



December, 2019

Biannual Report



Environmental Screening Report

DEPARTMENT OF PUBLIC HEALTH ENGINEERING

July'18 – November'19

[A report on WASH facilities and its environmental impact under PEDP-4]

Primary Education Unit, DPHE, Dhaka



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ABBREVIATIONS & ACRONYMS

ADB	:	Asian Development Bank
AusAID	:	Australian Agency for International Development
CIDA	:	Canadian International Development Agency
DFID	:	Department for International Development (of the United Kingdom)
DP	:	Development Partner
DPEO	:	District Primary Education Officer
DPE	:	Directorate of Primary Education
DPHE	:	Department of Public Health Engineering
DTW	:	Deep Tube Well
EFA	:	Education For All
EMF	:	Environmental Management Framework
EU	:	European Union
GOB	:	Government of Bangladesh
IDA	:	International Development Association
JARM	:	Joint Annual Review Mission
JCM	:	Joint Consultation Meeting
JICA	:	Japan International Cooperation Agency
LGD	:	Local Government Division
MIS	:	Management Information System
MLGRD&C	:	Ministry of Local Government, Rural Development and Cooperatives
MoPME	:	Ministry of Primary and Mass Education
MOU	:	Memorandum of Understanding
PEDP-4	:	Fourth Primary Education Development Program
SDTW	:	Semi Deep Tube Well
SEC	:	Small Ethnic Community
STW	:	Shallow Tube Well
SIDA	:	Swedish International Development Agency
TSP	:	Tube Well with Submersible Pump
UNICEF	:	United Nations International Children's Emergency Fund
WB	:	World Bank



EXECUTIVE SUMMARY

The prime objective of PEDP-4 is to ensure an efficient, inclusive and equitable primary education system through a child friendly physical learning environment. Infrastructural development in terms of construction of class rooms and wash blocks, installation of safe drinking water points plays an important role in achieving the sustainable physical learning environment. Department of Public Health Engineering (DPHE) is solely responsible to provide the facilities of quality water supply and sanitation in the primary schools of Bangladesh. As per MoU signed in between DPE and DPHE in September 15, 2019, DPHE will install 15,000 new water points and construct 58,000 Wash Blocks in the primary schools of Bangladesh throughout the program tenure of 5 years. Furthermore, DPHE will conduct water quality tests of earlier installed 65,000 water points and major maintenance of wash blocks constructed during PEDP-3. From the beginning of the project until November'2019 DPHE installed 388 new water points although no new Wash Blocks were constructed during this period. In this tenure, DPHE conducted major maintenance of 752 wash blocks.

The sole purpose of this study is to identify any concern or issue related to the environmental safeguard due to the installation of water points and major maintenance of wash blocks from July' 2018 to November' 2019. The study is based on the environmental safeguard screening conducted during construction and post implementation stages. The screening format is prepared after the approved EMF guidelines of DPE for PEDP-4. The screening included different environmental safeguard indicators such as loss of agricultural land, blockage in the drainage system, provision to access safe drinking water, provision of hand washing and hygiene facility etc.

The screening was conducted by DPHE officials at the Upazilla level which were duly verified in district level and compiled in DPHE headquarter. The environmental monitoring screening confirmed no significant instances or issues that may hamper or influence the environmental safety during the reporting tenure. Being an implementing agency, DPHE would like to uphold this status in its ongoing and upcoming works related to infrastructural development.



1. Introduction

Bangladesh, rolling in the highway of development is about to cherish the golden jubilee of its independence. To ensure true development, it is utmost important to nourish the children of a nation in such a manner that they can uphold the nation from all aspect. This has been eloquently articulated in the Constitution of Bangladesh as well. Fourth Primary Education Development Program (PEDP-4) is the continuation of Government's approach in thriving the excellence of children through the fulfillment of several distinct milestones including construction of need based infrastructures for sanitation and water supply. The program is supported by significant contributions from Government as well as Development Partners (DPs). Department of Public Health Engineering (DPHE) under Local Government Division (LGD) of Ministry of Local Government, Rural Development and Cooperatives (MLGRD&C) is solely responsible to provide the facilities for quality water supply and sanitation in the primary schools of Bangladesh. As per MoU signed in between DPE and DPHE in September 15, 2019, DPHE will perform the following activities in the next five years with an aim to provide safe drinking water and sanitation services in the primary schools under PEDP-4.

- Install 15,000 new drinking water sources.
- Replace/repair drinking water sources (if necessary).
- Water quality testing of 65,000 water points installed earlier by DPHE.
- Construction of 58,000 new Wash Blocks.
- Major maintenance of wash blocks.
- Operation and maintenance (O/M) of water points.

