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Channeling Financial Flows for Urban Water and Sanitation

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THE ISSUE

- Providing clean water and sanitation will be one of the greatest global challenges over the next decade due to population growth and urbanization. Today, 785 million people lack access to clean drinking water, and over 2 billion lack access to a toilet.[1,2]
- Additional sources of finance are needed in order to reduce the investment gap for water and sanitation programs. The World Bank estimates that current investment levels will need to at least triple in order to meet Sustainable Development Goal 6, which aims to ensure that people in all countries have access to sustainable water and sanitation.[3]
- Through development agencies like USAID and OPIC, the United States can leverage additional private capital and increase the efficiency of existing water and sanitation programs. Reducing conflicts over water and ensuring stability in developing countries benefits U.S. development, security, and economic interests abroad.

INTRODUCTION

Gaining access to potable water has been a challenge in developing countries for centuries. According to the *Global Risks 2015* report by the World Economic Forum, global water crises are the biggest threat facing the planet over the next decade.[4] Globally, 785 million people still lack even basic drinking water services, and at least 2 billion people are using drinking water sources that have been contaminated with feces.[5] As a result, 485,000 people die each year from diarrheal diseases related to contaminated drinking water.[6] Cities in particular have found it difficult to provide drinking water and sewage systems for their residents, as urban populations skyrocket and groundwater runs dry. According to the World Bank, around 4 billion people live in urban areas, accounting for over 50 percent of the global population.[7] Of these urban residents, 500 million live in coastal areas that are subject to flooding and contaminated ground water as a result of saltwater intrusion, which causes increased cases of diarrhea, cholera, and malaria.[8,9] There are two competing challenges: (1) the demand for clean drinking water is increasing as the global population soars, and (2) fresh water resources are increasingly scarce.

Development programs focused on water, sanitation, and hygiene (WASH) have gradually shifted from rural areas to focus more heavily on urban contexts as well. According to the UN, inequalities in the access and cost of WASH services are most prevalent in urban areas.[10] The challenges to delivering potable water and providing adequate sanitation facilities in cities include poor-quality infrastructure, scarce natural resources, pollution, and high cost of transportation. The U.S. Agency for International Development (USAID) found that poor access to sanitation and hygiene costs the global economy approximately $220 billion per year.[11]

Water sewage system in Monrovia, Liberia.

Source: Christopher Metzger, August 2018.

Many cities around the world have been forced to support populations with millions more people than ever intended. Originally constructed in 1824, Monrovia, the capital of Liberia, now has to provide public services like clean water, sanitation, and housing for over 1.5 million residents.[12] Building new infrastructure for water and sewage systems in cities like Monrovia can be extremely difficult, as many of the existing underground water distribution networks were built using wooden or lead pipes and are difficult to map. Maintenance for some systems has been deferred for years, leading many to be at risk of collapsing in the next few years.

In addition, vulnerable groups, such as women, low-income families, and refugees, are more affected by issues related to water and sanitation in urban areas than others. Women are often responsible for collecting water for the household and spend an estimated 200 million hours every day collecting water.[13] Lower-income families in urban areas have less access to services and are often forced to pay 10 to 20 times more than their more affluent neighbors for WASH services because the utilities in low-income areas are poorly managed.[14] Exacerbating the problem, many of these residents are not included in the official service statistics because they do not pay taxes and their housing arrangements are part of the informal economy.[15]

Many of the challenges related to clean water and sanitation can be linked to pollution and climate change. Big metropolitan areas are often built over existing water sources and along the coast, allowing trash, chemicals, human water, and saltwater to contaminate groundwater. India is one example of a country where rapid urbanization and demographic changes have contaminated and depleted the country's natural water systems. According to India's Central Pollution Control Board, 63 percent of the sewage flowing into rivers in urban areas every day is left untreated.[16] As a result, 70 percent of India's water has become contaminated, and India's water quality ranked 120 out of 122 countries, according to Niti Aayog, an Indian think-tank.[17] Some have even gone as far as to claim that 21 major cities in India will run out of groundwater by 2020, which would affect around 100 million people.[18] Dramatic steps need to be taken now in order to protect what groundwater remains for the future.

