

CASE STUDY

Drinkwell: Building a network of purified water ATMs in Dhaka

About Drinkwell

- **Location:** Bangladesh
- **Use of mobile channels:** Mobile apps, M2M
- **Mobile operator partner:** Robi Axiata
- **Website:** <http://drinkwellsystems.com/>

According to the World Bank, 98 per cent of Bangladesh's population have access to water from technologically improved water sources. Despite this, water quality is poor and 41 per cent of all improved water sources in Bangladesh are contaminated with E. coli bacteria, which suggests a high prevalence of faecal contamination.²⁰ About 13 per cent of the country's water sources also contain arsenic levels above Bangladesh's legal limit.²¹

Established in 2013, Drinkwell addresses this problem by removing contaminants from water using a gravity-

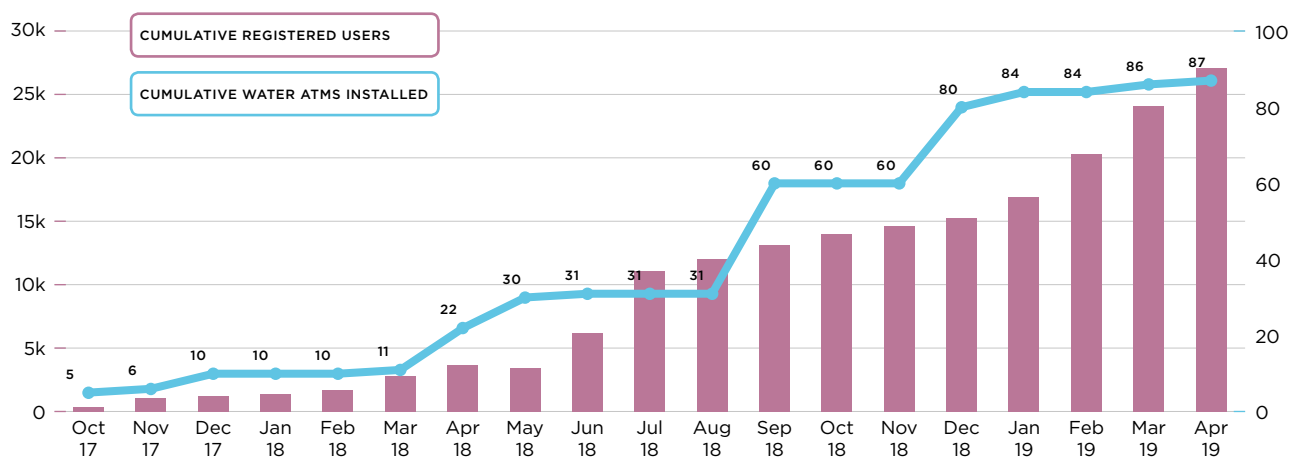
fed process that lowers energy costs and wasted water. Drinkwell has developed a water treatment solution for purifying water that it distributes through water ATMs. The ATMs automatically dispense the designated amount of water, for which customers prepay. The ATMs are M2M-enabled and real-time monitoring is currently being tested in their latest systems. Drinkwell has so far delivered over a million litres of water to over 200 water ATMs across India, Bangladesh, Laos, Cambodia and Nepal, providing safe water to over 250,000 people.

About our grant

In October 2017, the GSMA M4D Utilities Innovation Fund awarded a grant to Drinkwell in partnership with Dhaka Water Supply & Sewerage Authority (Dhaka WASA) and mobile operator Robi Axiata. Through the grant, Drinkwell has installed 87 water ATMs at Dhaka WASA's existing pumps, where water is purified even further, eliminating the common practice of boiling collected water at home. As of April 2019, Drinkwell was serving nearly 27,000 users across Dhaka through these ATMs.

