

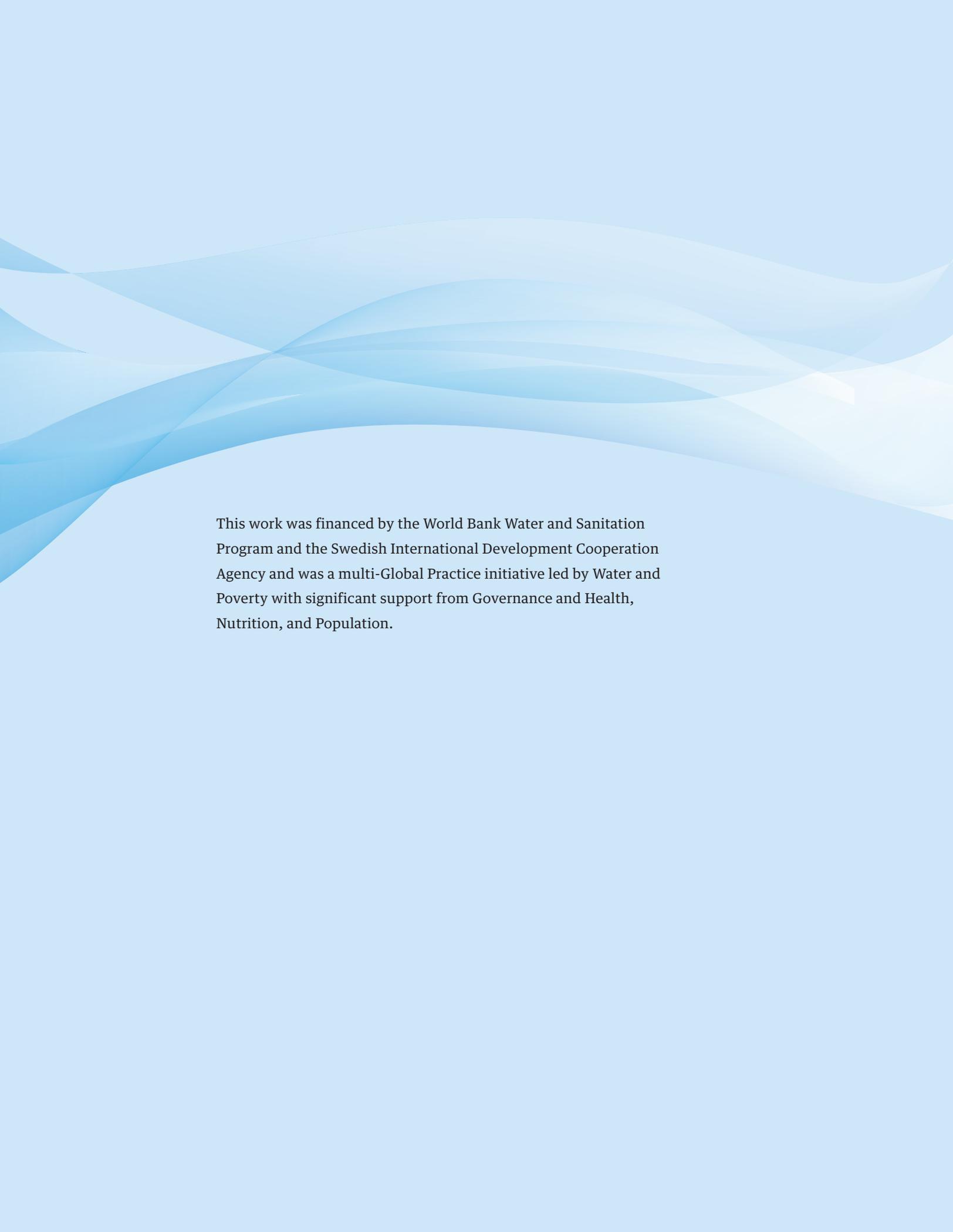
# Promising Progress

*A Diagnostic of Water Supply, Sanitation, Hygiene, and Poverty in Bangladesh*

## Executive Summary

### BANGLADESH



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# Promising Progress

*A Diagnostic of Water Supply, Sanitation,  
Hygiene, and Poverty in Bangladesh*

This publication is the executive from the Water Supply, Sanitation, and Hygiene (WASH) Poverty Diagnostic, *Promising Progress: A Diagnostic of Water Supply, Sanitation, Hygiene, and Poverty in Bangladesh*. The full-length report is available at <http://hdl.handle.net/10986/29450>. Please use the full report for citation, reproduction, and adaptation purposes.

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# Abbreviations

BWPD	Bangladesh WASH Poverty Diagnostic
CLTS	Community-Total Led Sanitation
GoB	Government of Bangladesh
JMP	Joint Monitoring Programme
LGI	Local government institutions
MDG	Millennium Development Goal
SUN	Scaling Up Nutrition
UP	Union parishads
WASA	Water supply and sewerage authorities
WASH	Water supply, sanitation, and hygiene

## BANGLADESH



# Promising Progress

*A Diagnostic of Water Supply, Sanitation, Hygiene, and Poverty in Bangladesh*

*Moving to higher quality WASH services*



## WATER QUALITY

All improved water nationally, regardless of location of source . . .

