

# mobile water

at aquaya, we are committed to leading the effort to evaluate mobile data solutions in the water sector and to take effective solutions to scale.



## going mobile

Mobile phones are cheap, easy to use, and nearly ubiquitous in developing countries. Most importantly, mobile phones can transmit multiple types of information cheaply and quickly over long distances. Leveraging these strengths, innovative mobile phone applications are providing tools for meeting a range of development and public health objectives. For example, mobile phone apps are used to report data from national health and nutrition surveys, to monitor HIV/AIDS treatment, to provide technical and market advice to rural farmers, and to support mobile banking.



Rural water system operator submitting water test results using a mobile phone application. Cambodia

## how can mobile phones increase access to safe water?

Aquaya is currently using mobile phone apps to address two significant drinking water challenges in developing countries.

### data reporting and analysis

In most countries, both public health agencies and water providers are responsible for monitoring the status and quality of drinking water supplies. However, if this data is collected it often sits in logbooks and is not aggregated, analyzed or reported upwards. For example, district health technicians in Mozambique regularly visit rural water systems to assess their overall condition and test water quality. In principle, they should report this surveillance data to the district, provincial and national level public health

### aquaya's field partners

**Mozambique:** Ministry of Health and UNICEF

**Vietnam:** Thua Thien Hue Water Supply and Construction Company

**Cambodia:** I001 Fontains Pour Demain

offices, but in practice reporting beyond the district is limited.

To improve data reporting in Mozambique, Aquaya collaborated with UNICEF and the Ministry of Health to equip district health technicians with the Water Quality Reporter (WQR); a simple app for recording and submitting data to a central database. We also configured the WQR database to send raw data and summary reports to the relevant health authorities at each administrative level.

### ***the water quality reporter***

The iCOMMs group at the University of Cape Town in South Africa developed the Water Quality Reporter (WQR) mobile phone app under the Aquatest research program. WQR provides customized water supply monitoring forms that are sent to a central database via the mobile data network. The WQR database triggers SMS alerts to managers when data reveals problems: for example, microbial contamination above a designated limit. To launch WQR in Vietnam, Cambodia, and Mozambique, Aquaya and iCOMMs worked with local partners to evaluate data collection needs, create forms, set up alerts, and train staff. Aquaya continues to support partners in optimizing and troubleshooting the system.

Even where data reporting is well established, traditional paper and phone reporting methods can be slow and time consuming. For example, managers at the Thua Thien Hue Water Supply and Construction Company in central Vietnam oversee operations of 22 treatment plants located throughout Hue Province. The water quality managers must audit operational data from each treatment plant to ensure that water supplies comply with standards and to identify areas that require support. Whereas water quality managers previously called the treatment plant operators and manually recorded operational test results, the operators now use the WQR application to efficiently report on-site testing data to their area managers and the central laboratory.

### **operational support for sustainability**

Long-term sustainability is a major challenge for rural drinking water supplies, which often lack formal maintenance and repair programs. Studies

from multiple countries indicate that on-going technical assistance from appropriate oversight agencies is critical for improving rural water supply sustainability. In addition to facilitating data reporting, WQR enables rural water supply operators to request this timely support.

1001 Fontaines Pour Demain is a Cambodian NGO that works with rural communities to install and manage village-level water treatment and vending kiosks. WQR data submission by kiosk operators and SMS performance alerts allows 1001 Fontaines Pour Demain program managers to identify operational problems in real time and to provide technical support.

### ***more apps!***

In addition to our efforts to improve data reporting and strengthen operational support for rural water providers, Aquaya is also developing apps to support the following water service activities:

- Bulk SMS messages for public service announcements and customer alerts
- Public submission of complaints and status reports
- Dynamic data summaries and graphs for managers
- Mobile billing

