Water Supply Strategy
for
Rohingya Response

Final Version
January, 2025

WASH SECTOR, COX'S BAZAR

WASH Sector
Cox's Bazar

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Acronyms

ADB – Asian Development Bank

AWD – Acute Watery Diarrhea

CFU – Colony Forming Unit

CiC – Camp in Charge

DPHE – Department of Public Health Engineering

DU – Dhaka University

EPR – Emergency Preparedness and Response

ERT – Emergency Response Team

FDMN – Forcibly Displaced Myanmar Nationals

FRC – Free Residua Chlorine

GoB – Government of Bangladesh

GWR – Ground Water Relief

HC – Host Community

HH – Household

HTH – High Test Hypochlorite

HP – Hygiene Promotion

IWM – Institute of Water Modelling

NRC – Nayapara Registered Camp

PPE – Personal Protective Equipment

RRRC – Refugee Relief and Repatriation Commission

SCCCM – Shelter- Camp Coordination and Camp Management

TCG – Technical Consultation Group

TOR – Terms of Reference

WB – World Bank

1. Introduction

Following the influx of Forcibly Displaced Myanmar Nationals (FDMN) into Bangladesh in 2017, humanitarian organizations implemented emergency response programs to support refugees. As of July 2024, there are 954,131[1] refugees accommodated in 33 camps around Ukhia and Teknaf sub district. Different agencies provide WASH services to refugees. Water Supply is one of the first lifesaving service provided in camps. Since 2017 a wide range of water supply interventions have taken place in Cox's Bazar. In the Ukhia camps these have consisted primarily of shallow tube wells, deep tube wells and small-scale water networks. Meanwhile, in Teknaf, surface water treatment and distribution systems have been installed, as well as some tube wells, water trucking, and reverse osmosis. In 2019 WASH sector launched "water network master plan" to ensure safe chlorinated water coverage.

Over the past years (2019-2023) as the water master plan was implemented, no major changes took place in term of water-supply in the refugee's camps. However, in 2024, WASH sector identified the need to develop a long-term "water strategy" through a review of the water context and consultative approach of all the actors.

Such "Water strategy" is presented here and was developed through the leadership of WASH sector.

2. Objectives

This strategy has been developed considering the following objective to ensure safe, sustainable and long term water supply system for the Rohingya community as well as affected host community people in the vicinity of the camps:

- Ensure the access of adequate water quality & quantities.
- Ensure long term sustainable solution for Teknaf water scarcity
- Harmonization of water quality monitoring system
- Develop policy on water supply system in camps

3. Context & Overview of Water Supply System:

In Cox's Bazar FDMNs are settled at Ukhia and Teknaf sub district. Topographic is hilly terrain and climate is topical. Monsoon season starts in May and continue till September. In the camps population density is very high, for that reason space availability is one of the major challenge. The water supply situation in Ukhia and Teknaf are quite different which explain more in below:

Ukhia context:

- Water sources in Ukhia sub-district fully relies on ground water mainly from Dupi Tila aquifer. This aquifer is sustainable, offers good quality water and is protected from salinity intrusion (localized iron issue especially for shallow aquifer)
- The monitoring of groundwater levels shows a satisfying yearly recharge of the aquifer but with a seasonal depletion affecting the surrounding host communities.
- Agricultural use of the aquifer is four time higher than domestic use.

Teknaf context:

- Teknaf sub district relies on surface water mobilized mainly through the construction of temporary and fragile earth dams built directly in the bed of the no permanent watercourses and which must be rebuilt each year (due to flash flood).
- Few permanent reservoirs have been built but with limited capacity compared to demand

[1] GoB UNHCR Population Factsheet - July 2024

- In Teknaf's camps, during the dry season (January to May), water rationing is implemented with sometimes less than 15 liters per person and per day leading to conflict around water uses.
- In Teknaf, two desalination plants from Naf River offer complementary water sources. During the driest years, additional water trucking has been put in place from Ukhia and other remote places.
- In some lucky cases, ground water can be found in Teknaf but yield will be limited (1 to 4m^3/h) and salinity issue may appears which bring serious concerns on longer-term for Teknaf sub-district.