Contaminated with E. Coli **41%**



**13%** Contaminated with arsenic

## SANITATION AND HYGIENE



**50.8 Million People** Share Sanitation Facilities



**7%** Urban Population is Connected to a Piped Sewerage System



**28%** Access to Handwashing Station with Soap and Water

## ACCESS INEQUALITY

**TOP 60 HOUSEHOLDS**

14% more access to improved sanitation  
22% access to on-premise improved water

SLUMS IN TOP 5 CITIES

**5 times less** Access to improved sanitation



## HEALTHCARE FACILITIES, SCHOOLS, WORK PLACES

SEPARATE TOILET FOR FEMALES

**1/2** Primary Schools



**1/4** Healthcare Facilities

HEALTHCARE FACILITIES



**1/3** Routine Water Shortages

Access to Piped Water  
**27%** Rural Areas **52%** Urban Areas



## HUMAN DEVELOPMENT STRATEGY

WASH-RELATED ENTERIC DISEASE



**3 times greater** burden for poorest than the richest

SLUMS IN THE FIVE LARGEST CITIES



Highest rate of **Undernutrition**



**Nearly half** of all children under five **stunted**

ADOLESCENT GIRLS

**1 in 4**

skip school when menstruating

## WASH BUDGET ALLOCATION

2016-17 WASH budget allocation **less than half** of what it was in 2007-08



The estimated total budget gap **47%** to meet the government's water targets by 2025

## Clean Water, a Stubborn Gap in Bangladesh's Development

*Shilpi lives in a small house in a farming village near the Bay of Bengal. She has just begun primary school, though both her parents are illiterate. Her home recently received its first electric power but remains without running water. Therefore, her afterschool chores include walking half a kilometer to collect water from a well by a cow pen. The water is contaminated with E. coli bacteria.*

*Nadia lives in a flat in Bharidhara, an affluent neighborhood of Dhaka. Her parents are university graduates who hold well-paying jobs. She has just begun primary school. Her home has air conditioning. Hot and cold running water are available at the turn of a tap. The water is still contaminated with E. coli bacteria.*



# Executive Summary

## Moving from MDGs to SDGs in Bangladesh's WASH Sector

**Ensuring safe water supply, sanitation, and hygiene (WASH) environments in Bangladesh is a cornerstone for its development.** Poor WASH is, of course, an important issue of public health, due to its potential to cause water-borne illness and even increased risk of mortality. But its ultimate impact extends much further. Poor WASH can ripple through the country's entire development process, holding back gains in human capital and efficient use of labor that are needed for sustainable prosperity. Perhaps one of the most extreme effects of inadequate WASH is the onset of chronic intestinal infections that can cause a higher rate of stunting: the failure of children to grow to full physical stature and mental capabilities. A less dramatic but still severe impact is the recurring disruption of education as bouts of diarrheal disease can keep children home from school. Productive wealth-creating activities and income can be lost to the days of illness recovery or to excursions for collecting water. These are just a few ways the larger campaign to fight poverty can be impeded. Yet, inadequate WASH can be seen as attributes to poverty itself. Being poor is not just a matter of too little income. Poverty is also measured by dimensions such as basic services that are available to a household and the quality of its shelter and surroundings. In the end, inadequate WASH, with its accompanying sights and smells, can make people poor.

**The new Sustainable Development Goal 6 (SDG-6) challenges countries to provide universal access to safe and affordable WASH services by 2030.** By 2015, the end of the Millennium Development Goal (MDG) period, Bangladesh's population experienced a 20-percentage point gain in water access and 29-percentage point gain in sanitation access since 1990. Now, it is estimated that close to 98 percent<sup>1</sup> drinks from a technologically improved water source,<sup>2</sup> and about 63 percent<sup>3</sup> uses an improved sanitation facility. Though very few Bangladeshis now fetch water from rivers or defecate in fields, the vast majority still live in environments plagued by inadequate WASH that hinder the country's overall development. WASH is inadequate in the sense that most Bangladeshis rely on *rudimentary* water and sanitation facilities that cannot be effortlessly accessed or guaranteed safe and sustainable in the long run.

**Compared to the MDGs, the SDGs shift from increasing basic access to improving service delivery of WASH.** The high access numbers to improved water and sanitation facilities achieved during the MDG period overlook critical dimensions of safe WASH such as water quality, convenience, continuity of service, fecal sludge management, and hygiene. However, SDG-6 aims to specifically tackle these issues. Bangladesh and 192 other countries are committed to providing safely managed water and safely managed sanitation to all by 2030. Safely managed water services guarantee that a household not only has access to a technologically improved water source,<sup>4</sup> but also has access to one that is available when needed on their immediate premise and free of priority bacterial and chemical contaminants. Safely managed sanitation services warrant that a household is accessing a technologically improved sanitation facility<sup>5</sup> that is not shared with other households, where excreta are safely disposed in situ or transported and treated off-site. These are ambitious targets but addressing these issues are pertinent to improving the well-being of populations.

