

# SANITATION AND WATER FOR ALL

## How Can the Financing Gap Be Filled?

**A DISCUSSION PAPER**

MARCH 2017

A paper submitted by the World Bank and UNICEF  
to support the Sanitation and Water for All Finance Minister Meeting Preparatory Process



## About Sanitation and Water for All (SWA)

Sanitation and Water for All (SWA) is a global partnership of over 150 country governments, private sector and civil society organizations, external support agencies, research and learning institutions, and other development partners working together to catalyze political leadership and action, improve accountability, and use scarce resources more effectively. Partners work toward a common vision of sanitation, hygiene and water for all, always and everywhere.

The 2017 SWA High-level Meetings (HLMs) will take place in Washington, DC. A Finance Ministers' Meeting (FMM), convened by the World Bank on behalf of the SWA partnership, will be held on April 21, 2017. In the days before the meeting, UNICEF will convene a Sector Ministers' Meeting (SMM), involving those ministers responsible for water, sanitation and hygiene who have accompanied their finance counterparts. The preparatory process for these meetings will take place in February and March 2017.

## Resources to Support the High-Level Meetings Preparatory Process

To facilitate the country dialogues and preparatory processes leading up to the High-Level Meeting, SWA has assembled a suite of supporting resources to stimulate and structure the discussion at both the country and global levels.

UNICEF and the World Bank Water Global Practice have jointly prepared the following resources to facilitate this preparatory process:

- This **discussion paper**, which provides a framework for country-level discussion, setting out key considerations for countries as they undertake financial planning for efforts to meet the SDGs.
- The **SDG costing tool**, an Excel spreadsheet developed to help countries estimate the costs of achieving SDG targets for water, sanitation and hygiene (WASH) under both basic and safely managed definitions.<sup>1</sup>
- A companion **guidance note and ministerial briefing template**, which can be used to organize and present the associated country SDG financing data and potential financing actions to sector and finance ministers.

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<sup>1</sup> For definitions of “basic” and “safely managed” water and sanitation, see section 2.2.

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## Executive Summary

This discussion paper provides a framework to facilitate the country dialogues and preparatory processes leading up to the Sanitation and Water for All (SWA) High-Level Meetings in April 2017, setting out key considerations for countries as they undertake financial planning to meet the Sustainable Development Goals (SDGs).

The 2030 Agenda for Sustainable Development introduced a new level of ambition for water, sanitation and hygiene (WASH) services, encouraging countries to aspire to even higher levels of service and thus greater health, economic, social, and environmental benefits. Despite the impressive achievements of the Millennium Development Goal (MDG) period, some areas were left incomplete. The definitions and indicators associated with the SDGs have changed significantly compared to the MDGs, with implications for both WASH sector needs and financing. The financing needed to meet the global SDG WASH targets greatly outweighs available funding from traditional sources. Inaction carries its own costs because access to water, sanitation and hygiene brings proven and significant development benefits.

Globally, the current levels of funding flowing to WASH services are in line only with the capital costs of meeting *basic* WASH services. The costs of achieving *safely managed* WASH, on the other hand, are a multiple of the costs of achieving *basic* WASH. The World Bank estimates that \$114 billion per year in overall global investment is needed to meet SDG targets 6.1 and 6.2. This represents 0.39 percent of the combined annual national income of the 140 low- and middle-income countries included in the study. The feasibility of achieving the SDG WASH targets depends on the ability to mobilize and redirect significant additional resources if services are to reach poorer, harder to reach populations.

### Using Existing Financing More Efficiently

To extract better results from existing financing, governments need to start by identifying objectives for the water, sanitation, and/or hygiene sector, such as social priorities and desired service levels and standards, and start putting the associated policies in place. Governments then need to identify the sector reforms (including the legal, regulatory, organizational, and institutional structures and instruments) needed to achieve the sector objectives. Once sector objectives are agreed, governments need to engage in three critical, and related, debates: defining who pays for what in the sector; analyzing each subsector individually (urban water, rural water, urban sanitation, and rural sanitation) to determine how to maximize the use of existing financial sources; and aligning aid transfers with domestic priorities to facilitate and support sector reform.

In response to the financial challenges facing the WASH sector, this discussion paper outlines a range of proposals for using existing financial flows more effectively, including improving the efficiency of existing funding sources (tariffs, taxes, transfers), and mobilizing domestic private finance—a largely untapped financial resource to the sector.

To increase the efficiency of existing funding sources, water service providers should be incentivized to reduce costs. Tariffs need to be set to achieve better cost-recovery, while targeted subsidies should be introduced as needed to alleviate the impact on low-income customers. Revenues from taxes and

transfers need to be allocated to areas of greatest need or potential impact. Household investments should be mobilized, particularly for sanitation, and combined with facilitated access to finance.

### Mobilizing Repayable Finance

Because existing domestic resources fall far short of the resources needed to achieve SDG 6.1. and 6.2., it is essential to look beyond them to see how repayable financing can be mobilized, especially from private sources. Repayable financing allows investments to be brought forward without having to accumulate sufficient funds upfront to cover the entire investment or wait for grant or low-cost capital to become available. It also helps smooth cash flows for water service providers, which is particularly important given the large upfront costs associated with water investments.

Increasing the level of private financing for the sector would allow service providers to borrow and invest in expanding services and improving quality without having to wait for scarce public resources to be made available or rely on limited concessional financing. Private finance can take various forms—such as vendor or supplier finance, microfinance, commercial bank loans, bonds, or equity—and come from a variety of providers, including equipment suppliers, microfinance institutions, commercial banks, private investors, or investment funds via capital markets. Domestic private finance can reduce the foreign exchange risk.

Such funds need to be mobilized gradually, given that the current starting point is limited or no commercial financing. This means improving the financial performance of existing service providers through a mix of initiatives aimed at improving technical/commercial efficiency and through governance and regulatory reforms. These improvements will generate the financial surplus that will enable utilities to borrow funds through commercial channels.

Blended finance—the strategic use of public taxes, development grants and concessional loans to mobilize private capital flows to emerging and frontier markets—can leverage additional funds for the sector and reduce borrowing costs compared to a fully commercial arrangement. Blending can help overcome affordability and/or political constraints to borrowing to improve services. The concessional element is used to catalyze more commercial investment than would occur without blending. Blended finance can create new relationships and opportunities between the water and financial sectors, which can promote the long-term goal of increasing commercial financing. A mix of instruments can be used, such as capital subsidies, partial credit guarantees, tenor extensions, political risk insurance, and dedicated lines of credit.

These multiple pathways toward greater financial sustainability are mutually reinforcing and need to be implemented in a coordinated manner. The optimal sequencing and balance will vary from country to country and by subsector. The financial attractiveness of the sector will develop incrementally, as the creditworthiness of water sector institutions improves and as capital markets in a country evolve.

This will require building political will. Recognition is needed that water and sanitation can be transformed from a "spending sector" into one that can effectively contribute to efforts to promote economic growth and reduce poverty. As governments set their sector objectives, crafting sector financial strategies will be key to getting available funding sources (tariffs, taxes and transfers) to leverage repayable financing, especially domestic private finance.