Another place that exemplifies the challenges associated with providing urban water is Jakarta, the capital of Indonesia, which is home to over 10.5 million people.[19] Jakarta is sinking faster than any other big city on the planet, mainly due to its citizens digging illegal wells for groundwater due to the scarcity of drinking water.[20] The *New York Times* estimated that about 40 percent of Jakarta was below sea level in 2017, and some of the coastal districts have sunk as much as 14 feet in recent years.[21] As a result of the city sinking, infrastructure has suffered: roads have been destroyed, pipelines contaminated, and rivers polluted. Especially in the north of the city, closest to the Java Sea, Jakarta is prone to flooding, which spreads diseases from contaminated groundwater, septic tanks, and improperly disposed sewage. According to the *Financial Times*, if the current rate of sinking continues, 95 percent of north Jakarta will be underwater by 2050, affecting 1.8 million people.[22] Even further, 96 percent of Jakarta's population does not have a wastewater system, dumping waste and sewage directly into the ground or into septic tanks that contaminate groundwater.[23] The situation has grown so bad that President Joko Widodo has decided to move the capital to the East Kalimantan Province on the island of Borneo.[24] On April 30, 2019, President Joko Widodo announced, "In Java, the population is 57 percent of the total for Indonesia, or more than 140 million, to the point that the ability to support this, whether in terms of the environment, water or traffic in the future, will no longer be possible so I decided to move outside of Java."[25]

Jakarta is sinking faster than any other big city on the planet, mainly due to its citizens digging illegal wells for groundwater due to the scarcity of drinking water.

ACTION FOR WATER AND SANITATION ACCESS

Despite these challenges, global progress is being made to provide access to clean water and sanitation for everyone. One of the UN's 17 Sustainable Development Goals (SDGs) is specifically on water: Goal 6 calls nations to "Ensure availability and sustainable management of water and sanitation for all." SDG sections 6.1 and 6.2 aim to achieve universal and equitable access to safe and affordable drinking water for all, achieve access to adequate and equitable sanitation and hygiene for all, and end open defecation by 2030, paying special attention to the needs of women and girls and those in vulnerable situations.[26] Many of the SDGs (especially Goal 9: Industry, Innovation, and Infrastructure; Goal 11: Sustainable Cities and Communities; Goal 13: Climate Action; and Goal 14: Life Below Water) cannot be achieved without also addressing the challenge of clean water and sanitation. In order to achieve the SDGs, countries around the world must further strengthen these efforts to provide sustainable drinking water and sanitation services for their populations.