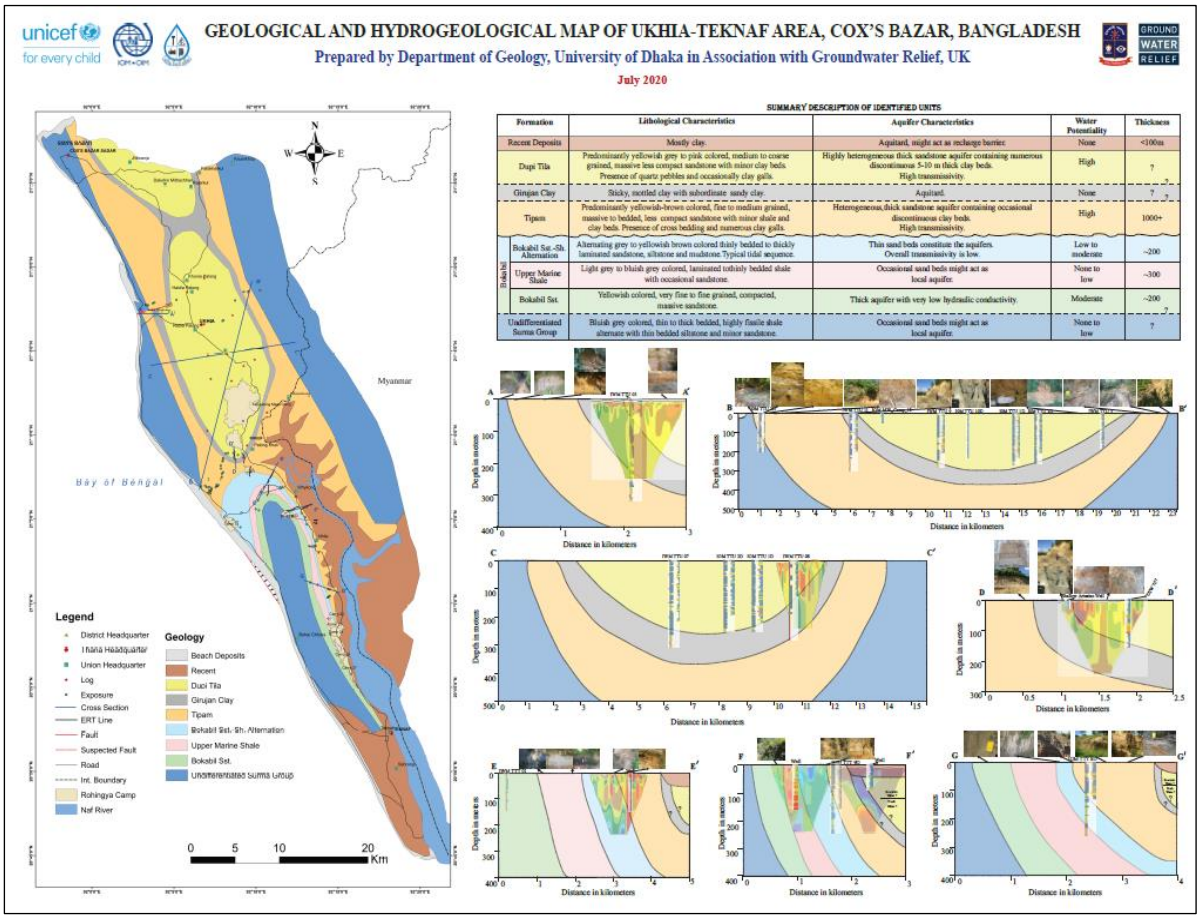


Figure: Geological and Hydrogeological Map Ukhia and Teknaf

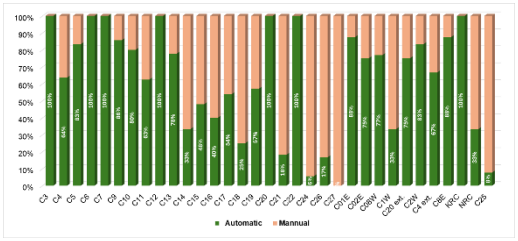
3.1 Water Supply Intervention:

- Sources: Ground Water (Ukhia), Surface Water and Rain Water (Teknaf)
- 298 water networks, 320 production boreholes, 768 nos. reservoir tank and over 7000 tap stands are exists across 33 camps. [2]
- 15,629 Tube well/hand pump[3]
- Water Quality Monitoring Dashboard
- Water Quality Testing Labs
- DPHE Ground Water Monitoring Cell

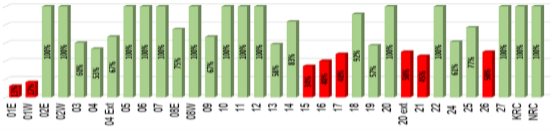
[2] Water Network Assessment –IWM -2023
[3] WASH-Infrastructure – Mapping – Tubewell – August, 2024

3.2 Water Related findings:

- Avg. 23 liter water collected per person per day[4]
- 68 % of HH using tap stand as primary source for drinking water[4]
- 85% of households reporting having enough water to meet all their HH needs in camps[4]
- 62% of households reporting having enough water to meet all their HH needs in Host's communities[5]
- 94% of household level E. Coli free[6]
- Ground Water Monitoring data (from 2019 to 2024) shows ground water level depletion range 4 m to 12 m within the camps
- Daily avg. 50 to 100 m3 water produced by per network[2]
- Water supply frequency is 1-2 times in general[2]
- 74% of water network with backup generator[2]
- 63 % of water network have automatic chlorination facilities[2]
- Only 47% of tap stands have found Free Residual Chlorine (FRC)[2]