## Abbreviations

CAPEX	capital expenditure
IBNET	international benchmarking network for water and sanitation utilities
JMP	Joint Monitoring Programme (WHO/UNICEF)
MDG	Millennium Development Goal
MFI	microfinance institution
OBA	output-based aid
ODF	open defecation free
O&M	operating and maintenance
OPEX	operating expenditure
SDG	Sustainable Development Goal
SDG 6	the water-related SDGs
SWA	Sanitation and Water for All
UNICEF	United Nations Children’s Fund
WASH	water, sanitation and hygiene
WHO	World Health Organization

*Note:* All dollar amounts are in U.S. dollars.

## 1 Introduction

For many countries still striving to provide their populations with basic access to water, sanitation and hygiene (WASH) services, the initial years of the Sustainable Development Goals (SDGs) is an appropriate time to reflect on and reassess current arrangements to finance the WASH sector. The 2017 High-Level Meeting of Finance Ministers will be the first held since the launch of the SDGs and will provide an opportunity for collective discussion on the roadmap for financing the water, sanitation and hygiene components of SDG 6, the so-called water SDG.

This discussion paper provides a framework for country-level discussion, setting out key considerations for countries as they undertake financial planning for efforts to meet the SDGs. This paper covers the following aspects:

- Estimating the costs and benefits associated with the SDG targets for WASH
- Using existing financial resources more effectively
- Accessing new resources
- Taking action to close the SDG financing gap.

## 2 Estimating the Costs and Benefits Associated with the SDG Targets for WASH

The 2030 Agenda for Sustainable Development introduced a new level of ambition for WASH services, encouraging countries to aspire to even higher levels of service and thus greater health, economic, social and environmental benefits. These higher targets, however, can only be achieved through increased investment. To understand the magnitude of the challenge, it is critical to consider:

1. **What was achieved during the MDG period:** Despite the impressive achievements of the Millennium Development Goal (MDG) period, some areas were left incomplete, and still require examination and attention.
2. **What needs to be achieved in the SDGs period:** The definitions and indicators associated with the SDGs have changed significantly when compared to the MDGs, with implications for both WASH sector needs and financing.
3. **Financing needs:** The financing needed to meet the global SDG WASH targets greatly outweighs the available financing from traditional sources.
4. **Costs of inaction:** Inaction carries its own costs because access to water, sanitation and hygiene brings proven and significant development benefits.

As countries begin to plan for the ambitious SDG targets, they will need to develop strategies that take into account each of these four points, as described next.

### 2.1 What Was Achieved during the MDG Period

Goal 7 of the MDGs—to ensure environmental sustainability—included a target (7C) that challenged the global community to halve, by 2015, the proportion of people without sustainable access to safe drinking water and basic sanitation, with 1990 chosen as the baseline year. The global MDG target for drinking water was met in 2010. In 2015, 91 percent of the global population used an improved drinking water source (figure 2.1) (UNICEF and WHO 2015).<sup>2</sup> Between 1990 and 2015, an estimated 2.6 billion people gained access to an improved drinking water source and 2.1 billion people gained access to an improved sanitation facility. Given the low baseline in many countries, such a rate of progress is unprecedented, resulting from a combination of economic growth and targeted policies, program, and project support, driven by global and national MDG targets.

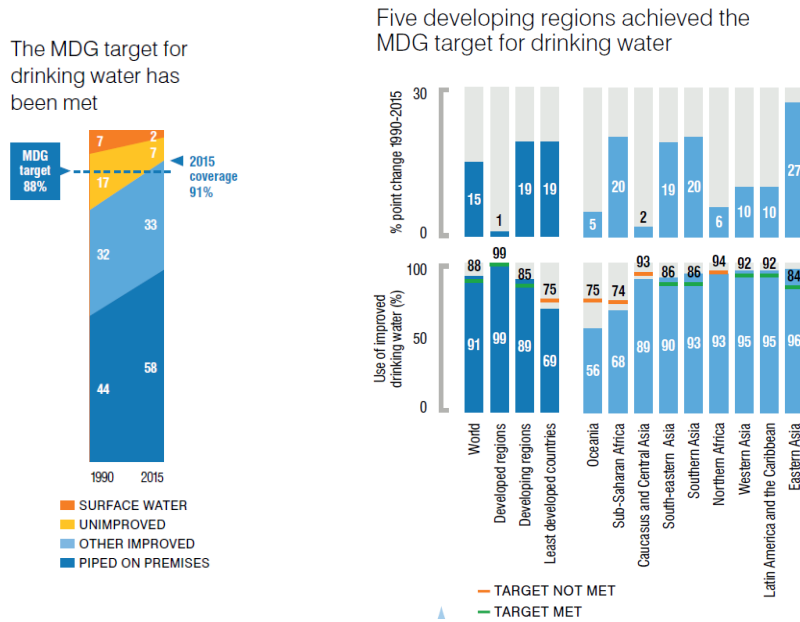
Despite the progress made, many gaps remain. Under the definitions of improved water supply and sanitation from the MDG period, 663 million (one in ten) people still lacked improved drinking water sources, 2.4 billion (one in three) people still lack improved sanitation facilities, and 946 million people still defecate in the open in 2015. Furthermore, the distribution of gains was uneven (see figure 2.1 for water and figure 2.2 for sanitation). For example, in Sub-Saharan Africa, access to improved sanitation increased by only 6 percentage points between 1990 and 2015, compared with an increase of 29 percentage points in East Asia over the same period. In 2015 most of those still without services were living in rural areas in Sub-Saharan Africa and South Asia. Access to drinking water and sanitation are still

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<sup>2</sup> This section draws heavily from UNICEF and WHO 2015.

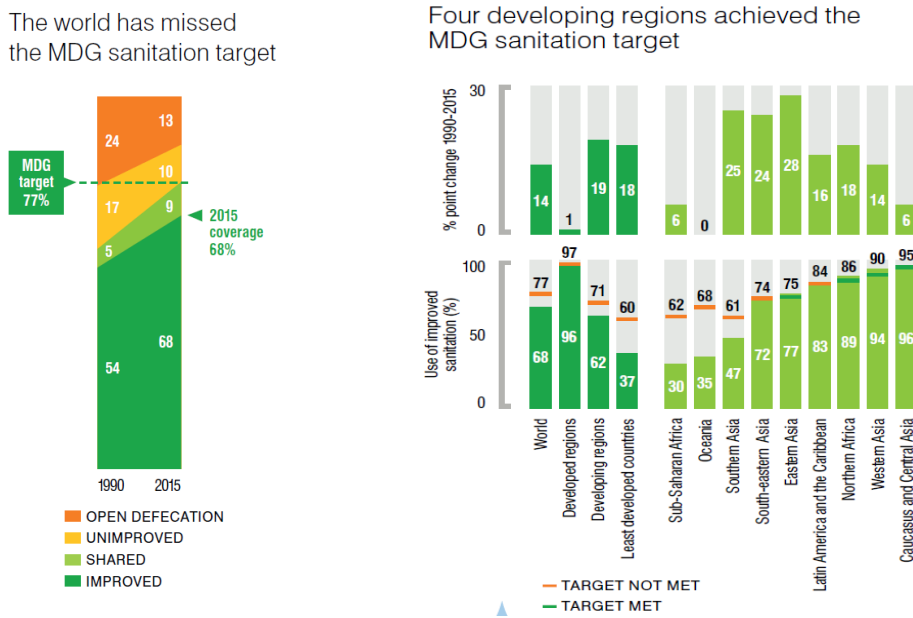
very heavily determined by wealth, with the majority of the unserved population of most countries falling in the lower wealth quintiles.