2. Purpose of current report

The basic intent of this report is to identify and resolve any anticipated environmental safeguard issues that may arise during the installation of water sources or construction of Wash Blocks in the primary schools of Bangladesh. This report will encompass and summarize the findings of the environmental screening conducted during the installation of water points and major maintenance of Wash Blocks in the primary schools of Bangladesh from the tenure of July' 18 to November' 19. During implementation of the project, environmental monitoring screening was conducted based on the Environmental Management Framework (EMF) of PEDP-4. The purpose of this report is listed below.

- To modify some of the tools based on the experiences gained from PEDP-3 to ensure that neither the infrastructure, both in terms of needs nor quality at primary schools, nor the environment is compromised through the program intervention.
- To ensure that envisaged purpose of PEDP-4 is achieved and result in desired benefits without adversely affecting the environmental resources.



- To avoid potentially adverse environmental impacts and enhance environmental outcomes so that the program is expected to have limited and minimum adverse environmental impacts.
- To establish the mechanism to determine and assess future potential environmental impacts of WASH infrastructure that are to be identified and cleared based on a community demand driven process and to set out mitigation, monitoring and institutional measures to be taken during implementation and operation of the WASH infrastructure to eliminate adverse environmental impacts or to reduce them to acceptable limits.

3. Indicators of environmental safeguard as per EMF under PEDP-4

This report covers different distinct environmental monitoring indicators based on the approved EMF of PEDP-4. Principles relevant to the environmental management of WASH (Water Supply, Sanitation and Hygiene) in PEDP-4 are mentioned below.

- Annual water quality monitoring of all the installed tube-wells under PEDP-4 will be carried out to ensure safe drinking water facilities to the students and teachers.
- Provision for adequate sanitation facilities for the teachers and students will be made and the mechanism for regular cleaning, routine and major maintenance will be implemented.
- To solve the drinking water problem in remote hilly areas and coastal areas, rainwater harvesting and other feasible options will be explored.

In general, the following indicators requires to be monitored during the planning, construction and post-implementation phases.

- i) Losses of agricultural lands
- ii) Drainage congestion/water logging
- iii) Surface water pollution
- iv) Dust and noise pollution
- v) Safe distance between tube-wells and sanitary latrines
- vi) Occupational health hazards and safety practices
- vii) Maintenance of water supply and sanitation facilities
- viii) Maintenance of air and water quality
- ix) Management of surrounding ecosystem and biodiversity (if any) etc.

A thorough screening on the above indicators were carried out during the reporting tenure.

4. Methodology

With an aim to investigate the impact of infrastructural development on environmental safeguard, a through screening was carried out in the respective primary schools by the concerned sub-assistant engineers of DPHE. The screening results were duly verified by the respective assistant engineers and



a database was prepared at Upazilla level. Executive engineers at district level compiled the verified database obtained from Upazilla level and sent them to DPHE Head Quarter at the MIS (Management Information System) unit, where the database was finally compiled and report was prepared under the supervision of focal point of PEDP-4.

Data for environmental safeguard screening during the installation of water sources and maintenance of Wash Blocks have been collected from the schools through DPHE official sources using the structured format (copy enclosed in Appendix-1 of this report). Data collected from grass root level have been entered into ‘Master Environmental Survey Outcome’ Spreadsheet by MIS UNIT and kept structured for database and reporting. A flow diagram of the screening method is depicted in Fig. 1.

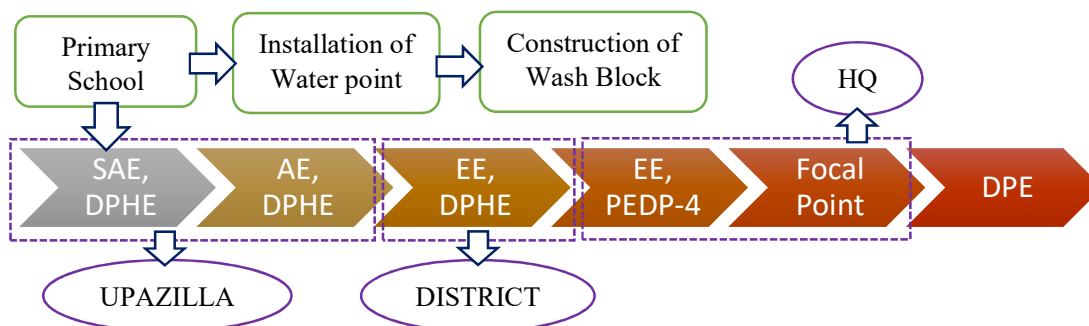


Fig. 1. Method of environmental safeguard screening

5. Role of DPHE in comprehensive monitoring

The subcomponents of PEDP-4 especially the infrastructural implementation are comprehensively monitored by several parties from commencement to operation. Fig.2 shows the monitoring scheme in PEDP-4 operated by different agencies. Being an implementing agency, DPHE is involved significantly from construction till post-construction monitoring. Role of DPHE is depicted in Fig.3. It can be noted that the defect liability period for installed water points and constructed wash blocks are 02 and 01 year respectively. This implies that contractor is responsible to rectify any sort of defects within this time frame counting from the date of handover of tube well and wash block. In order get a clear picture of ongoing and completed works, DPHE district office arranges monthly monitoring meeting with all concerned officers and staffs of that district. Executive Engineers thus address the issues of monitoring to the assistant/ sub assistant engineers monthly. Officers of concerned district used to visit the site frequently in order to monitor the ongoing and completed works and also focus on the environmental safeguard aspect. Visit from Focal Point’s Office and DPHE Head quarter happens frequently.

