



LOOMING **WATER CRISIS** IN **COX'S BAZAR**

Teknaf, Cox's Bazar, Bangladesh
September 1, 2018
Photo: Din Muhammad Shibly/COAST Foundation

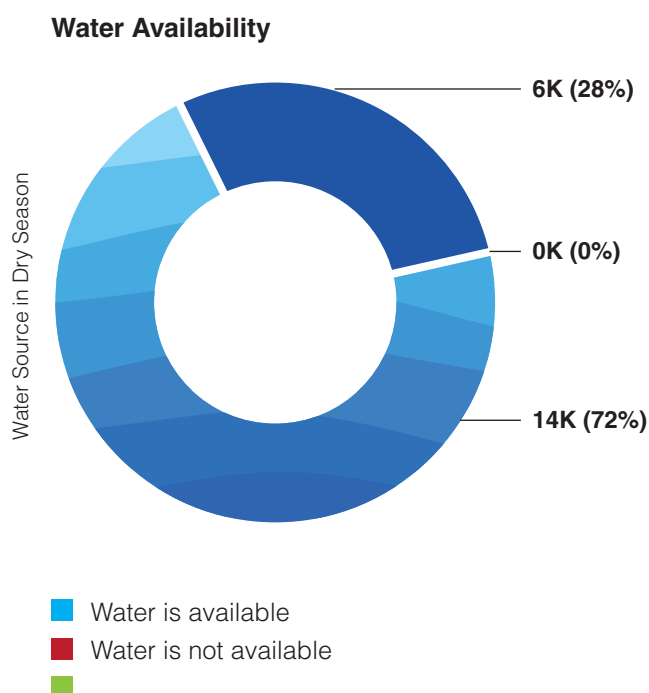
1. Background

Ukhiya and Teknaf sub-districts of Cox's Bazar face a growing water crisis, driven by population pressure, over-extraction of groundwater, and inadequate infrastructure. Host communities struggle to access safe and sufficient water, while declining groundwater levels and deteriorating water quality causes serious health and livelihood risks. This study provides evidence to guide targeted interventions and sustainable solutions for the water crisis in these communities.

2. Key Findings

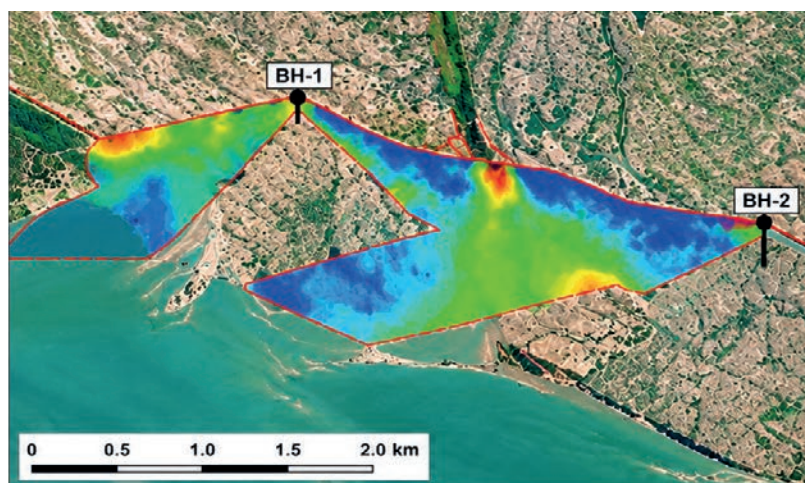
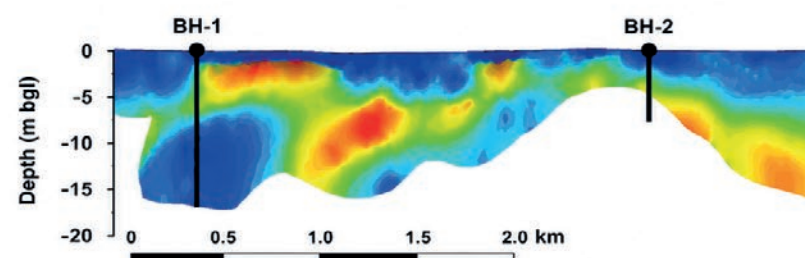
2.1 Water Availability & Access:

Study shows that, in Ukhiya and Teknaf upazila 28% of the households have no (IOM, 2023; UNICEF & UNHCR, 2022) access to potable water during the dry season as Groundwater levels are falling rapidly, with many shallow tube wells drying. Approximately 31,000 tube wells in Cox's Bazar, about 7,000 are no longer functional.