% of Water Network with Chlorination System



% of Water Network with Backup Generator

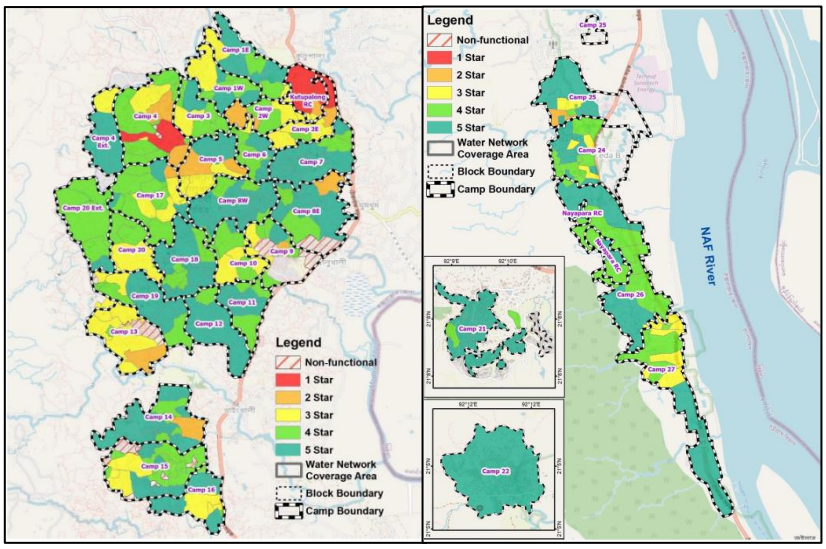


Figure: Maps of 5-Star Indicators for Camps

3.3 Major Challenges:

- Sustainability and O&M cost of small water networks (few cubic meters per day) creates challenges and offers limited water supply.
- Lack of backup generator (and fuel) and automatic chlorination system
- Lack of Free Residual Chlorine (FRC) at tap stand level
- Tap stolen, Illegal pipe connection, private tube, privatization of water supply infrastructure
- Lack of monitoring on other stakeholder operated water supply system in camp/block by the camp/block focal agencies.
- Lack of harmonization on water quality monitoring (Frequency, Type of source, sample test number, parameters) and high number of laboratories

[2] Water Network Assessment –IWM -2023
[4] Inter-Sector Needs Assessment (ISNA) 2024
[5] Cox's Bazar WASH Situation Assessment Dashboard
[6] WASH Sector Water Quality Dashboard

- Harmonization of water user group/committee for community engagement
- Tube well/hand pump head missing or stolen
- Water quality of shallow tube-wells, private and ranted tube well

3.4 Major Challenges in Teknaf Area:

- Long term solution for the scarcity of water at Teknaf (during dry season)
- Salty Ground & salty River water (NAF) or no permanent rivers
- Limited access to the tube well, insufficient water reservoir
- Conflicts between HC and refugees
- No reliable ground water (or very limited volume)

4. Recommendations for Tube-Wells

Although the aim is to ensure the provision of safe, chlorinated water through the water network, the use of tube wells, particularly deeper ones, remains necessary in certain pocket gap areas. Additionally, hand pumps/tube wells can serve as crucial water sources during emergencies due to their quick and easy restoration time and stronger resilience to disasters. However, some challenges have been observed, in terms of water quality (especially for shallow one) and functionality (during dry seasons). In light of these advantages and drawbacks, the following recommendations are proposed for the tube wells/hand pumps:

Deep Tube Wells:

- Water network coverage should be the first option to address the water needs gap, given the specific context and field conditions, only deep tube wells/hand pump have been recommended as alternate solution.
- Community engagement need to be ensure through consultation with community members and leaders during the planning phases for addressing their concerns as well as building ownership.
- Water quality must be complied according to the section “Recommendations for Monitoring & Standards” for existing and new tube well/ hand pump.
- It is recommended to comply the section “Recommendations for Monitoring & Standards” for population coverage. Considering the community needs and context coverage can be flexible to ensure the access to water for the community.
- Existing hydrogeology, climate resilience, safe distance from the contamination sources need to be considered, during the design phase of new tube well/ hand pump. It is also recommend to avoid flood prone area.

Shallow Tube Wells:

- For new tube wells installation and drinking purpose, shallow tube wells/hand pumps are strictly prohibited. It is also recommended for advocating with the Camp-in-Charge (CiC) and other agencies to enforce the restriction of installing new shallow tube wells and to support the transition to safer water sources.
- Agencies should be placed clear visible signs (refer to the Figure: Not for Drinking) at existing shallow and/or contaminated tube well sites, which will indicate that the water is not suitable for drinking. This is accompanied by consultations with community users to ensure understanding and compliance.
- The operation and maintenance of shallow tube wells will be gradually discontinued in consideration of their local context and inherent risks (based on the water quality analysis). After ensuring access to the alternate safe and adequate water source, WASH partners will not continue the O & M of the shallow tube

Less than 50 m depth of the well should be considered as shallow tube well

Figure: Not For Drinking

well. If the community want to continue the operation of shallow tube well, despite of having a safe and adequate water source than the O & M need to be done by themselves.

Decommissioning of Nonfunctional Tube Well Boreholes

- Shallow Tube Wells: Nonfunctional shallow tube wells must be decommissioned and sealed according to environmental safety standards to prevent contamination and other hazards.
- Deep Tube Wells: In cases where the water table declines, the head of the deep tube well will be removed and stored securely until the water table rises again. This ensures the well can be reused when conditions improve (rainy season) and it will limit challenges faced by hand-pumps being stolen.

Figure: Non Functional Hand Pump

Flooded Tube Well:

- Flooded tube well must be disinfected by shock chlorination and ensure the water remains safe for use.
- Before using the flood-affected tube wells, water quality should be ensure as per **section 8 Recommendations for Monitoring & Standards**
- Preventive measure (like: sanitary seal, plat form raise up etc.) need be considered for the existing deep tube well in the flood prone area, if there is no alternate.
- Building Tube-wells outside of flooding areas should be the first preventive measure to apply

Figure: Flooded Hand Pump

Tube Well/Hand Pump Component Missing:

Following recommendation should be considered for the tube well/hand pump component missing;

- Consulting with community to understand the root cause
- Strengthening the community engagement structure
- Explore the innovative idea to prevent this incident

Following hand pump have been recommended in this context:

- Tara Dev Hand Pump (recommended for deep water extraction)
- #6 Hand Pump

Figure: Hand Pump Head Missing

Figure: Tara Dev Hand Pump

Figure: #6 Hand Pump

5. Recommendations for Water-Networks:

Figure: Mini Water Network

Since 2019 to till 2024, 298 water networks have been built across 33 camps, ensuring access to safe water for the refugee population. These water networks, supported by O&M partners, government bodies, and I/NGOs, include 320 boreholes, 768 tank sites, and over 7,000 tap stands.