DPHE district office arranges coordination meeting between DPHE (EE, AE, and SAE) and DPE officials (DPEO, UEO) in every 3 months. A glimpse of the co-ordination meeting is depicted in Fig. 4. In this meeting, officers from department of primary education point out the necessity of monitoring of particular school which are immediately addressed by DPHE officials. In addition, mechanics of



DPHE upazilla headquarters repair the tube wells in an urgent basis when they are called for doing so from the concerned school in order to ensure that the running water supply are fully operational.

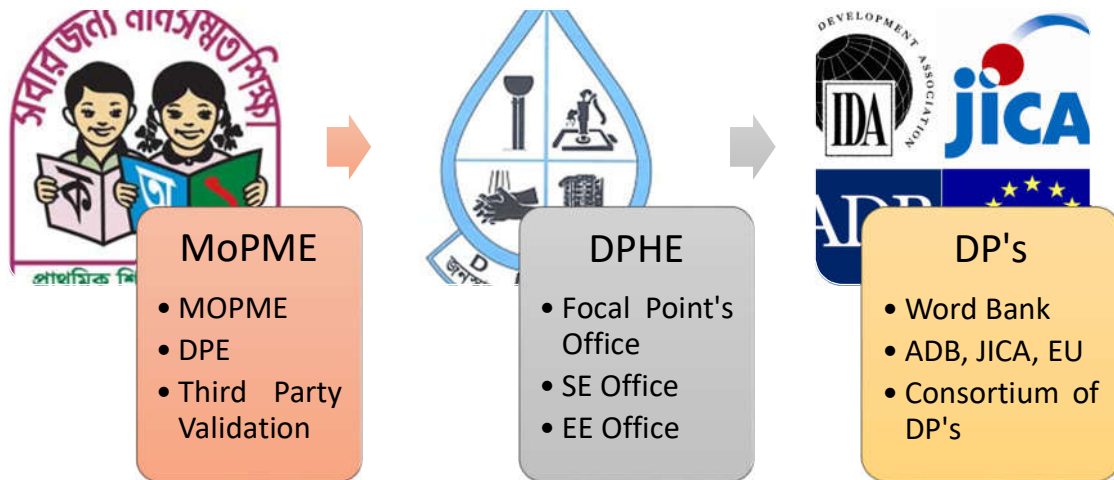


Fig. 2 Monitoring scheme in PEDP-4

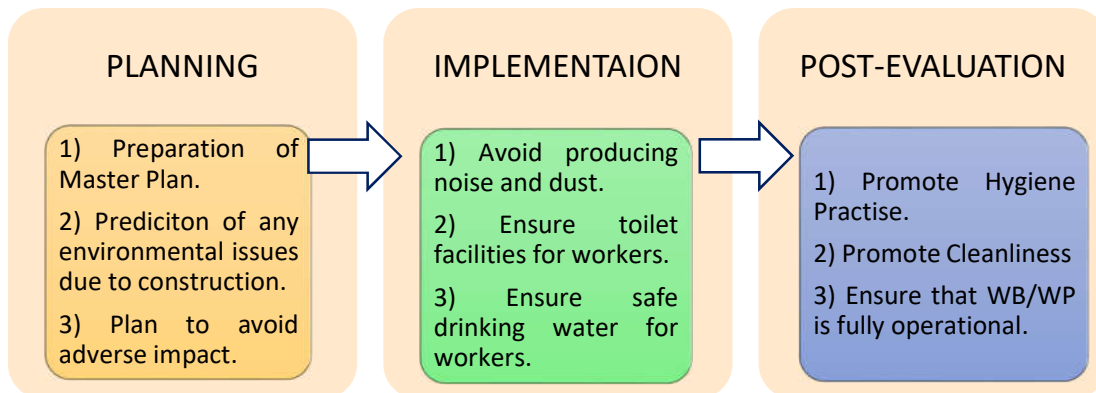


Fig. 3 Role of DPHE in environmental monitoring



Fig. 4 Co-ordination meeting between DPE & DPHE Officials



DPHE arranges caretaker training and provides MoPME approved 'Maintenance Manual' to the concerned schools during the handover of water points and wash blocks which covers post construction issues. Moreover, DPHE looks after the tube wells which have already passed the defect liability period of 02 (two) years. According to the order of Chief Engineer, DPHE (memo no. 1066, dated: 16/09/2013), the packages where the defects liability period is over, DPHE will still repair the tube wells within 72 hours of receiving information provided that the concerned school bears the expense of spare parts from routine maintenance.