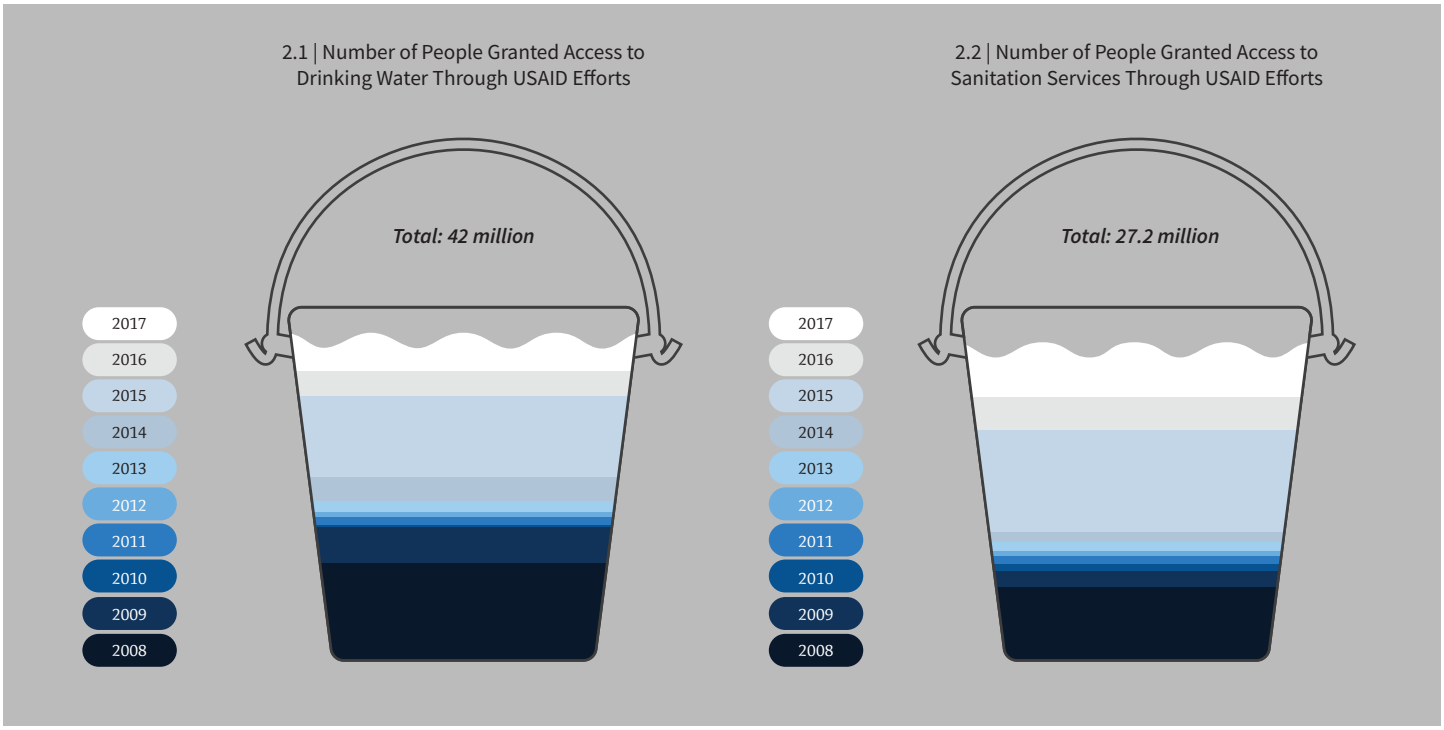
UN-Water was established in 2003 to help coordinate the water and sanitation programs across 30 UN organizations. UN-Water played an important role in making SDG 6 a priority in the 2030 Agenda for Sustainable Development, the 2015-2030 Sendai Framework for Disaster Risk Reduction, the 2015 Addis Ababa Action Agenda on Financing for Development, and the 2015 Paris Agreement within the UN Convention Framework on Climate Change.[27,28,29,30] UN-Water has also raised the profile of water and sanitation issues by celebrating "World Water Day" on March 22 and "World Toilet Day" on November 19 each year. As a result of the SDGs and widespread attention to the problem, the proportion of the people globally using safely managed drinking water services increased from 61 to 71 percent from 2000 to 2017, and the proportion using safely managed sanitation services increased from 28 to 45 percent over the same period.[31] However, these numbers do not tell the full story since access to water and sanitation differs greatly by region. For example, only 24 percent of the population of sub-Saharan Africa had access to safe drinking water in 2015, and only 28 percent had basic sanitation facilities that are not shared with other households.[32] According to the GLAAS 2019 Report by UN Water and the WHO, 20 countries and territories reported a funding gap of 61 percent between identified needs and available funding to reach national WASH targets.[33]

In addition to the work done by multilateral organizations, the United States has been a leader on supporting clean water and sanitation in developing countries for years.

Figure 1: SDG #6: Clean Water and Sanitation

Source: Data from "Sustainable Development Goal 6," United Nations, https://sustainabledevelopment.un.org/sdg6.