The functionality of these networks is generally positive, with 94% of the systems operational. But the challenges remain: 22 networks (4.4%) are non-functional, primarily due to theft and failure of electro-mechanical equipment. Key issues with the Water Networks are include the lack of functioning solar panels, backup energy systems or lack of fuel, inadequate chlorination protocols, and insufficient maintenance of water production and FRC logbooks. Improvements in equitable water distribution, operator training, O&M activities, monitoring and firefighting provisions are essential. To address these challenges, following recommendations need to be considered:

- **Water Network Capacity and Integration**:
  - Water networks should maintain a minimum pumping capacity of 10m³ per hour and/or serving at least 1,000 people (around 200 households).
  - Mini water networks should be merged with existing larger networks or decommissioned to enhance efficiency and reduce operational costs. If mini networks have adequate capacity but are underutilized, extend them to cover more users.
  - Decommissioned mini water network's borehole can be used as deep tube well/hand pump.

Definition of mini water-network is less than 10m3/hour (pumping capacity) for a borehole and/or serving less than 1000 people.

- **Decommissioning and Borehole Management**:
  - Decommission redundant networks where multiple water systems serve the same area. Protect decommissioned boreholes by safeguarding them for future use or convert them as deep tube well considering the needs.
  - Request support to capable actors when feel the capabilities are less to function the Water Network

- **Water Quality and Monitoring**:
  - Every water network should ensure record keeping system (manual or automatic) to monitor the water quantity & quality, flow rate, water level, fuel consumption, delivery frequency etc. (please find here suggested template)
  - Implementing flow meter at production borehole of all water networks, to track the daily production for ensuring at least 20 liters per person per day.
  - Pilot remote Free Residual Chlorine monitoring systems, starting with reservoir tanks and expanding to tap stands (refer to sector 8)
  - Water quality should be ensured by installing and maintaining auto-chlorination system
  - Continue yearly 5 stars monitoring of all the water-networks ideally at the same time of the year to allow comparative studies between the years, and/or maintain annual evaluations of water network performance at the tap stand as well as water quality, ensuring the provision of at least 20 liters per person per day and avoid discrepancies between water produced and water distributed.
  - Continue water quality monitoring (including of the networks under the coverage of block/camps focal agencies), and keep proper tracking of the result.

- **Infrastructure Development and Fire Safety**:
  - Ensure water tanks and pumping houses include fire outlets for emergency response.
  - In collaboration with SCCCM and EPR, assess technical possibility of dry hydrant across the camps in strategic places.

- **Power Sources with Backup Systems**:
  - Solar energy should be promoted as the primary power source with backup generators
  - Ensure the funds for backup fuel (around 3 days of storage is recommended for fuel especially during cyclone season and rainy season)
- **Resource Management**:
  - Implement groundwater monitoring (both quantitative and qualitative) across all water networks and sharing data to DPHE Ground Water Monitoring Cell. DPHE cell will analyze and inform the decision-making entities for future planning.
  - Manage groundwater extraction to prevent over-extraction, especially during the dry season, and ensure that water use benefits both refugees and host communities.

- **Alternative sources**:
  - Encourage wastewater reuse for activities like kitchen gardening to optimize resource utilization and reduce water waste.
  - Promote and explore cost effective other resources

- **Maintenance and Operator Training**:
  - Establish a standard for borehole maintenance, focusing on improving borehole capacity and water quality.
  - Prioritize regular maintenance of water networks to ensure operational sustainability and prevent system failures.
  - Provide continued training for network operators to enhance skills in managing water systems and ensuring equitable distribution.

- **Advocacy and Regulation of Private Boreholes**:
  - Advocate for regulating private boreholes and pipeline connections, particularly preventing new private pipeline installations within camp boundaries.

- **Long-term Investment and Planning**:
  - Coordinate with external investors (e.g., ADB, World Bank) to focus on long-term sustainability, maintenance, and monitoring of water infrastructure.
  - Ensure that investments prioritize the needs of both the refugee and host communities.

6. Recommendations for Emergency Water Supply:

An effective emergency water supply strategy is crucial in managing water resources during any crises or emergency, a situation requiring immediate action due to a sudden, unforeseen event that poses a risk to health, safety, or well-being. This document outlines the preparedness and response measures required to ensure a reliable and safe water supply in emergencies. It includes preparedness actions, response strategies, and capacity-building measures.

Preparedness:

- **Contingency Stock** should be maintained and updated regularly, based on 10% of the total population within the area of responsibility of the respective agencies. In contingency stock following essential items can be considered:
  - HTH
  - Aqua Tabs

  - Water Containers (2 pieces per household, 10L each)
  - Mobile Water Treatment Plant
  - Portable Tap Stands (1 tap per 250 users)
  - Flexible Pipes
  - Bladder/Onion Tanks (various capacities)
  - Specific items for Teknaf: tools for surface water treatment
  - Backup generators with adequate fuel
  - Fuel reserves for a minimum of 72 hours
  - Repair and maintenance tools
  - PPE (if necessary)
  - Water Quality Field Test Tools (like; Pool tester, Turbidity tube, E.coli test filed kit etc.)
  - Aluminum Sulfate (only surface water treatment system)

Figure: Portable Tap Stand

Figure: Bladder

- **Outbreak Preparedness**: For any outbreak (like: cholera, dengue, scabies etc.) sectoral specific guidance should be followed as preparedness.
- **Capacity Mapping**: To response any emergency following capacity mapping should be in place as preparedness:
  - Potential water sources and their routes mapping (like: production borehole, surface water reservoir etc.)
  - Human resources mapping with technical experts
  - Field warehouse location mapping with updated contingency stocks
- **Emergency Response Team**: Ensure the involvement of personnel working on the water supply system in Emergency Response Teams (ERT).
- **External Resources**: Encourage agreements with local vendors for emergency resources such as water trucking and fuel supply.
- **Capacity Building**: Conduct ongoing training for staff and volunteers involved in water supply operations and restoration.