6. Capacity building

During the implementation of PEDP-3, a ToT (Training of the Trainers) was conducted by the World Bank among DPE, DPHE and LGED officials. The purpose was to introduce the proposed framework for environmental and social safeguard under PEDP-3 along with the importance of conducting rigorous monitoring. In addition, screening method was agreed and confirmed based on targeted outcomes. DPHE officials (Executive Engineers, Senior Assistant Engineers and Assistant Engineers) who received ToT provided trainings to the sub-assistant engineers and mechanics in the district and upazilla level who eventually filled in the environmental screening forms in the grass root level.

In PEDP-4, although a revised framework is adopted for both environmental and social safeguard, the basic changes are little but elaborate in comparison to that of PEDP-3. During the reporting tenure, no new ToT was organized by either DPE or development partners, although necessity is there for the proper implementation of revised EMF and SMF. During the reporting tenure, DPHE master trainers (who received ToT during PEDP-3) provided day long trainings to about 196 newly recruited sub-assistant engineers and 112 mechanics for the smooth implementation of construction work by adhering the guidelines of both revised EMF and SMF. In order to identify the key differences of revised EMF and SMF to that of original EMF and SMF of PEDP-3, newly designed training schemes are required to be carried out by the experts who had inputs during the preparation of revised EMF and SMF.

7. Environmental safeguard screening by DPHE (July'18 – November'19)

DPHE handed over a total of 388 water points from the beginning of the project until November, 2019. Of them 270 water sources were installed in 2019. In addition, DPHE completed the major maintenance of 752 wash blocks since the beginning of the project. Most (598 nos.) of which were completed during January to November, 2019 of the reporting tenure. All these works were monitored based on approved Environmental Management Framework (EMF) for PEDP-4. Table-1 summarizes the list of DPHE implemented works where screening for environmental safeguard was carried out.



Table 1 Progress of work under PEDP-4, DPHE

Installation/ Maintenance of	No. of water points/ wash blocks covered in screening			
	July'18 - Dec'18	Jan'19 - June'19	July'19 - November'19	Total
Water Sources	118	213	57	388
Wash Block	154	507	91	752

This report focuses on the construction work from the tenure of July' 18 to November'19. During this period, although no new wash blocks have been constructed, major maintenance of 752 wash blocks have been conducted which were constructed during early period of PEDP-3 program. In this period, a total of 388 water points have been installed. The status of the water points and wash blocks received through the monitoring survey is given in following subsections.

8. Outcomes of environmental safeguard screening

8.1 Influence of type of water point

Planning from the lessons learnt in PEDP-3

It is fact that, DPHE installed water points of different options such as Deep Tube Well (DTW), Shallow Tube Well (STW), Tara Tube well, Ring Well (RW), Pond Sand Filter (PSF), Rain Water Harvesting (RHW) in PEDP-3 based on the variation in geological formation, position of aquifer /water table, saline water intrusion etc. However, all those options have certain advantages as well as multiple drawbacks. The common of which is the ease of availability of water from source and their familiarization and user friendliness to the young users.

Mitigation Measures Suggested (MMS):

In order to mitigate the concerns and to make the water sources more popular and user friendly, DPHE started installing Tube well with Submersible Pump (TSP) in all the primary schools under PEDP-4. This option has special features such as-

- Running water supply with storage facility.
- Multiple user can access at the same time.
- Promote hygiene practice through safe hand washing.

Fig. 5 shows the previous and improved water supply facilities in primary schools under PEDP-4.

Comment:

Installation of tube well with submersible pump added values to its user especially young user which eventually increases the easy access to safe drinking water result in health benefit as well as diminishes water logging and drainage problem.



Fig. 5 Improved water sources by TSP from hand tube well

8.2 Distribution of water points based on installed depth

DPHE installed tube wells of varying depth in different primary schools of Bangladesh considering the geological formation of respective district. Although the depth of tube well is depended on the suitable water layer, all the tube wells installed in the reporting tenure can be broadly categorized into four distinct types based on the depth of tube well. Fig. 6 depicts the classification of tube wells based on depth. It is clear that 75.1% tube wells were installed at a greater depth of more than 200m. Number of shallow tube wells were in the range of 15% where the depth is less or equal to 65m.

