

Profile: WaterHealth International

Treating and selling treated, affordable drinking water to urban and per-urban communities in Ghana



Challenge

More than 3 million people in Ghana lack access to an improved water source. The country's large chemical, mining, and agriculture industries have led to severe arsenic, mercury, and cyanide pollution, as well as microbial contamination. Expensive water treatment solutions are needed to filter the water to make it safe for drinking. In addition, many parts of the country lack basic water infrastructure. The challenge is to provide safe drinking water at an affordable rate to low-income communities.



Water treatment plants like this one in the Greater Accra region are manufactured as kits that can be easily assembled and maintained by local workers.

Innovation

WaterHealth International (www.waterhealth.org) has been operating in Ghana since 2008, using a build-operate-transfer model based on management contracts of 20–25 years. Once WaterHealth builds a center, it contracts it out to a local community or agency to operate and maintain for a period of time. Its unique UV treatment technology and innovative business model make high-quality, potable water affordable to households earning just USD 2 dollars a day.

The plant sells both “utility water” (used for washing and cleaning) and potable water. Their “Dr Water” branded product is consumer friendly to encourage widespread adoption. Utility water costs USD 0.05–0.08 per 20 liters. This water is filtered to safe drinking water standards but does not go through the final reverse osmosis process. Drinking water can be collected from the plant (at a cost of USD 0.20 per 20 liters) or delivered to homes (at a cost of about USD 0.50 per 20 liters).

WaterHealth reaches areas where it is not profitable or feasible for traditional water utilities to operate. Its system is flexible, as units of various sizes can be installed. Smaller treatment units cost USD 50,000 to equip and install; a large unit can cost up to USD 90,000. The plants are manufactured as kits that can be easily assembled and maintained by local workers. WaterHealth owns and operates the center, then transfers it to the community after 20–25 years.

The local authority (a village chief or district council) provides the land, access to electricity, and rights of access to the water source. WaterHealth employs and trains staff who run the center and helps the local community set up a water board to liaise between the community/users and those that run the water center to ensure a smooth operation and transition to community ownership at the end of the contract.

Several centers are developed at the same time in villages that are close to one another, in order to ease replication and allow efficiencies in management services across the centers. WaterHealth tests the water regularly and maintains the unit, using revenue from the water center to do so. It achieves break-even on operational costs in four to six months. To be fully sustainable, the unit needs to serve a population of at least 5,000 people.

Impact

WaterHealth provides 250,000–300,000 people in Ghana with access to clean drinking water treated at 35 plants. Each plant typically serves about 10,000 people—significantly more than bore wells, which provide just 300–500 people with access to unfiltered water. Although WaterHealth initially worked in rural areas, 50–70 percent of its new facilities are in peri-urban or urban areas, where demand from people living in informal or unplanned settlements is growing.

An independent review of the cleanliness of a sample of water from WaterHealth plants showed that at the treatment center, WaterHealth water had 93 percent less *E. coli* contamination than surface water (Opryszko and others 2015). However, as water quality degrades after it leaves the plant (due to contact with unclean hands, the mixing of surface water with clean water, and contaminated storage vessels)-- WaterHealth also chlorinates some of its water in at-risk areas.

Scaling Up

Grants of USD 4.5 million from the Coca-Cola Africa Foundation and the Diageo Foundation have allowed WaterHealth to expand its activities. Access to finance for capital investment and partnership support from local government will determine future growth. Support from local government is also needed as the system complements public provision. Constraints to scaling up include lack of access to land, as water centers need to be in a central place to ensure sufficient customers, and lack of relevant skills in the workforce in Ghana for employees to maintain the water filtration systems.

Reference

Opryszko, Melissa C., Yayi Guo, Luke MacDonald, Laura MacDonald, Samara Kiihl, and Kellogg J. Schwab. 2015. "Impact of Water-Vending Kiosks and Hygiene Education on Household Drinking Water Quality in Rural Ghana." *American Journal of Tropical Medicine and Hygiene* 88 (4): 651–60. <http://www.ncbi.nlm.nih.gov/pmc/articles/PMC3617848/>