Figure 2.1. Progress toward Meeting the Water MDG: Globally and by Region



Source: UNICEF and WHO 2015.

Figure 2.2. Progress toward Meeting the Sanitation MDG: Global and by Region



Source: UNICEF and WHO 2015.

Analysis of country and global experience in working toward the MDGs yielded lessons that remain relevant for achieving the SDG water, sanitation and hygiene targets:

- Several years elapsed between the time when MDG targets were agreed and targets were adopted at the national level. This time-lag needs to be compressed in the SDG period.
- Achieving access targets does not guarantee that these benefits are uniformly spread across populations unless specific incentives and resources are devoted to addressing inclusion and equity.
- Even where access is achieved, greater effort is needed to ensure that WASH services are sustainable.
- Inadequate and inefficient mobilization of financial resources is a key constraint to universal and sustainable WASH.
- The fragmented institutional framework of the WASH sector in most countries has led to a project-based rather than a programmatic approach to systemic development of the sector.
- The lack of reliable data to monitor progress and performance impedes accountability, rapid learning, and course corrections at both national and global levels.

At the beginning of the MDG period, there was a lack of standardized metrics to compare progress across countries and over time. This led the WHO/UNICEF (World Health Organization/United Nations Children’s Fund) Joint Monitoring Programme (JMP) for Water Supply and Sanitation to adopt a simple infrastructure-based classification using data from household surveys and censuses. While this has enabled JMP to estimate trends in the number of people using different types of facilities, it has masked huge variations in service levels, such as quality and availability.

## 2.2 What Needs to be Achieved in the SDG Period

Building from the lessons of the MDGs, the SDG agenda is more expansive. It has 17 goals, 169 targets, and 230 indicators covering economic, social and environmental aspirations. With widespread support, member-states adopted a dedicated goal on water and sanitation, SDG 6, which includes critical aspects of water such as wastewater management, integrated water resources management, water use efficiency, conservation, and ecosystems.<sup>3</sup> The goal incorporates the fundamental principles of universality and inclusiveness.

Within SDG 6, targets 6.1 and 6.2 focus on drinking water, sanitation and hygiene. These targets are the focus of the SWA Sector Ministers’ Meeting and the Finance Ministers’ Meeting. While other agencies and partnerships are supporting the implementation of other aspects of SDG 6, the Sanitation and Water for All partnership has agreed to focus its support on the WASH targets that commit the world to universal access to water, sanitation and hygiene services. The associated indicators have been agreed by United Nations (UN) member-states.<sup>4</sup>

- Target 6.1. By 2030, achieve universal and equitable access to safe and affordable drinking water for all.
  - Indicator 6.1.1. Population using safely managed drinking water services.

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<sup>3</sup> In addition, there are strong interlinkages among the SDGs, water, and sanitation are explicitly mentioned in health (SDG #3), cities (SDG #11), consumption–production (SDG #12), marine resources (SDG #14), and terrestrial ecosystems (SDG #15), and are relevant to many other SDGs.

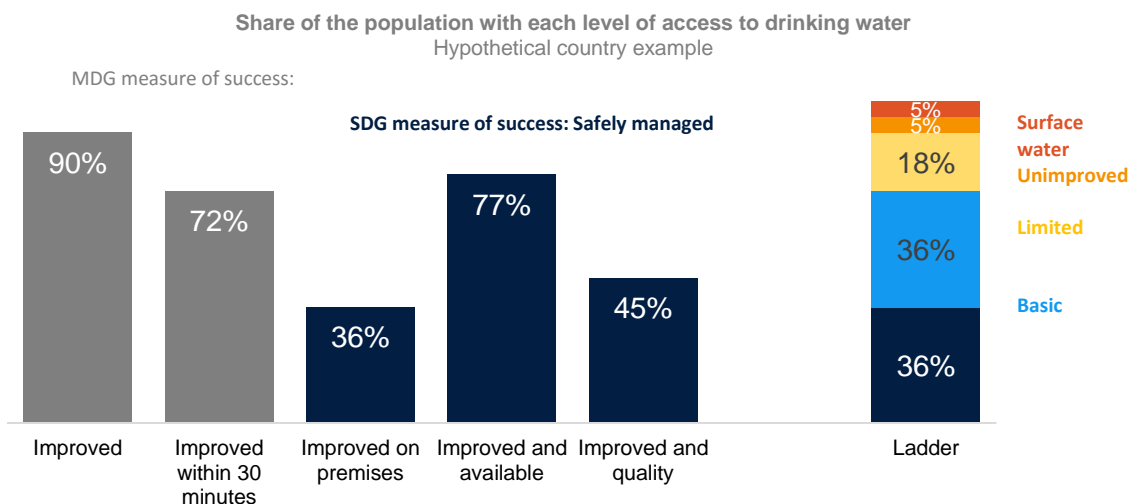
<sup>4</sup> Global agencies proposing indicators were instructed to build on existing MDG indicators, thereby providing continuity, and to agree on one indicator per target that is relevant to both developed and developing countries.

- 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.
  - Indicator 6.2.1. Population using safely managed sanitation services including a handwashing facility with soap and water.

It is important to note that countries are encouraged to set their own targets, which can be below or above the SDG targets. The 2030 Agenda for Sustainable Development states that each government should set its own targets, taking into account national circumstances but guided by SDG targets.

The language used in the indicators 6.1.1 and 6.2.1 is “safely managed”—terminology that encompasses significantly higher expectations than the “improved” requirements of the MDGs. The “improved” terminology has been replaced by a newly defined “basic” water supply, which is an improved source within a 30-minute round trip. The addition of a proximity requirement reflects the realization during the MDG period that some improved water sources were distant from users and therefore provided a poor level of service. For a water supply to be safely managed, it must be an improved source that is located on premises, available when needed, and free of contamination from feces and priority chemicals.<sup>5</sup> However, each service characteristic can be achieved at its own pace and analyzed separately (see the example in figure 2.3). For global monitoring, safely managed services will be calculated based on the minimum value of the three characteristics (in the figure 2.3 example, the minimum is “on premises”).