Figure 2: Number of Individuals Gaining Access by Year



Source: Data from USAID's annual water and development reports: https://www.globalwaters.org/tags/annual-reports.

Through the Water for the World Act of 2014 and the Water for the Poor Act of 2005 (Box 1), the United States has prioritized WASH programs, which have been mainly implemented by USAID, the State Department, and the Millennium Challenge Corporation (MCC). In FY 2017, USAID invested $449.6 million in water, sanitation, and hygiene activities in 41 countries.[34] From FY 2008 to FY 2017, USAID's programs helped 42 million people gain access to an improved drinking water service and 27.2 million gain access to improved sanitation service.[35] USAID's level of funding for water and sanitation has remained relatively consistent over the past few years. USAID's partnerships with the private sector, donors, academia, and host-country governments on WASH programs accounted for over $103 million in 2016.[36] This does not include local private capital leveraged through guarantees from USAID's Development Credit Authority (DCA) or projects like the Philippines' Water Revolving Fund, the Financial Institutions Reform and Expansion-Debt and Infrastructure (FIRE-D) Project in India, SUWASA in Africa, and WASH-FIN (see below), which have additionally mobilized hundreds of millions of dollars. Other U.S. government efforts include those by the Department of Treasury, which supported, for example, the 2017 local currency municipal bond in Pune, India for 24/7 water service provision.[37]

Launched in October 2016, the USAID Water, Sanitation, and Hygiene Finance (WASH-FIN) Project aims to close financing gaps and improve governance structures that enable countries to become self-reliant by accessing reliable sources of capital for sustainable, climate resilient water and sanitation infrastructure.[38] Implementation of the project is led by Tetra Tech, with support from Open Capital Advisors, Segura Consulting, and Global Credit Rating.[39] WASH-FIN works with national governments, development partners, private capital market institutions, service providers, and local governments and community stakeholders in eight countries.[40] USAID should continue to support WASH-FIN and look to build on its early success in leveraging additional financing for sustainable water and sanitation solutions.

BOX 1: U.S. LEGISLATION ON GLOBAL WATER STRATEGIES

Following unanimous consent in both the U.S. House of Representatives and Senate, the Senator Paul Simon Water for the World Act was signed into law on December 19, 2014 under President Barack Obama.[41] The law's two main points are: (1) water and sanitation are critically important resources that impact many aspects of human life, and (2) the United States should be a global leader in helping provide sustainable access to clean water and sanitation for the world's most vulnerable populations.[42] By investing in better water and sanitation services, the United States hopes to decrease the number of child deaths, reduce poverty,

and boost the number of girls attending schools.[43] More than 75 NGOs and various other faith-based organizations supported this legislation.[44]

The Water for the World Act requires that the United States produce a Global Water Strategy every five years, starting October 1, 2017 and ending October 1, 2027.[45] The 2017 Global Water Strategy laid out a framework for how USAID, the State Department, and development agencies could improve water and sanitation conditions around the world. The objectives include promoting sustainable access to drinking water and sanitation services, encouraging the adoption of key hygiene behaviors, propagating sound management of freshwater resources, reducing conflicts over shared waters, and strengthening water sector governance, financing, and institutions.[46] The 2017 Global Water Strategy states that, "Our vision is a water secure world, where people have sustainable supplies of water of sufficient quantity and quality to meet human, economic, and ecosystems needs while managing risks from floods and droughts."[47]

The law built off the success of the Senator Paul Simon Water for the Poor Act of 2005, which had required the secretary of state, in consultation with the USAID administrator, to submit a report every year from 2006 to 2014 updating Congress on the progress made toward tackling water and sanitation issues.[48] This law established the provision of safe drinking water, sanitation, and hygiene as a priority for U.S. foreign policy.

