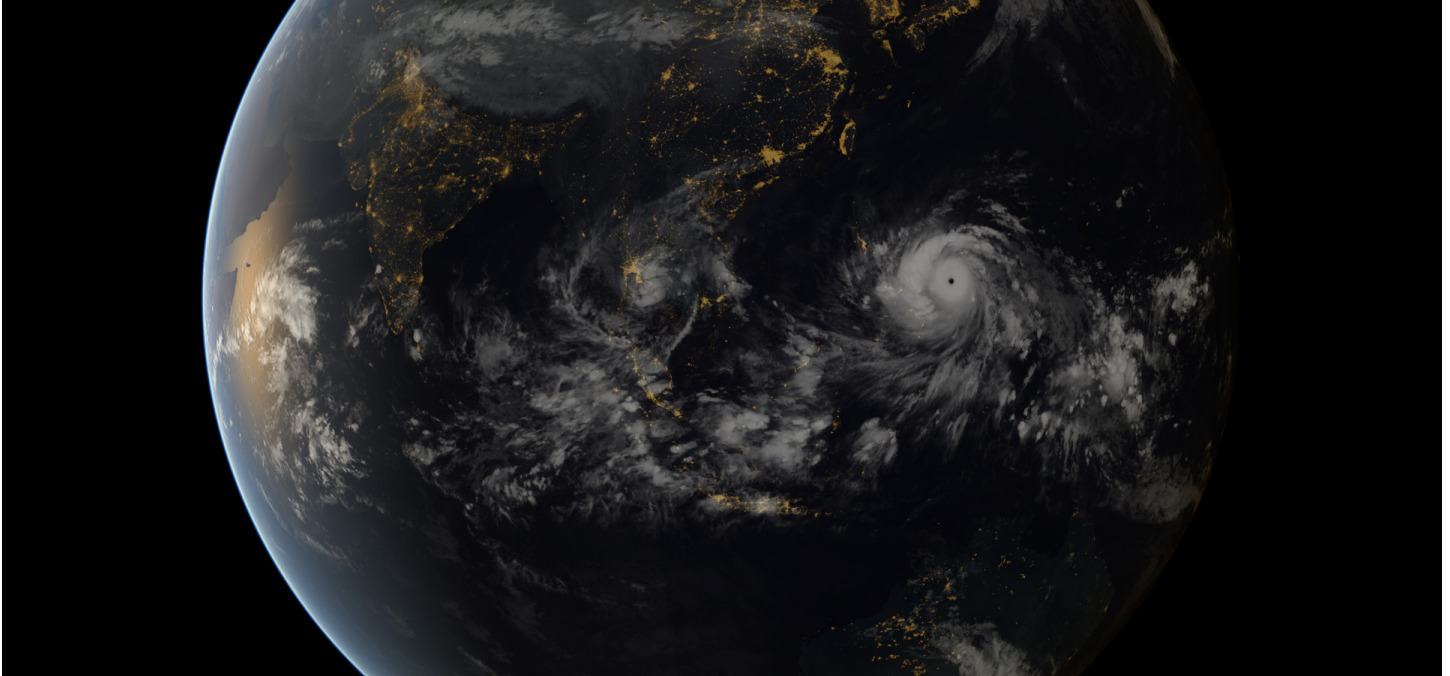




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What does climate change look like? Here, one of the strongest tropical storms ever recorded, Typhoon Haiyan, approaches the Philippines in a November 2013 composite image incorporating data captured by the geostationary satellites of the Japan Meteorological Agency (MTSat 2) and EUMETSAT (Meteosat-7), overlaid with NASA's 'Black Marble' imagery. Photo credit: JMA/EUMETSAT

Confronting Climate Uncertainty Head On in the Philippines

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A changing climate is forcing a reckoning across the Philippines — a sprawling island nation spread across more than 7,500 islands in the western Pacific where water is virtually everywhere and informs every facet of daily life. As the Philippines finds itself on the front lines of climate change, the country's proximity to water is both a blessing and a challenge. With government officials and water resource managers navigating complex and interwoven climate challenges — such as shifting precipitation patterns, intensified cycles of flood and drought, coastal erosion, sea-level rise, and stronger typhoons — it has become crystal clear that water poses a pressing national security threat.

