drinkwell

Corporate Social Responsibility Solutions Overview

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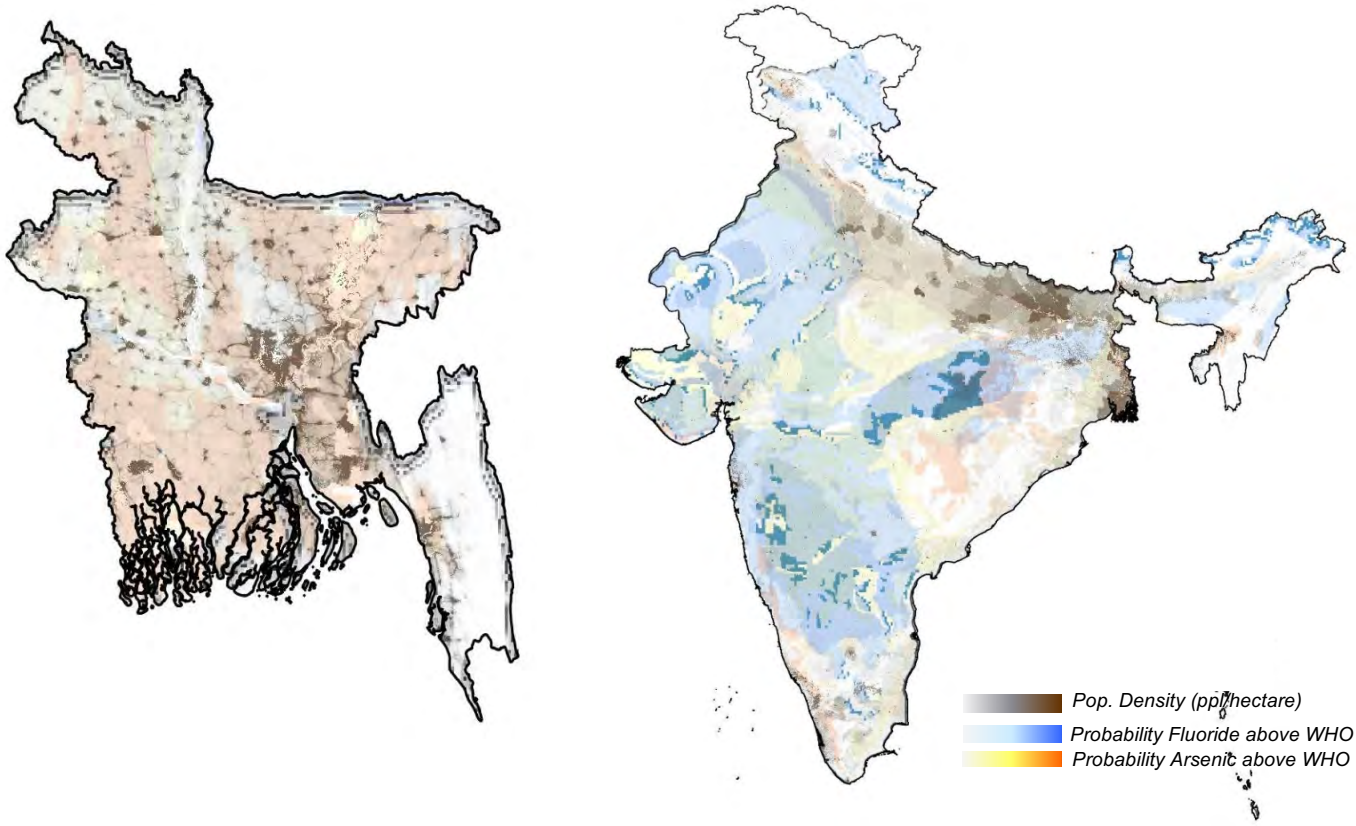
India & Bangladesh's Water Crisis



Bangladesh

- 1 in 5 deaths occur due to arsenic in highly-affected areas
- Arsenic, Iron, Calcium, Salinity & Manganese are top 5 contaminants
- 24 million Bangladeshis live in rural and urban areas of poor water quality
- 4 million Bangladeshis in urban dhaka live without access to legal safe water
- 43,000 annual deaths due to arsenic-related illnesses
- 2,000 children under 5 die each year due to diarrhoea