Figure 2.3. Defining Safely Managed Drinking Water for SDG Monitoring

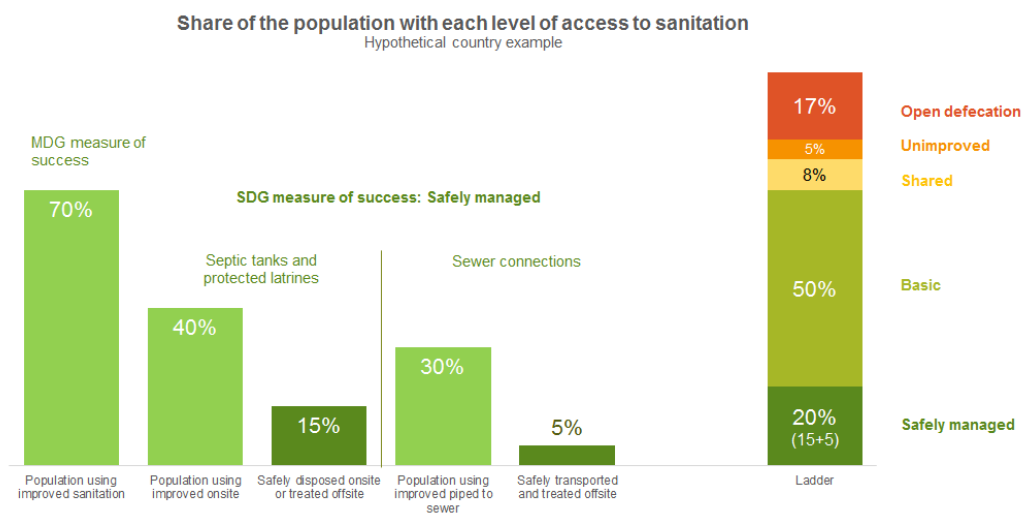


Source: UNICEF.

SDG target 6.2 includes both sanitation and hygiene and introduces additional criteria relating to disposal and treatment of human waste. Safely managed sanitation is defined as the population using an improved sanitation facility that is not shared with other households and where excreta are safely disposed in situ or transported either by truck or sewer to be safely treated off-site (see figure 2.4).

<sup>5</sup> That is, contamination from *E. coli*/thermotolerant coliforms, arsenic, and fluoride.

Figure 2.4. Defining Safely Managed Sanitation for SDG Monitoring



Source: UNICEF.

In most countries, the proportion of population using WASH services that meet the new SDG criteria for safely managed services will be significantly lower than the proportion meeting the previous MDG standard (use of an improved source/facility). However, for many countries, it will be critical to maintain focus on the unfinished business from the MDG period: that is, bringing all the population to a basic WASH service standard.

Sector monitoring, already challenging under the MDG period, will be more complex under the SDGs and needs to be taken into account as one of the challenges inherent to the new targets. In the SDG period, the Joint Monitoring Programme will continue reporting on all rungs of the service ladders (see figures 2.3 and 2.4), thereby enabling countries at different stages of development to benchmark and compare progress over time. However, given the larger number of indicator components, national and global monitoring will need to expand beyond the household surveys that were relied upon to monitor the “improved” service definitions of the MDG period. Monitoring efforts will identify ways to collect administrative, regulatory, and other service provider data, as well as capture data about WASH access outside the home, which will initially focus on two priority settings (schools and health care facilities).<sup>6</sup> In addition, core questions for household survey WASH modules will be adjusted to include questions addressing the safely managed components and affordability. WHO and UNICEF are leading a process through the Joint Monitoring Programme to estimate baselines for SDG targets 6.1 and 6.2. Additional datasets are being compiled. Initial baseline estimates will be shared with countries in early 2017 for review, consultation, and adjustment.<sup>7</sup>

<sup>6</sup> JMP has developed guidance on core questions and indicators for monitoring WASH in schools and health care facilities. This does not preclude the future monitoring of WASH in other settings such as workplaces, market and public places, refugee camps, and prisons and detention centers.

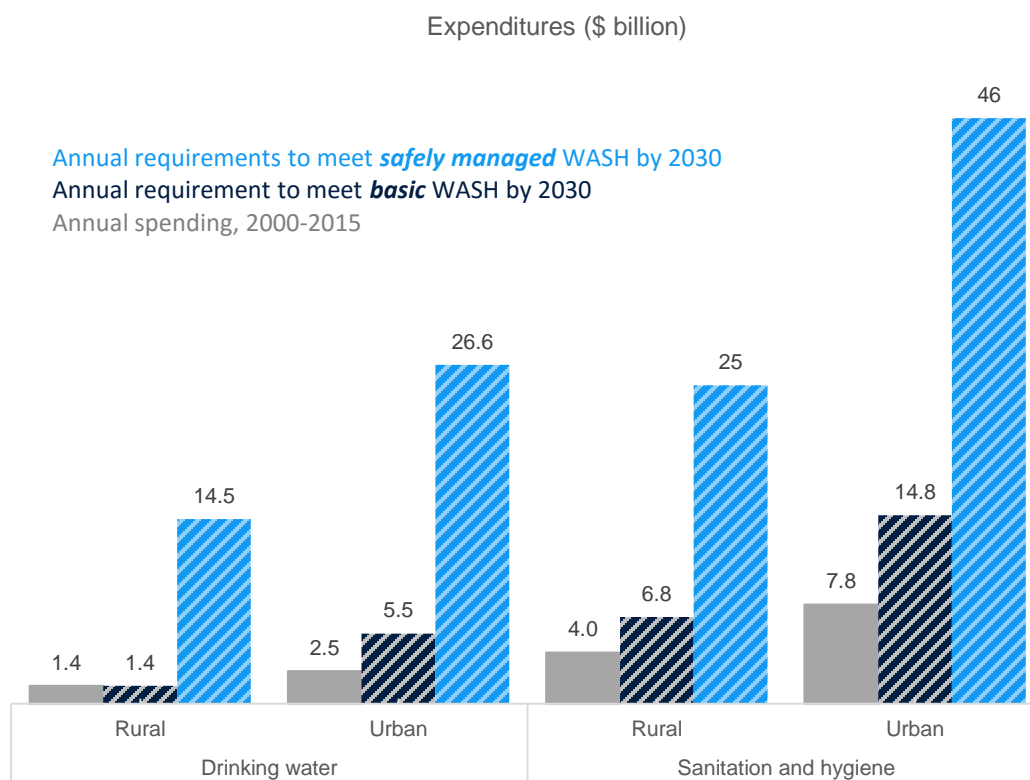
<sup>7</sup> As further datasets are identified, baselines will continue to be refined in the coming years.

## 2.3 Financing Needed to Meet the SDGs

Global studies estimating the costs of meeting MDG targets (Hutton and Haller 2004; Hutton and Bartram 2008; Hutton 2012) and more recently the SDG targets (Hutton and Varghese 2016) have become an established means of forecasting the financial magnitude of the challenge and have encouraged many countries to conduct their own more detailed sector investment planning.

Globally, the current levels of funding flowing to WASH services are in line only with the capital costs of meeting *basic* WASH services (see figure 2.5). Even then, given the differences in spending between countries, between urban and rural areas, and across wealthier and poorer households, the resources available would have to be better targeted to unserved populations. In particular, higher spending is required in Sub-Saharan Africa and Southern Asia to achieve universal basic WASH.

Figure 2.5. Estimating the SDG Financing Gap: Additional Resources for 2015–30 Needed to Meet Targets for Basic and Safely Managed WASH Services



Source: Based on Hutton and Varughese 2016.

The costs of achieving *safely managed* WASH, on the other hand, are a multiple of the costs of achieving *basic* WASH. The 2016 World Bank study (Hutton and Varughese 2016) estimates that overall global investment needed to meet the SDG targets 6.1 and 6.2 are \$114 billion per year (ranging from \$74 billion to \$166 billion). This represents approximately 0.39 percent (ranging from 0.26 percent to 0.55



percent) of the combined annual national income of the 140 low- and middle-income countries included in the study. In some regions, the relative cost compared to national income is much greater.