**The Bangladesh WASH Poverty Diagnostic (BWPD) is a data-driven exercise with an objective to highlight the key inadequacies in WASH service delivery and guide country and sector priorities for maximum impact during the SDG era.** BWPD gives a snapshot of the quality and inequality

of WASH access by generating statistics from numerous datasets. BWPD also attempts to show the implications of these numbers on human development and poverty reduction. A large portion of the work is dedicated to presenting stylized facts on the synergies between different dimensions of WASH and human development outcomes such as in health, nutrition, and education. Further, the generated numbers should help government and other stakeholders identify the gaps in service delivery and ask questions on why these gaps exist. Therefore, the final portion of this study begins a discussion on the institutional challenges that could be inhibiting high-quality service delivery. Some of the key findings are presented below.

## The State of WASH in Bangladesh

**A major barrier to clean water access is the fact that Bangladesh's natural water resources are heavily contaminated.** Bangladesh is not known as a water-scarce country, but the quality of its water resources is poor and deteriorating as a result of forces of climate change, urbanization, and population growth. Though households are usually not too far from a river or pond, surface water sources are far too polluted to be efficiently treated for consumption as they are vulnerable to agricultural, industrial, and municipal waste. Nevertheless, a little less than 3 percent of the population uses unimproved water sources, which translates to nearly 4 million Bangladeshis continuing to draw drinking water from ponds, rivers, streams, or unprotected wells and springs. The rest of the country primarily relies on improved water infrastructure that taps from groundwater sources. Groundwater is safer than surface water because it is theoretically less exposed to and can filter contaminants, particularly fecal bacteria. However, groundwater is not immune to issues of water quality in Bangladesh. For instance, aquifers in many parts of the country contain elevated levels of naturally occurring arsenic, doing grave harm to the health of people who consume it long-term. Aquifers in the low-lying nation on the front line of climate change are also vulnerable to another contaminant, salt water, as high tides surge inland over distances that are gradually increasing.

**Though Bangladesh has made strong progress in a crucial step toward better quality drinking water—the switching to improved water infrastructure—much of what is tapped remains stubbornly contaminated with dangerous microbes, heavy metals, or salt.** Much of the success of meeting the MDG targets for increasing access to improved water sources came courtesy of the tube well, a low-cost technology that extracts groundwater. Close to 90 percent of the population currently uses some tube well variation. However, tube wells do not necessarily filter out all contaminants, cannot always withstand natural disasters, and are poorly regulated. As a result, many citizens are sometimes unknowingly consuming unsafe water with either fecal bacteria, arsenic, salinity, or other contaminants. Continuity of service and resilience of water infrastructure are also likely problems. During times of flooding or cyclones, which affects a vast majority of the population almost every year, households may resort to highly polluted surface water sources, as their usual tube wells may have become inaccessible. During dry season, groundwater is over exploited and tube wells can become nonfunctional in some areas.

**Poor water quality seems to be an issue for the rich and poor alike and is pervasive throughout regions and different types of water technologies.** For instance, piped water, an exclusive asset for rich urban populations, seldom faces issues of arsenic or salinity, yet it is still highly contaminated with fecal bacteria. Piped water offers benefits of convenience and centralized regulation and treatment. However, it is a telling statistic that people who use piped water on their premise, which is theoretically the best, safest kind, face *E. coli* contamination more than 80 percent of the time, a rate not much different than that of water drawn from ponds and streams.

**Poor sanitation could contribute to the fecal contamination of water but also presents its own set of complex issues.** Bangladesh is known as a global leader in collective approaches to behavior-change and household sanitation innovations such as its development of Community-Total Led Sanitation (CLTS), the most widely used intervention to end traditional practices of

open defecation. Though the country has nearly eliminated the practice of open defecation and built household toilets, the environment continues to be highly polluted with fecal contamination. Whether this contamination is coming from human or animal fecal matter is debated. One contributing factor could be that in the transition from open defecation to fixed point defecation, millions of Bangladeshis have switched not to modern sanitation facilities but to primitive pit latrines that they share with neighbors. Heavy use and ambiguous ownership of these facilities often mean that their safety, upkeep, and cleanliness suffer. Now, close to 40 percent or 58 million Bangladeshis do not have access to a private improved sanitation facility in their home, most of whom are among the bottom 40 percent (B40) of the national wealth distribution.<sup>6</sup>

**However, the underlying issue is most likely the lack of a holistic approach in improving the entire sanitation chain—ensuring all types of waste are being effectively separated from humans, while doing no harm to the environment.** Just 3 percent of the population, a figure that has been nearly stagnant in the past 10 years, is connected to a sewer system, but even having a sewage connection does not mean that sewage is being properly transported and treated at a wastewater treatment plant. In Dhaka, for example, only 2 percent of fecal sludge is estimated to be properly treated, despite a sewerage connection of 22 percent. The vast majority of the population have on-site sanitation facilities including pit latrines, but on-site fecal sludge management is lacking, thus the entire sanitation chain remains unmonitored or unregulated.

