

It works! Human-powered drill strikes water in Tanzania

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A human-powered drill built by a team of BYU engineering students was meant to be inexpensive, easy to operate and easy to move. Field tests in Tanzania have shown the drill does just what it's supposed to do.

"At the end of our trip, it was exciting," says Nate Toone, a graduate student of engineering. "We were drilling in a farm of [sandy soil](#) and 70 feet down. When we unhooked the pipes, there was a small little [geyser](#). That was evidence to us we were successful. It was the payoff moment to see that water coming up and see the smiles on everyone's faces and know that we had found clean water."

Other water-drilling alternatives in the region either can't dig deep enough or cost too much, sometimes upwards of \$15,000. But the team's device has the potential to [drill](#) a 150- to 250-foot-deep hole in a matter of days—all for about \$2,000.

The drill was created for a year-long engineering capstone project that has students solving real engineering problems with real clients. The team created the drill for WHOLives.org, a nonprofit dedicated to providing clean water, better health and more opportunities to people living in impoverished communities. The organization is currently focusing its drilling efforts on [Tanzania](#), but it has plans to expand its operations to other countries. The project is also co-sponsored by the Ira A. Fulton College of Engineering and Technology.

The drill can be operated by four people. Three spin the wheel that turns

the bit, and the fourth lifts the bit up and down when necessary to punch through tough spots. A [water](#) pump system removes the dirt from the six-inch-wide hole.

"At the beginning of the year we had a meeting with the sponsor, and he said that very rarely do you get an opportunity to work on a project that can change millions of lives," says Toone. "You forget that sometimes when you're in the middle of working and setbacks and frustrations, but it's really good to see it pay off. It has definitely paid off."

Provided by Brigham Young University

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