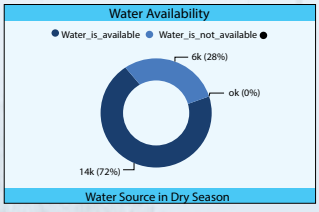
Looming Water Crisis in Cox's Bazar: Risking lives

1. Background

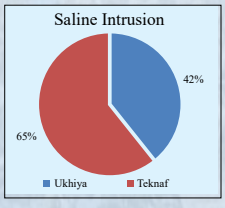
Ukhiya and Teknaf sub-districts of Cox's Bazar are facing an escalating water crisis driven by rapid population growth, excessive groundwater extraction, saline intrusion and inadequate water infrastructure. Host communities are increasingly struggling to access safe and sufficient water, while deteriorating groundwater levels pose severe risks to health and livelihoods. This study outlines evidence to guide targeted interventions and sustainable solutions for the water crisis in these communities.

2. Key findings

2.1 Water availability and access



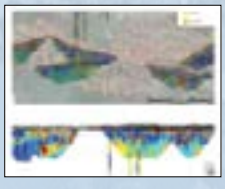
In Ukhiya and Teknaf, 28% of households have no access to potable water during the dry season (IOM, 2023; UNICEF & UNHCR, 2022). Groundwater levels are falling rapidly, leaving many shallow tube wells dry.



It is reported that out of 31,000 tube wells in Cox's Bazar, nearly 7,000 are no longer functional.

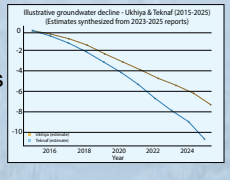
2.2. Groundwater extraction

An estimated 20–25 million liters of groundwater are extracted daily in 33 Rohingya camps (IOM, 2023). This extraction is unsustainable and directly contributing to aquifer depletion.



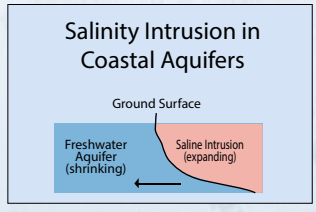
2.3. Groundwater level decline

Reports from BWDB and the World Bank (2023) show groundwater levels in Ukhiya and Teknaf are declining by 4–12 meters annually, posing an alarming long-term risk to water security.



2.4 Saline Intrusion

Salinity is rapidly intruding into freshwater aquifers, 65% of aquifers in Teknaf and 42% in Ukhiya are already affected



(UNDP, 2023; ADB, 2022). Once aquifers are salinized, recovery is nearly impossible without major interventions.

3. Recommendation

1. Reduce Over-Extraction: Introduce regulations and monitoring systems to limit groundwater pumping, particularly in camps. Promote water-saving technologies and efficient distribution networks.
2. Ban Deep tubewell in Camps:

   Excessive groundwater use through deep tube wells in Rohingya camps accelerates the depletion of groundwater reserves and worsens saline intrusion. So, prepare a roadmap to ban this and strengthen the use of the Naf River's treated water.
3. Enhance Surface Water Use: Excavate and restore community ponds for water preservation and invest in small-scale water reservoirs with protective embankments.
4. Treated saline water through a desalination plant: Establish desalination plants in coastal Teknaf Upazila for saline water treatment. Treat and distribute Naf River water in camps.
5. Groundwater Recharge: Pilot artificial recharge techniques, such as infiltration ponds, recharge wells and enhance natural recharge.
6. Rainwater Harvesting: Make rainwater collection mandatory at institutional and household levels with low-cost storage systems.
7. Stop deforestation and initiate reforestation: Stop deforestation in the hilly areas and scale up reforestation and mangrove restoration to increase water retention.

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