Two boys cool off near Zamboanga, the Philippines' sixth largest city with a population of 800,000. Photo credit: Vincent Paul Arnuco

Changing Climate, Changing Minds: How One Philippine City Is Preparing for a Water-Scarce Future

May 5, 2016

Surrounded by water, the Philippines is especially vulnerable to climate change. Its islands and its people are enduring increasingly unpredictable rains, intensifying cycles of flood and drought, and strengthening storms forming in the Pacific. These changing weather patterns have not only derailed livelihoods and agricultural productivity in rural areas, they have also worsened water insecurity in cities, where 45 percent of the population live.

In response, USAID launched its $21.6 million Water Security for Resilient Economic Growth and Stability (Be Secure) project in 2012 to improve urban resilience to climate change. Partnering with communities throughout the country, the project

builds local adaptation capacity, upgrades water supply infrastructure, and promotes more efficient water use. The project's impact has been especially notable in Zamboanga City, which recently became the first city in the nation's history to create an urban water demand management (WDM) plan.

Zamboanga on the Front Lines

Situated at the southern tip of the island of Mindanao, on a peninsula, Zamboanga City is exposed to coastal storm surges and flooding from heavy rains draining off nearby mountains.

Despite this seeming abundance of water, the city has been struggling recently with water scarcity. "Zamboanga has been in a three-year drought, and has been rationing its water to a few hours per day," says Mona Grieser, Chief of Party for USAID's Be Secure project. The situation became so serious that the city declared a state of calamity in January 2016.

Shifting climate patterns have contributed to the current crisis, water managers say. Warmer temperatures have intensified El Niño's impact and exacerbated drought conditions. This has "drained the city's reservoir at a rate faster than it can be replenished," explains Michael Carbon, a Department Manager with the Zamboanga City Water District. Groundwater, which accounts for 20 percent of the city's water supply, provides little relief, since naturally occurring contamination restricts its use. Meanwhile, a recent vulnerability assessment revealed there is not even enough water in the Tumaga River — the city's primary water supply — to meet demand.

As a result, local families have been struggling to cope. "I need to wake up at 2 am for us to get drinking water," reports Maimona Malidin, a Zamboanga resident and mother of eight. "Otherwise, we don't have water to drink. And there were times that there's no water coming out [of the tap], so instead we buy mineral water — but it's very expensive. So to maximize our budget, I normally boil water for drinking."

Less Is More

Through the Be Secure project, USAID has been prioritizing its assistance to Zamboanga, a partner city under the Cities Development Initiative. An initiative under the U.S.-Philippines Partnership for Growth, the Cities Development Initiative advances the development of secondary cities as engines of economic growth.

With Zamboanga's population growing at roughly three percent annually, USAID is working with the city on supply-side measures like building a new reservoir, and piping in water from other rivers to ease the city's water crunch. But it is Zamboanga's first-in-the-nation WDM plan — launched in February 2016 with USAID assistance — that is challenging the city to find innovative ways to squeeze more productivity out of each drop of its limited water supply.

Under this strategy, Zamboanga is engaging everyone, from engineers and plumbers, to policymakers and students. With WDM experts from Australia, Jordan, and the United States sharing best practices, USAID and its local partners are expanding local water treatment capacity, building staff skills to conduct leak analysis and repair, promoting rainwater harvesting structures, and hosting workshops on how to per-

form residential and commercial water audits. USAID is also helping the city upgrade its sewerage system to limit contamination of the local water supply.

The water demand management plan also engages out-of-school-youth, by creating new livelihood opportunities. "We organize the youth per barangay (village) and train them to repair leaks and other plumbing works," says Fernando "Ding" Camba, Division Manager for Planning and Monitoring with the Zamboanga City Water District and one of the plan's chief architects.

Resiliency in the Face of Uncertainty

Recognizing that these successes can only be sustained if households and businesses understand and practice water conservation, USAID supports workshops, forums, and other outreach activities that educate stakeholders. "With climate change adaptation projects and advocacy in place," says Carbon, "we are looking at a more responsive and resilient water district and customer base."

With time, might the city's WDM strategy provide a blueprint for other Philippine cities contending with water insecurity?

"Zamboanga's initiative is an excellent example of how cities can apply tools and technologies to efficiently use the water available to them," says USAID Philippines Mission Director Dr. Susan Brems. "By managing the demand for water, cities can be better prepared to alleviate future water shortages, and more resilient in the face of a changing climate."

By Russell Sticklor

• • •

Additional Resources:

- USAID/Philippines
- Water Security for Resilient Economic Growth and Stability (Be Secure) Project

This article appears in Global Waters, Vol. 7, Issue 2; for past issues of the magazine, visit Global Waters' homepage on Globalwaters.org.