Response:

- **Coordination**: Ensure proper coordination at camp and sector levels during emergencies to streamline efforts.
- **Assessment**: Collect information as much as possible, perform rapid and continuous detail assessments to guide and adapt the response as necessary.
- **Immediate Repairs**: Prioritize the repair of hand pumps and other resilient water points for ensuring adequate water availability.
- **Strategic Repairs**: Focus on repairing water points near food distribution sites and health facilities to facilitate water access.
- **Extension of Water Supply Networks**: Extend functional water supply networks to affected areas using portable pipes and tap stands. Use temporary storage tanks as needed.
- **Equal Distribution**: Ensure fair distribution of water from unaffected supply networks to both affected and unaffected areas based on capacity.
- **Contextual Response**: Modify the response based on the specific context and type of emergency.

- **Water Trucking and Bottled Water**: Use water trucking and bottled water as a last resort due to high costs and waste. Prioritize other methods when possible. If water bottles are considered, please deliver it in 5 liters containers (at it will be reusable for water transport/storage and create less short-term waste).
- **Community Awareness**: Communicate the locations of temporary water delivery points to the community to enhance accessibility.
- **Household Water Treatment**: Distribute household water treatment items only with adequate means and training. Monitor usage to ensure effectiveness and prevent waste.
- **Outbreak Response**: For specific outbreak, sectoral guidance, recommendation and strategies outlined should be followed (like: AWD/Cholera response should be followed **Multi sectoral Acute Watery Diarrhea (AWD)/Cholera Preparedness and Response Plan).**

7. Specific Recommendations for Teknaf Area

The Teknaf Water Supply system is critical in addressing the water needs of both refugee populations in the Rohingya camps and the local host communities. The system faces several challenges due to the area's geographical constraints, ground water scarcity, and limited source of water, seasonal variations in water availability, and the growing demand from both communities. To ensure a sustainable and reliable water supply, the strategy focuses on leveraging available surface water sources, optimizing transmission infrastructure, and implementing effective water treatment and distribution systems. Following recommendation have been considered to emphasize the need for a sustainable, efficient, and scalable solution to address the water need:

Figure: Water Supply System at Teknaf

- Potential source Mapping (Surface Water / Ground Water) should be in place
- Integration of existing available sources (both raw and treated water) and pipeline for all the camps should be ensured in Teknaf (Camp 24, 25, 26, 27& NRC). It will help to ensure smooth water supply in case of disruption for any water sources as well as water networks.
- Priority should be given to identify potential surface water source for dry season. However, ground water or desalination plant should not be prioritized as new source for large scale operation
- If building new desalinization plants is not recommended, the existing ones offer a good alternative especially during the driest months that need to be integrated in the water supply plan for Teknaf.
- Regular water reservoir situation analysis should be planned, especially ahead of dry season
- Teknaf water monitoring dashboard maintain by UNHCR need to be continued with the incorporation of Teknaf all camps and shared wildly.
- To increase capacity of the existing water reservoir, periodic maintenance of reservoir (like: re-excavation, de-siltation and rehabilitation) planned should be in place. Sustainable solution also should be proposed to minimize periodic costing. Relevant government stakeholder should take more responsibility regarding more sustainable solutions.

- Advocate to the government stakeholders as well as the development agencies (like WB, ADB etc.) for large-scale sustainable water supply system for Teknaf host and refugee communities. Teknaf partners should collaborate on the design as well as sustainability of the water system for the refugees.
- For future long term sustainable water project, existing study's findings (refer to DU, GWR, and Oxfam and UNHCR study) and recommendation can be considered to transmit ground water/surface water from potential water sources which are away from Teknaf.
- Monitoring, quality and standard assurance need to be done as per **section 8 (Recommendations for Monitoring & Standards)**
- As built water network system maps/layout (refer to Figure: Layout of Water Network) should be in place for identifying the water network component like: pipeline, water sources, treat plant etc.
- Periodic inspection of water supply systems should be planned by partners to ensure smooth water supply.
- Focusing to renewable energy instead of fossil fuel for water supply system operation
- A two-tier maintenance approach is recommended
  - Major repair maintenance – Implementing partner should have expert technician team to ensure uninterrupted water supply.
  - Minor Repair maintenance – Community Maintenance Team (CMT) by ensuring community participation.
- Access to host community – host community demand increasing day by day as they also going through the water scarcity. Suggested to incorporate as much as possible integrated water supply program for both Refugee and Host community.