2.2 Ground Water Extraction

Approximately 15 to 20 million liters of groundwater are extracted daily to meet the water demands of 33 amps. This continuous extraction places considerable pressure on local aquifers, particularly in Ukhiya and Teknaf, where groundwater resources are already under stress.

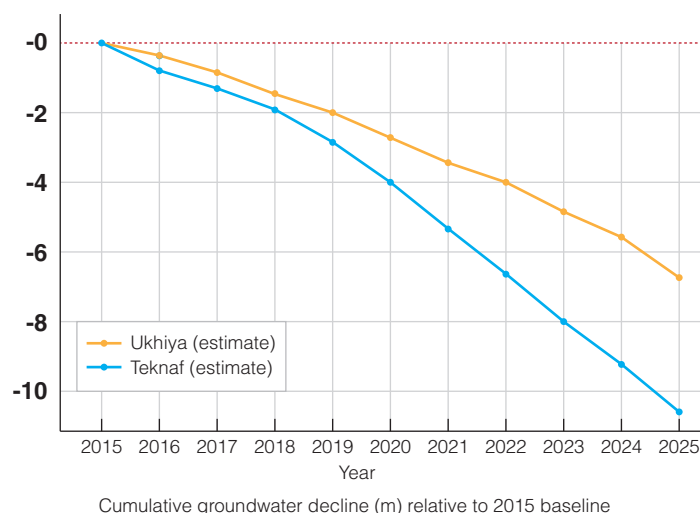


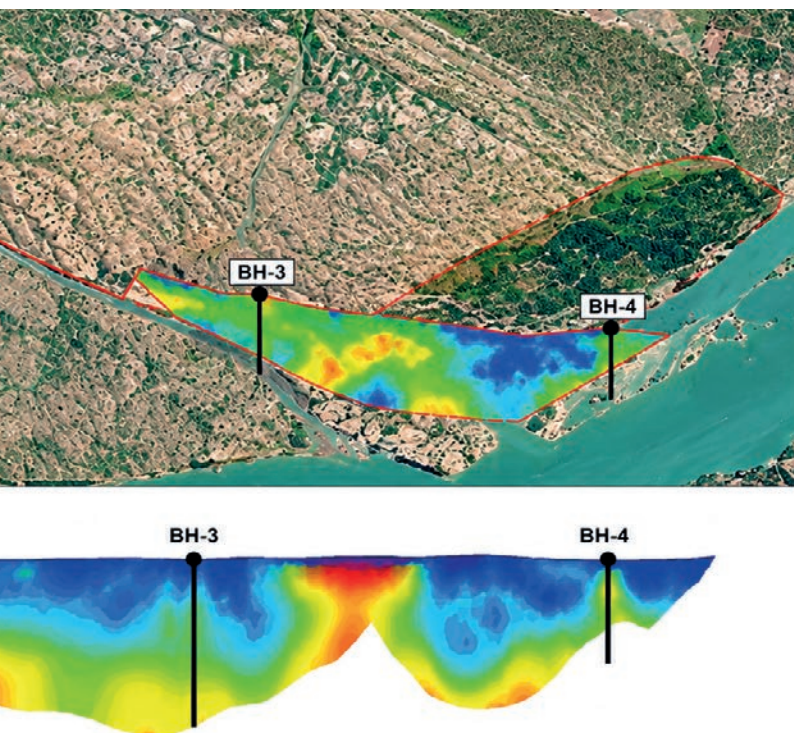
2.3 Ground Water level

According to reports from the WASH Sector and the Department of Public Health Engineering (DPHE), groundwater levels in Ukhiya and Teknaf have reportedly declined by approximately 8–14 feet per year. Groundwater, previously accessible at depths of 50–60 feet, is now being accessed at depths of around 100–110 feet, indicating increasing pressure on local groundwater resources which is increasing challenges in ensuring sustainable water supply.