**An overall absence of good hygiene practices exacerbates the perils of poor water and sanitation access.** It all adds up to an environment in which harmful pathogens and parasites can be pervasive and detrimental to public health. Certain behavioral practices can determine the risk of being affected from poor sanitary environments. In the home, basic hygiene practices such as washing hands with soap after defecation are often lacking. Nationally, 28 percent of the population are observed to have access to a handwashing station with both water and soap. Most households with young children do not properly dispose of infant feces, and just a quarter of women practice safe menstrual hygiene, a neglected issue with implications on education and availability of sanitary materials and sanitation facilities. Despite high contamination of water sources, only 10 percent of the population report using an appropriate water treatment method in their household. And though there are few differences between rich and poor concerning water contamination that is not true in other measures of hygiene behaviors, such as these. The poor consistently fare worse than the well-off and are at greater risk of having worse health outcomes such as diarrheal disease and stunting.

**At the root of inadequate WASH access are institutional challenges that inhibit high-quality service delivery.** Unclear and overlapping allocations of functions, funds and functionaries are a binding limitation to improving WASH services in Bangladesh. Despite its efforts, Bangladesh remains a centralized country, with limited devolution to lower tiers of governance. Though assigned the role of service provider, many local government institutions (LGIs), including *union parishads* (UPs), *pourashavas*, and city corporations, do not have the technical nor financial capacity to deliver and sustain high-quality WASH services. Instead, central agencies play multiple roles of financing, designing, implementing, and regulating WASH investments, blurring incentives and accountability of service provision in these areas. Though the private sector potentially could fill these service gaps, the current environment does not incentivize sustaining private sector participation. Finally, weak public demand for better WASH services and limited state capability do not incentive the government and the relevant institutions to improve service delivery.

**Though WASH strategy is well defined, the regulatory framework is incomplete.** The Government of Bangladesh (GoB) uses an SDG framework for sector planning that is anchored in its 2014 National Strategy for Water Supply and Sanitation, which provides uniform strategic guidance to the sector stakeholders for achieving sector targets. In larger cities, water supply and sewerage authorities (WASAs) are set up as public utilities for WASH, but lack of institutional and financial capacities and formal regulation as well as damaged infrastructure and intermittent

service have left major gaps in service delivery both in water supply and sanitation. Even if standards are in place, identifying appropriate monitoring mechanisms and accountability are also some of the key challenges.

**Apart from deficiencies in the governing and regulatory structure, financial allocation for overall sector development is insufficient.** The share of budget allocation to the WASH sector in the national budget has significantly decreased in the past decade. In 2016–17, the WASH budget allocation was less than half of what it was in 2007–08. Internal and external budgets show similar declines. The estimated total budget gap is about 47 percent of the total allocation in the sector to meet just the government’s envisioned water targets by 2025.<sup>7</sup>

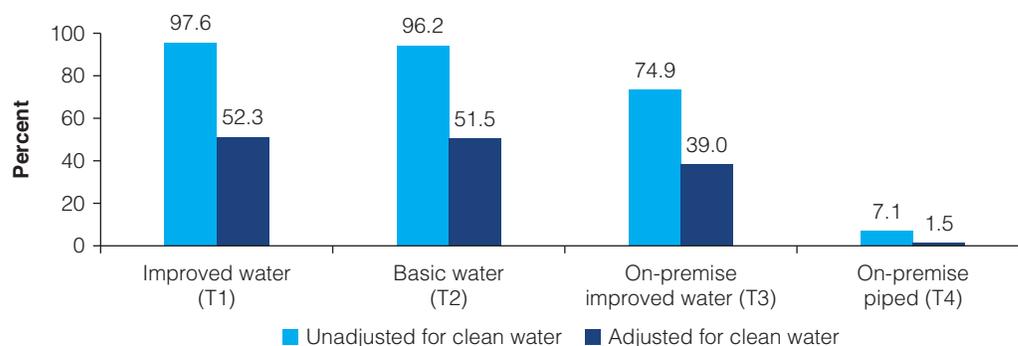
## Priority Areas for Action

Bangladesh can be proud of its advances in the sector to date, but the task remaining will be particularly difficult because it not only involves delivering higher quality WASH services but also delivering such services to those populations and areas that are often left behind. The BWPD outlines 6 priority areas of action (in no order of ranking) based on the study’s findings.

