



**Government of The People's Republic of Bangladesh**  
**Ministry of Local Government, Rural Development and Co-operatives**  
**Department of Public Health Engineering (DPHE)**

**Emergency Multi-Sector Rohingya Crisis Response Project (EMCRP)**



**Environment and Social Screening Report**

**Sub-project: EMCRP/WD-02**

**Construction of Mini Piped Water Supply System Scheme including O & M**

**Location: Camp-19, WDZ\_19.01, Block\_A-02 & A-06**

**Funded by: GoB - World Bank**

**Implemented Agency: Department of Public Health Engineering (DPHE)**





## Abbreviation and Acronyms:

ACF	Action Against Hunger
BBS	Bangladesh Bureau of Statistics
BD	Bangladesh
BMD	Bangladesh Meteorological Department
CIC	Camp in Charge
DC	Deputy Commissioner
DO	Dissolved Oxygen
DoF	Department of Forest
DPD	Deputy Project Director
DPHE	Department of Public Health Engineering
DRP	Displaced Rohingya Population
EC	Electrical Conductivity
EMCRP	Emergency Multi-sector Rohingya Crisis Response Project
ERP	Emergency Response Plan
ESMF	Environmental & Social Management Framework
ESMP	Environmental and Social Management Plan
FAO	Food and Agriculture Organization
FGD	Focus Group Discussion
GBV	Gender-Based Violence
GoB	Government of The People's Republic of Bangladesh
GRC	Grievance Redress Committee
GRM	Grievance Redress Mechanism
GPS	Global Positioning System
GW	Ground Water
HDPE	High Density Polyethylene
IEF	Important Environmental Feature
ISCG	Inter Sector Coordination Group
IUCN	International Union for Conservation of Nature
NGO	Non-Government Organization
LGED	Local Government Engineering Department
MPWSS	Mini Piped Water Supply System



## EMCRP Environment and Social Screen Report (DPHE)

PD	Project Director
PM	Particulate Matter
PMU	Project Management Unit
PPE	Personal Protective Equipment
PSC	Project Steering Committee
PTW	Production Tube well
PVC	Polyvinyl Chloride
ROW	Right of Way
RRRC	Refugee Relief and Repatriation Commission
SAE	Sub-Assistant Engineer
SMC	School Management Committee
SW	Surface water
TDS	Total Dissolved Solids
TSS	Total Suspended Solids
TTW	Test Tube Well
UN	United Nations
UNFPA	United Nations Fund for Population Activities
UNHCR	United Nations High Commissioner for Refugees
uPVC	Un plasticized Polyvinyl Chloride
VfM	Value for Money
WASH	Water, Sanitation and Hygiene
WB	World Bank
WDZ	Water Distribution Zone
WFP	World Food Programme
WSC	Women's Studies Center



## EMCRP (DPHE part)

### Environmental and Social Screening Form

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#### Sub-Project Description Form

**Name of Sub-project:** Construction of Camp based Mini Piped Water Supply System (MPWSS) including Operation and Maintenance Scheme under (WD-02) for Displaced Rohingya Population (DRP) at Ukhiya Upazilla, Cox's Bazar.

**Implementing Agency/Agencies:** Department of Public Health Engineering (DPHE)

**Estimated total cost of sub-project (in Taka):** 367,72,274 (Tk.)

**Estimated construction period duration:** 12 (Twelve) months.

**Estimated Operation and Maintenance period (life of sub-project):** 24 (Twenty Four) months Operation and Maintenance period but Project Design life more than 10 (ten) to 15 (Fifteen) years.

**District:** Cox's Bazar

**Sub-District:** Ukhiya

**Union:** Palongkhali

**Name of Community/Local Area:** Camp\_19, WDZ\_19.01, Block\_A-02 & A-06

**Description of proposed sub-project activities (incl. type of activities, footprint area, natural resources required, etc.):**

In the proposed sub-project area of Mini Piped Water Supply Scheme (MPWSS) activities, the following interventions would be taken place:

- Two Exploratory drilling & Test Tubewell (TTW)
- Installation of Two Production Tubewell (PTW)
- Two set Solar panel Installation
- Two Pump House Construction (Industrial tin shed) with toilet
- Two Submersible pump Installation
- Water reservoir (plastic) tanks Installation
- HDPE pipe networking
- Community taps for water collection, etc.

**Estimated footprint / land area for this sub-project:** Project will benefit an area of around 151,265 square meter (Water Distribution Zone area). However, the land area may change during construction period.

To construct the various components of the Scheme, the following land allocations were made totaling approx. 7,300 square meter land required for this scheme out of total scheme area 151,265 square meter: around 330 square meter land required for establishing solar panel and pump house, approx. 385 square meters for 11 nos. water tanks, around 2,310 square meters for up to 77 nos. tap stands and around 4,300 meter for the pipe line installation length.

**Brief description of sub-project site: (e.g. present land use, Important Environmental Features (IEFs) near site, etc.):**

Camp based Mini Piped Water Supply System (MPWSS) is located at Camp\_19 and Block A-02 & A-06. The proposed land is owned by government and no trees, structures and community properties will be affected. There is a health post, mosque and learning center close to the site. The selected land is near about 45ft to 50ft below the nearest hill top. No road close to the sub project area only footpath exists.



### Overall Comments:

The DRP of the sub-project area are very much optimistic about the success of the project. The sub-project is environmentally sustainable and socially acceptable. DPHE, together with PMU Social & Environmental Consultant, has conducted 7 (seven) numbers of consultations with DRP communities and their community representative, CiC, Camp WASH area focal, Camp area focal, SAE & Mechanic, and relevant stakeholders. The outcome of the consultation meeting was approval for the construction of the Mini Piped Water Supply System scheme. They also requested to involve local community and DRP community during the construction work.

In terms of natural, ecological features of the area, it was observed that before establishing DRP camp, roads and other essential establishment, it was a forest area; most of the natural forest were destroyed during establishment of Camp.

No further significant impact is expected on the ecosystem and biodiversity, no agricultural land/ activities or fish farming will be disturbed, due to the construction of the sub-projects. The Mini Piped Water Supply Scheme construction work is restricted within the boundary of camp.

### Sub-project site selection process:

Environmental and Social Consultants engaged for the Scheme, DPHE Officials along with EMCRP Consultants jointly visited the proposed DRP Camp area (Camp\_19 at WDZ\_19.01) to conduct the project screening process. The team primarily selected the scheme components such as TTW, PTW, Pipe Line, Pump House, Solar panel, Water Reservoir and Tap stand, etc.

OXFAM is acting as WASH camp focal agency, IOM is acting area focal agency and DPHE is implementing the Project with the financial assistance of World Bank and Government Republic of Bangladesh. After establishing the proposed Mini Piped Water Supply Scheme in the area about 7,643 people will be benefited from receiving their water requirements.

### Types of waste to be generated during construction and operation phase:

During construction phase solid and liquid wastes will be generated due to construction activities. The types of wastes are uPVC pipe, HDPE pipe, concrete, iron, earth, liquid drilling mud, lubricants, chemicals, etc.

### Sensitive environmental, cultural, archaeological, religious sites near (within 1km) of site including elephant migration routes and remaining forests:

Within the sub-project area three health posts, three mosques and eight learning centers are identified. However, none is going to be affected due to project intervention. No significant environmental or social disturbance is anticipated due to construction activities. In this scheme area, no elephant migration routes exist (ref. IUCN). Elephant migration routes are within 01 km to this scheme area.