Decision-makers in the Philippines increasingly view water and its sustainable management as foundational in any successful long-term effort to build a more resilient country capable of withstanding — and indeed thriving in the face of — future

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climate shocks. To support the Philippine government's water security efforts, USAID, through its five-year, \$18.4 million Safe Water Project (SWP), has been working with national and local government partners, community leaders, municipal officials, water service providers, businesses, nongovernmental organizations (NGOs), and other partners around the country since 2019 to strengthen the country's Philippines' water security and climate resilience. Implemented in the provinces of Negros Occidental, Sarangani, and Palawan, the project provides new sustainable water resource management technology and techniques, improves access to a reliable, resilient water supply, and incentivizes more accountable, sustainable, and financially-disciplined water sector governance.

On the Front Lines

The effects of climate change on the Philippines have been anything but subtle. The extraordinarily powerful Typhoon Haiyan that made landfall in November 2013 registered as one of the strongest tropical cyclones in recorded history and caused widespread devastation. A severe drought in 2015 led many cities and provinces to declare a state of calamity due to serious water shortages. More recently, Typhoon Vamco brought intense and sustained rainfall to the islands in November 2020, threatening dams and triggering devastating flooding of large and small downstream farming communities.

With its high degree of vulnerability and exposure to various climate change impacts, the Philippines has renewed its commitment, through a whole-of-government approach, to better plan for and respond to future natural disasters.

Adding further stress to the country's overall water security is the fact that even during years of relative water supply abundance, water rights are often fiercely contested. Competing demands for allocating the country's finite water supply are intensifying under the pressures of population growth, urbanization, and economic modernization. As if that weren't enough, many people must contend with serious public health threats on a daily basis affecting tens of millions of Filipinos who lack reliable access to safe water and sanitation services.

"The Philippines faces a number of water-related challenges," explains Lawrence Hardy II, Mission Director for USAID/Philippines, Pacific Islands, and Mongolia. "Recent studies show that the Philippines has the lowest water availability per capita among Southeast Asian countries [and] projections suggest the Philippines will continue to see a high degree of water shortages through 2040. About 12 million Filipinos do not have access to clean drinking water, while 80 percent of the country's 100 million people are not connected to wastewater treatment services, [and] waterborne diseases remain among the top ten leading causes of morbidity in the country."

In spite of the gravity of the Philippines' water security and public health challenges, confronting and preparing for grave threats can also help open the doors to a more sustainable future. "Challenges often present unexpected opportunities for USAID to be adaptive, creative, and responsive in its interventions," says John Edgar, Director of USAID/Philippines Environment Office.

Climate Is Water

While the relationship between climate change and water supply may not seem particularly obvious, the two are in fact deeply intertwined. Climate change can degrade water supply in a variety of ways.

For example, the heavy sustained rainfall that accompanies typhoons can trigger landslides, accelerate riverbank erosion, and wash agricultural chemicals and other contaminants into waterways as storm runoff — degrading water quality and threatening the health of communities that depend on these same waterways for their drinking water supply. Closer to the coast, intensified storm surges, sea level rise, mangrove habitat loss, and coastal erosion can accelerate saltwater intrusion into aquifers, which serve as key water sources for many towns and cities. And prolonged droughts can cause surface water levels to drop, concentrating harmful pollutants and encouraging overreliance on groundwater as an alternative water source.

Regardless of the cause of water supply degradation, water service providers across the Philippines are bearing much of the expenses. They are struggling with both higher water treatment and infrastructure maintenance costs due to damage inflicted during extreme weather events whose effects are felt for months or even years. Mounting operating expenditures are one of the many reasons SWP has been working closely with cash-strapped water service providers, and conducting financial stress tests to help steer them onto the path of long-term fiscal health. This is particularly important at a time when many service providers are experiencing significant revenue loss due to the COVID-19 pandemic and postponing improvements and expansions as a result.

Creating a Resilient Water Supply

Drawing on guidance from USAID’s climate risk assessment and planning tools, SWP has placed climate considerations at the core of its evidence-based interventions for creating a more resilient, reliable water supply. “Building on our past experience responding to the impacts of Typhoon Haiyan and severe droughts, USAID ensured that climate resilience is an integral part of SWP’s design,” Edgar says. “USAID applies climate risk assessment in all its projects to understand and mitigate risks from climate change. SWP benefited from USAID’s robust assessment of climate risks, making it well positioned to integrate resilience across interventions [including] integrating climate considerations in water-system engineering designs to ensure that systems can withstand impacts of typhoons and flooding.”