India

- 90% of rural households drink untreated water
- Arsenic, Fluoride, Nitrate, Salinity & Iron are top 5 contaminants
- 100 million Indians live in areas of poor water quality
- 66 million people at risk of waterborne diseases
- 37.7 million people suffer from waterborne diseases
- 1,04,437 hamlets affected by heavy metal contamination

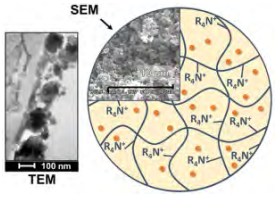
Drinkwell's Solution

Drinkwell offers scalable water solutions that remove arsenic, fluoride, iron, bacteria and other impurities while reducing TDS from drinking water through the use of reusable hybrid ion exchange nanotechnology known as "HIX Nano". This Patented technology was developed by Dr. Arup SenGupta of Lehigh University, Pennsylvania, USA.

6,000
Liters Per Day

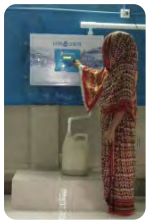
50,000 - 75,000
Liters Per Day

1,000,000+
Liters Per Day



Drinkwell's HIX-Nano resins are manufactured in a dedicated in-house facility in Kolkata, West Bengal with strong quality control mechanisms.

Resins are loaded into columns that process raw water for systems that range from 1,000 (pictured above) – 190,000+ liters per hour.



Households collect safe drinking water from either Water ATM-powered taps, subscribe to delivery service, or receive water via piped water schemes

HIX Nano is the world's first commercial hybrid adsorbent using zirconium nano-particles, a material that has a high affinity for arsenic and fluoride removal providing the following advantages:

- 5-10 year product lifetime due to resin reusability
- 10x lower energy costs compared to Reverse Osmosis translating to higher reliability due to lesser dependence on electricity
- Simple operation by local unskilled labor with low and infrequent servicing

Corporate Social Responsibility Partnerships

Drinkwell partners with Corporate Social Responsibility (CSR) programs to benefit stakeholders around a company's area of operation by providing safe drinking water while also creating jobs, catalyzing economic activity, and improving health.

Sponsorship Operating Model

- CSR Sponsors would upfront finance the system capital cost and 5-year operation & maintenance costs
- From day one, end users of the system will pay for safe water at a price per liter to be determined by the system sponsor.
- Between years 1 and 5, end user water sales would grow to the point where revenues can finance monthly operation and maintenance costs without the need for subsidies from the CSR Sponsor.

Site Selection Criteria

Prospective sites should meet 5 criteria:

1. Land – Must own a minimum 25 cubic meter space of land that has access to electricity, and with 1,500 HHs in a 3km radius
2. Electricity – Sufficient to power 2 HP pump for pumping groundwater to overhead storage tank
3. Tubewell – Must have a nearby tubewell that is 100 ft + deep
4. Experience – P&L management in any prior business
5. Team – Relationships in the community to advocate clean water through enterprise

Site Selection Process

Tata Trusts Case Study

Drinkwell Arsenic Iron Removal System (Est. May 2017)	
Location	Kothora Village, Nalbari District, Assam
Capex Sponsor	Tata Trusts
Operating Partner	Gram Vikash Mancha
Households Served	310
Capacity	1,000 Liters Per Hour
Impurities	Arsenic (Influent: 240 ppb > Effluent: 1 ppb) Iron (Influent:2.10mg/L>Effluent:0.24 mg/L)
Daily Avg of Ls Sold	4,650
Operation & Maintenance Capabilities	- Prepaid RFID-enabled ATM dispensing system - Online dashboard tracking Ls sold, RFID recharge activity - Smartphone-enabled after sales servicing request system

Other System Sponsors

Chevron Humankind

Nike Foundation

CLINTON HEALTH ACCESS INITIATIVE

USAID FROM THE AMERICAN PEOPLE

UKaid from the British people

Impact Monitoring via Water ATMs

Drinkwell Water ATMs simplify complex water system management through mechanical, digital, and cloud-based automation thereby reducing cash leakage, water loss, and human dependency required to operate a community-based water system.

How it works

1. Consumers load credit onto a Drinkwell Card via either onsite payment with a local caretaker or via remote recharge facility through mobile money or dealer network.