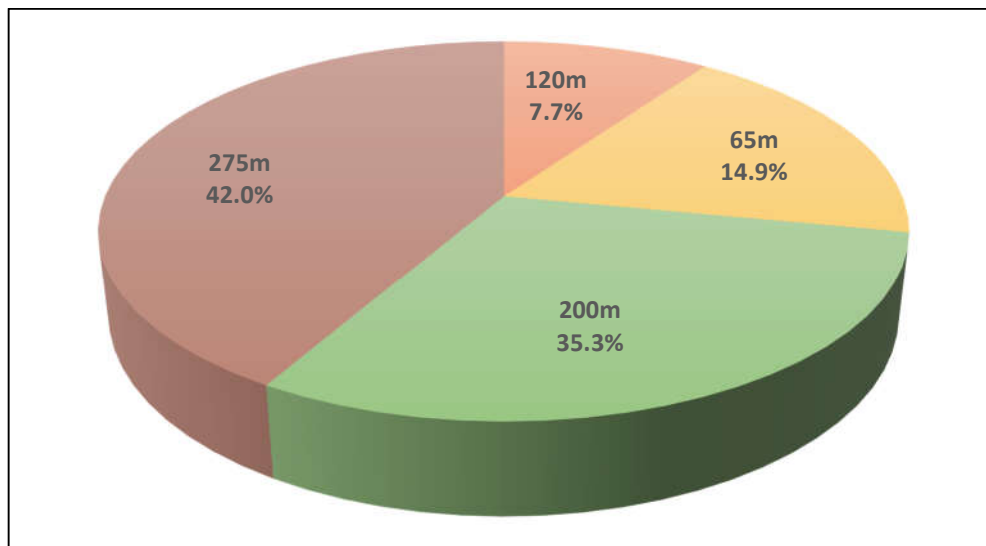


Fig. 6 Distribution of water points based on depth



8.3 Loss of agricultural land

During the preparation of site plan/ master plan it was the prime focus that the adoption of the new water supply facility does not preclude the use of existing agricultural lands. No loss of agricultural lands was received from the environmental screening survey conducted for the water points installed from July'18 to Novmber'19. Furthermore, it was confirmed that installation of water points were carried out in the land owned by the respective school.

8.4 Environment of water supply facility

In case of water points 'Clean Environment' refers to the surrounding of the installed water option. If the surrounding environment is not dirty and/or not covered with algae then it would be referred to as 'Clean'. Post installation monitoring of all 388 water points have been conducted. Clean environment was found in 380 water points which is 98% of the total water points as depicted in Fig. 7. Causes of dirty environment of water supply facility were blocked drainage due to waste dumping near the outlet. It can be noted that due to the provision of basin type water points, water logging and or other problems related to dirty environment have been dramatically reduced than that observed during the environmental screening of other types of tube well installed in PEDP-3 program.

Mitigation Measures Suggested (MMS):

During the monitoring phase, mitigation measures were suggested to the concerned school such as cleaning of basin, removal of leaves and other utensils that causes blockage of the drains etc. Because of taking mitigation measures, caretakers' training and routine maintenance during monitoring phase, environment of water supply facility improves to 100% from 98%.



Fig. 7 Environment of water supply facility



8.5 Surface Water Pollution:

The water sources were installed in such a manner that they do not adversely pollute the surface water. The environmental screening of all 388 water points installed up to November'19 revealed that they did not pollute any surrounding water bodies.

8.6 Facilities for draining out of water

From the lessons learnt during the environmental screening in PEDP-3, DPHE took initiative in solving the water logging problem by adopting different measures.

- 1) Pipe out used water to the existing drains.
- 2) Construction of 5 user water collection basin having 50mm dia. PVC washout pipe. (Drawing attached in Appendix-2).

As because, DPHE local office took initiative in solving the drainage issue, it has been observed that, the water logging problem is insignificant compared to that in PEDP-3. However, it is revealed that out of 388 water sources only 3 (<1%) had the problems of water logging. The reasons observed are mainly blockage of drainage pipe by wastes like paper, tree leaves, mud etc. It is hence suggested that, SMC needs to look after this issue and run regular cleanliness program in the water collection basin and drains.

8.7 Source of existing water supply

During preliminary survey it was found that (Fig.8), out of 388 schools 91.5% did not have their own water option. 49.74% of them used the facility of their neighborhood. Though 8.5% schools have their own tube wells, yet those tube wells were found as non-functional or did not provide sufficient water during dry season. From the lessons learnt during the environmental screening in PEDP-3, DPHE took initiative in solving the above problem by installing new tube wells with submersible pump but at different depth due to site geology.