Figure-1: Proposed PTW Site location at WDZ\_19.01



Figure-2: Proposed PTW Site location at WDZ\_19.01.02

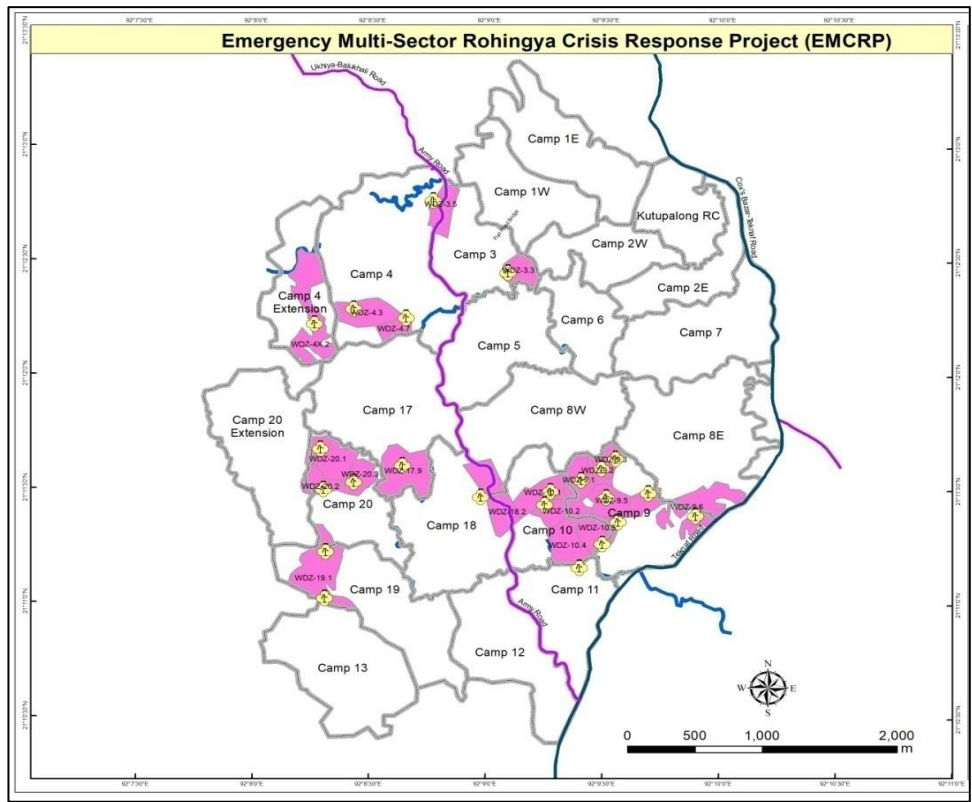


Figure-3: Community Consultation Meeting with DRP community at WDZ\_19.01

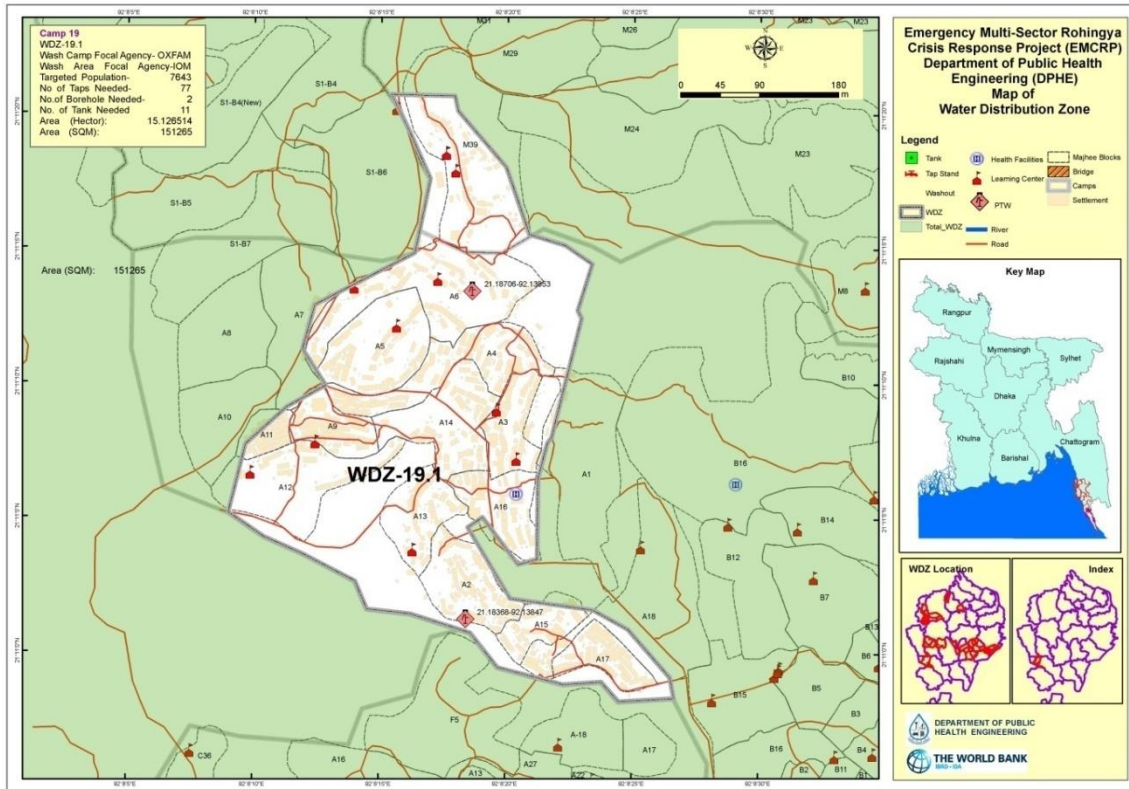




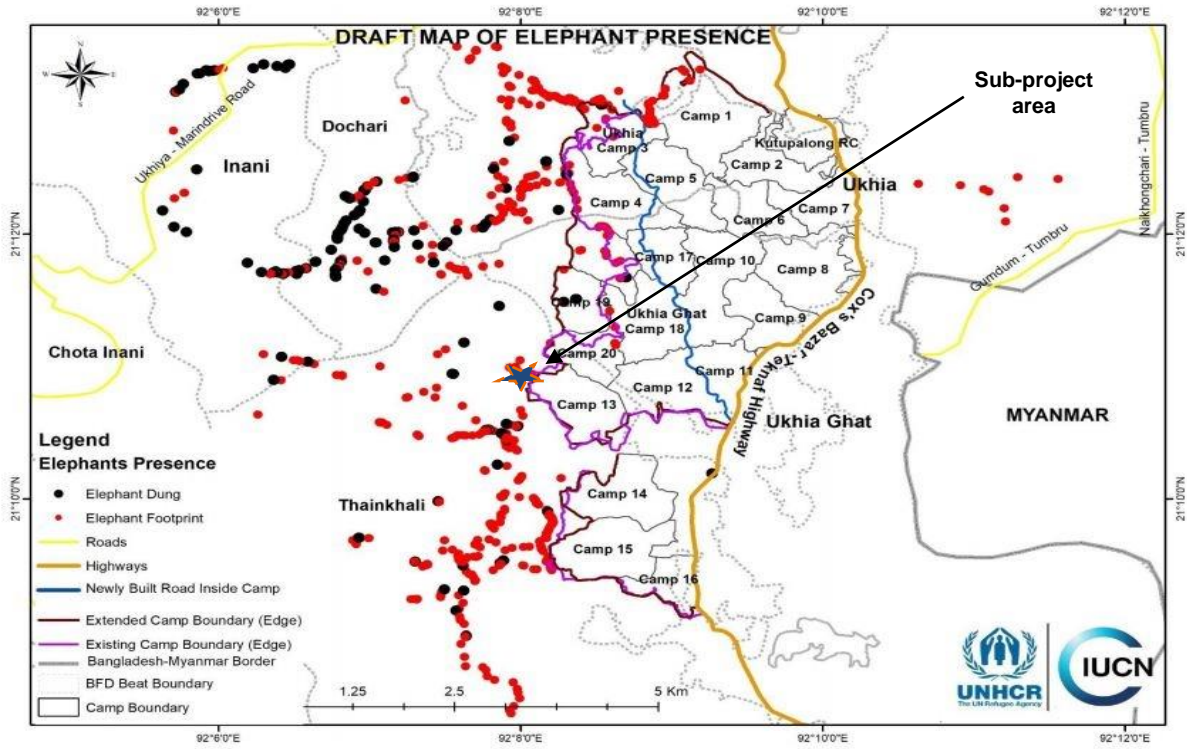
Completed environmental and social (E&S) screening forms and respective E&S Management Plan are given below:



Map-1: Water Distribution Zone information at camp area



Map-2: Water Distribution Zone information at WDZ\_19.01



Map-3: Map of Elephant Presence in Camp area





**EMCRP (DPHE part)**

**Work Package: WD-02 (Mini Piped Water Supply Scheme)**

**Environmental and Social Screening Form**

**Section A: Sub-Project Overview**

<p><b>Description of sub-project/component interventions:</b></p> <ul style="list-style-type: none"><li>i) Two Exploratory drilling for Test tube well</li><li>ii) Installation of Two Production Tube well (PTW)</li><li>iii) Two Submersible pump</li><li>iv) Two set Solar panel</li><li>v) Two Pump House Construction (Industrial tin shed) with toilet</li><li>vi) Water reservoir (plastic) Tanks</li><li>vii) HDPE (High-density polyethylene) pipe network</li><li>viii) Community Tap for water collection</li></ul>
<p><b>Sub-project Location:</b></p> <p>This sub-project area is situated at Rohingya camp_19 (WDZ_19.01 and block_A-02 &amp; A-06) at Palongkhali Union under Ukhiya Upazila of Cox;s Bazar District. This selected land is near about 45ft to 50ft below the nearest hill top. No road close to the sub- project area only footpath exists.</p>
<p><b>Land ownership:</b> Land is owned by Government.</p>
<p><b>Expected construction period:</b>12 (Twelve) months.</p>
<p><b>Description of project intervention area and project influence area with schematic diagram(where relevant, indicate distance to sensitive environmental areas such as elephant corridors, water bodies, etc. and historical or socio-cultural assets):</b></p> <ul style="list-style-type: none"><li>i) Adjacent of the scheme site under the project intervention area: Camp_19. and WDZ_19.01</li><li>ii) Impacted area: approx. 7,300 sq. meter</li><li>iii) No structures, trees and livelihood will be affected.</li><li>iv) DRP shelter relocation is not required.</li><li>v) Influence area: the influence area is within the scheme area of 151,265 sq. meter (Map-2)</li><li>vi) Environmental sensitivity: Within the influence area of the sub-project no historical sites were identified. There is no evidence of presence of elephants in the sub-project influence area (checked with local IUCN representative).</li><li>vii) Two alternative location is respectively 120 meter and 75 meter away from the final selected location. Alternative locations are narrow &amp; congested and close to the foot hill.</li></ul>



## Section B: Environmental Screening

### B.1: Environmental feature of sub-project location

#### Description of cultural properties (if applicable, including distance from site):

1 (one) kilometre surrounding of scheme area include three health post, three mosque and eight learning centre. Apart from this structure, there are no other sensitive cultural, archaeological, religious sites.

#### Location of environmentally important and sensitive areas:

This location was environmentally important and sensitive for protected forest area but now these locations have no forest. Erosion/land slide may occur when moderately to highly sloping terrains are disturbed for the construction of test tubewell, production well, pump house, solar panel, overhead tank, tap stand and pipes line construction. The impacts are expected to be negative, small scale, site-specific within a relatively small area and manageable by mitigation measures.

#### (1) Within/near Elephant Migration Routes Yes/No\*:

**No.** Due to deforestation and settlement of DRP, now there is no existence of Elephant corridor/ route now according to elephant migration route map established by UNHCR/IUCN.

#### (2) Potential impacts on remaining forests in/around camps Yes/No\*:

**No.** There are no original forests in this area now. Forestation works have been started and some plantation is ongoing by different organizations.

#### (3) Other issues:

No more mentionable issues raised

#### Dust:

Ambient air quality data was not readily available. In the proposed site the existing air quality is almost dust free except for few months in the dry season (November to March).

#### Noise:

Noise in the Sub-project area is not a major concern based on the consultations. Noise is originating from the movement of vehicles of various NGO's to distribute relief among the Displaced Rohingya People (DRP).

#### Baseline soil quality:

Soil types are alluvial reddish brown, muddy & sandy soil and Dupitila formation. The soils developing from the weathered sandstones tend to be sandy to clay loams. Presence of organic matter content in the soil is moderate.



**Landslide potential (high/medium/low, with explanation):**

**Low.** Potential erosion/land slide may occur when moderately to highly sloping terrains are disturbed for the construction of test tube well & production well, overhead tank, tap stand and pipe line construction. The impacts are negative but very small scale, site-specific within a relatively small area and minimized by mitigation measures.

**Baseline surface water and groundwater quality (FE, TDS, fecal coliform, pH):**

**Surface water quality:**

No surface water.

**Groundwater quality:**

Groundwater is the main source of potable water in the Sub-project area. The shallow depth is about 100 feet and deep tubewell depth is 500ft to 800ft. In the sub-project area, groundwater is saline and arsenic free. Water of Shallow tubewell of the surrounding area of sub-project are with little high iron concentration.

pH\_ 7.00 to 8.00, DO\_ 2.20 to 8.50mg/l, TDS\_ 25.50 to 280 mg/l, EC\_ 20 to 425  $\mu$ s/cm, Fe\_ 0.50 to 2.00 mg/l, Mn\_ 0.01 to 0.08 mg/l, Chloride\_ 10 to 70 mg/l, Hardness\_ 60 to 160 mg/l and As\_ Nil to 0.001 mg/l. (Tubewell depth: 500 ft. to 800 ft.)

Many shallow tube wells have been installed in the camp area. This has resulted in excessive withdrawals of water from the shallow aquifer and a drying up of some of the wells.

\*Data source: Secondary data and field survey

**Status of wildlife movement:**

Wildlife movement has previously been reported in the area. At present, due to deforestation and settlement of DRP, wildlife movement is no longer there.