Illustrative groundwater decline - Ukhiya & Teknaf (2015-2025)

(Estimates synthesized from 2023-2025 reports)

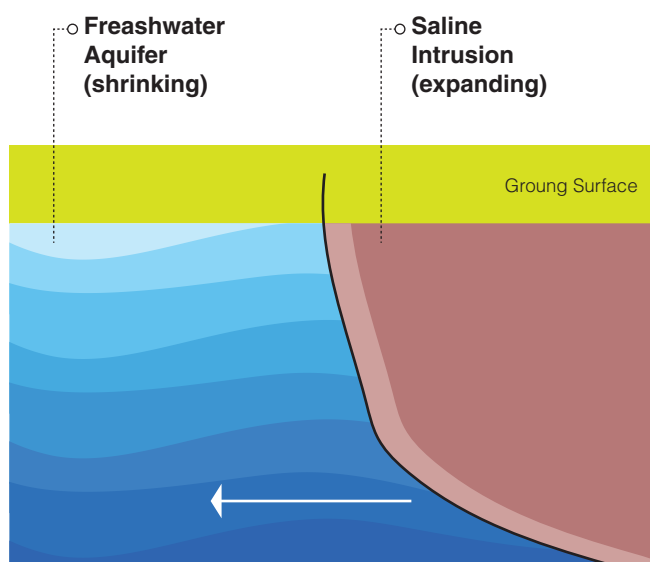




2.4 Saline Intrusion

According to different reports, aquifers in Teknaf and Ukhiya upazila have already been affected by saline water intrusion. Host community are raising their concern regarding increasing salinity of their tube wells. This is associated with excessive ground water extraction, which can lower groundwater levels and increase the risk of seawater intrusion into coastal aquifers, further threatening the availability of safe drinking water for local communities.

Salinity Intrusion in Coastal Aquifers



3. Recommendations

3.1 Immediate Actions (0-12 Months)

- **Reduce and regulate groundwater extraction:** Introduce monitoring, metering, and controlled pumping schedules for groundwater extraction in Rohingya camps. Restrict the installation of new deep tube wells in areas experiencing significant groundwater depletion.
- **Expand surface-water treatment:** Treat water from the Naf River and suitable canals through appropriately designed surface-water treatment plants for distribution in Rohingya camps and nearby host communities.
- **Establish groundwater monitoring systems:** Install permanent observation wells at strategic locations in Ukhiya and Teknaf to monitor groundwater levels and salinity. Publish seasonal monitoring data to support evidence-based decisions by the WASH Sector, DPHE, local authorities, and humanitarian agencies.

3.2 Medium to Long-Term Actions (1-5 Years)

- **Expand surface-water storage capacity:** Re-excavate and restore community ponds, protect existing water bodies, and construct small reservoirs where feasible to increase dry-season water availability and reduce dependence on groundwater.
- **Pilot managed aquifer recharge (MAR):** Implement pilot projects to replenish aquifers using appropriately treated pond water and harvested rainwater.
- **Promote rainwater harvesting:** Install household and community rainwater harvesting systems at homes, schools, health facilities, and community institutions, supported by appropriate storage, filtration, and safe-water management measures.
- **Restore forests and watersheds:** Strengthen Forest conservation, reforestation, and mangrove restoration initiatives in ecologically suitable areas. Protect watersheds and natural drainage systems to improve soil-water retention and strengthen ecosystem resilience.



The water crisis in Ukhiya and Teknaf, Cox's Bazar, demands urgent, coordinated action. Rapid groundwater depletion, saline intrusion and rising demand threaten the health and livelihoods of both Rohingya refugees and host communities. The immediate priorities are to regulate groundwater extraction, expand surface-water treatment and set up systematic monitoring. Over the longer term, rainwater harvesting, pond restoration, aquifer recharge and ecosystem conservation should be promoted.

Laboni Point Beach, Cox's Bazar, Bangladesh, May 21, 2016
Photo: Din Muhammad Shibly/COAST Foundation