Since its launch, SWP has been collecting climate and hydrological data to monitor and analyze the condition of watersheds that serve as critical drinking water sources. This ongoing effort to fill in longstanding data gaps will go a long way toward improving water management in the three project sites, as well as elsewhere across the country, according to Roderick Planta, Assistant Secretary for Infrastructure Development of the National Economic and Development Authority (NEDA). As the Philippines’ planning agency, NEDA leads and coordinates water sector programming and serves as SWP’s key implementing partner. “Poor data availability, management, and accessibility have been hounding water sector planning and policymaking,” he admits. “Through the collection and subsequent analysis of these various data, a more informed and sound, scientific recommendation or decision can be expected. While the data to be gathered under SWP are context-specific, the tools and methods that

will be developed may be further enhanced and scaled up at the national level.”

This month, SWP will present that data for the first time in a series of hydrological studies that seek to shape decision-makers’ thinking about water and hopefully lay the foundation for more sustainable water management practices. “With new and improved data-driven analyses capabilities and better, more frequent reporting accompanied by resonating public communication campaigns, local actors may be motivated — even compelled — to improve water resource management that can benefit all Filipinos,” says Hardy.

The new data-rich hydrological studies will shed further light on the islands’ delicate water balance and serve as “baseline data for more accurate and reliable predictions in the future,” says Francisco Alolod, a manager with the General Santos City Water District. This information in turn will empower water officials like Alolod to more effectively manage water supply in a manner that can withstand climate shocks and extreme weather events.

The studies “are crucial in establishing the baseline water security situation” of the three provinces where SWP is active, explains Alma Porciuncula, SWP’s director. “The reports include analyses of land cover and temperature and rainfall variations in the watersheds as factors impacting surface water runoff and recharge rates, establishing the current and projected conditions of the water resources. The findings of the studies will feed into policy actions, plans, and programs of the provinces.”

According to local SWP partners, better data can also go a long way toward shaping the design and implementation of more sustainable water management techniques and enhancing watershed protections. “Our local government will surely benefit from these hydrological analyses by using them as the basis for our future water-system projects and designs,” says Israel Delvo, an administrative officer in Alabel municipality. Delvo added that better access to hydrological data can help local officials — including emergency response personnel — identify patterns and more accurately predict and respond to future climate disruptions.

Facing Uncertainty, Well-Prepared

The path forward will not be an easy one, with all forecasts appearing to indicate rough weather ahead. “The Philippines is one of the world’s most vulnerable countries to the negative impacts of climate change,” points out USAID’s Joanne Dulce, who manages SWP. “Climate projections from the Philippine Atmospheric, Geophysical and Astronomical Services Administration indicate that increases in temperature, changes in rainfall, and extreme weather events nationwide will intensify between 2020 and 2050 and are likely to cause more droughts, floods, and storms.”

Despite the looming uncertainty, USAID’s partnerships in the Philippines are built for the long haul, drawing on a history of cooperation. After all, SWP “builds upon USAID’s previous successes that have promoted water security in the Philippines,” says Hardy. “Since 2013, USAID has invested \$30 million to increase access to water supply and sanitation services for underserved communities alone.”

In the years ahead, SWP will continue to help better equip and position water managers across the Philippines to successfully respond to climate disruptions. Thank-

fully, the future looks bright. After all, Filipinos have demonstrated their collective resilience time and time again in response to a wide range of recent shocks, from typhoons and floods to droughts and COVID-19. “I have witnessed the Filipinos’ incredible resilience to bounce back from the wave of disasters that hit the country,” says Edgar. “While the economic recovery from the pandemic will be slow, I am fully confident that the Philippines will be able to adapt to a new and better normal.”

SWP and its partners are well-positioned to meet the moment and have ambitious plans: By the time SWP closes its doors in 2024, it expects to improve water and sanitation services for more than 1 million Filipinos, laying the foundation for a more resilient and prosperous future.

By Russell Sticklor



Additional Resources:

- [USAID/Philippines](#)
- [DAI: Safe Water Project](#)
- [Globalwaters.org: Philippines](#)

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