**State of forestation:**

To accommodate large numbers of DRP, hills have been cleaned and cut indiscriminately, and shelters have been set up on the hills. Steps have been cut into the slope to facilitate access to the shelters. Hill cutting loosens the soil and can result in soil erosion, sedimentation and siltation. Washing out of the valuable fertile top soil that will make the hills unsuitable for supporting any valuable vegetation cover. The eroded soil will also cause stream congestion, which might hinder stream flow, which in turn will result in habitat loss, water pollution and water scarcity. New plantations have been made by different organizations.

**Summary of water balance analysis (For water supply scheme only):**

Please consider (i) water requirements of newly forested areas for plants' total evapo-transpiration, (ii) new settlements water supply requirement for drinking water, household use, bathing and sanitation, (iii) replenishment rate from annual rainfall etc.



- i) In the sub-project area some new plantations have been done by different organizations.
- ii) 20 liters/person/day water will be allocated for drinking and cooking purpose for Rohingya People. Therefore, daily approx. 152,860 liter water will be required to serve 7,643 beneficiaries.
- iii) The average Annual rainfall in Cox's Bazaar 3,524.1mm, average relative humidity 80%. Record high temperature was 37.2°C and low was 7.8°C (Data source BMD & BBS)

## B.2: Pre-construction Phase

### **Information on Ancillary Facilities (e.g. status of access road or any other facility required for sub-project to be viable):**

A 15ft wide herringbone road is 150 meters away from the sub-project area. Only foot path exists in the sub-project area. However, the site is not inaccessible and head load is the most feasible option of carrying the construction materials (pipes, rigs, bamboo, bricks, cement, rods, gravel, overhead tank, wooden frame and bentonite sacks, etc.) to the construction site.

### **Requirement of accommodation or service amenities (toilet, water supply, electricity) to support the work force during construction:**

Toilet and drinking water present but no electricity in the sub-project area.

### **Possible location of labor camp:**

Within the scheme area and very close to the sub-project sites.

### **Requirement and type of raw materials (e.g. sand, stone, wood, etc.):**

i) Bricks, ii) Sand iii) Cement iv) HDPE pipes v) uPVC pipe vi) Nut & bolt vii) PVC solvent cement viii) Gravel ix) water x) Bamboo & wood from mobilized materials by and other electro-mechanical equipment (small welding machine, small generator, etc.) are the most common type materials used in construction.

### **Identification of access road for transportation (Yes/No):**

**Yes.** A 15ft wide herringbone road is 150 meters away from the proposed production well site. Foot path/ narrow earthen road about 5ft. wide is the main way for transportation of the materials by head load from unloading point to production well location. For the pipe alignment, sides of existing roads will be used.

### **Location identification for raw material storage:**

Adjacent to the production well location and very close to the construction sites and away from steep slopes.

### **Type and quantity of waste generated (e.g. Solids wastes, liquid wastes, etc.):**

**Solid type waste:** i) Bricks, ii) Sand iii) Cement iv) HDPE pipes v) uPVC pipes vi) Nut & bolt vii) PVC solvent cement viii) Gravel ix) Bamboo & wood. It is difficult to give exact figures of pre-construction waste produced on a mini pipe water supply construction site. However, 300 kg of waste may be produced.



**Approx. area (in square meters) of vegetation and soil in the right-of-way, borrow pits, waste dumps, and equipment yards:**

Very little presence of weed-type of vegetation within the proposed construction area (approx.7,300 sq. meter land) There is no privately/public owned trees or vegetation in proposed construction areas.

**Possibility of stagnant water bodies in borrow pits, quarries, etc., encouraging for mosquito breeding and other disease vectors: (High/Medium/Low with explanation):**

**Low.** Very low possibility of stagnant water bodies accumulation in borrow pits reported around or adjacent to the sub-project area.

**Disturbance or modification of existing drainage channels (rivers, canals) or surface water bodies(wetlands, marshes): (High/Medium/Low with description):**

**Low.** No pre-existing drainage channel is found

**Destruction or damage of terrestrial or aquatic ecosystems or endangered species directly or by induced development: (High/Medium/Low with description):**

**Low.** Under this scheme establishment interventions, the effect of destruction or damage of lives and endangered species ecosystem is very low In the site area. Species and ecosystems have not been reported whose lives or movement may be disturbed (i.e. Insects - Ant, bees, earthworm, reptiles, birds etc.) by the scheme activities.

**Activities that can lead to landslides, slumps, slips and other mass movements in road cuts:**

In pre-Construction phase, stock piling of raw materials can lead to localized land slips. The impacts can be minimized by careful selection of stock pile locations and ensuring large amounts are not stored in one place.

**Describe possible traffic movement impacts on (unwanted) light, noise and air pollution:**

No traffic movement impacts on light but low effects of noise and air pollution.

High = Likely to cause long-term impacts or over large area (>1.00sqkm); Medium = Likely to cause temporary damage or over moderate area (0.5 to 1.00 sqkm); Low = Likely to cause little, short-term damage and over small area (<0.50 sqkm)

**B.3: Construction Phase**

**Type and quantity of waste generated (e.g. Solids wastes, liquid wastes, etc.):**

**Solid waste:** i) Bricks, ii) Sand iii) Cement iv) HDPE pipes v) uPVC pipes vi) Nut & bolt vii) PVC solvent cement viii) Gravel ix) Bamboo & wood. It is difficult to give exact figures of construction waste produced on a mini pipe water supply construction site. However, 500 kg of waste may be produced.





**Liquid waste:** Drilling mud and drilling fluid waste water. During construction period, fecal sludge will be generated from labor camp. It is difficult to give exact figures of construction waste produced on a mini pipe water supply construction site. However, 7,000 kg of waste may be produced.

**Type and quantity of raw materials used (wood, bricks, cement, water, etc.):**

**Raw materials:** i) Bricks, ii) Sand iii) Cement iv) HDPE pipes v) uPVC pipes with fittings vi) Nut & bolt vii) PVC solvent cement viii) Gravel ix) water x) plastic tanks xi) Bamboo & wood from mobilized materials by and other electro-mechanical equipment by the concerned contractor firm.

**Quantity:** It is difficult to provide exact figures of construction materials that will be used on a mini pipe water supply construction site. However, 7,500 kg of raw materials may be required. Around 11 plastic tanks (10,000L capacity). Around 4,300m length of HDPE pipes. Approx. 77 nos. tap stand materials.

**Approx. area (in square meters) of vegetation and soil in the right-of-way, borrow pits, waste dumps, and equipment yards:**

No valuable vegetation presence in proposed sub-project construction sites. So, vegetation will not be affected by construction works.

**Possibility of stagnant water bodies in borrow pits, quarries, etc., encouraging for mosquito breeding and other disease vectors: (High/Medium/Low with explanation):**

**Low.** Trenches for laying of pipelines will be required. These can potentially store stagnant water for short period of time during and after rain events. The top soils in the sub-project are sandy and the water should drain away quickly.

**Disturbance or modification of existing drainage channels(rivers, canals) or surface water bodies (wetlands, marshes): (High/Medium/Low with description):**

**Low.** No pre-existing drainage channel is found

**Destruction or damage of terrestrial or aquatic ecosystems or endangered species directly or by induced development: (High/Medium/Low with description):**

**Low.** Under this scheme establishment interventions, the effect of destruction or damage of lives and endangered species ecosystem is very low in the site area.

**Activities that can lead to landslides, slumps, slips and other mass movements in road cuts:**

Construction of the sub-project components can lead to low scale effects of land slide/slips. The impacts are expected to be negative, short-term, site-specific within a relatively small area and can be minimized by mitigation measures.

**Erosion of lands below the road bed receiving concentrated outflow carried by covered or open drains: (High/Medium/Low with description):**

**Low.** Potential erosion may occur when moderately to highly sloping terrains are disturbed for the construction of Production tube wells and pipe lines. The impacts are expected to be negative, small scale, site-specific within a relatively small area and minimized by mitigation measures.



**Describe possible traffic movement impacts on (unwanted) light, noise and air pollution:**

No traffic movement impacts on light as all vehicular movement will be during day time. Some temporary, localized effects of noise and air pollution can occur due to truck movements.

High = Likely to cause long-term impacts or over large area (>1sqkm); Medium = Likely to cause temporary damage or over moderate area (0.5 to 1sqkm); Low = Likely to cause little, short-term damage and over small area (<0.5sqkm)

**B.4: Operation Phase**

**Activities leading to health hazards and interference of plant growth adjacent to roads by dust raised and blown by vehicles:**

In Operation phase of mini-pipe scheme, improper use of personal protective equipment (PPE) and lack of safety procedures may cause injuries. Plant growth adjacent to scheme areas can be affected during maintenance of waters supply pipelines. However, this will be a localized and temporary activity.

**Chance of long-term or semi-permanent destruction of soils:  
(High/Medium/Low with description)**

**Low.** Some localized semi-permanent destruction of soils may occur during maintenance of water supply pipelines.

**Possibility of odor and water, soil quality impacts from SWM and FSM disposal system  
(High/Medium/Low with description):**

**Low.** Sludge from one toilet in pump house shed will be generated. The sludge will be disposed properly in camp waste management facilities.

**Possibility of stagnant water bodies in borrow pits, quarries, etc., encouraging for mosquito breeding and other disease vectors:  
(High/Medium/Low with explanation):**

**Low.** There are low possibilities of stagnant water occurring in operation period if there are leakages in the water supply scheme, including overflow of overhead tanks.

**Likely direct and indirect impacts on economic development in the project areas by the sub-project:**

Local labor will be involved in maintenance activities. Safe drinking water supply will be helpful to reduce water scarcity crisis of the DRP and improve their health condition.

**Extent of disturbance or modification of existing drainage channels(rivers, canals) or surface water bodies(wetlands, marshes):  
(High/Medium/Low with description):**

**Low.** No pre-existing drainage channel is found.



**Extent of destruction or damage of terrestrial or aquatic ecosystems or endangered species directly or by induced development:  
(High/Medium/Low with description):**

**Low.** Operation and maintenance activities of mini-pipe scheme will be localized and temporary in nature.

**Activities leading to landslides, slumps, slips and other mass movements in road cuts:**

Buried pipe channels can form preferential runoff paths, causing localized erosion. Also, leaking pipes can lead to slope instability.

**Erosion of lands below the road bed receiving concentrated outflow carried by covered or open drains:  
(High/Medium/Low with explanation):**

N/A

**Describe possible traffic movement impacts on (unwanted) light, noise and air pollution:**

Temporary, localized impacts on noise and air pollution from maintenance vehicles movement can occur. All maintenance works will be conducted during daytime – so no light impacts expected.

