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REAL IMPACT: BE SECURE

WATER SECURITY FOR RESILIENT ECONOMIC GROWTH AND STABILITY

USAID's *Real Impact* series highlights examples of water sector projects around the world. Each issue provides from-the-field insights about successful approaches, challenges faced, and lessons learned.

OVERVIEW

Location: Philippines
Duration: 2012–2017
Total USAID Funding: \$21.6 million
Primary Implementing Partner: AECOM

CHALLENGE

The Philippines has emerged as one of the fastest growing economies in Southeast Asia, with GDP growth averaging 6 percent between 2010 and 2016. Despite the growth, poverty still persists, exacerbated by 15 million Filipinos lacking access to clean water, and 26.5 million with little or no access to sanitation facilities.

Much of the population is vulnerable to changing weather patterns that include less rain, longer dry seasons, increased flooding, and more violent

storms. Further complicating the situation are the approximately 20 typhoons that hit the country annually.

Responding to these challenges, USAID's Water Security for Resilient Economic Growth and Stability (Be Secure) Project works in six selected sites to increase sustainable access to water and wastewater treatment services and resilience to water stress and extreme weather.

Province	Cities / Municipalities
Basilan	Isabela City, Maluso
Leyte	Tacloban City, Ormoc City
Iloilo	Iloilo City
Maguindanao	Cotabato City
Misamis Oriental	Cagayan de Oro City
Zamboanga Peninsula	Zamboanga City



Moving from village to village on a regularly scheduled basis, vacuum trucks collect septage from septic tanks as part of an effective waste management program.

APPROACH

Enhancing Capacity for Sustainable Water Service

Access to water is variable in Be Secure's partner cities. Water utilities battle systemic water losses, insufficient water sources, or aging facilities that reduce service efficiency. They can rarely meet customer demand.

In Cagayan de Oro City (CDO), the water supply is depleted by high non-revenue water (NRW)—water that is lost either to leaks or bad metering and, therefore, yields no revenue. In 2015, USAID initiated a partnership with The Coca-Cola Foundation and the city's water district to implement an NRW program that will steadily reduce the city's water loss from a staggering 53 percent to 30 percent by 2035.

The foundation provided \$300,000 for geographic information system (GIS) software while USAID furnished the technical expertise to establish a GIS database, develop a hydraulic model of the CDO service area, and identify district metering areas to help locate where the system was losing water. Through this

partnership, the water district upgraded its maintenance department and GIS division, ensuring the sustainability of the NRW program beyond the term of USAID's support.

Be Secure works with water districts to design efficient, new water systems. Equipped with project-procured feasibility studies, Cagayan de Oro and Cotabato cities can now determine the best sites to tap additional water sources as they prepare to meet future demand. In Zamboanga City, the project helped the water district prepare bid documents for contracting services to design and build a plant that can treat 20 million liters of drinking water per day.

Project technical assistance helped unlock an estimated \$17.7 million from water district partners to support construction of large-scale septage facilities, system improvements, or water treatment plants—physical infrastructure to bring water where it is needed.

But the ability to plan and prepare for improved infrastructure is only part of the skill set needed for successful water utility expansion. The staff of Be Secure partner utilities must also hone their management skills and learn to access available funds for water supply projects. By working with USAID, water utilities are better able to operate and maintain their systems, manage data, and develop project proposals to access national government funds. To date, \$14.9 million from the national government's Salintubig (Abundant and Safe Water for All) Program has been released to small water utilities whose staff received Be Secure training.

Advancing Septage Management

In the Philippines, only 10 percent of wastewater is treated and only 5 percent of the total population is connected to a sewer network. Sludge treatment and disposal facilities are rare, and domestic wastewater is discharged without treatment. With USAID assistance, the cities of Ormoc, Tacloban, Isabela, Cotabato, and Cagayan de Oro have all passed ordinances that will enable the implementation of septage treatment programs at the local level. With Be Secure assistance, Zamboanga City, which passed its ordinance in 2009, has developed a septage treatment plant.

All six cities have set aside a location for treatment facilities and several have started to design them, having secured funds to support construction. Some have

started designing the tariff structures for the collection of fees and are initiating public awareness campaigns to encourage social acceptance.

USAID has conducted operations and maintenance training for septage management at all sites. Tacloban City in Leyte Province, which was severely damaged by Typhoon Haiyan in 2013, has successfully inaugurated its facility, which will begin operation within the year. Isabela City in Basilan Province began operation of its septage treatment plant in December 2016. It is the first in Mindanao. Treated wastewater is reused to irrigate an adjacent rubber plantation owned by the water district.

Integrating Resilience in Water and Sanitation

One of the primary goals of USAID's Be Secure project is to help the Philippines prepare for and withstand adverse impacts of the frequent storms that pound the islands.