Figure 11

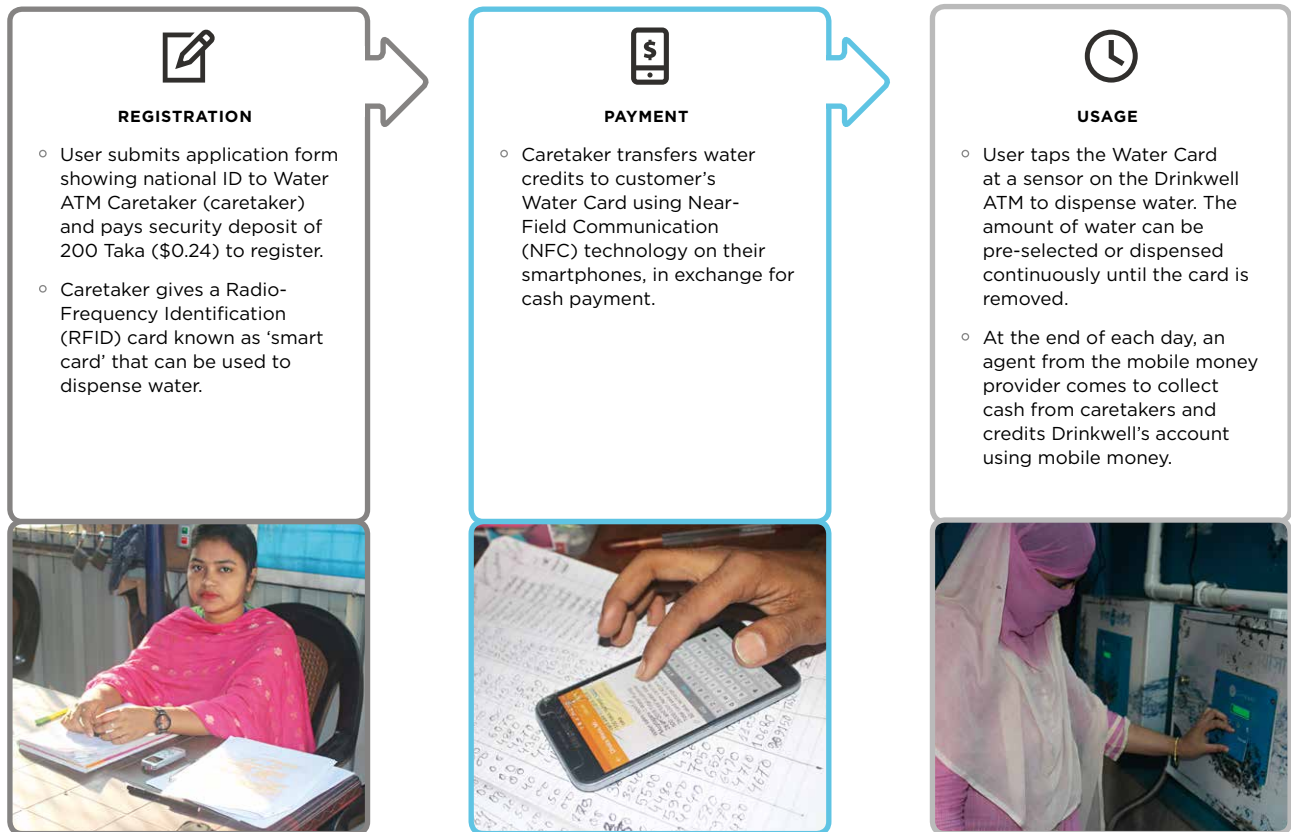
Growth in water ATMs installed and cumulative user base for Drinkwell



20. World Bank (11 October 2018), "Bangladesh: Access to Clean Water will Reduce Poverty Faster".

21. Ibid.

How does it work?



Results and impact

To evaluate the lessons of the grant, we measured project indicators before the onset of the grant through a baseline survey of 350 registered Drinkwell users. This was then followed up with an endline survey of 326 Drinkwell users who had been using the service for at least six months.²² We also conducted qualitative research, including surveys, focus group discussions and ethnographic studies covering 12 sites included in the project.

1. Benefits for end users

The endline qualitative surveys indicated that users were very satisfied with Drinkwell's services and found the water collection process quicker, more orderly and convenient than the pumping stations they had used previously. Water quality was also appraised as good and free of iron and arsenic impurities. The number of respondents reporting water-related health issues also decreased from 79 per cent during the baseline survey to 10 per cent in the endline surveys 12 months later. However, it is important to emphasize that these are user perceptions and not based on their health history.

98%

of end users reported being satisfied using the Drinkwell ATM system

90%

of households reported an improvement in health (eg. reduction in instances of diarrhoea etc.)