High = Likely to cause long-term impacts or over large area (>1sqkm); Medium = Likely to cause temporary damage or over moderate area (0.5 to 1sqkm); Low = Likely to cause little, short-term damage and over small area (<0.5sqkm)



## Section C: Social Screening

### C.1 General Labor Influx Screening

Key Screening questions	Aspects to Consider
Will the project potentially involve an influx of workers to the project location, and will the influx be considered significant for the local community?	The number of total skilled Labor is 10-12 and unskilled labor 12-16. All the unskilled labor will be engaged from the DRP community. No additional foreign labor will be engaged. All the skilled labor will be staying at labor shed within the camp. The size of the labor shed will be 280 square feet.
Is the project located in a rural or remote area?	The project area is within a camp area demarcated by the Government which belongs to camp-19 in a remote specialized area. The total scheme (WDZ_19.01) population is 7,643. The frequency and extent of the contract, communication between the local community and outsiders are limited, and controlled by the respective authority.
Based on the socioeconomic, cultural, religious and demographic qualities of the local community, Rohingya population and the incoming workers, is there a possibility that their presence or interaction with the local community could create adverse impacts?	<b>No.</b> It is not expected that the presence of the skilled (local) and unskilled labor (DRP) may generate any adverse impacts. The project will benefit the DRP communities. There will be a code of conduct for the labors to follow, which will be monitored by the PMU on a regular basis.
Consultation with DRP Community People and relevant stakeholders (SH)	<p>During screening and site identification DPHE has conducted seven (07) consultation meetings with primary and secondary stakeholders. The stakeholders include RRRC, WASH Sector, Site Management Committee representatives, Contractor team and DRP Community. In addition to the above-mentioned meetings, the local DPHE has undertaken many consultations with male and female members of the DRP.</p> <p>Through the coordination and linkage activities of the project, the authorities have accomplished some formal exchange meetings, individual household visits, FGD, Tea Stall discussion and other consultation meetings.</p>



**C.2 Land acquisition and stakeholder screening**

Probable Involuntary Resettlement Effects	Yes	No	Not Known	Remarks
<b>Involuntary Acquisition of Land/ Land Donation/ Land Taking</b>				
1. Will there be any land acquisition?		√		No, land acquisition is not for this subproject MPWSS at the DRP camp site
2. Is the project construction site known?	√			The land is selected with the recommendation of CIC SMC & Local DPHE and assigned UN agencies
3. Who manage the land?	√			The ownership of the land is government and lands are currently empty.
4. Will easement be utilized within an existing Right of Way (ROW)? CRP (Common Resource Property)	√			In the camp area Provision is available be utilized within an existing Right of Way (ROW) within this WDZ-19.01 under EMCRP.
5. Will there be loss of DRP tent, agricultural carps, trees, and other productive or fixed assets due to project intervention?		√		No DRP shelters will be affected. However, during construction if any shelters require to shift, mitigation measures will be taken according to RPF. Consultations will be conducted with stakeholders, camp and block focal persons, and site management. During construction, if any shelters are affected, contractors are responsible to mitigate the impacts following the RPF as well.
6. Will there be loss of businesses or enterprises due to project intervention?		√		No
7. Will there be loss of income sources and means of livelihoods due to project intervention?		√		No
<b>Involuntary restrictions on land use or on access to legally designated parks and protected areas</b>				
8. Will people lose access to natural resources, communal facilities and services?		√		No
<b>Information on Displaced Persons:</b>				
9. Any estimate of the likely number of persons that will be displaced by the Project? If yes, approximately how many?				<input checked="" type="checkbox"/> No <input type="checkbox"/> Yes
10. Are any of them poor, female-heads of households, or vulnerable to poverty risks?				<input checked="" type="checkbox"/> No <input type="checkbox"/> Yes
11. Are any displaced persons from indigenous or ethnic minority groups?				<input checked="" type="checkbox"/> No <input type="checkbox"/> Yes
During Screening, project authority will conduct consultation with the primary and secondary stakeholders and provide their observations in the following sections (12 to 16 )				





**12: Who are the stakeholders of the project? Please provide a summary of consultation meetings with stakeholders and the affected community.**

The key stakeholders of this sub-projects are DRP, Labors, People/communities/organizations within the project influence area indirectly affected by project activities, relevant government departments/agencies, Dept. of Environment and Forest Department, Development Partners (WASH Cluster, UNHCR, WFP, IOM) and Local and international NGOs working with local host communities/DRP.

Aiming to establish the MPWSS scheme at RRRC assigned DRP camp area by the respective site management committee, under EMCRP (DPHE part) initially GIS specialist, Hydrogeologist located the scheme area, E&S consultants, Local DPHE authority and other development partners such as UN agencies have conducted a series of consultations with the DRP community and people on the following issues: WB introduced Social and Environmental safeguard issues, grievance redress mechanism (GRM), possible social environmental and economic effects, livelihoods options, discussions on minimizing the laborer conflict among DRP and local host communities, Infrastructure WASH, hygiene, gender-based violence (GBV), forestation, elephant corridor, waste, ludge management, benefits of safe drinking water options by the establishment of mini piped water supply and other WASH schemes. The respective Camp leader, Local DRP elites, community man & women also participated in the consultations.

In the consultation session, environmental and social aspects of the project interventions were discussed at the project sites. The community welcomed and appreciated the DPHE EMCRP's initiatives on WASH sector sub projects. They opined that safe water and improved sanitation (Latrine installation) as one of their priority needs for secured and better livelihoods. They also opined that as no Elephant corridor exist so there is no scope of Elephant/Human conflict over there. Through the consultation meeting, the DRP community were made aware and sensitized on E&S safeguard issues, precautions, child safety, any chances of displacement of various structures, relocations of local institutions (mosques, school/ learning centers & others, any restrictions for the DRP, and any compensation mechanism in the event of any objections and complaints.

**13: What social and cultural factors affect the ability of stakeholders to participate or benefit from the proposed policy or project?**

None.

**14: Are project objectives consistent with their needs, interests and capacity?**

Yes, the EMCRP project objectives are consistent with the respective stakeholders, DRP and host community, needs, interests and capacity in the project areas.



**15: What will be the impact of the project or sub-project on the various stakeholders, especially women and vulnerable groups?**

According to the stakeholders, overall project impacts will be positive, stakeholders are in favor of implementing the project as earliest possible. The influx is straining existing infrastructure and degrading an already resource-constrained social service delivery system and the environment at DRP camps. Access to improved water quality and quantity is a priority. In environmental aspects, the settlement of DRP in Cox's Bazar's South Forest Division, including the Teknaf and Ukhiya Ranges, the Teknaf Wildlife Sanctuary, and other Reserved Forest areas has added unprecedented pressure on the area's natural resources. Regarding Social Protection, it has been revealed that, at least 80 percent of the DRP are dependent on life-saving external assistance. The remaining 20 percent only partially meet their needs through coping strategies, which will quickly deteriorate as coping capacities such as savings are exhausted. The high influx of DRP has placed formidable pressures on an already inadequately resourced social service delivery system.

**16: What social risks might affect project or sub-project success?**

During visiting the area and consultation meeting with DRP community, other organizations and representatives of the scheme area, it has been revealed and perceived that the following social risks might be raise to implement the scheme interventions:

Since the skilled labor will be engaged from the host community and unskilled laborers will be engaged from the DRP, there may be some conflict between the two groups. To establish the scheme tasks, additional labor from outside such as technicians will be engaged. Thus, there may have few chance of some social conflict. A complete Gender action plan has already been developed and approved, a full time Gender Specialist for this project has been assigned to oversee the GBV based issues for this subproject. The gender and GBV issues (ie. human trafficking, eve teasing, etc.) are being addressed through mainstreaming activities. As a mitigation measure, the Social Safeguard team and grievance redress committee (GRC) has been following the respective GRM, is keeping abreast on GBV occurrences and will guide the community through consultation meetings and counseling. Given the sensitivities in the camps areas (social, cultural, religious, gender, disabilities, orphaned and vulnerable children, relationship with DRP and host community), if the site area will be used as the open play space for the DRP kids, it might hamper their movement and play time for the time being. Unexpected noise, dust pollution, waste materials due to scheme establishment activities, might affect general social, religious activity of the DRP community at site area. However, by adopting the project E&S safeguard and through community consultation, the CIC, community leader and local DPHE representatives may determine possible ways and options to overcome and mitigate the constraints and risks during the scheme implementation.



### C.3. Social Capital Format

The objective is to list various types of social institutes/bodies working in the camp, intended project influence areas to enlist them for the possible inclusion in the management, and monitoring of the projects. List the name of social institutes/ bodies under the given categorization along with the following information. Use separate sheet for each category of social institute/body. The information can be collected through secondary sources such as RRC/UN agencies or different development organizations that are involved with the Rohingya crisis projects, etc.

Type of Social Institutes/bodies	Name of Institution	Contact Person and Address and phone number	Primary areas of Work	Coverage areas in the camp and communities
Government Organizations	RRRC  DPHE  DC  LGED, MoDR, DRP CIC	Mr. Mahbubul Alam Talukder, RRRC Commissioner , Cox's Bazar, Email <a href="mailto:rrccox@yahoo.com">rrccox@yahoo.com</a> ..... Engr. Ritthick Chowdhury, CXB, DPHE , Executive Engineer Email. <a href="mailto:chowritthick@gmail.com">chowritthick@gmail.com</a> ..... Md. Kamal Hossain <a href="mailto:dccoxsbazar@mopa.gov.bd">dccoxsbazar@mopa.gov.bd</a> ..... Mr. Mikon Tonchonga Camp-in-Charge, Camp-19 (Senior Assistant Secretary) <a href="mailto:camp19@rrrc.gov.bd">camp19@rrrc.gov.bd</a>	Overall Coordination of GoB dept., Dev partners , NGO, INGO , UN Agencies , Volunteers, Management of DRP Crisis in BD. Refugee Relief and Repatriation, Site management ,  Ensuring DRP HH shelter , F/NFIs , WASH facilities , Education , Health , Livelihoods , Social security , power sources , renewable solar energy .	DRP Camps, Blocks, synchronizing with Host, E&S aspects, Elephant corridors, conserve NR. Establish proper road communication.
UN Agencies /INGOs	WSC IOM, UNICEF, WFP, FAO , UNHCR UNFPA	Damian Seal WASH Sector Coordinator UNICEF  <a href="mailto:dseal@unicef.org">dseal@unicef.org</a> <a href="#">Please IUCN too.</a> ..... Tanvir Ahmed WASH Information Management Officer , UNICEF <a href="mailto:taahmed@unicef.org">taahmed@unicef.org</a>	Management of DRP Crisis in BD. Refugee Relief and Repatriation, Site management ,  Ensuring DRP HH shelter, F/NFIs, WASH facilities, Education, Health, Livelihoods, Social security, power sources, renewable solar energy .	DRP Camps, Blocks, synchronizing with Host, E&S aspects, Elephant corridors, conserve NR. Establish proper road communication.