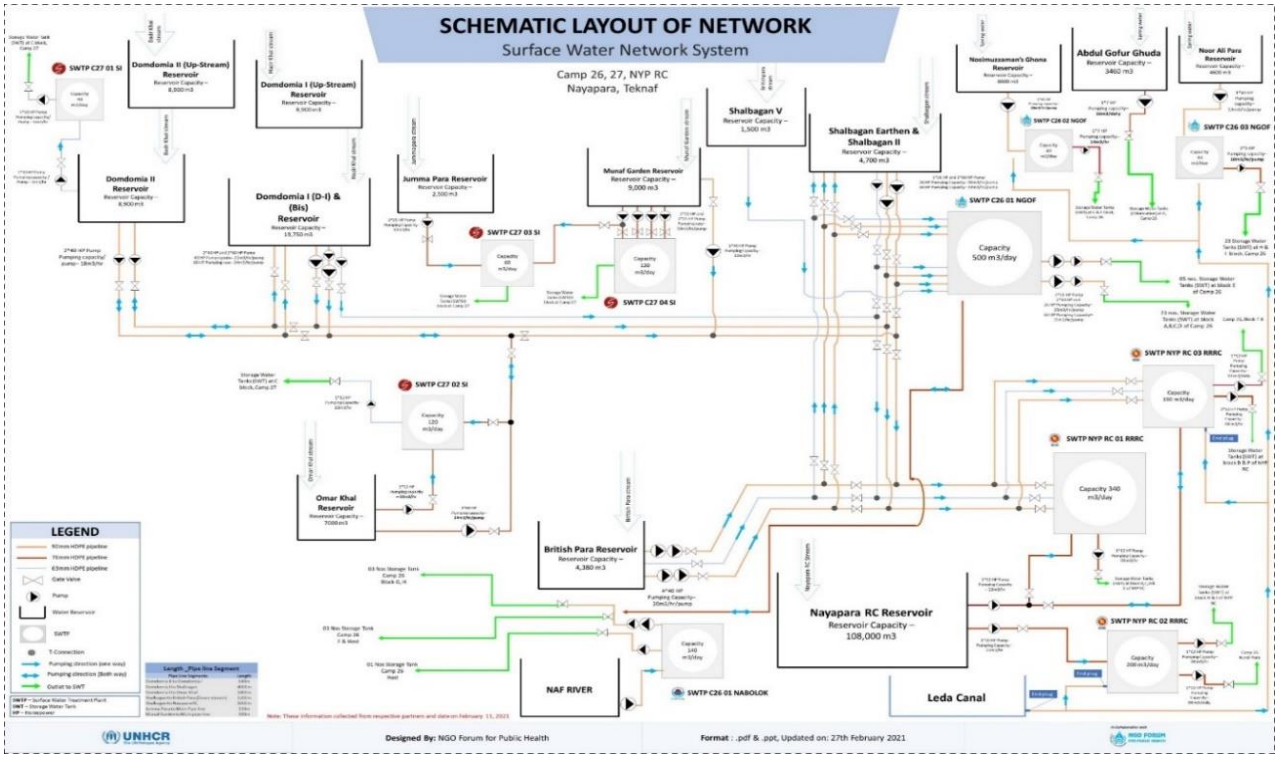


Figure: Layout of Water Network

- User Group should be formed at tap stand level and necessary steps should be taken for the capacity development of user group to be responsible for maintenance work.

Emergency Water Supply at Teknaf

Teknaf area often faces critical water shortages crisis particularly during dry seasons. To avoid this crisis, advance planning for such contingencies is vital. This requires early identification of water sources for trucking, mapping routes for efficient distribution, and collaboration between agencies to ensure quick responses. By maintaining a contingency plan and holding regular water management meetings, the WASH sector can better prepare for emergency situations and maintain water supply continuity during crisis.

Dry season planning

- Contingency Plan water supply in crisis moment should be in place based on the periodic situation
- Source Identification for water trucking at the beginning of dry season
- Route Mapping for distribution
- Inter-agency collaboration
- Mechanism – water management meeting should be continued

Other emergency water supply aspect should be considered as per **section 6: recommendations for Emergency Water Supply**

8. Recommendations for Monitoring & Standards

- At least once in a year **5 Stars Water Network Assessment** should be carried out by a neutral agency. This 5 stars assessment reflect the performance of each water network based on water production, water quality, water network functionality, water distribution frequency and beneficiary's satisfaction.
- WASH agencies will continue their own water quality monitoring and report to the sector according the existing system.
- Parameters and the frequency for the monitoring should be followed according to the **8.2 Water Quality Monitoring.**
- All water quality parameters (refer section 8.2) threshold should be **followed as per Bangladesh Environmental Conservation Act 2023 (Except Free Residual Chlorine).**

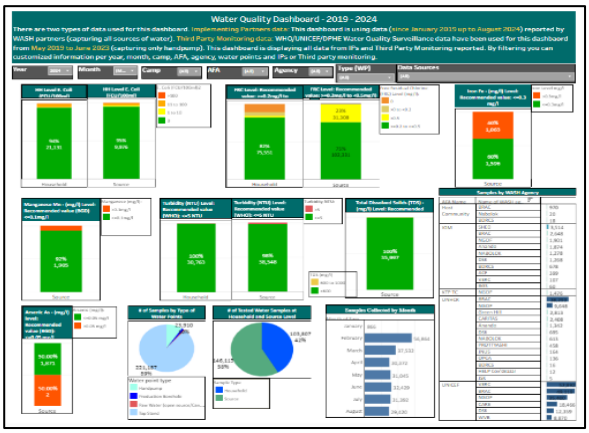


Figure: Water Quality Dashboard

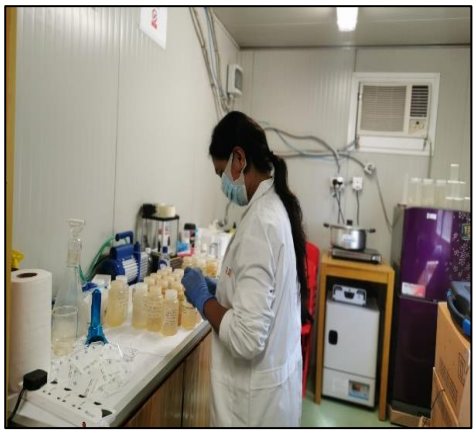


Figure: Water Quality Testing Lab

- Water quality dashboard should be in place and need to be updated according to the **Water Quality Monitoring Section** recommendation.
- Water Infrastructure like production borehole, hand pump, tap stand, water reservoir etc. mapping should be in place and based on needs it should be updated.