67%

of households switched to clean water sources, fully displacing the use of other illegal water sources after using Drinkwell services

22. Due to changed mobile numbers, inactivity of some baseline booths and other reasons, the endline survey did not include the same customers as the baseline survey. The respondents for the endline survey were chosen among customers who had used the Drinkwell service for at least the last six months.

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When we were in the village, my son was here for admission test, he used to live in student's hostel. The water supply was so poor there that once it caused diarrhoea to three of the students at the same time. From then I became very cautious about pure drinking water. I used to collect water from Dhaka WASA's tap, and then when it stopped and the booth [Drinkwell ATM] started, now I collect it from there. Both are deep ground water, so no such bad incident occurred again.

Female Drinkwell user, Mugdapara

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2. Benefits for Drinkwell and Dhaka WASA

As mentioned earlier, the Drinkwell water ATMs were located at sites where Dhaka WASA pumps had served as community water collection points. The purpose of this project was to further purify the water provided by Dhaka WASA and offer prepayment prepayment option using mobile money, thereby reducing the costs and risks of cash collection. While integrating the water ATMs with mobile money services could not be completed during the course of the project, some other benefits were observed for both Drinkwell and Dhaka WASA.

- a. **Expanded user base:** The quantitative survey results showed a 10 percentage point (pp) reduction in non-registered Dhaka WASA line users who collected water from the WASA line (illegally tapped mostly), but did not pay for the water, and a five pp reduction in registered Dhaka WASA users. Drinkwell, on the other hand, saw a 69 pp increase in usage.
- b. **Improved brand perception:** Since Drinkwell ATMs replaced Dhaka WASA's earlier supply points, the users attributed the cleaner water to Dhaka WASA (and not Drinkwell), improving Dhaka WASA's credibility among existing users. In the quantitative survey, 90 per cent of users reported a more positive perception of WASA because of the Drinkwell ATM system.
- c. **Reduced water wastage:** Interestingly, in the qualitative survey, end users acknowledged a tendency to waste resources if they were received for free (which was the case with prior Dhaka WASA pumping sites). They reported that Drinkwell's service, where customers pay per use, has led them to be more accountable for the water they use and to reduce waste.

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(While dispensing water) I remove the card few seconds prior to (my can) filling up, as the water continues to flow for a little longer after the card is removed. This saves water from being wasted. I am accustomed with timing and now I know when to punch out the card.

Male, Azimpur

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3. Working with mobile operators

Drinkwell sought to collaborate with mobile operators on two aspects of their service: mobile money payments for end users and GSM-enabled real-time monitoring of the water ATMs. Unfortunately, during the grant, Drinkwell ran into hardware and software issues that meant that the systems were not cloud-based which prevented both aspects from functioning.

Additionally, the 1.5% mobile money transaction fee was prohibitive considering the low cost of water and the small amounts in which customers make purchases. Drinkwell felt it's customers would be unwilling to pay this and Dhaka WASA also was not willing to cover this. Instead, Drinkwell had their agents collect cash from customers and send the money to Drinkwell at the end of the day or this was collected by banking agents. Drinkwell still sees

value in remote monitoring and cashless customer payments. The company is currently trialling new hardware and software to support the originally intended cloud-based solution.

Despite these challenges, Drinkwell has found great value in Robi's service to remotely monitor its staff (surveyors, caretakers and maintenance staff) using SIM-enabled location tracking services. This is helping Drinkwell efficiently allocate reported errors in the water ATMs to service engineers in the vicinity, rather than calling each service engineer to check their availability and proximity to the ATM. This has reduced the time it takes to respond to a service issue by approximately 20 minutes. The location tracking services are also helping Drinkwell ensure that service engineers are not out of their work zone for more than 30 minutes during the day, helping them manage travel and daily allowance expenditures more effectively.



Robi has been a true partner for Drinkwell as we grew our footprint across Dhaka by powering the communications backbone via services such as Robi Enterprise Resource Locator through which we are able to manage our field team who service over 100 water ATMs ensuring clean water to over 40,000 households.

Minhaj Chowdhury, CEO and Co-Founder, Drinkwell



Working with Drinkwell has allowed Robi to not only expand our corporate client footprint as Robi powers water ATM booths across Dhaka but also aligns our growth alongside SDG 6 around ensuring safe water for all – a win-win for both business and society.

Adil Hossain, EVP, Enterprise business, Robi