### Priority 1: Improving the Quality of Water Services

**Despite having high access to water infrastructure, the population has low access to clean drinking water available on household premises. Bangladesh’s baseline access level to the new SDG target for “safely managed water” is likely lower than 39 percent.** Figure ES.1 compares improved water access unadjusted and adjusted for water quality indicators of *E.coli* and arsenic presence at the source. According to previous MDG standards, 98 percent of the population has access to a technologically improved water source. However, the SDG water target for “safely managed water” includes dimensions of water quality, continuity of service, and proximity of water sources. At this time, national data on continuity of service is unavailable. Nevertheless, when considering contamination and location of water sources, about 39 percent of the population has access to an on premise improved water source that taps water free of *E. coli* or arsenic.<sup>8</sup> In terms of clean, on-premise piped service, the figure drops even lower. Less than 2 percent has access to on-premise piped water free of contamination.

Figure ES.1: Comparison of Unadjusted and Adjusted Clean Water Access, by Tier, Bangladesh, 2014



Source: World Bank calculations using Demographic and Health Survey (DHS) 2014 data (NIPORT, Mitra and Associates, and ICF International 2016) and Multiple Indicator Cluster Survey 2013 data (UNICEF and BBS 2015).

Note: T1 = Tier 1: Use of improved water technologies; T2 = Tier 2: Use of improved water technologies within 30 minutes of access; T3 = Tier 3: Use of improved water technologies available on household premises; T4 = Tier 4: Use of piped water supply available on household premises. Clean water implies that water is free of *E. coli* and arsenic, 50 parts per billion.

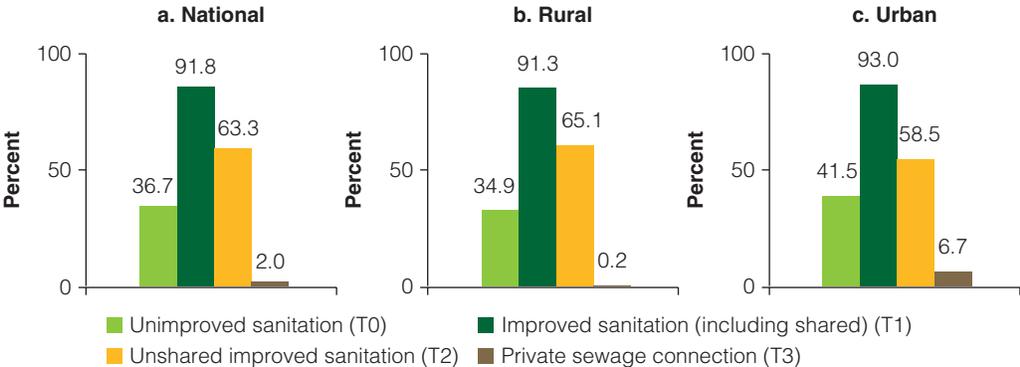
## Priority 2: Reducing Shared Sanitation, Fecal Contamination of the Environment, and Poor Hygiene Practices

The population relies heavily on shared sanitation facilities that most likely lack proper fecal sludge management. Bangladesh’s baseline access level to the new SDG target for “safely managed sanitation” is estimated to at most be 63 percent. The baseline access level to basic hygiene (e.g. handwashing station with available soap and water) is 28 percent. Figures ES.2 a, b, and c provide estimates on national, rural, and urban improved sanitation access. BWPD makes the “safely managed sanitation” estimation by only considering access to improved sanitation facilities that are unshared between households. However, this figure is likely to be significantly lower when including safe fecal sludge management practices. Some studies have estimated that 1 to 2 percent of all fecal sludge is safely managed in urban cities, but little data exists in rural areas. (Blackett, Hawkins, and Heymans 2014; Gunawan, Schoebitz, and Strande 2015; Kabir and Salahuddin 2014; Ross et al. 2016). Aside from the infrastructural and regulatory mechanisms needed to reduce pollution in the environment, proper hygiene practices are also needed. Though handwashing with soap is a person’s first line of defense for preventing the transmission of disease, many people lack even basic knowledge of when to wash hands and 28 percent have access to an observed handwashing station with available soap and water in their household.

## Priority 3: Bringing Services to the Poor and Other ‘Left-Behind’ Populations

There are substantial inequities in WASH service levels, which hinder strategies to promote shared prosperity and meet universal WASH coverage. Those who are left without or with low quality WASH access are in the bottom 40 percent of the wealth distribution, including in remote and hard-to-reach villages, disaster-prone areas, and crowded urban slums. Household wealth alone explains 70 to 75 percent of whether a child will have access to improved water or improved sanitation infrastructure.<sup>9</sup> Map ES.1a illustrates disparities in improved sanitation access between districts. Map ES.1b shows the few districts that do not have universal access to improved water infrastructure, while map ES.1c illustrates that most districts lack access to water that is free of *E. coli* and arsenic contamination. Particularly, households living in some