## EMCRP Environment and Social Screen Report (DPHE)

Type of Social Institutes/bodies	Name of Institution	Contact Person and Address and phone number	Primary areas of Work	Coverage areas in the camp and communities
		Asif Arafat Sector Coordinator WASH, ACF <a href="mailto:washsecco-cox@actionagainsthunger.org">washsecco-cox@actionagainsthunger.org</a> .....		
National Organizations	Not yet on boarded	the database web link  <a href="https://www.humanitarianresponse.info/en/operations/bangladesh/document/wash-sector-coxs-bazar-members-contact-list-17-october-2017">https://www.humanitarianresponse.info/en/operations/bangladesh/document/wash-sector-coxs-bazar-members-contact-list-17-october-2017</a>		
Community Based Volunteer Organizations are those, which constitute the members of the community working towards social development.	Not yet involved	Yet to develop the database	Ensuring DRP HH shelter , F/NFIs , WASH facilities , Education , Health , Livelihoods , Social security , power sources , renewable solar energy .	



### Section D: Environmental and Social Screening Summary

Please summarize the results of environmental and social screening conducted above. Mitigation measures need to be proposed in referenced to ESMP Guidelines relevant to the type of the sub-project. This table needs to be completed by both environmental and social specialists. Please add rows to the table as necessary.

Section	Main Environmental and Social Impacts	Impact Significance*	Suggested Mitigation Measures	Person/Institution Responsible	Monitoring Suggestions	
					Indicators	Frequency
1:Sub-Project Interventions	Air Quality	Under the sub-project intervention the overall score is <b>low</b> .	<ul style="list-style-type: none"> <li>• Limiting earthworks;</li> <li>• Watering of dry exposed surfaces and stockpiles of aggregates at least twice daily, as necessary; (spreading of crushed gravel over backfilled surfaces ;).</li> <li>• Limiting speed of construction vehicles in access roads and work sites to maximum of 20 kph</li> <li>• More details provided in ESMP</li> </ul>	Construction Contractor monitored by Environmental Consultant and PMU	<ul style="list-style-type: none"> <li>• Location of stockpiles;</li> <li>• Number of complaints from stakeholders;</li> <li>• Records of air quality inspection;</li> </ul>	<ul style="list-style-type: none"> <li>• Air quality test (CO, PM2.5 and PM10) once in construction period in winter season.</li> </ul>





Section	Main Environmental and Social Impacts	Impact Significance*	Suggested Mitigation Measures	Person/Institution Responsible	Monitoring Suggestions	
					Indicators	Frequency
	<b>Soil</b>	Under the sub-project intervention the overall score is <b>low</b> .	<ul style="list-style-type: none"> <li>• Precautions to be taken when rainstorms are likely, when a rainstorm is imminent or forecast, and actions to be taken during or after rainstorms shall be developed by the Contractor.</li> <li>• The earthwork sites where exposed land surface is vulnerable to runoff shall be consolidated and/or covered.</li> <li>• Channels, earth bunds, netting, tarpaulin and or sand bag barriers shall be used on site to manage surface water runoff and minimize erosion.</li> <li>• The overall slope of the works areas and construction yards shall be kept to a minimum to reduce the erosive potential of surface water flows elsewhere.</li> <li>• More details provided in ESMP</li> </ul>	Construction Contractor monitored by Environmental Consultant and PMU	<ul style="list-style-type: none"> <li>• No visible degradation to nearby drainages,</li> <li>• Khals or water bodies due to soil erosion.</li> </ul>	Weekly, especially after rain events



Section	Main Environmental and Social Impacts	Impact Significance*	Suggested Mitigation Measures	Person/Institution Responsible	Monitoring Suggestions	
					Indicators	Frequency
	<b>Hydrology (surface and groundwater)</b>	Under the subproject intervention the overall score is <b>low</b> .	<ul style="list-style-type: none"> <li>All precautions to store chemicals/oil/fuel properly so that no chance of spill.</li> <li>Proper disposal of excess bleaching power and care should be taken to follow the appropriate procedure for chlorination.</li> <li>Monitor water quality according to the environmental management plan.</li> <li>Ensure drilling equipment is cleaned well and will be free of contaminants such as grease, and chemicals, prior to drilling; and properly dispose of spoils and wastes at the end of each day's work.</li> <li>More details provided in ESMP</li> </ul>	Construction Contractor and monitored by Environmental Consultant and PMU	<ul style="list-style-type: none"> <li>Areas for stockpiles, storage of fuels and lubricants and waste materials;</li> <li>Records of water quality inspection; Water Quality Test (National Drinking Water Quality Standard Parameters);</li> <li>No visible degradation to nearby drainages, khals or water bodies due to construction activities.</li> <li>For surface water quality parameters: pH, EC, TSS, DO, BOD, COD, Total N, Total P, TC, FC.</li> <li>For groundwater quality parameters: pH, TDS, Chloride, As, Fe, Mn, S, TC, FC.</li> <li>Training records</li> </ul>	<p>Water quality test (SW &amp; GW) once in construction period and Operation period.</p> <p>Training records reviewed quarterly</p>



Section	Main Environmental and Social Impacts	Impact Significance*	Suggested Mitigation Measures	Person/Institution Responsible	Monitoring Suggestions	
					Indicators	Frequency
2: Pre-construction Phase	Sanitation, water supply	Under the sub-project intervention the overall score is <b>low</b> .	<ul style="list-style-type: none"> <li>Provide suitable housing, adequate supplies of potable water, and toilet and bathing facilities within the housing area for the assigned laborer.</li> <li>Provide means for disposing of wastewater from toilets, baths and food preparation areas either through a septic tank and soak away, or holding tank with removal by vacuum truck.</li> <li>More details provided in ESMP</li> </ul>	Construction Contractor and monitored by Environmental Consultant and PMU	<ul style="list-style-type: none"> <li>Site-specific H &amp; S Plan;</li> <li>Records of supply of uncontaminated water;</li> <li>Record of Health &amp; Safety orientation trainings;</li> <li>Condition of sanitation facilities for workers</li> </ul>	Visual inspection by PMU and supervision consultants on monthly basis
	Transportation	Under the subproject intervention the overall score is <b>low</b> .	<ul style="list-style-type: none"> <li>All vehicle movement to be done during the day time</li> <li>Speed needs to be limited to 20kmph</li> <li>Contractor's responsibility to verify the suitability carrying, loading and unloading of materials by trucks or others transport and head load arrangement.</li> <li>More details provided in ESMP</li> </ul>	Construction Contractor and monitored by Environmental Consultant and PMU	<ul style="list-style-type: none"> <li>Check the vehicle pool.</li> <li>Record of regular inspection.</li> <li>Record of accidents/incidents</li> </ul>	Monthly monitoring.
	Storage of construction materials	<ul style="list-style-type: none"> <li>Under the sub-project intervention the overall score is <b>low</b>.</li> </ul>	<ul style="list-style-type: none"> <li>Obviously orient to the concerned person, team assigned for the construction work.</li> <li>More details provided in ESMP</li> </ul>	Contractor and monitored by Environmental Consultant and PMU	<ul style="list-style-type: none"> <li>List of materials and sources of materials;</li> </ul>	Weekly



Section	Main Environmental and Social Impacts	Impact Significance*	Suggested Mitigation Measures	Person/Institution Responsible	Monitoring Suggestions	
					Indicators	Frequency
3: Construction Phase	Wastes (earth, mud, HDPE cuttings, etc.)	Under the sub-project intervention the overall score is <b>medium</b> .	<ul style="list-style-type: none"> <li>Prepare and implement drilling mud and water runoff management plan approved by PMU.</li> <li>Wastes must be placed in the designated bins which must be regularly emptied.</li> <li>All waste must be removed from the site and transported to a disposal site.</li> <li>More details provided in ESMP</li> </ul>	Construction Contractor and monitored by Environmental Consultant and PMU	<ul style="list-style-type: none"> <li>Complaints from community;</li> <li>Regular inspection of waste management activity;</li> <li>Waste disposal record.</li> </ul>	As work weekly progresses
	Storage of materials (Creating dust/ air pollution spillage of liquid/ hazardous substance i.e. oil, drilling fluid, chemicals etc.,	Under the sub-project intervention the overall score is <b>medium</b> .	<ul style="list-style-type: none"> <li>By the site management committee in Camp to identify the storage site and other requirements, which will be approved by PMU and consultants</li> <li>More details provided in ESMP</li> </ul>	Construction Contractor and monitored by Environmental Consultant and PMU	<ul style="list-style-type: none"> <li>List of materials and sources of materials;</li> </ul>	Monthly basis during implementation phase.
	Noise pollution	Under the subproject intervention the overall score is <b>low</b> .	<ul style="list-style-type: none"> <li>Consultation with affected people; not to operate noisy equipment during working and operations time (17:00 – 06:00);</li> <li>Sound suppression for equipment;</li> <li>Ear protection for workers.</li> <li>Conduct noise quality monitoring</li> </ul>	Construction Contractor and monitored by Environmental Consultant and PMU	<ul style="list-style-type: none"> <li>Number of complaints from stakeholders;</li> <li>Use of silencers in noise-producing equipment and sound barriers;</li> <li>Noise Level following decibel meter (dB)</li> </ul>	Inspection by PMU and supervision consultants on monthly basis;



Section	Main Environmental and Social Impacts	Impact Significance*	Suggested Mitigation Measures	Person/Institution Responsible	Monitoring Suggestions	
					Indicators	Frequency
	Air pollution	Under the subproject intervention the overall score is <b>low</b> .	<ul style="list-style-type: none"> <li>Water spraying from test tubewell for dust control;</li> <li>Construction materials with potential for significant dust generation shall be covered; no smoke emitting equipment; and limiting speed of construction vehicles in access roads and work sites to maximum of 20 kph.</li> <li>More details provided in ESMP</li> </ul>	Construction Contractor and monitored by Environmental Consultant and PMU	<ul style="list-style-type: none"> <li>Location of stockpiles;</li> <li>Number of complaints from stakeholders;</li> <li>Records of air quality inspection; Air quality test report</li> </ul>	Air Quality: PM <sub>10</sub> PM <sub>2.5</sub> , SPM and SO <sub>2</sub> test once in construction period.
4: Operational Phase	Odor & waste disposal of sludge from toilet at Pump House Shed	Under the issue the overall score is <b>low</b> .	<ul style="list-style-type: none"> <li>Use bin covers and/or tarpaulins during transport of wastes and end products (compost).</li> </ul>	Construction Contractor for first 2 years monitored by Environmental Consultant and PMU  Long-term responsibility to be determined by CIC/DPHE	<ul style="list-style-type: none"> <li>Complaints from communities</li> </ul>	Site inspection daily/weekly basis.
	Destruction of soil	The operation period may be possible soil damage problems in the project areas by maintenance works and overall score is <b>low</b> .	<ul style="list-style-type: none"> <li>Safeguards to be taken at any time of year when rainstorms are likely, actions to be taken when a rainstorm is imminent or forecast, and actions to be taken during rain storms.</li> </ul>	Construction Contractor for first 2 years monitored by Environmental Consultant and PMU  Long-term responsibility to be determined by CIC/DPHE	<ul style="list-style-type: none"> <li>No visible degradation to nearby drainages or water bodies due to soil damage at pipe laying area.</li> </ul>	Site inspection weekly/2-weekly in rain season.



