of Wildlife Sanctuaries	Check & report			
18	Bird counts	Check & report			
19	Other wildlife counts	Check & report			
	Socio-economic				
20	Communication?	Check & report			
21	Protection of municipal area including markets and homesteads?	Check & report			
22	Employment?	Check & report			
23	Income generation?	Check & report			

PART 4 – Pictures taken during the visit



1. Dust from moving vehicles



2. Signboards meant for display (backside in Bangla)



3. Life-jackets (un-used)



4. Campsite for about 400 workers



5. Washing at unprotected tubewell in worker's camp



6. Toilets (6) for about 400 workers



7. Interviewing local village women



8. Wastewater drainage pit

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- (i) EMP included as Chapter 10 in the EIA (of May 2014) as enclosed in Volume IV – 'Social Development and Safeguards' of the PPTA report for FRERMIP – this EMP distinguished three phases: Pre-Construction, Construction and Post-Construction and is meant to manage and mitigate all identified adverse impacts of the project).
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PART 1 – General Project Information, Findings and Recommendations

1-A Location, key contacts and report

Location:	Chauhali	Monitoring report:	Nr 2
Date of visit:	22 March 2106	Date:	24 March 2016
Contract:	By:	Dr Nurul Islam Mr Wandert Benthem
Contractor:	IJ (JV)		
Contractor's contact:	Mr Atiquil Islam / Mr Zahed Iqbal		
BWDB's contact:			
On-site ISPMC Consultant's contact:	Mr Mirza Harunar Rashid – Supervising Engineer Mirza_harunarrashid@yahoo.com Mr Faridul Alam – Site Engineer 1 faridnao@yahoo.com Mr Ekramul Haque Sarder – Site Engineer 2 Ekramul.sarder@gmail.com		

1-B Main Contract features

Current Contract	Protection of the left (east) bank of Jamuna River over 7 km by depositing sandbags and concrete blocks on eroding riverbanks near Chauhali. Main contract activities are clearance and establishment of work sites and worker's camps, sand mining, transport of sand to filling areas and cement block making sites; filling and depositing sand bags on/from barges; laying of concrete blocks. In total some 900 labourers have been employed of which some 200 are from nearby villages and the rest resides in two worker's camps; nearly all of these are men; few women have been employed for cooking/cleaning.
Start of the works	November/December 2015
End of the works	May-June 2016

1C Persons met

	Party	Name	Position
1	Contractor	Mr Zakaria Mahammed Nasim Cell: 01738457229	Site Engineer
2	Supervising Consultant	Mr Mirza Harunar Rashid Mr Faridul Alam Mr Ekramul Haque Sarder	Supervising Engineer Site Engineer 1 Site Engineer 2

1D Summary of observations

Significant adverse impacts of the physical construction works were not noted. As dredging takes place on selected sites (with high sand content) in the middle of river where it is several km wide, negative impact is believed to be limited to very local and temporary disturbance of the water downstream of the dredger only. Sandbag filling cannot be expected to have a negative impact on the environment but the works (maneuvering barges, movement of ships, sandbag dumping) will temporarily chase away fish and dolphins (*sunuk*) that return later, as was confirmed by local fishermen. The main adverse impact of the works is therefore in and around worker 's camps (water supply and sanitation facilities), and from moving vehicles through noise and dust generated by these.

1E Summary of recommendations

<p>For BWDB / ISPMC:</p> <ol style="list-style-type: none"> 1. Prepare and conduct training of supervising and contractor staff in environmental management and monthly reporting on these. 2. Assist contractors in developing and introducing a formal Grievance Redress Mechanism and a meaningful template for monthly reporting on EMP implementation. 3. Develop and introduce a system for filing and sharing EMP compliance monitoring reports, and following up on these timely and effectively. 4. Step up code of safety conduct for drivers/passengers and monitor adherence. 	<p>To be achieved by:</p> <ol style="list-style-type: none"> 1. With immediate effect. 2. With immediate effect. 3. With immediate effect. 4. With immediate effect.
<p>For On-site Supervising Consultant:</p> <ol style="list-style-type: none"> 5. Familiarizing with EMP requirements. 6. Follow-up on EMP compliance monitoring reports timely and effectively. 	<p>To be achieved by:</p> <ol style="list-style-type: none"> 5. With immediate effect. 6. With immediate effect.
<p>For Contractor:</p> <ol style="list-style-type: none"> 7. Employ one full-time inspector for supervising EMP compliance 8. Prepare and submit monthly environmental report 9. Install proper noise silencer on boat and dredger engines. 10. Improve on waste disposal in worker's camps, e.g. by installing waste bins, and depositing waste, and instructing workers through health awareness training. 11. Consider whether any safety equipment is needed for workers (PPE, guards), and acquire and distribute as needed. 	<p>To be achieved by:</p> <ol style="list-style-type: none"> 7. With immediate effect 8. Immediate after training has been conducted. 9. Asap 10. With immediate effect. 11. Asap

12. Install proper signboards as needed.	12. Asap
13. Install proper fencing as may be needed.	13. Asap
14. Improve waste water management around water points.	14. With immediate effect.
15. Improve sanitation facilities and increase number of toilets.	15. With immediate effect.
16. Identify, introduce and operate an environmentally sound disposal system for discarded fuel and lubricants and other waste from machinery, as needed.	16. Asap.
17. Develop, introduce and operate a formal Grievance Redress Mechanism.	17. Asap.