OPPORTUNITIES FOR FINANCING WATER AND SANITATION

The UN General Assembly and the Human Rights Council first recognized the human right to access safe drinking water as part of binding international law in 2010.[49] The human right to access sanitation was explicitly recognized as a distinct right by the UN General Assembly in 2015.[50] This has led to a debate among international organizations about whether drinking water should be considered free since it is a human right. In 2009, Catarina de Albuquerque, UN special rapporteur at the time, said that water can have a price as long as people are not excluded and encouraged the private sector to have a role.[51] Most urban water systems in developing countries fall under the responsibility of national and local governments and lack sustainable financing.

Traditional WASH financing comes from a number of sources, including tariffs and fees paid by the WASH users, domestic tax revenues passed from the central or local governments to the WASH sector, and grants from international donors, charitable foundations, and non-governmental organizations interested in supporting the sector.[52] Investing in clean water and sanitation offers significant returns for development actors. A report by the WHO found that the benefit-cost ratio was 5.5 and 2.0 for improved sanitation and drinking water, respectively.[53] Yet, many cities are dependent on outside development actors to support services, and fee collection remains an issue for many local governments and municipalities. Funding from NGOs and foreign governments is neither sufficient nor sustainable, and efforts should be focused on strengthening developing countries' capacities to manage and finance their own urban water systems.

> *"A lack of funding and financing is a critical bottleneck to achieving the SDG WASH targets for vulnerable groups."*
>
> *- Luis Andrés and Ye-rin um of the World Bank*[54]

Traditional methods of development finance will not be enough to achieve universal access to water and sanitation systems. For the first time since 2011, official development assistance for WASH declined in 2017, to $4.9 billion.[55] Development partners in the WASH sector have identified a lack of blended finance and an inadequate amount of resources focused on the poorest and most vulnerable groups as the main challenges.[56] The World Bank estimates that the annual cost of meeting the first two targets of SDG 6 would require $114 billion each year, which is about three times the current investment levels.[57] This number does not include the cost of operating and maintaining the infrastructure over time.[58]

Development finance institutions (DFIs) can incentivize local private capital through financial institutions and spur domestic and international private companies to invest in water and sanitation systems by reducing the financial risk involved with investments. Blended finance aims to "crowd in" private capital by managing, transferring, or mitigating the risk inherent or perceived in the developing world while also producing a return and creating jobs and growth through investments that would otherwise not exist.[59] For large-scale projects, DFIs like the Overseas Private Investment Corporation (OPIC), which will soon become the U.S. International Development Finance Corporation (DFC) and include USAID's DCA guarantees program, could

offer specialized financial products such as loan guarantees, direct lending, and possibly equity for water and sanitation finance, including in local currency.

The first USAID partial credit guarantees issued in 1999 were for WASH, and USAID has since provided DCA guarantees to utilities, municipalities, companies, and finance facilities for commercial bank loans and bonds for WASH. These transactions are typically tied to technical support and a bilateral assistance project to ensure bankable investments are developed and the guarantee is utilized. In order to provide these guarantees, OPIC must identify a financial institution with interest and liquidity, after which OPIC backs up the investment. Per project, OPIC can typically guarantee up to $250 million.[60] In 2018, OPIC entered into a contract with Befsea Desalination Developments Ghana Limited, a company in Accra, Ghana looking to upgrade their reverse osmosis desalination plant. By desalinating seawater, the plant is able to provide cleaner and more sanitary water for residents around Accra. OPIC agreed to provide $50 million in loans and guarantees for up to 18 years for the project.[61]

There is also significant demand for loans and financing toward small-scale household solutions to water and sanitation issues, such as water filtration systems. The Bill and Melinda Gates Foundation reports that there is a $12 billion demand for affordable financing that could help 565 million people gain access to quality WASH systems.[62] Increasing the amount of financing available to citizens in low- and middle-income countries will allow them to take out loans in order to purchase toilets and water purification systems for their homes. One of the leaders in providing these microfinance solutions is Water.org (Box 2). Through the WaterCredit initiative and WaterEquity platform, Water.org has provided more than 21 million people in Africa, Asia, and Latin America with safe water and sanitation.[63]Every dollar invested in WaterCredit creates $59 worth of impact.[64]