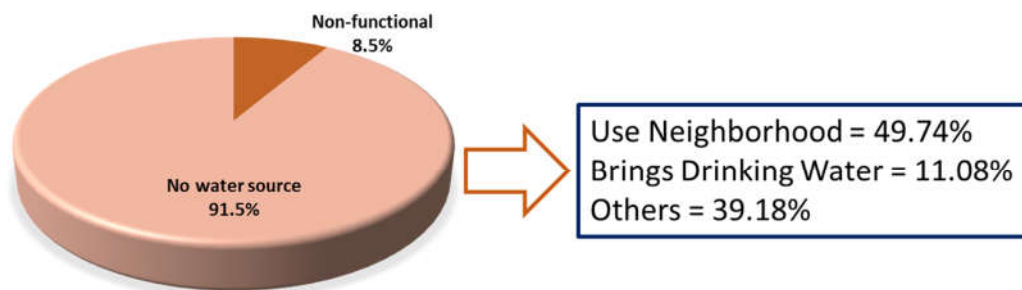


Fig. 8 Status of water points prior to installation



8.8 Water quality

During preliminary survey it was found that, out of 388 monitored schools, none had the concern of excess Iron and Chloride in drinking water. Based on geographic location and DPHE's experience, suitable water options were selected and subsequently provided in the schools as mentioned above.

Water testing facilities in DPHE zonal laboratory:

After installation of new water point in the said 388 schools, laboratory tests were conducted to identify potential hazards of Arsenic, Iron and Chloride in water. The tests were done by the laboratory circle of DPHE and the reports are stored in the DPHE MIS database. Figure below shows laboratory testing facilities of DPHE. None of the said 388 water points have any concern about water quality i.e., the arsenic, iron and chloride content were found below 50ppb, 10mg/l and 600mg/l (1000 mg/l in coastal belt) respectively. Ample field tests were conducted in those schools during post monitoring phase by DPHE. The reports were found in the closer range to the reports of DPHE laboratory test. A sample copy of water test report is provided in Appendix-3 of this report.



Fig. 9 DPHE Zonal Laboratory setup for water testing

8.9 Hand washing facility

Prior to the installation of water sources, hand washing of students before and after meal especially mid-day meal and after using toilet was a matter of concern. As a result, students were more susceptible to diseases which triggered the absence of students from school.

Mitigation Measures Suggested (MMS):

Working with the motto of ‘clean hand, safe hand’ DPHE confirmed the installation of tube wells with running water supply by provision of submersible pump in all the above mentioned schools during the reporting tenure. Construction of state of the art wash basin for drinking as well as hand washing ensured total hand washing facilities in the school. A glimpse of the hand washing performance is depicted in Fig. 10.



Fig. 10 Students practicing handwashing

It is fact that personal hygiene improves the well-being as well as ensures improved environment. In order to confirm adequate hygiene practise, DPHE district and upazilla level officers frequently conduct sessions related to hygiene promotion activities in the classes. All these activities put positive sign to the improvement of total environment. Fig. 11 shows a real time photo of hygiene promotion that was conducted by the Executive Engineer, DPHE, Rajshahi.



Fig. 11 Executive Engineer, DPHE conducting Hygiene promotion at school



8.11 Miscellaneous observations

During the implementation phase, two basic standards were maintained.

- 1) Ensure at least a distance of 10m between water points and leach pit/soak well/septic tank etc.
- 2) Ensure that the water collection basin is not clogged by paper, dry leaves, mud etc.

During monitoring phase, these options were found to be maintained properly.

8.12 Summary of observations

The post installation monitoring of all 388 water points confirmed no major concern or significant issues that can cause adverse environmental impact. Table 2 summarizes some other environmental issues observed during survey of water points.

Table 2 Important environmental issues observed

Issues/Environment Criteria	Findings from the Survey for all TWs
Is the TW installed?	Yes
Is the existing TW working?	Yes
Was the installed TW water tested?	Yes
Is Arsenic < 50ppb?	Yes
Is Iron <5mg/l, for iron prone area up to 10 mg/l	Yes
Is Cl ≤ 600 mg/l, for coastal area up to 1000 mg/l	Yes
Loss of agricultural land?	No
Negative effect on flora/fauna?	No
Conflicts with water supply right?	No
Any potential health risk?	No

Note: Only the particular water source that met the drinking water quality in the laboratory test is handed over to the primary school authority. DPHE preserves all the testing report in the MIS cell.

8.13 Positive environmental impact

The outcomes of the environmental screening as discussed in the previous subsections pointed out the achievement of following positive impacts through the implementation of revised EMF and SMF during the construction works under PEDP-4.



- 1) Through the assurance of contamination free safe water sources in the said primary schools during the reporting tenure, a long awaited demand was fulfilled which not only improved health potential of users but also reduced the dropout rate.
- 2) Lessons learnt from PEDP-3 helped in designing the type and structure of water sources with provision of running water free from bacteriological contamination. This initiative dramatically reduced the problem of water logging and drainage which was encountered in PEDP-3.
- 3) Regular WASH related programs such as hygiene promotion through hand washing campaign not only increased the personal safety of students but also spread the positive vibe in the surrounding society.