Section	Main Environmental and Social Impacts	Impact Significance*	Suggested Mitigation Measures	Person/Institution Responsible	Monitoring Suggestions	
					Indicators	Frequency
	Erosion of land	Erosion/land slide may occur in small scale near distribution pipes due to runoff from rainstorms or from pipe leakages and the overall score is <b>low</b> .	Protection to be taken at any time of year when rainstorms are likely, actions to be taken when a rainstorm is imminent or forecast, and actions to be taken during or after rainstorms.	Construction Contractor for first 2 years monitored by Environmental Consultant and PMU  Long-term responsibility to be determined by CIC/DPHE	• No visible degradation to nearby drainages or water bodies due to soil erosion in scheme area.	Site inspection weekly and monthly basis.
	Injuries to operation and maintenance workers	Site staff can be seriously hurt by accidents. <b>Medium</b>	<ul style="list-style-type: none"> <li>• Ensure proper training given to all staff</li> <li>• Ensure PPE used by all staff</li> </ul>	<ul style="list-style-type: none"> <li>• Camp WASH NGO staff</li> <li>• DPHE XEN</li> </ul>	• Accidents register	Monthly
	Roadside vegetation damage	Temporary, localized impacts. <b>Low</b>	<ul style="list-style-type: none"> <li>• Minimized maintenance work area</li> <li>• Remove topsoil carefully and replace after maintenance works</li> <li>• Replant vegetation/tree if required</li> </ul>	<ul style="list-style-type: none"> <li>• Maintenance Contractor</li> <li>• DPHE XEN</li> </ul>	• Vegetation Damage/loss	During maintenance works
	Air Pollution and Noise from Traffic Movement	Temporary, localized impacts. <b>Low</b>	<ul style="list-style-type: none"> <li>• Properly maintained vehicles to be used.</li> <li>• Limit speed to 20kmph at/near work sites</li> </ul>	<ul style="list-style-type: none"> <li>• Maintenance Contractor</li> <li>• DPHE XEN</li> </ul>	• Complaints by nearby DRPs	During maintenance works
	Stagnant water	From pipes leaking <b>Low</b>	• Ensure monthly inspections of pipelines for leakages	<ul style="list-style-type: none"> <li>• Camp WASH NGO staff</li> <li>• DPHE XEN</li> </ul>	• Water pooling along, community taps, pipe alignment, overhead towers and production well.	Monthly

\* Overall Impact Score: High = Likely to cause long-term E&S impacts; Medium = Likely to cause temporary impacts; Low = Likely to cause little, short-term impacts



### **Social Screening Summary:**

Under the Construction of MPWSS including O&M (WD-02) for DRP at WDZ\_19.01, Block\_A-02 & A-06 herein have been illustrating the overall 'Social screening summary:

In order to furnish the details of social screening, ESMF has been followed focusing on major social impacts and significance of the sub-projects (Equity, labor influx, population coverage, easy access, GBV, impact mitigation measures, referral, monitoring suggestions. No land acquisition is required for this sub-project. Provision of utilizing an existing Right of Way is available within the camp\_19 (WDZ\_19.01). The sub-project location was found by the support of RRRC,CIC, SMC and local DPHE. Consultation meetings were conducted with relevant local representatives of the sub-project. The screening report has been prepared after visiting the proposed site by the assigned consultants and local DPHE, CiC representatives, SMC and WASH focal team. The area was surveyed by the team initially and sorted (2-3) places to establish the scheme. Exact situation of safe water provision was discussed with the community & concerned stakeholders during consultation meeting. The foot of hill, natural drain or channel, toilet and others environmental obstructions were not found close to the site.

### **Construction induced impact issues:**

As the Mini Piped Water Supply Scheme is being implemented in an empty government-owned land, no land acquisition will be required, which will prevent construction induced impacts. During construction, movements of heavy vehicles or construction materials may cause damages to the shelters or assets. If any damages are reported, DPHE will consult with the site management team along with contractors and camp focal points to take mitigation measures according to ESMF and RPF.

### **Labor issues:**

The Mini Piped Water Supply Scheme executing contractor will employ skill & unskilled labors. Around 10-12 unskilled labor will be involved who will from the camp while another 10-12 skilled laborers will be engaged from the local/host community/other places of Bangladesh. No foreign labor will be needed to implement the sub-project. As very few number of outside workers will be engaged for short periods (more than 6 months) so usually there will have no competition in using resources amongst the host and DRP communities. Thus, the sub-project will not create any influx of workers. The unskilled labors will be hired from the DRP community of WDZ\_19.01, who already reside in the camp. The skilled labors will be accommodated on





site in the DRP camp by the contractors. The contractor will prepare two labor shed of around 15ftX30ft for males and 15ftX20ft for females (if necessary). All laborers (skilled and unskilled) will be given appropriate training and capacity development to entail a multitude of codes of conduct pertaining to conflict, GBV and other issues.

**Linkage with other stakeholders:**

The team has provided emphasis to keep better linkage with related stakeholders (*i.e.* RRRC, CiC, Camp focal, WASH focal, DRP & Host Community, INGO & Local NGO *etc.*). The team conducts several types of consultation meeting with them group/individually for any social issues.

**GBV issues:**

The GBV risk for the project is assessed as high. The proposed project activities will involve major civil works through skilled (from the host community) and unskilled (from the DRP community) labor. Although a strict labor code of conducted will be enforced, a key concern is the potential exposure to Sexual Exploitation and Abuse (SEA), Sexual Harassment (SH) and GBV for females in the area. During construction of pipelines many women and vulnerable groups in the project location may be exposed to male laborers, which may lead to sexual harassment of varying degrees. A GRM will be established to deal with related issues. The team will conduct consultation meetings with the DRP & Host communities, contractors and labor to address GBV. In this meeting, another topic of discussion will be the ‘do’s and don’ts’ during implementation of the sub-project intervention to mitigate all the cross-cutting issues. The impact of the sub-project to various stakeholders, women and vulnerable groups is expected to be positive and will create a friendly socioeconomic climate to implement the intervention. It has been determined that Camp WASH Focal, DRP communities and their community leader have no objection to establish the MPWSS in the proposed site of Camp\_19 (WDZ\_19.01). If any odd situations arise, the GRC will attempt to mitigate any issues according to the ESMF GRM guideline. On the other hand, if any private land/land leases issues arise, the team will conduct a consultation meeting with the owner and relevant stakeholders according to the ESMF & resettlement guideline.

UNFPA is being hired as specialized organization to deal with the GBV activities. This project is a part of the Gender Component of the UNFPA 9th Country Programme and will contribute to achieve the CP outcome 3 “Advanced gender equality, women’s and girls’ empowerment, and reproductive rights, including for the most vulnerable and marginalized women, adolescents and youth”. In the event any issues on GBV arise, they will be well communicated with UNFPA through appropriate channels to resolve the issue following proper processes.

In this project, 16 new WFS will be established and 2 existing WFS will be fully operationalized, providing comprehensive GBV case management



services such as lifesaving information, community and outreach initiatives, community-based psycho-social support, community engagement in GBV prevention activities through SASA, community engagement in safety audit, and strengthening of community-based support mechanism for women and girls through women support groups and adolescence support groups. The staff's capacity will be developed to adequately handle GBV case management, coaching, mentoring, supervision, GBVIMS and GBVIMS+ to ensure comprehensive case management services through proper supervision. Capacity development will also focus on inclusion of people with disability into response and prevention work for GBV. Various tools will be developed/adapted to facilitate GBV services, MHPSS services and engaging men and boys into GBV prevention work. Along with the GBV case management services mentioned above, GBV and labor code of conduct awareness programs will be implemented, where all stakeholders including the host and DRP communities, labor engaged for the project, site management, the WB and project clients such as DPHE and LGD can participate. Mukti will procure WFS strengthening materials and awareness raising materials. They will also implement the preparedness/ contingency plans for any and upcoming disasters. Finally, close monitoring and supervision initiatives will be in place to ensure in minimizing any sorts of adverse raised issue and to facilitate smooth project processes.

### **Consultations and Future Consultations:**

Under the EMCRP, the DPHE has initiated elaborate consultations with various stakeholders of this project for the Mini Piped Water Supply Scheme site management. These include GIS specialist (initially), Hydrogeologist located in the scheme area, E&S consultants, local DPHE authorities, other development partners such as UN as well as the DRP community. These sessions covered topics such as Project introduced Social and Environmental safeguard issues, GRM, possible social environmental and economic effects, livelihoods options, discussions on minimizing the laborer conflict among DRP and local host communities, Infrastructure, WASH, hygiene, GBV, forestation, waste, sludge management. Most importantly, the benefits of safe drinking water options through installing the mini pipelines were discussed. It was also determined that there is no Elephant corridor and no scope of Elephant/Human conflict in the site area. The DRP community were made aware and sensitized on E&S safeguard issues, precautions, child safety, avoid resettlement, relocations of local institutions (mosques, school/ learning centers & others, any restrictions for the DRP, and compensation mechanisms in the event of any objection and complaints.

These consultations resulted the community to welcome and appreciate the DPHE EMCRP initiatives on WASH sector sub projects. They opined safe water and improved sanitation (Latrine installation) as one of their priority needs for secured and better livelihoods aspects.



Thus, future consultations during the lifetime of the project are expected to ensure that negative social and environmental impacts are being mitigated and community needs and opinions are being considered. Consultations will involve determining with the site management team whether proper signage is being used (e.g. for occupational hazard) and whether a properly GRM system is being implemented through an efficient GRC. The GRM will be set up to serve as an integral tool for engaging various stakeholders during the project activities and its implementation. A complaint book for stakeholders and the GRM will be institutionalized with qualified personnel having proper training in managing relevant complaints. The GRM will be available for a wide array of issues such as malpractice, labor issues and GBV. Every complain will be registered in the complaint book along with the statement of resolving measures.