- **DPHE Ground Water Monitoring Cell will be responsible for** Ground water monitoring as well as shared the update with sector twice in a year. WASH partners will shared the ground water related data to DPHE through designated template developed by DPHE.
- Teknaf water monitoring dashboard maintain by UNHCR need to be continued with the incorporation of Teknaf all camps and shared wildly.

8.1 Water Supply Standard:

INDICATOR	EMERGENCY STANDARD	POST-EMERGENCY STANDARD
FRC level in drinking water (Water source and HH Water storage)	0.2 – 0.5 mg/L	0.2 – 0.5 mg/L
Count of E. Coli in Drinking water (Water source and HH water storage)	0 CFU/100 ml	0 CFU/100 ml
Minimum Provision of Safe water	15 liters / Day / Person	20 liters / Day / Person *
Maximum distance to nearest water point from household	500 meters	100 meters
Minimum Number of functional Taps / user numbers	1 / 250 Users	1 / 100 Users
Minimum Number of Tube-wells / user numbers	1 / 500 Users	1 / 250 Users

Notes:
*20 liter per person day through the water network

8.2 Water Quality Monitoring Standard:
Following parameters, frequency, sample quantities and source type are recommended for water quality monitoring:

Sample Sources	Sample Quantity	Frequency	Parameters***
Raw Water of Water Network Production Borehole & Surface Water Treatment Plant	1 per water network	Once in a year	Arsenic (As), Color, Chloride (Cl), E. coli, Electric Conductivity (EC), Fluoride (F), Iron (Fe), Manganese (Mn), Turbidity, Total Dissolve Solid (TDS), pH
Surface Water Treatment Plant	1 per water network	Each time of water delivery	Turbidity, FRC
Tap Stand	2 to 4 per water network	Each time of water delivery	FRC
Tube Well	All	Once in a year	E.coli
Informal/private water supply	All	Once in a year	E.coli
HH Level**	2 per water network	Daily	FRC and E.coli*

Note:
* If the FRC is zero
** Not the same HH in every day

*** All parameter's threshold limit should be considered as per Bangladesh Environmental Conservation Act 2023 **(except FRC)**

9. Recommendations for Policy Around Water Supply in Camps

Privatization, Private Tube Well and Institutional Water Sources:

Figure: Borehole Privatization

This strategy prioritizes the provision of safe and accessible water supply services within the camp. The WASH agency will focus on supplying water through designated points within the camp and will not be responsible for the installation, operation, and maintenance (O&M) of institutional water infrastructure and private water sources. To ensure adherence to WASH standards, technical support will be offered for the institutional water source by the operational WASH actors.

- This strategy pledges free access to safe water for all camp residents through designated points. This eliminates the need for private water sources, promoting a sustainable and managed water supply system.
- This strategy reassuring a zero-tolerance policy for unauthorized connections to tap stands and installation of private water points, well as well as shallow tube well. This ensures equitable water distribution and prevents system strain.
- To prevent the installation of private tube well, shallow tube well and privatization of tap stand, pipe line as well as community deep tube well, a policy need to be developed and endorsed by the Refugee Relief and Repatriation Commission (RRRC) office.

Figure: Tap Stand Privatization

Figure: Private Tube Well

Additionally, collaboration with other sectors and community engagement should be strengthened at all stages to discourage the establishment of unauthorized water facilities of any kind that's include private distributor or business inside the camp.

Host Community:

Due to the drop-down of the water table in Ukhia, there is a negative impact on Host Communities land as well as water sources especially shallow layer well. Therefore, it should be prioritized to avoid any sort of negative impact during the water intervention. Moreover, this strategy recommends focusing more water project in the Host Communities area where possible.

- HC people living inside the camp are eligible for water collection from designated communal water points.

Regarding the installation of private water points, the same policy applies to both Host Communities and refugees living inside the camp. **WASH actors will not be responsible for the maintenance of those private water points.**

Payment and Contribution

This strategy prioritizes free and equitable access to safe water for all camp residents.

- There will be no financial barriers to accessing water at communal points.

- The WASH sector strongly stands for not implementing any financial contribution requirements for water usage.

While water access remains free, the strategy recognizes the importance of fostering a sense of ownership and responsibility among communities. This can be achieved by:

- Equipping user groups with tools for facility maintenance and hygiene promotion can build a sense of ownership over the water system.
- Capacity building: Training user groups on basic maintenance, water conservation practices (i.e., fixing leaks, efficient uses of water points, being mindful of consumption, etc.), and awareness can empower them to actively participate in managing their water resources.

By focusing on free access alongside capacity-building initiatives, this strategy aims to promote long-term sustainability and responsible water management within the camp.