BOX 2: MICROFINANCE SOLUTIONS OFFERED BY WATER.ORG AND WATEREQUITY

Water.org has a long history of providing grants for microfinancing institutions to improve water and sanitation systems in households. Originally founded in 2009 by Gary White and Matt Damon, Water.org starts by identifying a region that is in need of microfinancing and carefully selecting local institutions to partner with and help establish water and sanitation loans in their portfolio of offerings.[65] Through the WaterCredit initiative, Water.org provides technical assistance, connections, and resources so that these local microfinance partners can provide small and affordable loans that can be used to put a tap or toilet in households.[66]

WaterEquity was launched in 2017 by Water.org as an independent non-profit focused heavily on investing in microfinancing institutions and mobilizing capital in low- and middle-income countries to end the global water crisis.[67] Matt Damon and Gary White were inspired to launch WaterEquity after seeing that the vast number of families in need of $200-300 loans were overwhelming lenders' capacity.[68] These loans could be used to buy a household's first-ever toilet or install a water catchment systems.

In March 2019, WaterEquity officially closed the $50 million WaterCredit Investment Fund 3 (WCIF3), which invests in microfinance institutions, as well as small sanitation-related businesses, in India (45 percent), Cambodia (30 percent), Indonesia (20 percent), and the Philippines (5 percent).[69,70] The fund offers high-net-worth investors, financial institutions, and foundations a modest target return of 3.5 percent over its seven-year term and aims to provide 4.6 million people with safe water and sanitation at the same time.[71] To be safe, $5 million in first-loss guarantees were set aside in the unlikely scenario that the fund suffers a loss.[72] Investors in the fund include OPIC, Bank of America, Conrad N. Hilton, the Skoll Foundation, and Niagara Bottling.[73] As of July 2019, WCIF3 had completed seven loans to microfinance institutions, resulting in 60,000 microloans to families living in poverty (93 percent of the borrowers were women).[74] The fund also had a significant impact, with 224,100 people gaining access to sanitation and 39,700 people gaining access to water.[75]

Every dollar invested in WaterCredit creates $59 worth of impact.

GOING FORWARD

RECOMMENDATIONS FOR U.S. AGENCIES

The United States remains a global leader on water and sanitation issues. This does not mean that it is exempt from the challenges of supplying clean drinking water, as seen through the water crisis in Flint, Michigan.[76] Many historic cities in the United States suffer from outdated underground water distribution systems and contaminated groundwater.

For example, over 80 percent of New Orleans' 1,500 miles of water pipes were installed at least 80 years ago and are under threat of saltwater intrusion.[77] St. Petersburg, Florida is another city where rain and flooding has overwhelmed stormwater systems, forcing the city to pump partially treated sewage into Tampa Bay, Boca Ciega Bay, and the Clam Bayou Nature Preserve.[78] Federal, state, and municipal governments should work to build more resilient cities. Increased flooding, growing urban populations, and saltwater intrusion along coastal towns will only exacerbate the challenges to providing sustainable WASH systems in cities.

Driven by climate change and unpredictable weather, water and sanitation challenges are becoming more and more difficult to address, and the United States must remain committed to strengthening WASH systems at home and abroad. If the United States limits its engagement to just domestic efforts, WASH systems in cities around the world will deteriorate beyond repair and contribute to increased global instability. Through the Water for the World Act, the United States has demonstrated its commitment to supporting clean water and sanitation services abroad. Increasing access to capital for WASH programs in developing countries saves lives, helps strengthen the resilience of cities, and reduces dependency on donor agencies. Reducing fragility in developing countries also supports U.S. security and economic interests abroad.