### COVID Management Guidelines during implementation:

- A. **Labor, Workers and Working Conditions:** Contractors are responsible to manage the labors, workers and working conditions. PMU with the support of superstition and monitoring firms will ensure implementation.
- i. Stop any Project Activities that may increase community exposure to COVID risks
  - ii. Communicate to communities about protective COVID risks and measures
  - iii. Monitor incidence and outbreak of communicable diseases
  - iv. Identify hotspots based on health data available
  - v. Screen Security personnel for COVID
  - vi. Follow strict protocols in management of project interventions that may increase the COVID risk for human health (for instance in livestock and commercial farming)
  - vii. Undertake preventive measures in resettlement settlements
  - viii. Practice social distancing in meetings, workshops and consultations
- B. **Land Acquisition and Involuntary Resettlement:** Though this sub-project will not require land acquisition and involuntary resettlement but during implementation if any involuntary resettlement issues arises, following steps will be followed:
- i. Identify vulnerable PAPs and Non-title holders who may have increased vulnerability due to COVID outbreak and (lockdown or loss of livelihood); particularly NTH
  - ii. Make accelerated payments for compensation and/or livelihood restoration to project affected persons, especially vulnerable households, non-titled holders to help them cope with lockdown;
  - iii. Employ local population on wage labor, make advance payments;
  - iv. Manage migrant labor for COVID related risks



- v. Invest in living conditions in relocation settlements

**C. Community Health and Safety:** PMU and contractors are responsible to implement the following

- i. Stop any Project Activities that may increase community exposure to COVID risks
- ii. Communicate to communities about protective COVID risks and measures
- iii. Monitor incidence and outbreak of communicable diseases
- iv. Identify hotspots based on health data available
- v. Screen Security personnel for COVID
- vi. Follow strict protocols in management of project interventions that may increase the COVID risk for human health (for instance in livestock and commercial farming)
- vii. Undertake preventive measures in resettlement settlements
- viii. Practice social distancing in meetings, workshops and consultations

**D. Stakeholders and Citizen and Grievance Mechanism:**

- i. Disseminate COVID advisories over phones, texts, what's app groups, radio, TV, frontline workers Communication;
- ii. Monitor existing grievance and public information mechanisms for any COVID related grievance, queries etc.;
- iii. Widely disseminate material on those who have recovered from COVID to remove stigma
- iv. Include Doctor or medical staff in the GRM
- v. Use more video conference facilities and conferences.

**Labor and Contractors management during COVID-19:**

**A. For projects involving construction/civil works,** contractors will develop specific procedures or plans so that adequate precautions are in place to prevent or minimize an outbreak of COVID-19, and what should be done if a worker gets sick.:

- Assessing the characteristics of the workforce, including those with underlying health issues or who may be otherwise at risk
- Confirming workers are fit for work, to include temperature testing and refusing entry to sick workers
- Considering ways to minimize entry/exit to site or the workplace, and limiting contact between workers and the community/general public
- Training workers on hygiene and other preventative measures, and implementing a communication strategy for regular updates on COVID-19 related issues and the status of affected workers
- Treatment of workers who are or should be self-isolating and/or are displaying symptoms
- Assessing risks to continuity of supplies of medicine, water, fuel, food and PPE, taking into account international, national and local supply chains
- Reduction, storage and disposal of medical waste



- Adjustments to work practices, to reduce the number of workers and increase social distancing
- Expanding health facilities on-site compared to usual levels, developing relationships with local health care facilities and organize for the treatment of sick workers
- Building worker accommodations further apart, or having one worker accommodation in a more isolated area, which may be easily converted to quarantine and treatment facilities, if needed
- Establishing a procedure to follow if a worker becomes sick (following WHO guidelines)
- Implementing a communication strategy with the community, community leaders and local government in relation to COVID-19 issues on the site.

**B. For supporting health facilities,** plans or procedures will be in place to address the following issues:

- Obtaining adequate supplies of medical PPE, including gowns, aprons, curtains; medical masks and respirators (N95 or FFP2); gloves (medical, and heavy duty for cleaners); eye protection (goggles or face screens); hand washing soap and sanitizer; and effective cleaning equipment. Where relevant PPE cannot be obtained, the plan should consider viable alternatives, such as cloth masks, alcohol-based cleansers, hot water for cleaning and extra hand washing facilities, until such time as the supplies are available
- Training medical staff on the latest WHO advice and recommendations on the specifics of COVID-19
- Conducting enhanced cleaning arrangements, including thorough cleaning (using adequate disinfectant) of catering facilities/canteens/food/drink facilities, latrines/toilets/showers, common areas, including door handles, floors and all surfaces that are touched regularly
- Training and providing cleaning staff with adequate PPE when cleaning consultation rooms and facilities used to treat infected patients
- Implementing a communication strategy/plan to support regular communication, accessible updates and clear messaging to health workers, regarding the spread of COVID-19 in nearby locations, the latest facts and statistics, and applicable procedures.

**Recommendation for further environmental and social assessment and/or site specific environmental and social management plan: Yes/No**  
(\*If yes, please specify what assessments/plans would be required. Mention some recommendation on E&S assessment .... ESMP)

**Yes.** If site specific environmental and social management plan (ESMP) is followed, any negative impacts can be mitigated and monitored. ESMP is attached.



**Appendix -01**

**Environmental and Social Management Plan (ESMP) of this Sub project (site specific)**

**ESMP for Mini-Piped Water Supply System (MPWSS): WDZ\_19.01, Block\_A-02 & A-06**

Project Stage	Potential Environmental & Social Impacts/Issues	Proposed Mitigation Measures/indicators	Institutional Responsibilities	Supervision Responsibility
Pre-Construction Stage	Assessment of Social Impacts and Risks	To meet the requirements for disadvantaged and vulnerable directive: <ul style="list-style-type: none"> <li>• Include COVID positive individuals, households and clusters as vulnerable category in Social Assessment TORs, surveys and consultations (particularly relating to social stigma);</li> <li>• Consult with such COVID positive households to Identify specific support mechanisms that projects could support;</li> <li>• Add tribal communities in self isolation under vulnerable groups who may need suitable and socially acceptable support;</li> <li>• Use alternative and virtual and video means for consultations and interactions.</li> </ul>	PMU	Social Development Specialist and Gender Specialist of PMU, Supervision and monitoring firms.
Pre-Construction Stage	Loss of land/and other physical assets	<ul style="list-style-type: none"> <li>• No land acquisition will be allowed inside the DRP camp.</li> </ul> As, there were no any mitigation measures according to this impact.	PMU	Social Development Specialist and Gender Specialist of PMU
Pre-Construction Stage	Loss of livelihoods	<ul style="list-style-type: none"> <li>• Under this sub-project, there is no scope of negative impact of DRP livelihoods.</li> </ul>	PMU & Contractor	Social Development Specialist and Gender Specialist of PMU
Pre-Construction Stage	Stakeholders Engagement	<ul style="list-style-type: none"> <li>• All the project stakeholders will be engaged in consultation process</li> <li>• Individual/Separate community level consultation meeting will be held with the potential affected HHs</li> <li>• Consultation meeting with Rohingya male and female</li> </ul>	PMU & Contractor	SD and Gender Specialist of PMU



Project Stage	Potential Environmental & Social Impacts/Issues	Proposed Mitigation Measures/indicators	Institutional Responsibilities	Supervision Responsibility
		<p>about the project safeguard documents will be disclosed to the stakeholders</p> <ul style="list-style-type: none"> <li>• DRP camp people will be involved with the GRM, formed GRC</li> </ul>		
Pre-Construction Stage	Loss of Access rights	<ul style="list-style-type: none"> <li>• Project to ensure thorough analysis of alternatives that access enjoyed by the community remains intact.</li> <li>• In case of unavoidable circumstances, alternative access will be provided.</li> </ul>	PMU	SD and Gender Specialist of PMU
Pre-Construction Stage	Site Selection & implementing interventions: Human-elephant conflict	<ul style="list-style-type: none"> <li>• Selection of sub-project sites will be outside of the elephant route/corridor/influenced area.</li> <li>• Before finalized the location of sub-project must be contact with camp wash focal</li> <li>• Department of Forest (DoF) and Border Guard Bangladesh (BGB) already fixed up the camp area and boundary. Sub-project Interventions will be also included in this area. So no need to take any further consent for those purpose, if any circumstance arisen.</li> </ul>	PMU	Environmental Consultant of PMU, PSC
Pre-Construction Stage	Site Preparation: Soil Erosion; Alteration of natural drainage	<ul style="list-style-type: none"> <li>• Selected site will be far away from any water bodies or natural water flow path to avoid the flash flood or any kind or surface runoff.</li> <li>• For production tubewell sinking a minimum 10 meters distance from latrines' soak well to be maintained.</li> <li>• A minimum aerial distance 200 - 250 meters to be maintained among deep tubewells installation for cone depression and optimizing the production of wells etc.</li> <li>• Minimize cut &amp; fill operations, the site clearing and grubbing operations should be limited to specific locations only.</li> <li>• Always try to avoid any disruption of socially sensitive areas with regard to human and biodiversity.</li> <li>• The existing slope and natural drainage pattern on the</li> </ul>	PMU & Contractor	Environmental Consultant of PMU, PSC





Project Stage	Potential Environmental & Social Impacts/Issues	Proposed Mitigation Measures/indicators	Institutional Responsibilities	Supervision Responsibility
		<p>site should not be significantly altered.</p> <ul style="list-style-type: none"> <li>If trees on private lands are damaged during construction operations, compensation shall be paid to the owner as determined by the DoF or appropriate authority.</li> <li>The contractors shall ensure that site preparation activities not lead to disruption of activities for the local residents and biodiversity.</li> </ul>		
Construction Activity	Construction Induced Impacts	<ul style="list-style-type: none"> <li>Any construction induced impacts must be mitigated following the guidelines of RPF and ESMF</li> </ul>	Contractors	PMU
Construction Activity	Noise from construction works	<ul style="list-style-type: none"> <li>Construction activity will be finished at daytime with in 4.00 pm. Proper measures will be taken to avoid any disturbances. But some works will be continuing for 24 hours schedule like TTW and PTW drilling, development &amp; testing.</li> <li>Contractor will confirm proper measures for avoiding any disturbance of residents as well as biodiversity.</li> <li>Personal Protective Equipment (PPE) will be ensured in sub-project site before starting any kind of construction activities.</li> </ul>	Contractor	Environmental Consultant of PMU, PSC
Construction Activity	Dust	<ul style="list-style-type: none"> <li>Construction machinery shall be properly maintained to minimize exhaust emissions of CO<sub>2</sub>, particulate matter (PM<sub>2.5</sub>andPM<sub>10</sub>) and Hydrocarbons.</li> <li>Dust generated as a result of clearing, leveling and site grading operations shall be suppressed using water sprinklers.</li> <li>Dust generation due to vehicle movement on haul roads/access roads shall be controlled through regular water sprinkling.</li> </ul>	Contractor	Environmental Consultant of PMU, PSC