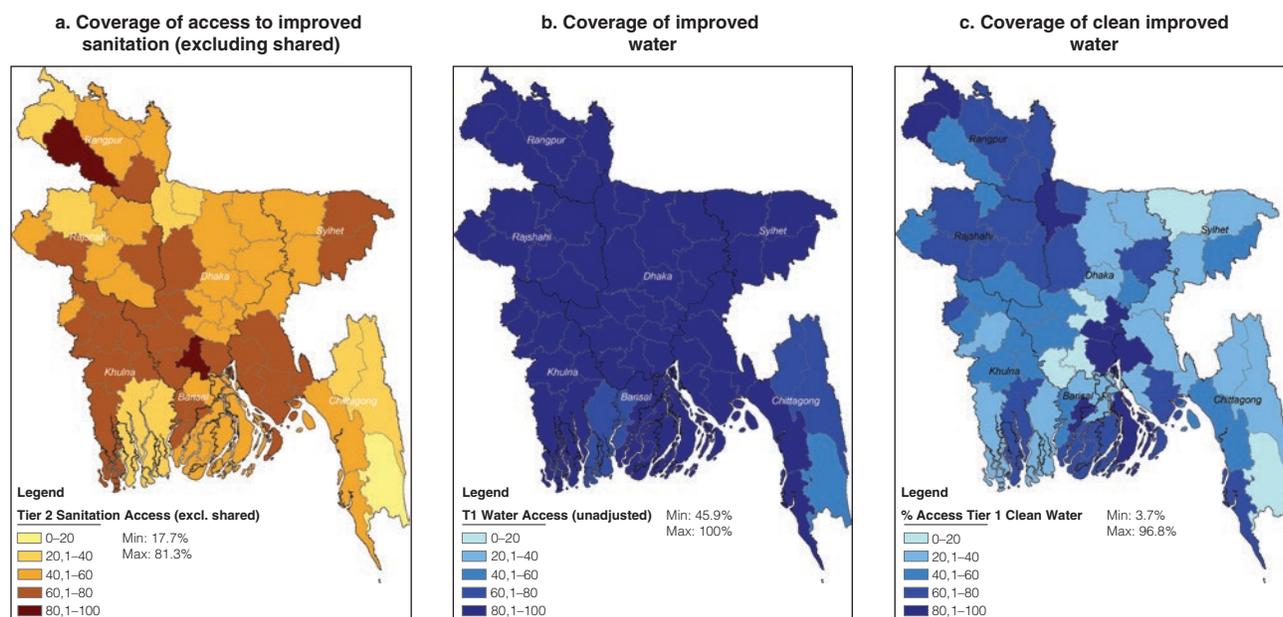
Figure ES.2: Access to Sanitation, by Tier, Bangladesh, 2014



Source: World Bank calculations using Demographic and Health Survey (DHS) 2014 data (NIPORT, Mitra and Associates, and ICF International 2016).

Note: T0 = Tier 0: use of unimproved sanitation technologies; T1 = Tier 1: use of improved sanitation technologies including those that are shared; T2 = Tier 2: use of improved sanitation technologies that are unshared between households; T3 = Tier 3: use of improved sanitation technologies connected to sewer system. T0 and T2 will add to the total population because T0 includes improved sanitation that is shared.

Map ES.1: Proportion of Access to WASH, by District, Bangladesh, 2013



Source: World Bank calculations using Multiple Indicator Cluster Survey (MICS) 2013 data (UNICEF and BBS 2015).  
 Note: WASH = water supply, sanitation, and hygiene.

remote areas of the country are outliers to national access rates, with more than half of the population remaining without access to improved water sources or any fixed place to defecate in some hard-to-reach districts. Coastal regions and other disaster-prone areas deal daily with the impacts of climate change and need resilient water infrastructure that can adapt to issues of salinity intrusion or frequent flooding. In urban areas, the rapidly growing population places further stress on utilities as evidenced by stagnant coverage rates and increasing intercity disparities in access between the rich and the poor.

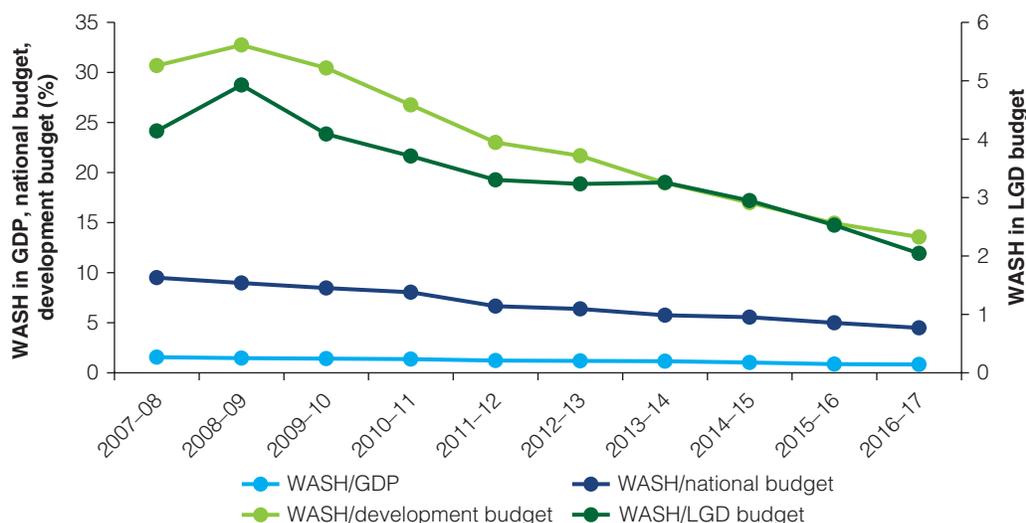
## Priority 4: Implementing WASH Beyond the Household