1F. Circulation (recommended)

BWDB / PMO office – Dhaka ISPMC – Dhaka Contractor’s Resident Engineer – Chauhali Consultant’s Supervising Engineer – Manikganj Consultant’s Site Engineer – Chauhali	
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PART 2 – Monitoring Contractor’s EMP and Safety at Site Compliance

Scoring key: 4 = excellent; 3 = good; 2 = fair; 1 = poor; 0 = non-compliant

EMP Clause	Item	Score	Comment
2.1.1	Inspector		
	Employing one full-time EMP inspector.	2	One has been appointed reportedly, although it remained unclear to what extent he had been covering EMP issues thus far – see also 2.3.4.
	Set of environmental standards at site.	2	A Contractor Contract, including the EMP was available in the office. Staff was not yet fully familiar with the EMP or its requirements.
	Monthly EMP reporting.	0	Is not taking place as yet – see also 2.3.4.
2.1.2	Air & noise		
	Spraying water on dry surfaces (roads and work sites.		Not noted or discussed.
	Noise cancellation at work sites.		Not noted or discussed.
2.1.3	Land use		
	Topsoil removal and replacement at work sites.		Not noted or discussed.
	Restoring surface vegetation at work sites.		Not applicable as yet.
2.1.4	Pollution		
	Preventing spills of lubricants and fuel.		Not discussed.
	Waste disposal at work sites.		Not assessed.

EMP Clause	Item	Score	Comment
	Waste disposal at worker camps.	1	There are no wastebins available; paper and plastic waste abound.
2.1.5	Disruption of agricultural activities		
	Minimizing disturbance.		Not noted or discussed.
	Compensation arrangements.		Not discussed.
2.2.1	Navigation		
	Preventing navigation routes of riverine traffic.		Not discussed.
	Clearance permits for protection works.	3	Protection works require ECC from DoE and PMO has received clearance already. For sand mining, contractor has sub-contracted. Sub-contractor has received clearance from the district authority concerned, reportedly. See also 2.2.4.
	Compliance to GoB navigation and safety standards.		Not discussed.
	Coordination with BWDB & BIWTA on dredging operations.		Not discussed.
2.2.2	Roads		
	Road inspections.		Not assessed.
	Road use & maintenance.		Not assessed.
2.2.3	Excavation of earth in slope protection		
	Excavation is accordance with approvals.		Not discussed or assessed.
2.2.4	Sand mining		
	Mining in accordance with approvals.	3	See 2.2.1 - approval of sand mining is not the concern of the contractor since he is sub-contracting it to a dredging firm; legal permit has been given by local authority.
2.3.1	Safety equipment to prevent accidents / injuries		
	Helmets & life jackets.		Not discussed.
	Traffic control signboards.		Not noted.
	Guards / walkways / etc.		Not noted.
2.3.2	First aid		
	First-aid nurse.	3	Nurse available and met; demonstration of equipment given.
	Qualified medical doctor.	0	Not noted.
	Health inspection & vaccination to workers.		Not discussed.
2.3.3	Accidents		
	Reporting of accidents within 24 h.		Not discussed.
2.3.4	Full-time Safety Inspector		
	Employed / on-site.		Assigned reportedly - see 2.1.1
	Monthly safety report.		Not being made yet - see also 2.1.1
2.4.1	Site management		
	Clearing obstructions, grading, working / storage sites.		Not discussed or assessed.

EMP Clause	Item	Score	Comment
	Protection of existing structures.	2	Fencing constructed, however accessible
	Maintenance of temporary roads.		Not discussed or assessed.
	Building maintenance.		Not noted.
	Site fencing.		Fencing constructed, however accessible to public
	Equipment management.		Not assessed.
2.4.2	Lay-out drawings		
	Submission on demand.		Not discussed.
2.4.3	Sanitation conditions & waste management		
	Water supply.	1	Two tubewells noted, both lacking protection and proper discharge.
	Sanitation (toilets etc).	1	Existing toilets (about 1 per 90 workers) is insufficient.
	Waste management.	0	No wastebins or proper management system in place.

PART 3 – Post-Construction: operation of flood and bank protection works & other interventions

Nr	Important Environmental Component (IEC) / impact	Mitigation measure	Monitor frequency	Score	Comment
	Water resources				
1	Condition of new and rehabilitated embankments (crest level, width, slope)	Check & report			
2	Performance of drainage sluice & fish pass	Check & report			
3	Condition of riverbank protection works	Check & report			
4	River planform	Check & report			
	Land and agriculture resources				
5	Crop yield	Check & report			
6	Crop damage	Check & report			
7	Irrigation expansion	Check & report			
	Fisheries resources				
8	Operation of Fish Sanctuaries	Check & report			
9	Fish habitat - status	Check & report			
10	Fish migration	Check & report			
11	Fish diversity	Check & report			
12	Fish production	Check & report			

Nr	Important Environmental Component (IEC) / impact	Mitigation measure	Monitor frequency	Score	Comment
13	Pond fish culture	Check & report			
14	Public awareness	Check & report			
15	Training needs	Check & report			
	Other ecological resources				
16	Survival rate of planted saplings	Check & report			
17	Operation of Wildlife Sanctuaries	Check & report			
18	Bird counts	Check & report			
19	Other wildlife counts	Check & report			
	Socio-economic				
20	Communication?	Check & report			
21	Protection of municipal area including markets and homesteads?	Check & report			
22	Employment?	Check & report			
23	Income generation?	Check & report			

PART 4 – Pictures taken during the visit



1. Camp for about 350 workers



2. Two tubewells in worker's camp, one is operational.



3. Toilets (4) in worker's camp (for about 350 workers).



4. Consulting landowner of worker's camp.



5. Site for making concrete blocks.



6. Nurse on-site demonstrating blood pressure equipment.



7. Discussing EMP in Contractor's office.



8. Fencing of fuel & lubricant storage