Project Stage	Potential Environmental & Social Impacts/Issues	Proposed Mitigation Measures/indicators	Institutional Responsibilities	Supervision Responsibility
Construction Activity	Safety Issues	<ul style="list-style-type: none"> <li>Unauthorized entry to the site area is completely prohibited and the site will be properly fenced with a single entry, for this purpose</li> <li>Properly maintained and control store house, storages instruments as well as hazardous materials on the site</li> <li>Health and safety training will be arranged for the Rohingya or other communities labours before project intervention started.</li> <li>Labour will bring their proper IDs and wear when they will entry in the camp area.</li> <li>Child labours will not allowed for any kind of activities</li> <li>Site shall be secured by fencing and maintained at entry points.</li> </ul>	Contractor	Environmental Consultant of PMU, PSC
Construction Activity	Traffic Management	<ul style="list-style-type: none"> <li>Contractors to provide traffic management plans to be approved by relevant authorities.</li> <li>If need adequate alternative arrangements will be made to minimize impact on motorist and pedestrians.</li> <li>Adequate road signs to be planted on access roads to limit vehicular speeds.</li> <li>For access roads, speed ramps will be construct by proper design.</li> <li>Traffic signs will be made both in Bangla and Rohingya language.</li> </ul>	Contractor	Environmental Consultant of PMU, PSC
Construction Activity	Conflicts with existing users due to the scarcity of resource base.	<ul style="list-style-type: none"> <li>A detailed assessment of the available resources and consent of the local representative for withdrawal of water from existing surface water sources shall be taken.</li> </ul>	Contractor	SD and Gender Specialist of PMU



Project Stage	Potential Environmental & Social Impacts/Issues	Proposed Mitigation Measures/indicators	Institutional Responsibilities	Supervision Responsibility
		<ul style="list-style-type: none"> <li>• If ground water is withdrawn, adequate approvals essential from the appropriate department/authorities before setting up bore wells.</li> <li>• Local community must be consulted before any construction works started</li> </ul>		
Construction Activity	Increase in road accidents	<ul style="list-style-type: none"> <li>• The movement of heavy machinery and equipment will be restricted to defined routes.</li> <li>• Proper signage to be displayed at major junctions.</li> <li>• Road diversions and closures to be informed well in advance to the local community.</li> <li>• The vehicular movement will be controlled near sensitive locations viz. schools, colleges, hospitals, mosques, learning center &amp; DRP camps identified along designated vehicular transportation routes.</li> <li>• Local community will be trained up about traffic management and awareness.</li> </ul>	Contractor	Environmental Consultant of PMU, PSC
Construction Activity	Labor Base Camp: Conflicts with the local residents	<ul style="list-style-type: none"> <li>• An alternate arrangement for fuel wood, heating and cooking required to meet fuel requirement of the labor camps .</li> <li>• Alternating cooking arrangement for the HHs living in the camp</li> <li>• Awareness building about nutrition, disaster risk resilience or mitigation, adoption of clean energy for cooking; and prevention of child abuse, child marriage, GBV, sexual harassment, trafficking of women and children as well as illegal drug trade.</li> <li>• Work force should be prohibited from disturbing the flora, fauna including hunting of animals, wildlife hunting, poaching and tree felling.</li> <li>• Adequate facilities ensuring sanitation for labor camps.</li> </ul>	Contractor	SD and Gender Specialist of PMU



Project Stage	Potential Environmental & Social Impacts/Issues	Proposed Mitigation Measures/indicators	Institutional Responsibilities	Supervision Responsibility
		<ul style="list-style-type: none"> <li>• Safe drinking water will be made available at site for labour drinking purpose.</li> <li>• Adequate accommodation arrangements for labour.</li> <li>• Labor code of conduct to be disclosed through consultation and FGD.</li> </ul>		
Construction Activity	Waste Management: Improper management and handling of hazardous and non-hazardous waste during construction.	<p>Preparation of a waste management plan covering the following aspects:</p> <ul style="list-style-type: none"> <li>• Residual waste from the temporary accommodation facilities for labor.</li> <li>• Working areas are kept clean and tidy at all times.</li> <li>• Construction site is to be checked for spills of substances i.e. chemical, oil, paint, etc.</li> <li>• Bins and/ or skips should be emptied regularly and waste/ debris should be disposed off at waste disposal areas and/ or at the site.</li> <li>• Waste from equipment maintenance/vehicles on-site</li> <li>• The scrap material generated from the erection of structures and related construction activities will be collected and stored separately in a stack yard and sold to local recyclers.</li> <li>• Hazardous waste viz. waste, oil, Mobil etc. will be collected and stored in the paved and bounded area and subsequently sold to authorized recyclers.</li> <li>• Waste from civil works will be properly collected</li> <li>• Hazardous Waste Management Rules should be applied.</li> </ul>	Contractor	Environmental Consultant of PMU, PSC



Project Stage	Potential Environmental & Social Impacts/Issues	Proposed Mitigation Measures/indicators	Institutional Responsibilities	Supervision Responsibility
Construction Activity	<p>Health &amp; Safety Risks:</p> <ul style="list-style-type: none"> <li>• The potential for exposure to safety events such as tripping, working at height activities, fire from hot works, smoking, failure in electrical installation, mobile plant and vehicles, and electrical shocks.</li> <li>• Exposure to health events during construction activities such as manual handling and musculoskeletal disorders, hand-arm vibration, temporary or permanent hearing loss, heat stress, and dermatitis.</li> </ul>	<ul style="list-style-type: none"> <li>• All construction equipment will be properly inspected timely.</li> <li>• The risk assessment will be prepared time to time for all types of work activities on site.</li> <li>• Proper walkways that are clearly designated as a walkway; all walkways shall be provided with good conditions underfoot; signposted and with adequate lighting.</li> <li>• Proper signpost any slippery areas will be ensured in construction site.</li> <li>• Carry out fire risk assessment for the construction areas, identify sources of fuel and ignition and establish general fire precautions including, means of escape, warning and fighting fire.</li> <li>• A system to alert for workers will be setup on site. This may be temporary or permanent mains operated fire alarm.</li> <li>• Fire extinguishers will be located at identified fire points around the site. The extinguishers will be appropriated to the nature of the potential fire.</li> <li>• This sub project has Proper communicative emergency response plan (ERP) with all parties, the ERP to consider such things as specific foreseeable emergency situations, organizational roles and authorities, responsibilities and expertise, emergency response and evacuation procedure, in addition to training for personnel and drills to test the plan.</li> <li>• Electrical equipment must be safe and properly maintained; works shall not be carried out on live systems.</li> <li>• Only competent authorized persons shall carry out</li> </ul>	Contractor	Environmental Consultant as well as Social Development and Gender Specialists of PMU, PSC



Project Stage	Potential Environmental & Social Impacts/Issues	Proposed Mitigation Measures/indicators	Institutional Responsibilities	Supervision Responsibility
		<p>maintenance on electrical equipment, adequate Personal Protective Equipment (PPE) for electrical works must be provided to all personnel involved in the tasks.</p> <ul style="list-style-type: none"> <li>• An adequate number of staff and first aiders shall be on site in accordance with Bangladesh Labor Law requirements.</li> <li>• First aid kit with adhesive bandages, antibiotic ointment, antiseptic wipes, aspirin, non-latex gloves, scissors, thermometer, etc. shall be made available by the contractor on site.</li> <li>• Emergency evacuation response shall be prepared by the contractor and relevant staff shall be trained through mock-up drills.</li> <li>• Ensure all equipment is suitable for jobs (safety, size, power, efficiency, ergonomics, cost, user acceptability etc.), provide the lowest vibration tools that are suitable and can do the works.</li> <li>• All safety equipment will be available in sub-project site (safety, size, power, efficiency, ergonomics, cost, user acceptability etc.), the lowest vibration tools will be provided that are suitable and can do the works.</li> <li>• Regulated noise exposure assessments and noise level surveys of noisy areas, processes and equipment shall be carried out in order to form the basis for remedial actions when necessary.</li> <li>• Contractor will provide Awareness training to all personnel involved during the construction phase in order to highlight the heat related illnesses of working in hot conditions such as heat cramps, heat exhaustion, heat stroke, and dehydration.</li> <li>• Adequate quantities of drinking water will be available at different locations within the sub-project area.</li> </ul>		



Project Stage	Potential Environmental & Social Impacts/Issues	Proposed Mitigation Measures/indicators	Institutional Responsibilities	Supervision Responsibility
		<ul style="list-style-type: none"> <li>Provision to maintain proper PPE wherever necessary and to ensure that there are satisfactory washing and changing facilities.</li> <li>Provision to ensure all workers exposed to a risk are aware of the possible dangers and also given thorough training in how to protect themselves and there should be effective supervision to ensure that the correct methods are being used.</li> </ul>		
Operation & Maintenance	Noise disturbances to fauna	<ul style="list-style-type: none"> <li>Provision to maintain noise from the operation &amp; maintenance of machinery and equipment by noise dampeners</li> <li>Provision to take necessary lighting, caution for the works and most of the time contractor will avoid the night time construction works.</li> <li>Contractors will be ensure the device to determine the of noise level in this sub-project area.</li> <li>Regularly third-party will be monitored the noise level in this sub-project area.</li> </ul>	Contractor for first 2 years  Long-term responsibility to be determined by CIC/DPHE	Environmental Consultant of PMU, PSC  Long-term responsibility to be determined by CIC/DPHE
Operation & Maintenance	Draw down of groundwater due to excessive withdrawals	<ul style="list-style-type: none"> <li>Coordination with other development agencies for groundwater extraction rates will be monitoring.</li> <li>Regular third-party will be monitoring of groundwater levels</li> </ul>	Contractor for first 2 years  Long-term responsibility to be determined by CIC/DPHE	Environmental Consultant of PMU, PSC  Long-term responsibility to be determined by CIC/DPHE
Operation & Maintenance	Improper disposal of solids wastes from solar powered systems can cause land and water pollution	<ul style="list-style-type: none"> <li>Ensure effective Waste Management Plan will developed and implemented.</li> <li>Contractor will ensure third party monitoring of nearby surface and underground water bodies for signs of contamination. Parameters. Test results are to be</li> </ul>	Contractor for first 2 years  Long-term responsibility to be determined by	Environmental Consultant of PMU, PSC  Long-term responsibility to be





Project Stage	Potential Environmental & Social Impacts/Issues	Proposed Mitigation Measures/indicators	Institutional Responsibilities	Supervision Responsibility
		compared with Bangladesh Environmental Quality Standards of DoE.	CIC/DPHE	determined by CIC/DPHE
Decommissioning	The impacts are similar to those listed in construction stage: <ul style="list-style-type: none"><li>• Pollution from waste materials</li><li>• Health &amp; Safety risks to workers and local community/DRPs</li></ul>	<ul style="list-style-type: none"><li>• Provision to proper measure of mitigation and monitoring to minimize or reduce the environmental and social impacts during decommissioning are anticipated to be similar to those identified for the construction phase.</li><li>• Third-party monitoring of air quality as well as on receiving land and water bodies, may be undertaken, if the condition of those compartments seems to be significantly worse.</li></ul>	Long-term responsibility to be determined by CIC/DPHE	Long-term responsibility to be determined by CIC/DPHE

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