**Community establishments such as healthcare facilities, schools, and work places overlook safe WASH services.** Overall, data is sparse on WASH coverage beyond households. In primary schools, access to improved water supply is 80 percent and access to at least one sanitation facility is 85 percent. Yet, the average student to toilet ratio is 100:1, double the national standard. About a third of healthcare facilities<sup>10</sup> experience routine water shortages and the convenience of access to water supply is poor, where only 27 percent and 52 percent of healthcare facilities in rural and urban areas have access to piped water supply. Moreover, access to handwashing stations with soap and water in many healthcare facilities is also lacking. Among manufacturing enterprises with more than 5 employees, only 52 percent were found to have access to at least one toilet.

## Priority 5: Addressing Binding Institutional Constraints and Challenges

Despite its efforts with a national WASH strategy and well defined legal framework, Bangladesh remains a centralized country, with limited devolution of functions, funds, and functionaries to lower tiers of governance. Improper assignment, mixed roles, warped accountability and poor

Figure ES.3: Proportion of WASH Allocations in GDP, National Budget, Development Budget, and LGD Budget, Bangladesh, 2007–17



Source: World Bank calculations using WaterAid 2017 data.

Note: GDP = gross domestic product; LGD = local government division; WASH = water supply, sanitation, and hygiene.

capacities thus combine to produce a policy and institutional setting that is unlikely to be responsive to the emerging challenges of scaling up access—especially for the poor—to water systems that ensure quality and reliability, and sanitation systems that address the full chain of safe excreta management. A lack of national service standards or pricing and monitoring mechanisms have left gaps in water quality and safe excreta management. In addition, financial allocation for the overall sector development is insufficient. The WASH budget as a proportion of national and LGD budget has been declining since 2007 (figure ES.3). The estimated total budget gap is about 47 percent to meet just the government’s envisioned water targets by 2025. An appropriate mix of policy changes, gradual and time bound institutional changes, implementation of regulations and effective citizens participation to ensure improved water quality and maintain service standards is needed to overcome many of these constraints to achieve the goal of safe universal access. It is pertinent to make WASH service providers more efficient and accountable for meeting the demand for piped water services within premises from a rapidly growing economy and an expanding middle class in Bangladesh. In addition, there is an urgent need to raising finances to meet sector goals.

## Priority 6: Harnessing Complimentary Effects of WASH to Improve Human Development

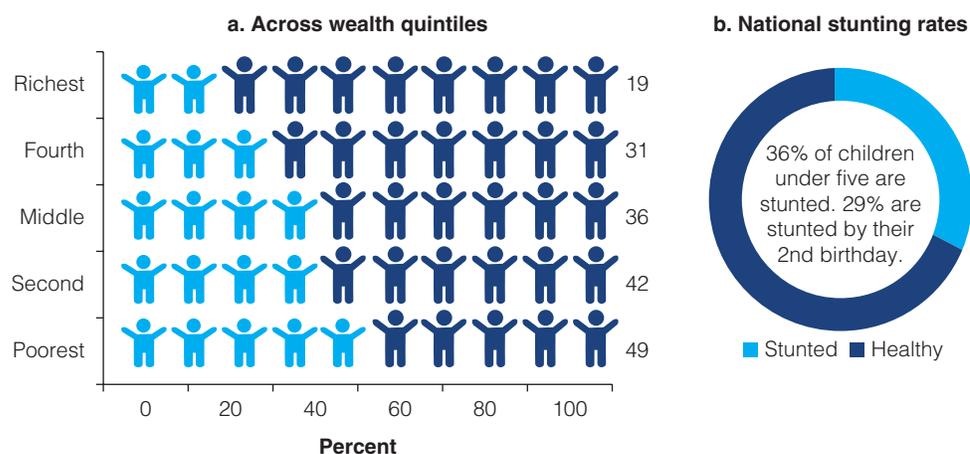
**WASH has a catalyzing role in improving human development outcomes.** Beyond the scientific linkages of WASH and human development outcomes, addressing WASH issues is a fundamental component for any program that aims to reduce poverty and meet the 17 goals of the SDG agenda. Bangladesh has special incentives to implement higher quality WASH services, because they have broad multiplier effects in improving health, nutrition, education, and early childhood development outcomes. They improve public health but also facilitate, directly and indirectly, a collection of other important development and poverty reduction goals that improve the capability of populations such as increasing educational attainment, reducing stunting, and creating a healthy and skilled work force.