2. Consumers arrive at water system site and place Drinkwell Card on sensor once to view credit balance and a second time to begin dispensing of water (batch dispensing or continuous dispensing modes available).

3. If continuous mode, consumer removes Drinkwell Card from sensor to stop water dispensing. Remaining balance appears on ATM display.

4. Liters dispensed data transmitted from Water ATM to cloud-based IT backend via GSM connectivity viewable remotely on smartphone/laptop through Drinkwell Portal.

Key Benefits

Automated water dispensing through either pre-determined batch quantity of 1- 20 Ls per dispensing or continuous mode reduces water loss

Customizable RFID-enabled cards maintain customer balance rechargeable via smartphone app ensuring realtime revenue & account management

Cloud-based Water ATM portal enables realtime view of system utilization, Ls dispensed, revenue, and customer demographic data.

About Drinkwell

Drinkwell is a technology-driven company providing turnkey water solutions for rural, urban, and industrial customers. We focus on 3 areas:

1. manufacturing water purification technology
2. system design, implementation, and after-sales servicing of community water systems
3. effluent treatment solutions for industrial water systems

Our Mission

Provide safe drinking water to 5,000+ villages and urban areas impacting 5 million people by 2020

Key Offerings

Patented resins empaneled by India's Ministry of Drinking Water & Sanitation's R.A. Mashelkar Committee for arsenic/fluoride removal with 99% water recovery vs. 40 - 50% for Reverse Osmosis

Turnkey water purification system implementation and servicing with real-time monitoring via Water ATMs

Industrial & Wastewater Solutions

Scale

Smallest system has capacity of 700 liters per hour

Largest system has capacity of 193,000 liters per hour

Fluoride reduction from 22 mg/L to below 0.4 mg/L (World Health Limit is 1.5 mg/L)

Arsenic reduction from 240 ppb to below 1 ppb (World Health Limit is 10 ppb)

Frequently Asked Questions

1. How much water can be treated per day with what levels of contamination?

A typical Drinkwell Community System is gravity fed through an Overhead Tank with 5,000 – 6,000 Liter Per Day capacity with an average of 8-9 working hours per day serving 250-300 households at 20 liters per household per day. The system however can be scaled up as needed with a pump driven system by increasing the capacity of the Overhead Tank. The system can treat the highest levels of arsenic and comply with the regulatory limits of arsenic set by the World Health Organization & IS-10500.

2. What is the size and weight of a typical system?

A typical Drinkwell Community System is comprised of a 4 nos. FRP column system comprising of pre-treatment, arsenic/ fluoride removal, post-treatment units, UV unit, and ATM dispenser. Size and combination of HIX-nano media & other IX media depend on detail water quality, daily water production, kinetic aspects of the system and media, etc. It is recommended to be designed for each system separately unless 2 sites are identical. As a reference point a typical plant has the following column sizes - col-1 16"x65", Col-2 & 3 - 14"x65" & Col-4 - 12"x48". Besides concentration of target contaminant (e.g. arsenic), separation capacity is influenced by the presence & concentration of other ionic species, competing species, operation pH, separation chemistry & kinetics, bed depth etc.

3. What are the expected consumables for a typical Drinkwell System?

Regular consumables are common chemicals like coagulant, sodium hypochlorite, HCl etc. HIX Nano media is regenerable. Regeneration need is expected once in 1-2 years (depending upon water quality, water production, operational practices etc.). Self life of HIX & other IX media is usually >5 years.

4. Specifications of the container tanks (raw water & purified water) –material used, size specifications, compliance to standards etc.

A typical Drinkwell Community system has 2 Nos. OHTs 2000 L each (total 4000 L), 1 no. 2000 L capacity. OHT- 3 layered, TW tank- 4 layer plastic tank (conforming IS-12701).

5. What is the typical price of a system, as well as pricing for replacement parts?

Product pricing for both capital costs as well as ongoing operation & maintenance costs depends on raw water profile, desired capacity, and site location as well as local cost of consumables, overheads, and civil work contractors. Replacements etc. is a part of service/ maintenance agreement. Items covered under warranty (usually given with a detailed technical proposal) are replaced free of cost within warranty period (typically 1 year). A Servicing agreement is decided separately identifying list of services/ activities between Drinkwell and the partner organization.

6. We can only fund a registered NGO. Can you help us find one?

Yes. We have several partners and can assist with this process.

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