Hence the feasibility of achieving the SDG WASH targets depends on the ability to mobilize and redirect significant additional resources, beyond historical levels of expenditure, if services are to reach poorer, harder to reach populations. In particular, loans and other forms of repayable finance from domestic private lenders will be a critical resource in financing efforts to achieve the SDGs (see section 4.1). However, this form of finance will be mobilized only when the sector reaches a certain level of efficiency and reliability to assure lenders that their funds will be repaid.

## 2.4 Costs of Inaction

Negative social, economic, and environmental impacts result from populations not having access to WASH services. These include health impacts and the associated medical treatment costs; productivity losses and premature mortality; environmental impacts on both land and in water of not treating human excreta; and the economic value of time lost due to travel to and waiting for water sources and sanitation (World Bank 2008). Economic losses as a result of poor sanitation and inadequate water supply have been documented in a global study, and have been shown to vary between developing regions from 0.7 percent to 4.3 percent of gross domestic product (GDP), or 1.5 percent globally, with the highest impact in Sub-Saharan Africa (Hutton 2012). Economic studies conducted at country level by the World Bank over the past 10 years have shown that poor sanitation and hygiene alone cost countries between 0.5 percent and 7.2 percent of their GDP (World Bank 2008).<sup>8</sup>

The economic cost of underinvestment in WASH is directly manifested in the life-chances of children, whether through child mortality or lowered productivity as children move into adulthood. It is estimated that in 2012 diarrheal diseases caused the deaths of around 842,000 people, of which 43 percent were children under the age of five (Prüss-Üstun et al. 2014). The indirect effects of malnutrition, to which poor water and sanitation contribute in approximately half the cases, claimed as many as 1 million additional lives (Hutton 2012). Studies have shown that malnutrition leads to lower school and work productivity because of impaired cognitive function and learning capacity, leading to negative economic impacts of at least 5 percent of GDP (Acharya, Paunio, and Ahmed 2008).

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<sup>8</sup> For fuller set of studies, visit [www.wsp.org/esi](http://www.wsp.org/esi).

### 3 Using Existing Resources More Effectively

Water and sanitation services in many countries suffer from common challenges. These include lack of strategic financial planning; unclear institutional and regulatory arrangements; fragmented institutional responsibilities; weak institutional capacity; stalled decentralization; inefficient service providers; vicious cycles of running down assets and deterioration of services; lack of financial viability due to low and/or uncollected tariffs; tensions between the public's willingness to pay and governments' willingness to charge; and low public investment levels.

Getting better results from existing financial flows to the sector will be key to attracting additional funding and to mobilizing repayable finance, particularly domestic private finance.

To extract better results from existing financing, however, governments need to start by identifying objectives for the water, sanitation, and/or hygiene sector, such as social priorities and desired service levels and standards, and start putting the associated policies in place. Governments need to identify the sector reforms (including the legal, regulatory, organizational, and institutional structures and instruments) needed to enable and sustain the achievement of the sector objectives. Each sector objective will have a cost ramification, which will set the parameters for discussions on the volume and source of financing needed. Once these sector objectives are agreed, governments need to engage in three critical, and related, debates:

- Defining who pays for what in the sector
- Analyzing each subsector individually (urban water, rural water, urban sanitation, and rural sanitation) to determine how to maximize the use of existing financial sources
- Aligning aid transfers with domestic priorities to facilitate and support sector reform.

Engagement in these areas is not sequential. Rather, governments will need to lead an iterative process to develop the sector that may require different groups of sector actors (ministries, utilities, local governments, donors, financiers, civil society, and the like) to identify new and better ways of working together.

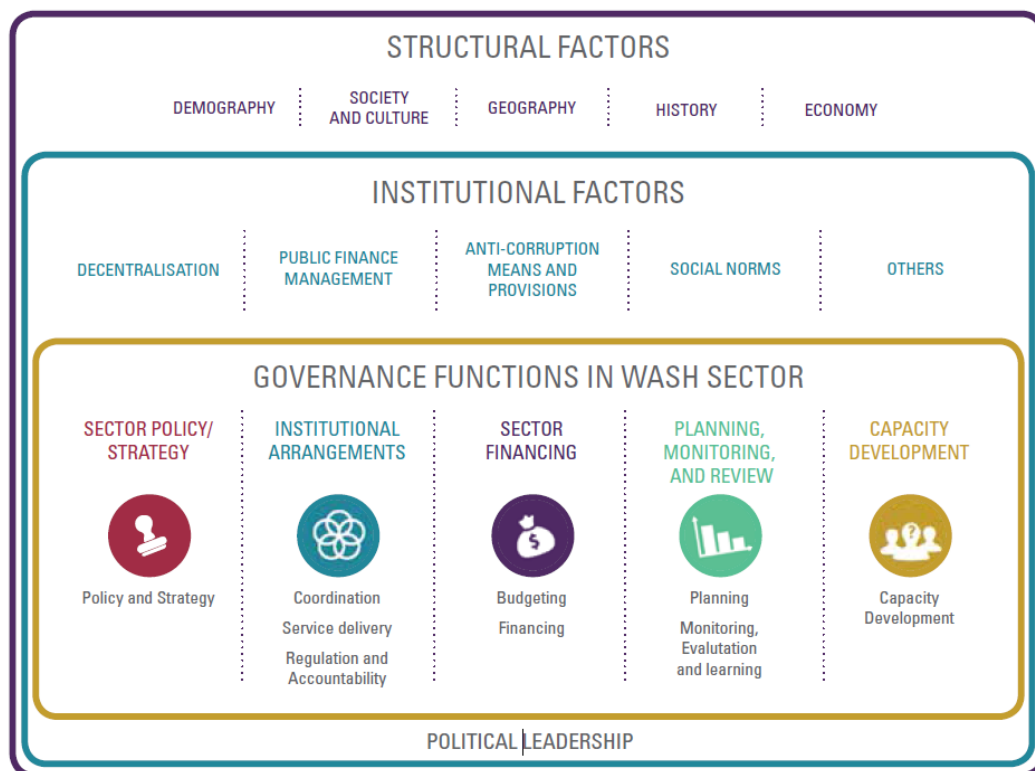
#### 3.1 Identifying Sector Reforms Needed to Enable and Sustain Results

Many water sectors are operating inefficiently, which generates additional costs and undermines the sustainability of services provided. Identifying sector reforms needed to enable and sustain results needs to be undertaken upstream of defining financing strategies, with a view to eliminate inefficiencies, reduce costs and ensuring long-term maintenance of assets.

Frameworks for understanding the key building blocks to advance sector reforms have been developed for the water and sanitation sector (World Bank, 2011; WHO, 2008). SWA partners have articulated a framework to lay out key elements for sector strengthening into five building blocks: policy and strategy; institutional arrangements; sector financing; planning, monitoring and review; and capacity development (SWA 2016). While these building blocks describe key areas for sector strengthening efforts, the broader governance environment beyond the sector also needs to be considered, such as political leadership, public financial management, decentralization and social norms.