9. Monitoring progress report

It is fact that environmental screening report is related to the monitoring of implementation progress of environmental and social management plan. During the planning stage, all possible environmental and social safeguard issues are forecasted and related mitigation plans are included in the related contract packages. Issues related to EMP and SMP are clearly indicated in the ‘Particular Conditions of Tender and Contract for Water Sources/ Wash Blocks’ which is provided by default as a part of tender and contract. Following table shows the monitoring progress report of EMP during the reporting tenure.

Table 3 EMP progress monitoring

Monitoring Criteria	Progress Detail			
	July'18 – Dec'18	Jan'19- June'19	July'19- Nov'19	Cumulative
No. of contracts that incorporated environmental clause	19/19	54/54	11/11	84/84
Funds utilized for addressing safeguards	N/A	N/A	N/A	N/A
No of schools having dirty environment around water source	2/118	4/213	2/57	8/388
Schools with drainage congestion identified and solved	0/118	2/213	1/57	3/388
No. of water points having problem with quality of water	0	0	0	0

10. Conclusions

This study investigates the environmental safeguard concerns during the implementation of water points and major maintenance of wash blocks based on the approved EMF guidelines for PEDP-4. The environmental monitoring screening confirmed no significant instances or issues that may hamper or



influence the environmental safety during the reporting tenure. Being an implementing agency DPHE would like to uphold this status in its ongoing and upcoming works related to infrastructure development.



Appendix-1: Environmental screening report format

District: শোভাখালী
 Upazilla: সাপল উপজেলা
 Name of School: দক্ষিণ পশ্চিম সার্বভাষা সরকারি প্রাথমিক বিদ্যালয়
 School ID: 403011023
 School Type: GPS Type of Water Sources/ wash-block: TSP

Screening Questions	Base Line		Impact Without Intervention			Impact During Implementation			Impact after Implementation			Remarks
	Yes	No	+	-	N/A	+	-	N/A	+	-	N/A	
Environment of Water Supply Facility Good?		✓		✓			✓			✓		
Facilities for Draining out of Water Proper?		✓		✓			✓			✓		
Any Reported event of Sickness?	✓			✓			✓			✓		
Source of Existing Drinking Water		✓		✓			✓			✓		
Is the existing TW working?		✓		✓			✓			✓		
Was the water quality tested?				✓			✓			✓		
Any concern about Water Quality?				✓			✓			✓		
Any Health risk associated?				✓			✓			✓		
Distance of Existing water Source from Leach Pit > 10m					✓						✓	
Height & Location of New Water Source Appropriate?	✓		✓			✓			✓			
Any Loss of Agricultural Land?		✓		✓			✓			✓		✓
Any Negative effect on flora/fauna?		✓		✓			✓			✓		✓
Any conflicts with water supply right?		✓		✓			✓			✓		✓

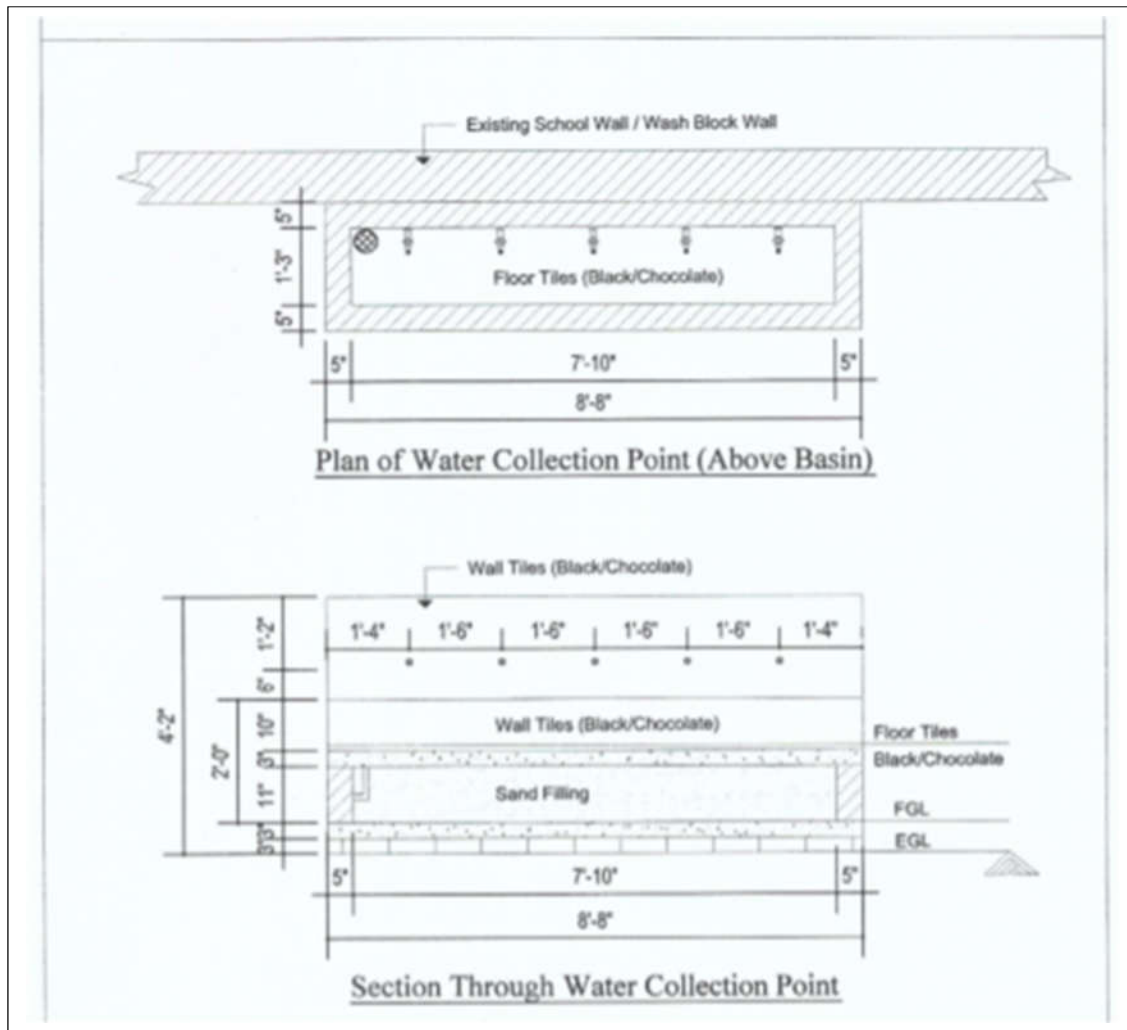
Signature of SAE
 (Signature)
 উপ-সহকারী সার্বভাষা
 উপজেলা স্বাস্থ্য ও পরিবার কল্যাণ
 কর্মসূচী, শোভাখালী।

