Universal access to safe water and sanitation - how much would it cost

The 2030 Agenda encompasses a broad scope of ambition for clean water and sanitation. Sustainable Development Goal 6 – clean water and sanitation, goes beyond the call for universal access to safe and affordable drinking water and sanitation, and ending open defecation to include increasing water-use efficiency, water quality as well as water resource management to help conserve water-related ecosystems. Access to safe water and sanitation for all is an essential requirement for attaining health targets (SDG 3) and reducing deaths attributed to unsafe water, sanitation and hygiene. Under SDG 9, water and sanitation are basic infrastructures that support well-being and economic development.

Universal access to water, sanitation and hygiene promotes economic, social and environmental well-being. In developing countries, diarrhea kills as many as 2 million people each year, mostly children. Access to safe drinking water contributes to positive educational outcomes and worker productivity. It also promotes gender equality (SDG 5) by making it unnecessary for rural females in the poorest Asian countries to walk long distances to fetch household water or for sanitation needs. Poor sanitation and inadequate water supply are estimated to cause economic losses of between 0.7 and 4.3 percent of GDP in developing countries and 1.5 percent of global GDP (Hutton, 2012). Moreover, water is an important productive resource for agriculture, fishery, industries, transportation and recreation. As population and industries continue to grow, demand for water increases. At the same time, climate change impacts in the form of droughts and flooding can affect food security and aggravate hunger and malnutrition (SDG 2). Improved management of water can thus contribute to better production of food and energy and enhance economic growth. A dollar invested in water supply, sanitation and hygiene has returns of $9 (Hutton, 2015).

Where Asia and the Pacific stands

Between 1990 and 2015, access to sanitation facilities increased from less than 50 to 76 per cent, yet 519 million people still lack access to such facilities. While 25 per cent of the population in East Asia and the Pacific have improved access water—higher compared to other regions, 130 million people in the region still lack access to improved water supply (UNICEF, 2015). The proportion of people in the Pacific islands with access to water is still below the rest of Asia as a result of urbanization, population growth, changing land-use and climate change impacts.

Financial requirements for universal access to water supply and sanitation

Prior to the adoption of the SDGs, studies have estimated the annual costs of halving the proportion of population without access to safe drinking water and sanitation to be between from $1.8 to $136.5 billion. (Hutton and Haller, 2004; Hutton and others, 2007; and Hutton and Bartram, 2008a, 2008b). A WHO (2012) study estimated that $145 billion is needed during 2010-2015 to achieve such target, while universal coverage would require additional investment of $390 billion. East Asia had the highest financing requirements for drinking water and sanitation combined, needing an estimated $120 million.

The 2030 Agenda targets and indicators have a broader scope than the Millennium Development Goals. SDG 6 covers quality, accessibility and availability. “Improved” access to water means a water source within a 30-minute round-trip while a “safely managed” level of service implies a higher expectation and would require upgrading of water source infrastructure to be within the premises. Likewise, SDG 6 targets on sanitation include the impact of discharge and treatment on the environment and public health.

In estimating the cost of attaining universal access to clean water and sanitation under the SDGs, Hutton and Varughese (2016) finds that $114 billion is needed to achieve these targets for 140 low- and middle-income countries.

Investment needs in Asia-Pacific

This study adopts the ESCAP (2017) methodology to estimate investment needs for universal access to clean water and sanitation by 2030. The following indicators were selected to capture the level of access: the percentage of urban and rural populations with access to improved water sources; and the percentage of urban and rural populations with access to improved sanitation facilities. To allow for county-specific pathways, the analysis in this chapter offers two technology options with “high” and “low” cost requirements: the low-cost scenario refers to the “basic” level of service where an improved water source is within a 30-minute round-trip, while the high-cost scenario refers to the “safely managed” level of service where water and sanitation infrastructure is within the premises, readily accessible and free from contamination.

The cost to achieve a higher level of water and sanitation infrastructure is almost double that of achieving the basic level of services. It is estimated that developing countries in the Asia-Pacific region will require an additional $14 billion annually to provide universal access to water and sanitation facilities by
to play in self-provision or self-investments. From different sources, while households also have a large role in rural settings, more investments may be needed by the service provider tariffs can play a larger role in urban settings. Access can be funded through user fees, water and sanitation loans, such as in India, have also raised household demand for latrines. Unlike other sectors, such as telecommunications where access can be funded through user fees, water and sanitation in urban and rural settings requires different considerations. In the urban setting, service provider tariffs can play a larger role. While in rural settings, more investments may be needed by the public sector in transitioning to piped systems. Furthermore, financing capital versus operational expenditures can often be from different sources, while households also have a large role to play in self-provision or self-investments.

Policy and financing options

For policy and financing considerations, it is important to make distinctions between water and sanitation services as well as rural and urban settings. Within urban settings, improving management of billing, fee collection, fixing leakage and making routine maintenance can help improve efficiency of funds and the reliability of water supply services (World Bank and UNICEF, 2017). Within rural settings, lack of community ownership and lack of incentives for households to invest in sanitation are some examples of why water and sanitation targets are not reached.

Raising awareness on the risks to health posed by open defecation and investing in behaviour change related to hygienic practices have proven to be more effective than subsidies in incentivizing households to invest in latrines (World Bank and UNICEF, 2017). Making latrines cheaper or providing "toilet loans", such as in India, have also raised household demand for latrines.

Unlike other sectors, such as telecommunications where access can be funded through user fees, water and sanitation in urban and rural settings requires different considerations. In the urban setting, service provider tariffs can play a larger role while in rural settings, more investments may be needed by the public sector in transitioning to piped systems. Furthermore, financing capital versus operational expenditures can often be from different sources, while households also have a large role to play in self-provision or self-investments.

References


Endnotes


3. Ibid.

4. Target 6.1: By 2030, achieve universal and equitable access to safe and affordable drinking water for all; and Target 6.2: By 2030, achieve access to adequate and equitable sanitation and hygiene for all and end open defecation, paying special attention to the needs of women and girls and those in vulnerable situations

5. For more details on methodology and results, please see online technical appendix. Add link to online technical appendix.

The MPFD Policy Briefs aim at generating a forward-looking discussion among policymakers, researchers and other stakeholders to help forge political will and build a regional consensus on needed policy actions and pressuring reforms. Policy Briefs are issued without formal editing. This issue was prepared by Kiatkanid Pongpanich. It benefited from modeling inputs and comments from Candice Branchoux; overall comments and suggestions from Jun Fan and Evariste Kouassi-Komlan (The United Nations Children's Fund); Daniel Jeongdae Lee, Sweta Saxena, Mahesh Uniyal (Macroeconomic Policy and Financing for Development Division, ESCAP). For further information on this issue, please contact Hamza Ali Malik, Director, Macroeconomic Policy and Financing for Development Division, ESCAP (escap-mpdd@un.org).