These have been captured in a comprehensive governance framework that incorporates the five SWA sector building blocks as well as structural and institutional factors (UNICEF, 2016), as illustrated below.

Figure 3.1. An Enabling Environment Framework and Building Blocks for WASH Sector Reform and Development



Source: UNICEF, 2016

*Structural factors* are natural, physical and contextual characteristics inherent in a country that influence the direction, size and speed of development possible at sector level. These characteristics include demography, political system, society and culture, geography, history and economy. They are changeable over decades and generally not subject to influence by the WASH sector.

*Institutional factors* are norms, regulations and informal rules that shape the relationship between the actors in a given context and sector. Institutional factors outside the WASH sector include political leadership and support, the nature and extent of decentralization, fiscal policy, human resources management, public procurement, public finance management, measures for anti-corruption, social norms relating to power relations and decision-making, and other context specific factors like quality assurance, equity and sustainability.

*Sector building blocks* include:

- (1) *Policy and strategy* are the foundation of sector operation. Policy is defined as the set of procedures, rules and allocation mechanisms that provides the basis for programs and services. Policies are often supported by laws and regulations. Strategy involves setting goals and priorities, determining actions to achieve the goals, and mobilizing resources to execute the actions.

- (2) *Institutional arrangements* define the sector leadership, rules or norms of engagement, accountability and incentive structures. Clearly defined roles and responsibilities for all sector actors are key, including leadership functions and coordination mechanisms. There should be clear expectations and legislation around who provides services, whether public, private or non-governmental or a combination thereof. Regulations and contracts control or govern the behavior of sector actors, through design standards, tariffs, environmental standards.
- (3) *Sector planning, monitoring and review*. Planning is the practical organization of budgeted activities required to achieve an agreed goal. Monitoring requires the regular collection of evidence that is specific, measurable, agreed, reliable and timely to indicate the level of progress. Review is the systematic assessment of this evidence for sector decision makers to adapt and improve strategy, policies and programs.
- (4) *Financing* involves comprehensive assessment of the financing sources and mechanisms required to achieve sector targets and includes advocacy for, and allocation of, public budgets to achieve policy goals. In the face of public funding shortfalls, other sources must be drawn on including philanthropy and foreign aid or borrowed such as private capital. It is important that the various financing channels support the countries' own delivery systems, and where possible, avoid creating parallel systems.
- (5) *Capacity development* includes both institutional and human capacity. Public and private institutions at all levels must have the capacity to carry out their roles and responsibilities for effective WASH service delivery at scale.

The ways in which each of these building blocks are addressed are specific to country context and need to co-evolve with the sector development. Very ambitious reforms in one building block, say policy, without addressing the other building blocks will not generate adequate results. Rather, reforms need to consider all these building blocks together, by introducing iterative changes to advance and reflect the status of sector development.

### 3.2 Defining Who Pays for What: The Foundation of a Strategy to Finance the Sector

*Who pays for what* in any service delivery sector is a fundamental public policy question. Conventional thinking about funding service delivery identifies three main sources: user tariffs and fees (Tariffs), allocation of tax revenue (Taxes), and aid funding (Transfers). Together these are referred to as the three Ts. The cost of services can be covered from users through their investment in self-provision or tariffs charged by service providers, or from general taxation. Indeed, some sectors, such as telecommunications, can be fully financed from user tariffs and be net contributors to general taxation, while others, such as education and health, remain “spending sectors” that are financed from a mix of taxation and user charges.”

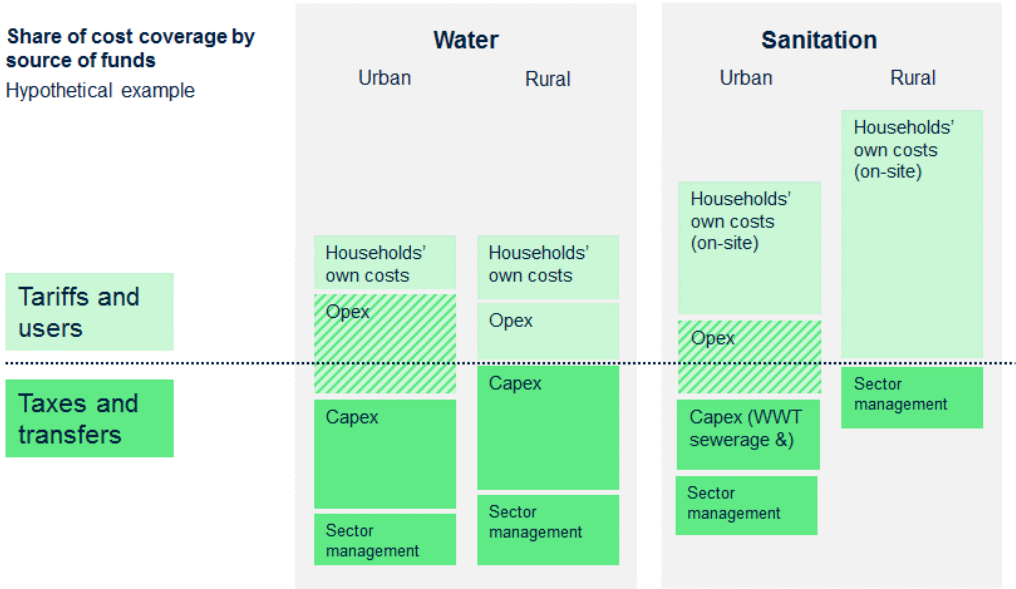
Defining public policy on how to share the burden of costs of service delivery depends on multiple factors ranging from the characteristics of a service, to the level of access coverage in the sector, to concerns about equity. For example, the telecommunications sector has characteristics that make it easier to generate funding from tariffs than for electricity, electricity is easier than water, and urban

water is easier than rural water. Countries with an inequitable rural-urban distribution of services may decide to channel more tax subsidies to rural services than to urban services.

The water sector already generates substantial funding both through service provider tariffs and from user investment in self-provision. However, each of its subsectors (urban water, rural water, urban sanitation, and rural sanitation) have very distinct service delivery characteristics. This means that public policy on *who pays for what* needs to be considered for each subsector individually, as discussed in the next section.

Sustained universal coverage will require more than capital for infrastructure. For a service to be not only sustained but also expanded and improved to meet demand, other costs must be assessed, including the cost of operations and maintenance, cost of capital, rehabilitation, taxes, and the costs of essential functions such as policy and planning, regulation, monitoring, and capacity building. Each of these “revenue requirements” must be matched with a funding source so as to form the basis for a sector financing strategy, as shown in figure 3.2.