User group

This strategy emphasizes the importance of empowering camp residents through the establishment of user groups at each water point.

- User groups will be established for each water point, following the recommendations outlined by the Hygiene Promotion Technical Consultation Group (HP TCG).
- This ensures a standardized and effective approach to user group formation.
- Gender inclusion should be ensured in the User group
- A Terms of Reference (TOR) will be developed to clearly define the responsibilities of the user group. These may include:
  - Maintaining the cleanliness of the water facility
  - Serving as a communication channel between the community, the WASH agencies, and relevant authorities.
  - Participating in theft prevention efforts to safeguard water infrastructure
  - Minor repair and maintenance of water supply system
- For water points managed by other partners like: the Department of Public Health Engineering (DPHE), the designated block focal agency will be responsible for facilitating the establishment of user groups. If the other partners have the capacity to establish user group, they will coordinate with block/camp focal agencies for establishing the user group.

By establishing user groups, this strategy aims to promote a sense of ownership and responsibility among camp residents, fostering a more sustainable and participatory approach to water management within the camp.

10. Way Forward and Key Recommendations:

This section provides key recommendations for the improvement as well as continuation of smooth operation of water supply system

Recommendations for Tube-Wells:

- Only **deep tube wells/hand pump (>50m)** have been recommended
- Tara Dev and #6 Hand Pump have been recommended
- Agencies should be placed clear visible signs (refer to the Figure: Not for Drinking) at existing shallow and/or contaminated tube well sites, which will indicate that the water is not suitable for drinking.
- Nonfunctional shallow tube wells must be decommissioned

Figure: Not For Drinking

Recommendations for Water-Networks:

- Water networks should maintain a minimum pumping capacity of 10m³ per hour and/or serving at least 1,000 people (around 200 households).
- If mini networks have adequate capacity but are underutilized, extend them to cover more users or decommissioned to enhance efficiency and reduce operational costs.
- Every water network should ensure record keeping system (manual or automatic)
- Water quality monitoring should be in place (including of the networks under the coverage of block/camps focal agencies).
- Backup generator and backup fuel (around 3 days of storage is recommended for fuel especially during cyclone season and rainy season) should be ensured for every water network
- Coordinate with external investors (e.g., ADB, World Bank) to focus on long-term sustainability and ensure the needs both the refugee and host communities.

Recommendations for Emergency Water Supply:

Preparedness:

- Contingency Stock should be maintained and updated regularly, based on 10% of the total population within the area of responsibility of the respective agencies.
- For any outbreak (like: cholera, dengue, scabies etc.) sectoral specific guidance should be followed as preparedness
- To response any emergency potential water sources, field warehouse locations and their routes mapping should be in place as preparedness:

Response:

- Ensure proper coordination at camp and sector levels during emergencies to streamline efforts.
- Immediate repairs should be focus on hand pumps and water points near food distribution sites as well as health facilities for ensuring adequate water availability.
- Water Trucking and Bottled Water should be considered as a last resort. If water bottles are considered, please deliver it in 5 liters containers.
- Outbreak Response: For specific outbreak, sectoral guidance, recommendation and strategies outlined should be followed

Specific Recommendations for Teknaf Area:

- Potential source Mapping (Surface Water / Ground Water), integration of existing available sources (both raw and treated water) and pipeline for all the camps should be ensured in Teknaf (Camp 24, 25, 26, 27& NRC).

- Regular water reservoir situation analysis should be planned, especially ahead of dry season
- Teknaf water monitoring dashboard maintain by UNHCR need to be continued with the incorporation of Teknaf all camps and shared wildly.
- Advocate to the government stakeholders as well as the development agencies (like WB, ADB etc.) for large-scale sustainable water supply system for Teknaf host and refugee communities.
- Focusing to renewable energy instead of fossil fuel for water supply operation

Recommendations for Monitoring & Standards

- At least once in a year 5 Stars Water Network Assessment should be carried out by a neutral agency.
- WASH agencies will continue their own water quality monitoring (refer to section 8.2) and report to the sector according the existing system.
- DPHE Ground Water Monitoring Cell will be responsible for Ground water monitoring as well as shared the update with sector twice in a year.
- Teknaf water monitoring dashboard maintain by UNHCR need to be continued with the incorporation of Teknaf all camps and shared wildly.

Recommendations for Policy around Water Supply in Camps

Privatization, Private Tube Well and Institutional Water Sources

- WASH agency will not be responsible for the installation, operation, and maintenance (O&M) of institutional water infrastructure and private water sources.
- This strategy reassuring a zero-tolerance policy for any unauthorized connections and installation of private water points, well as well as shallow tube well.
- To prevent the installation of private tube well, shallow tube well and privatization of tap stand, pipe line as well as community deep tube well, a policy need to be developed and endorsed by RRRC office.
- Collaboration with other sectors and community engagement should be strengthened at all stages to discourage the establishment of unauthorized water facilities

Host Community:

- This strategy recommends focusing more water project in the Host Communities due to the drop-down of shallow layer water table.
- HC people living inside the camp are eligible for water collection from designated communal water points.
- WASH actors will not be responsible for the maintenance of those private water points.

Payment and Contribution

- This strategy prioritizes free and equitable access to safe water for all camp residents. And there will be no financial barriers to accessing water at communal points.

User group

- User groups will be established for each water point, following the recommendations outlined by the Hygiene Promotion Technical Consultation Group (HP TCG).
- Gender inclusion should be ensured in the User group
- A Terms of Reference (TOR) will be developed to clearly define the responsibilities of the user group.