In 2013, Super Typhoon Haiyan struck the nation, causing massive property damage, loss of life, and displacement of thousands of families. USAID was in place to lend post-disaster recovery assistance in Leyte Province, where water utilities learned firsthand how violent weather activity can affect water supply. USAID helped repair and rehabilitate damaged facilities, and, under the guiding principle of "build back better," new structures can now withstand strong typhoon winds or are better protected from flooding and landslides. In addition, the project commissioned and shared data from municipal-level weather models and vulnerability assessments to determine the susceptibility of cities to floods, landslides, and other hydrological disasters. This data and other weather considerations were integrated into engineering designs and the siting of water supply infrastructure.

The Be Secure project also facilitated a mentoring program for water districts to learn from the experience of the Florida Water and Climate Alliance on how to integrate water resource assessments, hazard maps, and weather projections into their business and emergency response plans.

In 2015, as drought intensified due to El Niño, USAID introduced water demand management at the national and local levels. This encouraged the Government of the Philippines to allocate about \$1.16 million for

construction of rainwater harvesting systems in schools and public buildings, reducing the use of drinking water for washing, flushing, or gardening. At the local level, with mentoring from Seattle Public Utilities, water utility representatives learned how to better forecast demand and identify appropriate water conservation and efficiency measures, as well as design and roll out school education campaigns. They now manage water supplies to last longer and serve more people without having to build expensive infrastructure. Consumers experience greater water efficiency in their homes, saving on water bills. The utilities have designed education campaigns to reinforce conservation at school and at home.

Finally, the project engaged the media to help raise public awareness of water issues nationwide. Be Secure organized television interviews, live streamed on social media, and distributed press releases that amplified key messages to a wider public. The project also worked with the *Philippine Star*, one of the largest print and digital publications in the country, to develop and disseminate messages about saving water. The project also worked with SMART, one of the largest phone carriers in the country, to broadcast weather messages in times of typhoons to alert emergency personnel to respond to disasters.



Photo Credit: Be Secure

In Tacloban and other cities and towns affected by Typhoon Haiyan, USAID assisted local governments and water utilities to rehabilitate damaged water systems. USAID helped communities install cisterns and bury exposed water lines.

IMPACT

Having set a target of 1.2 million people with access to an improved water source, USAID/Philippines has now reached 1.3 million people. Of that number, nearly 700,000 live in the conflict-affected areas of Mindanao. Similarly, while it initially set out to reach 400,000 with improved sanitation collection and treatment, more than 1 million people will now have access to such improvements.

By working with USAID, 258 small water service providers can now deliver improved access to water. Other key providers are better prepared to provide wastewater treatment and sanitation services to their customers.

To date, USAID/Philippines has mobilized \$25.5 million of public and private funds to support water supply access in the six cities in which Be Secure works.

As a result of Cagayan de Oro's NRW Reduction Program, initiated as a tri-partite arrangement among the project, The Coca Cola Foundation, and the water district, the city is expected to increase access to water for 400,000 people and provide water 24 hours a day.

Thanks in part to USAID support, 47,224 stakeholders are better prepared to cope with the outcomes of extreme weather-related variability and 180 water service providers have now integrated disaster risk reduction into their business plans.

LESSONS LEARNED

- **Water security** can be achieved if both city governments and water utilities work together, share data, and coordinate their long-term plans.
- **A holistic approach** must be taken to achieve water security. This includes sufficient water supply, resilient and well-built water and sanitation infrastructure, and efficient use of water.

- **Local partners will invest** in large-scale water and sanitation projects when they understand future risks from weather-related impacts, and when their decisions are well supported by technical options and robust financial analysis.
- **A successful septage management program** requires a proper enabling environment, sustainable and resilient infrastructure, and social marketing to encourage behavior change.
- **Peer-to-peer mentoring** is an effective tool to build capacity and accelerate transfer of new knowledge and skills on integrating extreme weather resiliency into water supply and sanitation.
- **When confronted with new challenges** arising from impacts of extreme weather, local governments, water utilities, and universities are open to learning and adopting new tools that enhance their capacity to adapt.
- **As extreme weather events continue**, authorities must regularly assess what is happening, review the effectiveness of current measures, as well as revisit and update plans.
- **Working with the media as a partner**, rather than just as a publicity tool, can further the public education goals of a project and expand its outreach.

To learn more about Be Secure, visit:

USAID Philippines

<https://www.usaid.gov/philippines/energy-and-environment/be-secure>

Be Secure Facebook page:

<https://www.facebook.com/besecureph/>

Front Cover: Be Secure trained local governments to write and implement Operations and Maintenance Health and Safety Plans. Here, a septage truck driver complies with Tacloban's plan, which requires septage handlers to wear personal protective equipment.

Photo Credit: Be Secure