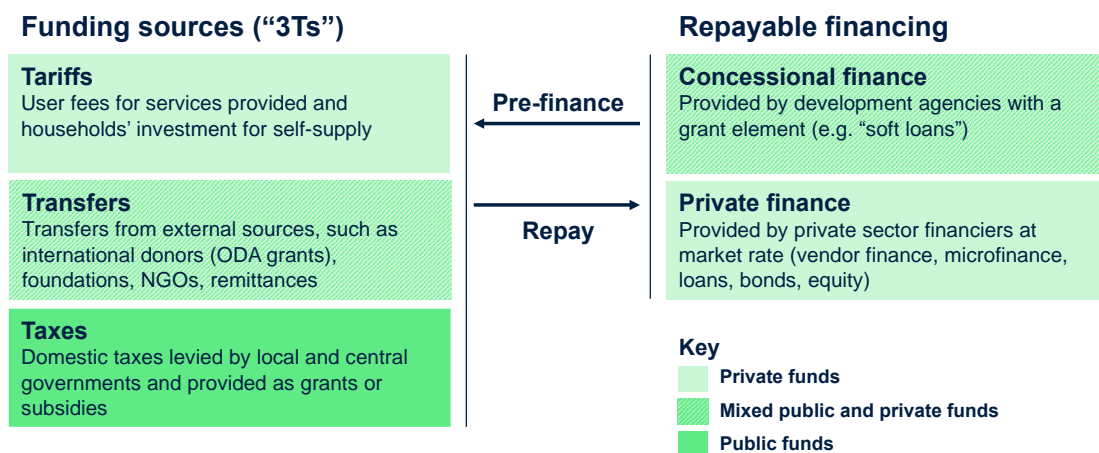
Figure 3.2. Defining Who Pays for What Costs in Each Subsector



Source: World Bank.

Clarifying policy (national and/or local) on *who pays for what* is foundational as it helps set out the roles and responsibilities of sector institutions and promotes transparency and accountability among sector institutions. This creates sector stability which, in turn, leads to the consistent and reliable funding flows, whether from tariffs or taxes. This reliability of revenue streams and their good governance leads to better levels of service, creating a virtuous cycle of satisfied users paying fees for efficient services. It also provides potential private lenders with a higher degree of confidence in a service provider’s ability to service debt. Indeed, private finance can be provided to pre-finance investments only if lenders have a reasonable certainty that they will be repaid from a mix of funding sources, as shown in figure 3.3.

Figure 3.3. How Funding Sources (the three Ts) Can Unlock the Ability to Borrow



Source: World Bank.

This policy clarity is also a key enabling factor in encouraging all financiers to work together to finance the sector’s SDG targets, making it easier for grants, concessional or commercial finance to leverage one another. The process of matching the *who* to the *what* also helps in allocating scarce resources efficiently across subsectors by ensuring that critical sector functions, such as sector management and regulation, do not go completely unfunded or underfunded.

### 3.3 Analyzing Each Subsector Individually to Maximize Use of Existing Financial Sources

Each subsector (urban water, rural water, urban sanitation and rural sanitation) has very different service characteristics and modes of delivery. Thus strategies to maximize existing funding sources, through efficiency gains, need to be differentiated by subsector. These strategies aim at getting the “house in order”, so as to open up opportunities to access commercial finance. Such strategies can include reducing costs, bringing tariffs closer to cost-covering levels, improving the allocation of scarce public revenues, and upgrading the effectiveness and allocation of international transfers.

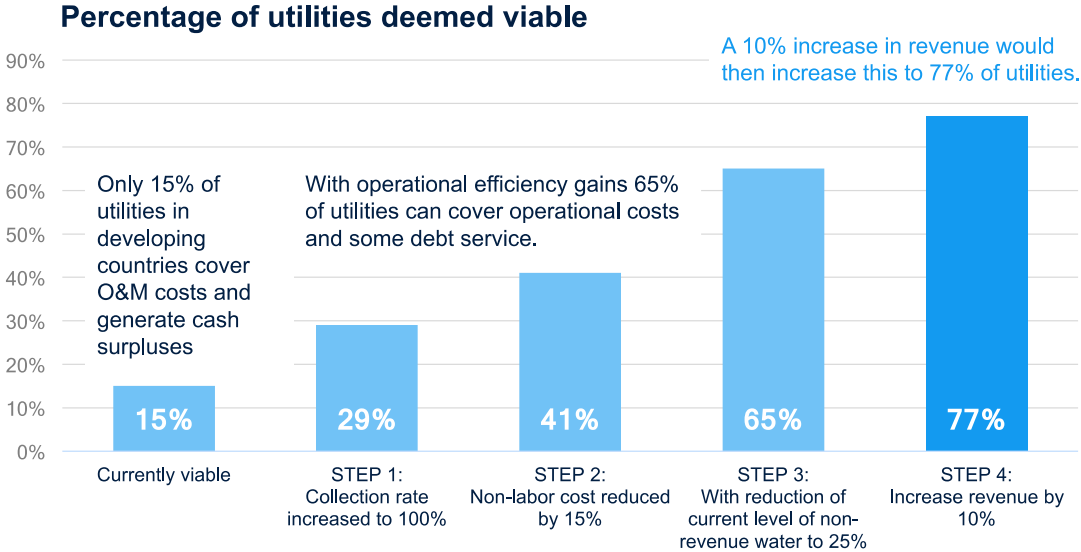
#### 1.2.1. Urban Water Supply

In urban water supply, a large portion of the efficiency gains that can be achieved will stem from improving service provider performance. Urban service providers manage most of the funding flows in the sector, but often do not use these funds efficiently or effectively. Major gains in utility performance can be achieved through: better management of commercial losses (billing and collecting user tariffs) and technical losses (such as fixing leaks); reducing labor costs; careful asset management (such as routine maintenance of pumps); and reducing energy demand (especially for water pumping).

For instance, NYEWASCO, a utility in Kenya, reduced its non-revenue water from 42 percent in 2006 to 18 percent in 2015 (Heymans et al. 2016). The efficiency improvement led not only to additional revenue through water sold but potentially postponed a need for investment in additional sources.

World Bank analysis, based on IBNET data, shows that only 15 percent of utilities in developing countries cover operational expenditures (OPEX) and generate a cash surplus. With operational efficiency gains and no increase in tariffs, up to 65 percent of utilities would potentially cover operating costs completely (see figure 3.4).

Figure 3.4. Water Utilities: Evaluating the Potential for Revenue Generation from Efficiency Gains

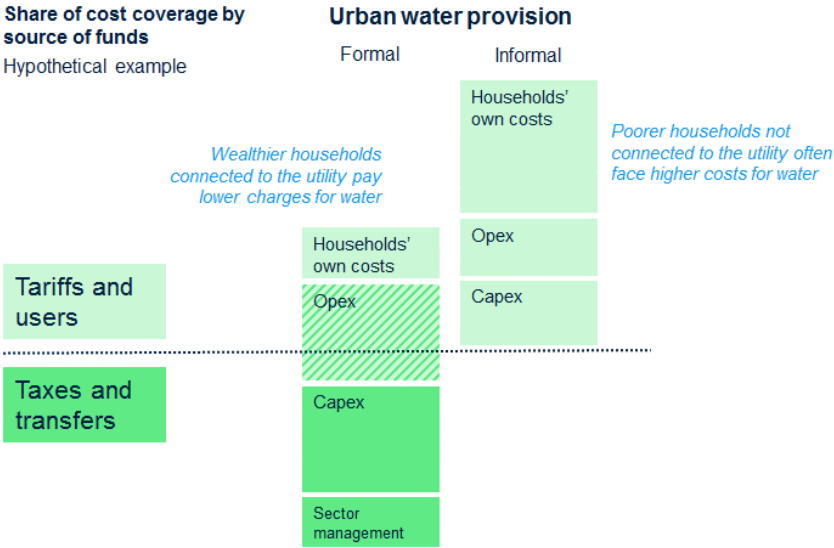


Source: World Bank calculations based on IBNET data for 605 developing country utilities.

