



Millennium Water Alliance and WaterAid Use CBT for Water Supply Research in Nicaragua



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The Millennium Water Alliance is a coalition of America's leading charities working to bring clean, safe drinking water and sanitation to millions of the world's poorest people in Africa, Asia and Latin America.

www.mwawater.org



WaterAid is a global non-profit that strives to transform lives by improving access to safe water, hygiene and sanitation (WaSH) in the world's poorest communities. WaterAid works with partners and influences decision makers to maximize its impact. www.wateraid.org



WaterAid Nicaragua field technician Max Rodriguez examining CBT test results.

About the CBT

The Aquagenx Compartment Bag Test (CBT) is a portable, simple water quality test kit that lets anyone, anywhere determine if drinking water contains *E. coli* bacteria and poses a health risk.

Challenge

Millennium Water Alliance (MWA) and WaterAid Nicaragua conducted applied research to measure water supply service levels provided simultaneously by household rainwater harvesting systems and multiple other sources of water in the municipality of Puerto Cabezas, Nicaragua. Their goal was to better understand the quality of service for different kinds of water sources as well as how people perceived the different sources. An important challenge was that water quality testing needed to be done in remote locations without access to a lab. They needed a water quality test for *E. coli* they could run on-site.

Solution

MWA and WaterAid decided to use the Compartment Bag Test (CBT). In addition to testing for *E. coli* with the CBT, the researchers also tested for turbidity and pH. They analyzed samples from various types of water sources in the dry and rain seasons, monitoring differences between shallow unprotected wells, shallow concrete lined wells, rooftop rainwater harvesting systems, surface water and a hand-pump equipped borehole. The research was a collaboration of WaterAid Nicaragua, MWA, and the University of Leeds. It was financed by FEMSA Foundation, Catalan Cooperation Fund for Development, and Rotary International.

Test Results

Researchers found that the rooftop rainwater harvesting systems installed by the community with WaterAid Nicaragua and one hand pump-equipped borehole well provided the best and most consistent bacteriological water quality of more than 25 different water sources available in the community.

Conclusion

Daniel W. Smith, Program Officer at Millennium Water Alliance, says, "We'll continue using the CBT because it's easy to use, interpret and share its results. Its quantitative data helps us build evidence of the advantages and disadvantages of the different types of water supplies that we can help communities develop."

Daniel also believes the CBT's color-change results are a big help in the field. "The CBT's positive and negative compartments for *E. coli* are easy to understand for residents and researchers alike," says Smith. "In our Nicaragua research, the water sources with the lowest concentrations of fecal indicators were quickly apparent using the CBT. It was great to get results so fast because we could share them locally in real-time, which helped the water sampling be relevant for the local WaSH initiative as well as the research."