1. ***Mobilize private capital to support increased water and sanitation in cities.***

In order to address the $114 billion in financing needed, scarce resources from the public sector must leverage private capital to crowd in all available forms of funding and financing.[79] Ideally, the private capital mobilized will be from DFIs and capital markets and in local currency. This is more sustainable for practical reasons, as it engages local institutions, and also for financial reasons, as local currency debt is better matched to the revenues of the service providers and does not carry foreign exchange risk. There may be an opportunity to engage further with local pension funds looking for low-risk, long-term investments.

DFIs should play a bigger role in crowding in capital for WASH systems. When OPIC transforms into the new DFC, it should use the new investment tools at its disposal to support urban water infrastructure projects. OPIC was a debt investor for the WCIF3 blended finance fund, but through the 2018 BUILD Act, the new DFC will have the capacity to make debt and equity investments—including in local currency—offering a new opportunity to further leverage private-sector financing.[80,81] The DFC can benefit from the connection with USAID and the DCA legacy. As the DFC has a mandate to deliver results in the least-developed countries, partnering with bilateral and multilateral DFIs can help alleviate risks and costs.

Increasing access to capital for people in low- and middle-income countries will allow households the ability to purchase their first toilets and tap water systems. Microfinancing is another way to expand the amount of private capital available for households to get the loans they desperately need and on favorable terms. DFIs like OPIC should continue to support funds like WaterEquity's WaterCredit Investment Fund 3 through debt financing and equity investments. Partnering with other DFIs through co-investments also gives a certain level of credibility to investment opportunities because investors know that the U.S. government is supporting the fund. So far, 99 percent of WaterCredit's cumulative loans have been paid back.[82]

2. ***Increase the efficiency and improve the performance of WASH systems.***

Part of bridging the finance gap should also be to increase the efficiency and performance of existing water and sanitation systems. Building new infrastructure is needed in many instances, but many of the problems that utility providers face are related to management and governance. Service providers struggle with collection or lose money due to non-revenue water from spills or leaks. Strengthening urban water systems should be a part of smart cities initiatives and leverage new technologies when appropriate. Cities' WASH systems could be greatly improved by access to reliable data and information. Seeing where the leaks are on a map would go a long way to fixing them and preventing them in the future. Technology should be used to map complex underground piped networks and monitor collection points. However, without addressing the governance and enabling environment challenges, no amount of new technologies will be able fix all the problems that systems face.

A good example of technology that support water systems is mWater, a free data management platform used by over 40,000 people in 158 countries to map and monitor water and sanitation sites, conduct surveys, and collaborate with local governments.[83] Since being launched, mWater has been used by 40,000 different researchers from NGOs and governments.[84] Another example is the innovation hub that USAID has developed in India focused on water and sanitation issues. So far, it has been focused on supporting innovations related to service delivery and technological developments. The hope has been that by encouraging these

innovations, there will be a greater number of homegrown solutions to water and sanitation problems in India.[85]

USAID should build on the success of its past WASH interventions and continue to focus efforts on collecting data surrounding water and sanitation systems and protect the supply and availability of safe drinking water. Special attention should be paid to urban water systems moving forward as more and more people leave rural communities for cities. Lack of reliable performance information often leads to policy decisions which are not based on any sort of hard data and lead to problems with the financial viability of utilities. If data collection and management were improved at the local levels, some of these issues might be resolved.[86]

3. *Invest in domestic resource mobilization and develop municipal bond markets to help finance urban water solutions.*