Signature of AE

Signature of Executive Engineer
 (Signature)
 (সহকারী প্রকৌশলী)
 জলসঞ্চয় প্রকল্প, শোভাখালী।



Appendix-2: Drawing of water collection basin





Appendix-3: Sample water quality monitoring report

Government of the People's Republic of Bangladesh
 Office of the Senior Chemist
 Department of Public Health Engineering (DPHE)
 Zonal Laboratory, Shahid Masuir Rahman Road, Jhenaidah.
 Phone: 0451-61416, Fax: Email: wqmsc_jhenaidahzonalab@yahoo.com



Sl. No.	District	Upazilla	Village	ID	Type of School	Water Point		Name Of School	GPS Reading	Water Quality					Remarks		
						Type	Depth (M)			Sand	Clear	As (mg/L)	Fe (mg/L)	Cl			
1	Jhenaidah	Shaikupa	Mathurapur	204050207	1	DTW (Sub-Mer.)	8	Mathurapur Govt Primary School	N: 23°41'44.7" E: 89°08'58.5"	10	Free	Clear	0.020	2.10	15	15	
2	Jhenaidah	Shaikupa	Khari Baria	204051302	1	DTW (Sub-Mer.)		Khari Baria Govt Primary School	N: 23°36'59.0" E: 89°14'02.8"		Free	Clear	0.020	2.60	10		
3	Jhenaidah	Shaikupa	Mingram	204051103	1	DTW (Sub-Mer.)		Mingram Govt Primary School	N: 23°37'02.5" E: 89°20'42.4"		Free	Clear	0.014	3.00	60		
4	Jhenaidah	Shaikupa	Bahir Royra	204051307	1	DTW (Sub-Mer.)		Bahir Royra Govt Primary School	N: 23°37'27.7" E: 89°14'24.7"		Free	Clear	0.002	2.30	15		
5	Jhenaidah	Shaikupa	Nadpara	204050606	1	DTW (Sub-Mer.)		Nadpara Govt Primary School	N: 23°42'49.9" E: 89°15'52.4"		Free	Clear	0.002	1.80	10		
6	Jhenaidah	Shaikupa	Kachua	204051404	1	DTW (Sub-Mer.)		Maimali Govt Primary School	N: 23°36'08.1" E: 89°12'47.2"		Free	Clear	0.001	1.60	15		
7	Jhenaidah	Shaikupa	Debtola	204050305	1	DTW (Sub-Mer.)		Debtola Govt Primary School	N: 23°40'45.4" E: 89°12'48.9"		Free	Clear	0.002	2.80	10		

Work order No. 697, date : 12/06/2019 Package No. Contactor : M/S. Malitha Enterprise, Jhenaidah.

Sample Collected by:

Sample Analyzed by:

Counterigned/Approved by:

Md. Meoruzaman
 Sample Analyzer
 DPHE, Zonal Lab, Jhenaidah.

Md. Nazrul Islam
 Junior Chemist
 DPHE, Zonal Lab, Jhenaidah.

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 Junior Chemist
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