However, gaps in WASH service delivery including poor water quality, inconvenient access, and high fecal contamination of environments are particularly holding back the effectiveness of investments in the sector. For instance, inadequate WASH is significantly shown to increase the incidence of enteric infections that impair nutrient absorption and healthy growth and development among expectant mothers and children. Currently, Bangladesh has one of the highest stunting rates, a marker of undernutrition, in the world, with about 36 percent of children under five stunted (figure ES.4b). Moreover, nearly half of children under five in the poorest wealth quintile are stunted (figure ES.4a). The B40 feel the greatest burdens of inadequate WASH because of its synergies with other life deprivations such as little income, poor access to health services, food insecurity, and low levels of education. Nationally, the WASH-related enteric disease burden for the poorest quintile is about 3 times greater than the burden for the richest quintile. Those who are already impoverished thus face indefinite challenges to their health and well-being, adversely impacting their ability to obtain education, skills, and participate in economically productive opportunities. Policies and programs are needed to specifically target quality WASH expansion in areas where the B40 are most prevalent.

**None of the WASH challenges that Bangladesh faces are easily met.** But in view of its past successes, the country can achieve the new targets in the next decade and a half and meet the SDGs through a combination of well-crafted investment and innovation. Detailed analysis and recommendations are provided in the full report on how future WASH programs can prioritize safety, inclusion, and sustainability.

**The cost of meeting the next generation of challenges will be substantial, but Bangladesh can look forward to broad multiplier effects from its investment.** Better WASH conditions are key to basic human development outcomes, including better health, nutrition, and education. The energetic, skilled work force that will drive future prosperity in Bangladesh needs clean water and modern sanitation thus helping to break themselves from the vicious cycles of intergenerational poverty. Improvement in this sector will be welcomed by the entire population, rich and poor, urban and rural, because the problems affect virtually everyone to a greater or lesser degree.

Figure ES.4: Stunting among Children under Five across Wealth Quintiles in Bangladesh, 2014



Source: World Bank calculations using Demographic and Health Survey (DHS) 2014 data (as cited in NIPORT, Mitra and Associates, and ICF International 2016) data 2014.

## Notes

1. This number differs from official Joint Monitoring Programme reports, which estimate 87 percent improved water access to adjust for arsenic contamination. The BWPD accounts for arsenic adjustments separately.
2. Per WHO/UNICEF Joint Monitoring Programme (JMP) definitions, “an ‘improved’ drinking-water source is one that, by the nature of its construction and when properly used, adequately protects the source from outside contamination, particularly faecal matter. An ‘improved’ sanitation facility is one that hygienically separates human excreta from human contact and is unshared between households.”
3. Note that this number differs from the latest JMP estimates of improved sanitation of 61 percent. The report references improved water and sanitation access numbers that were generated by the authors’ secondary analysis of 2014 Demographic and Health Survey and 2013 Multiple Indicator Cluster Survey data.
4. Improved sources include piped water, boreholes or tube wells, protected dug wells, protected springs, and packaged or delivered water.
5. Improved sanitation facilities include flush/pour flush-to-piped sewer systems, septic tanks, or pit latrines; ventilated improved pit latrines; composting toilets; or pit latrines with slab.
6. This figure is calculated using the DHS 2014 and WDI 2014. Unless otherwise noted, all figures described in this document are derived from the authors’ calculations using available rounds of WDI, DHS, MICS, UHS, and NHBS data.
7. As per the government’s target in the Sector Development Plan (2011), by 2025, 100 percent population would be provided with improved water supply and sanitation facilities. Piped water supply further expanded with the city corporations with 100 percent, large pourashavas having 90 percent, small Pourashavas 85 percent, urban centers 40 percent and rural area 10–20 percent coverage. The sewerage coverage would be increased to 60 percent in Dhaka, 30 percent in Chittagong, 25 percent in Khulna and 10 percent in city corporations. Sewerage systems would be introduced to the large pourashavas covering about 10 percent of the population. One hundred percent population would be provided with sanitation facilities ranging from sewerage systems to pit latrines with about 10 percent use of septic tanks in rural areas.
8. Water is considered to be contaminated when sample has greater than 1 colony-forming units per 100 milliliters *E. coli* or greater than 50 parts per billion arsenic (Bangladesh standard).
9. Finding from Human Opportunity Index analysis. Methods are discussed in chapter 4.
10. Included government or private/NGO hospitals or clinic that provided overnight inpatient healthcare service facilities inside the hospitals or clinics.

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