

CLIMATE ADAPTIVE WATER PROGRAMMING

A case of building resilience in climate impacted communities through introducing feasible water treatment facilities, operation-maintenance and management of the facilities by engaging the private sector, community, and municipality.



CYCLONES AND SEA-LEVEL RISE INCREASES SALINE INFILTRATION INLAND

Kalaroa, a municipality that is situated over 70 kilometers from the coastline, face increased salinity in its deep aquifers. However, effective and scalable water programming models has demonstrated the potential to change things.



Image captured in Paikgacha, Satkhira. Satkhira is a district bordered with the Bay of Bengal and experience the worst climatic events in Bangladesh's history. As a result, the people of Satkhira suffer from varying levels of water crisis.

WaterAid/ Habibul Haque



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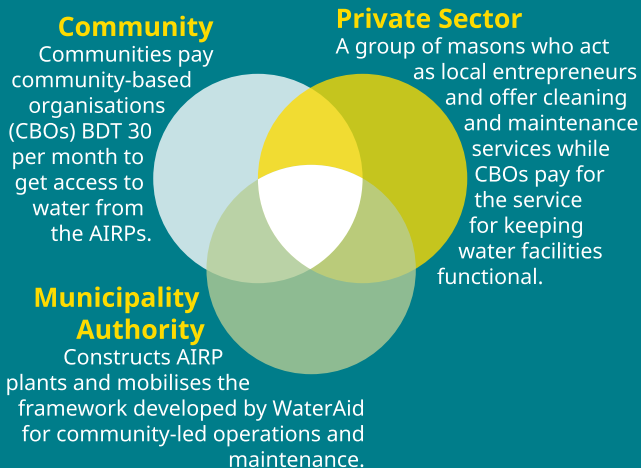
IN KALAROA, DEEP AQUIFERS ARE SALINE AND MOST SHALLOW ONES ARE PLAGUED BY HIGH ARSENIC AND IRON CONCENTRATION

Over 80% of the tube wells found to have high levels of arsenic, with concentrations reaching 150µg/l and iron concentrations over 6mg/l in the Kalaroa municipality. There are several ways to treat saline water, but these are often very expensive and inconvenient.



INTRODUCING A TRIPARTITE SUSTAINABILITY ECOSYSTEM

In Kalaroa, we developed a framework for operations and maintenance ecosystem that leverage the community, private sector, and municipality authority:



A viable option for ensuring access to water is **Arsenic and Iron Removal Plants**, commonly known as AIRPs. The technology is simple and can be constructed and operated by locals. However, it comes with its own set of challenges regarding long-term sustainability.



CHALLENGES

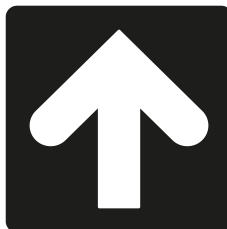
in regards to AIRP operations

Regular cleaning

AIRPs generate sludge derived from the arsenic and iron as it experience use. Therefore, it requires periodic cleaning to ensure proper working condition - at least once a month.

Ownership for continued upkeep

Lack of dedicated responsibility for scheduled cleaning, managing funds for repairs, and overseeing the operations and maintenance of AIRPs often lead to non-functionality of the facilities. Therefore, long-term sustainability of AIRPs or any other interventions in the grassroots is limited.



FACTS & STATS

79 facilities established

which include both AIRPs and SIDKO plants, the latter only removes arsenic. These facilities are expected to cover 27,293 people in the Kalaroa municipality.

93% water coverage achieved

enabled by our intervention in Kalaroa while the remaining 7% was covered by other safe water facilities. This translates to total water coverage at the municipality level, consisting of 6,728 households.

27.6% revenue/month

on average combining performance from all arsenic and iron removal plants at Kalaroa - translating to complete sustainability of the model. The revenues help establish a business case for private sector entrepreneurs to continue engagement.



Image/ An AIRP installation at Kalaroa, Satkhira, Khulna. Each unit is designed to serve up to 35 households, although water volumes can vary.