USAID Administrator Mark Green has recognized the potential of domestic resource mobilization (DRM) reforms and has made it a central theme of USAID's new *Journey to Self-Reliance* framework.[87] A part of USAID's WASH-FIN project is focused on supporting DRM by helping service providers leverage domestic resources and build local capacity to track investment.[88] Rwanda's tax intake as a percentage of GDP has increased by roughly 6 percent over the past 17 years.[89] Improving DRM efforts and prioritizing water and sanitation will help local and national governments finance their own drinking water and sanitation services. When DRM systems are strengthened, local governments will be able to finance more water and sanitation systems. An example of this is the USAID Indonesia Urban Water, Sanitation, and Hygiene (IUWASH) Project from 2011-2016 and the IUWASH PLUS Project from 2016-2021, both implemented by DAI. IUWASH brought reliable water supply to more than 3 million people and safely managed sanitation services to more than 230,000 city dwellers.[90] Through the IUWASH project, USAID and DAI partnered with Indonesian government agencies (central, provincial, and local), local government-owned water utilities (PDAMs), NGOs, communities, universities, and the private sector.[91] If governments in low- and middle-income countries can increase DRM, then governments can begin financing a larger portion of the WASH programs in their urban communities and rely less on the international community.

Providing utilities and quality infrastructure for urban populations will remain a challenge for developing country governments. As people migrate from rural contexts to cities, local authorities are under increased pressure to provide sustainable and reliable public services to their constituents, such as water, transportation, sustainable energy, and housing.[92] The development of local currency bond markets, especially municipal bonds, can help local governments address numerous challenges to urban economic growth. Yet this will not be an easy endeavor: developing bond markets will require tackling weak WASH institutions and regulations, substandard account-keeping practices, and poor fiscal practices. USAID supported the first municipal bond in India in 1994, and capital market laws and regulations likely require reforms. Recent reforms include allowing foreign portfolio investment, and municipal bonds were recently removed from following corporate bond requirements.[93,94] Through the FIRE-D Project in India, USAID was able to provide a loan guarantee system that supported the local municipal bond market.[95] The project lasted from 1994 to 2011 and focused more broadly on mobilizing resources and increasing cities' abilities to finance water and sanitation systems in 16 states in India.[96]

4. *Ensure the sustainable use of water at the supply and at the collection point.*

As part of the *Journey to Self-Reliance* framework, all development organizations should be working themselves out of a job and toward a point where communities in low- and middle-income countries no longer need to rely on the international community for assistance. This applies to the WASH sector as well. In order for governments in sub-Saharan Africa or Southeast Asia to house, feed, and provide services for their urban populations, it is critical that they have sustainable access to clean water and sanitation systems. The support from the international community toward achieving SDG 6 is having a tremendous impact in communities around the world, but concerns remain with the long-term sustainability of these newly constructed infrastructure projects.

Donor agencies and NGOs should not only fund the initial construction of new WASH systems but also help communities receive the training necessary to maintain the systems over time. Development programs may introduce new ways of collecting groundwater but fail to help communities develop maintenance plans to deal with malfunctions. New technologies like pumps and filtration devices will not have the intended impact if locals cannot maintain the devices or use them properly. The International Institute for Environment and Development (IIED) reported that up to $360 million had been spent on constructing boreholes and wells in Africa that then became useless because they were not maintained or fixed when they broke down; as a result, 50,000 water supply points were not functioning across sub-Saharan Africa in 2009.[97] In order to have sustainable financing, some communities

should consider charging a small fee for access to water collection points. This money could be used to support drinking water systems even after NGOs and development agencies leave communities.

Teaching communities the importance of protecting groundwater and preventing leaks and saltwater intrusion are important ways of improving the sustainability of WASH systems as well. According to the Chicago Council on Global Affairs, groundwater has the highest rate of extraction of any raw material on the planet, and rates of withdrawal are increasing at nearly twice the rate of population growth.[98] Strong country ownership and governance reforms are needed in order to achieve SDG 6.

CONCLUSION

New sources of financing are needed in order to provide clean water and sanitation for citizens around the world. The challenge is particularly acute in cities where population growth and urbanization are stretching resources and deteriorating living conditions. The United States and its development agencies must further leverage private-sector capital for WASH programs and increase the efficiency of existing WASH systems. Unless significant progress is made, water and sanitation will be the greatest global challenge of the next decade. ■

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