



## Customer Story

### CBT Kit and mWater App Raise Water Quality Awareness in PNG



WaterAid is an international non-profit organization whose mission is to transform the lives of the poorest and most marginalized people by improving access to clean water, sanitation and hygiene. [www.wateraid.org](http://www.wateraid.org)



Paula and Alison of TCA use the Aquagenx CBT Kit for *E. coli* testing in Maui Village Aitape-Lumi, PNG

#### Aquagenx CBT Kit



The Compartment Bag Test (CBT) is a portable, simple water quality test kit that detects and quantifies *E. coli* in 100 mL to determine the health risk of water.



[mWater](http://mwater.org) is a free, open source data platform for managing projects in water, sanitation and health using smart phones and mobile technology.

#### Project Description and Challenges

Wateraid Australia has a long-standing partnership with Tenkile Conservation Alliance (TCA), a conservation organization in Papua New Guinea. Together, they provide improved drinking water supply and work to improve sanitation and hygiene practices in the Torricelli Mountain Ranges, which are located within a very remote area across two provinces of Papua New Guinea (PNG). This region encompasses three districts containing 50 villages and a population of approximately 12,500 people.

Previously, the vast majority of rural communities in the Torrecelli Mountain Ranges lacked access to safe water supplies. Treatment and disinfection of drinking water in rural PNG is considered culturally unacceptable, and such activity is also beyond the capacity of these rural populations.

Rainwater harvesting is considered a safe and improved water source free of chemical contaminants. However, monitoring the water quality of rainwater in rural areas of PNG is extremely challenging. Traditional microbiological testing methods such as membrane filtration and portable laboratories are heavy, cumbersome and difficult to use correctly. In rural areas, knowledge and capacity for undertaking this kind of complex testing correctly is often very limited.

#### Aquagenx CBT Kit and mWater Mobile App

WaterAid Australia uses the Aquagenx CBT Kit to detect and quantify (MPN) *E. coli* bacteria because it is a simple test that can be used by anyone with a basic level of training and minimal capacity. WaterAid provided CBT Kit training to TCA cluster coordinators, and they continue to support TCA to expand their routine water quality monitoring, operations and maintenance of rainwater harvesting systems.

Australian Aid funding supported the WaterAid and TCA partnership to purchase affordable Android smartphones and Aquagenx CBT kits for use together in routine water quality monitoring. The free mWater mobile app was downloaded onto the smartphones to calculate CBT Kit test results, create surveys and map and share test results in real-time.

Many of the TCA coordinators had never used a smartphone before and were excited and motivated to receive smartphone



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data collection training. Training included how to link quantitative Aquagenx CBT Kit *E. coli* water quality results to the water point, and water point mapping using the mWater app and smart phone technology.

### Test Results

TCA coordinators have conducted *E. coli* testing and sanitation surveys using the Aquagenx CBT Kit and mWater at 50 rainwater harvesting systems as well as 50 unimproved dug wells and surface water sources. The aim of these measurements has been to raise awareness of water quality, improve rainwater harvesting system management and discourage the use of unimproved water sources such as unprotected dug wells and surface water for drinking without point of use treatment.

To see test results and mapping, visit WaterAid's webpage for this project on the mWater Portal: <https://portal.mwater.co/#/dashboards/d7a6437656204afd9d9835142a902086?share=2c16b1c2677140a0ad687d845d31da4c>

### Benefits of Aquagenx CBT Kit and mWater



“WaterAid’s use of the Aquagenx CBT Kit in the Asia and Pacific regions has been very successful and has greatly improved WaterAid’s water quality monitoring capacity,” says Tim Davis, Performance and Impact Monitoring Advisor at WaterAid Australia. “Our staff and partners like the simplicity of the CBT Kit and the fact that anyone can undertake *E. coli* testing with very basic training and capacity.”

Davis continues, “The Aquagenx CBT Kit is lightweight and disposable. People can carry the CBT Kit by foot so water quality testing is part of their routine work duties, which increases water quality knowledge and confidence in water safety.”

WaterAid Australia believes using the Aquagenx CBT Kit together with the mWater mobile app ushers in a new era of institutional WASH monitoring. Access to digital information and real-time data improves water safety program decision making and outcomes, and the sustainability of WaterAid’s work.

In the future, WaterAid Australia wants to extend this kind of training and support to district level government, with the long-term goal of implementing a joint monitoring program between TCA and local civil society groups, WaterAid and government.

TCA and WaterAid Australia would also like to present use of the Aquagenx CBT Kit for quantitative *E. coli* testing to government partners at national, provincial and district levels to expand water quality awareness, knowledge and ongoing monitoring.

Visit WaterAid Australia’s summary of this program on the mWater Portal:

<https://portal.mwater.co/#/dashboards/d7a6437656204afd9d9835142a902086?share=2c16b1c2677140a0ad687d845d31da4c>