

Water & Sanitation

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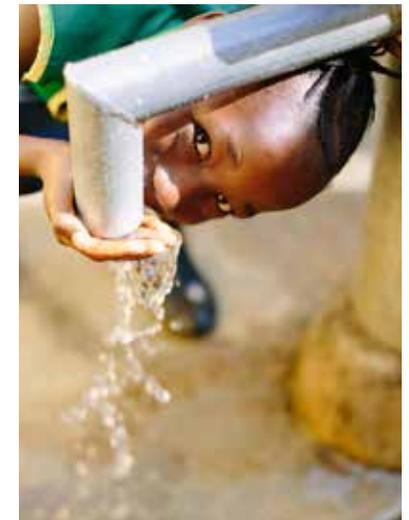


Clean water is essential for survival. Unfortunately, 780 million people worldwide do not have access to an improved water source. The combination of unsafe drinking water and lack of sanitation & hygiene facilities creates an environment where harmful bacteria can spread. In 2012, deficits in water, sanitation, and hygiene were directly responsible for an estimated 842,000 deaths due to diarrheal disease, mostly affecting children under 5 years of age (Prüss-Ustün et al., 2014).¹ Children are particularly vulnerable to diarrheal disease as their immune systems are not yet fully developed.

¹ Prüss-Ustün, A., Bartram, J., Clasen, T., Colford, J. M., Cumming, O., Curtis, V., ... Cairncross, S. (2014). Burden of disease from inadequate water, sanitation and hygiene in low- and middle-income settings: a retrospective analysis of data from 145 countries. *Tropical Medicine & International Health*, 19(8), 894–905. <http://doi.org/10.1111/tmi.12329>

2016 WELL WATER STATS

134	Total number of wells drilled	90,463	Total beneficiaries	686	Average beneficiaries per well
69	Sierra Leone	38,863	Sierra Leone	579	Sierra Leone
30	Mozambique	22,558	Mozambique	752	Mozambique
25	Liberia	28,000	Liberia	1,120	Liberia
9	Cambodia	495	Cambodia	55	Cambodia
1	Zambia	600	Zambia	600	Zambia



World Hope International has been committed to improving lives affected by Water, Sanitation, and Hygiene (WASH) issues since 2004. WHI provides clean, reliable, and year-round drinking water to communities, hospitals, health centers, and schools through drilling borehole wells. Providing clean drinking water to a community changes lives. Not only are diarrheal and other waterborne illnesses reduced, there are other less obvious, far reaching effects like increasing school attendance. When children, especially girls, don't have to go far to fetch water, they have more time for their studies and are at less risk of being assaulted during the trip. Clean water goes hand in hand with improved sanitation. Constructing handwashing stations, latrines, and toilets is part of WHI's overall WASH infrastructure plan. To ensure the sustainability of these initiatives, WHI helps communities form Local Water Committees to undertake minor pump repairs, and to collect usage fees to pay for more costly repairs.

Project Overview

WHI's WASH efforts began in 2004 with hand dug wells. Hand dug wells can go dry during the dry season, so three years later, WHI purchased a drilling machine to drill borehole wells in order to provide a year-round water supply. Before drilling a well, WHI conducts a water quality analysis to check the physical, chemical and bacteriological composition of the water. The borehole wells are usually fitted with a hand pump as well. Over the past 12 years, WHI's water program has expanded to include four drilling rigs, multiple compressors, and many vehicles. To support the growing effort, WHI hired additional staff and now employs 22 people including engineers, geologists, drillers, drivers, mechanics and other auxiliary staff.

Besides drilling boreholes wells, WHI's WASH department also constructs water towers and installs electric submersible pumps to pump water up into the elevated tanks. From the storage tanks, water is piped into nearby buildings through gravitational force. The electric pumps that pump water to the storage tanks are often powered by solar panels. In 2017, WHI plans to experiment with charging a small fee to household users for piped water as a way to make the water projects financially sustainable.

Program Achievements

In 2016, WHI drilled 69 community boreholes in Sierra Leone, providing water for 39,410 community members, an average of 579 beneficiaries per well. WHI drilled 16 borehole wells in health centers and hospitals, 42 wells in various schools, and 1 borehole well for irrigation. WHI also constructed twelve water towers with gravity tank systems. WHI drilled 30 borehole wells benefiting 22,558 people in Mozambique, and 25 wells in Liberia benefiting 28,000 people. In Cambodia and Zambia, WHI worked with drilling contractors to provide water to 495 and 600 people, respectively.



Maria just delivered twins at a newly refurbished maternity center in Sierra Leone. Thanks to funding support from the John Snow Institute (JSI) and the US Agency for International Development (USAID), WHI was able to provide solar-powered water from a borehole water well for the maternity clinic where Maria delivered her twins!*

**Name changed to protect privacy*



Program Challenges

Drilling water wells in some of the most remote places in the world is not without challenges. Poor roads causes tires to blow and damages equipment and vehicles. Most of the equipment and parts are imported via sea freight, a time consuming process. Advanced geographical surveying and hydrogeological studies are necessary to determine the viability of a potential well, and WHI is limited by having only one set of geographical survey equipment. Once a site is approved, acquiring permits through government officials can be challenging, as regulatory efforts toward water drilling projects are ever evolving. Once a permit is issued, WHI closely manages the process to comply with detailed water safety and reporting requirements.



Future Plans

In 2017, WHI plans to purchase a second set of geophysical survey equipment to increase our capabilities and to keep up with the demand for drilling boreholes. We will drill 105 new community boreholes in 2017, and construct 50 elevated tank systems and 40 showers at rural health facilities in Sierra Leone.



World Hope International is a registered 501(c)(3) nonprofit organization. All donations are tax deductible.