Another significant way in which urban water utility performance improvements have been achieved in many countries is by reforming sector governance and institutional roles. Separating out sector oversight (such as standard setting and regulation) from service provision roles can introduce incentives for more efficient services. Sector governance and institutional arrangements often fail to distinguish sector oversight from service provision, leading to misaligned incentives, poor accountability, and limited autonomy of service providers. This separation creates transparency and accountability by clarifying to service providers which assets they are responsible for maintaining and replacing; what revenue sources they have a mandate to collect and manage; what autonomy they have over staffing; and what autonomy they have over managing new investments.

Utility reform does not inherently mean that water services will become unaffordable through tariff increases. Tariffs should be set so as to balance the objectives of cost-recovery, efficiency, and equity, with the aim of achieving financial sustainability. This requires a close understanding of affordability. At present, because of the vacuum left by public sector failure in many towns and cities, most poorer people are served by unregulated providers (bottled and sachet drinking water, water delivered by vendors, private networks, and fecal sludge workers). These market-provided services allow consumers to cope with the public service gap, but leave consumers, especially poorer households, vulnerable to higher costs and health risks. Increasing utility tariffs, along with improving utility performance, can free up resources for investment in poorer, harder-to-reach areas (see figure 3.5).

Figure 3.5. The Inequitable Distribution of Investment and Subsidies for Water between Wealthier and Poorer Urban Households



Source: World Bank.

Note: Capex = capital expenditures; opex = operating expenditures.

The combination of improving sector governance and performance while increasing service provider revenues strengthens the creditworthiness of service providers and thus the opportunity to access commercial finance, as was the case in Senegal (see box 3.1.).

**Box 3.1. Reforms in the Urban Water Sector in Senegal**

The urban water and sanitation sector reform launched in Senegal in 1996 helped establish a well performing institutional and contractual framework. It created a public asset-holding company (SONES), to manage the sector assets and oversee the development of urban water services under a concession agreement with the government. A private operator (SDE) was hired to operate the urban water facilities and deliver water services under lease agreement that initially lasted 10 years. A public parastatal corporation (ONAS) was established to manage urban sanitation.

The Senegal urban water sector now ranks among the top performers in the business by international standards. With an active policy to promote subsidized household water connections and a large investment program underpinning the reforms over the last two decades, the sector has achieved near-universal access (98 percent) to safe water in urban areas. These results were obtained through the "social connections" program, which was fully subsidized.

**Box 3.1. Reforms in the Urban Water Sector in Senegal (continued)**

From the time the reforms were launched, a financial model was built to forecast future costs and identify sources of funding and financing, including from efficiency gains, donor transfers, taxes, and



commercial loans. The financing structure to fund the \$500 million investment program from 1996 to 2006 (including social connections) was determined through the financial model. It included multilateral and bilateral donors (80 percent), the private operator through efficiency gains (13 percent), SONES' equity (3 percent), the government of Senegal through fiscal transfers (2 percent), and local commercial banks (2 percent). The commercial bank financing included two loans. In 1998, SONES received a \$20 million loan from a pool of Senegalese commercial banks to meet its cash flow needs. This commercial loan to SONES demonstrated the interest and confidence the pool of Senegalese commercial banks has had in the development of the sector. However, SONES did not use the entire loan from Citibank because its cash flow was better than expected.

This confidence has been renewed in 2000 during the design-build-finance (DBF) operation for the construction of the new water treatment plant (Keur Momar Sarr). A local commercial bank (Compagnie Bancaire de l'Afrique de l'Ouest, CBAO) participated in the funding with an \$7 million direct loan to SONES.

The success of the urban water sector reform has had positive impacts on the entire sector. The same model is currently being applied in the rural water sector. The government embarked on significant reforms in rural water supply, marked by a greater involvement of the private sector in the management of rural water facilities, and the creation of OFOR in 2014, a public asset-holding company that plays a similar role in the rural water sector to that of SONES in urban water. Three public-private partnership transactions are under preparation, accounting for 60 percent of the rural water schemes. This percentage is expected to rise to 100 percent by 2020. Leveraging domestic private finance is also contemplated for these transactions.

*Source:* Ndaw (undated).

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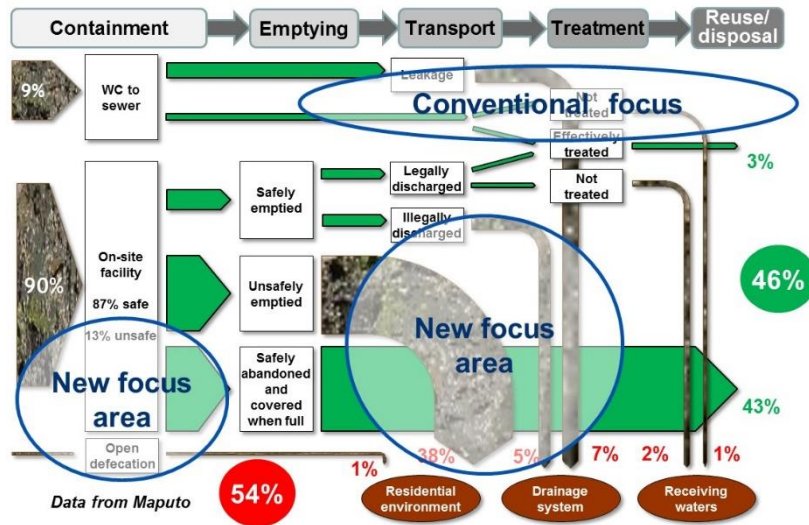
### 1.2.2. Urban Sanitation

In urban sanitation, significant efficiency gains can be achieved by making incremental improvements to management of fecal sludge, rather than city-wide adoption of large-scale investments in sewerage. For many developing countries, urban sanitation is likely to be the largest share of necessary investment in the SDG era. Cities that already have large sewer networks managed by utilities can benefit by improving the performance of the sewer utility (comparable to the urban water scenario previously described). Cities with no or limited sewer networks (including most cities in Sub-Saharan Africa) will do better to focus on incremental improvements to fecal sludge management. In these cities, sewerage and wastewater treatment benefits only the small percentage of the population connected to a sewer.

Fecal sludge collection is poorly regulated, if at all, and illegal dumping is common. As a result, a high percentage of fecal sludge in developing country cities is unsafely managed and presents a health risk to both collectors and the urban population at large. Figure 3.6. below represents fecal sludge flows in Maputo, Mozambique. This figure, referred to as a “fecal flow diagram” helps identify what percentage of fecal sludge is safely collected and disposed of (appearing in green, i.e. 46 percent in the case of Maputo) against the flows that are unsafely treated (appearing in red, i.e. 54 percent in Maputo). This

figure also highlights that improving on-site sanitation should be a key focus area in the case of Maputo (and many other cities) as this is the type of sanitation services that generates the most challenges.

Figure 3.6. Charting Fecal Flows to Identify Focus Areas for Urban Sanitation

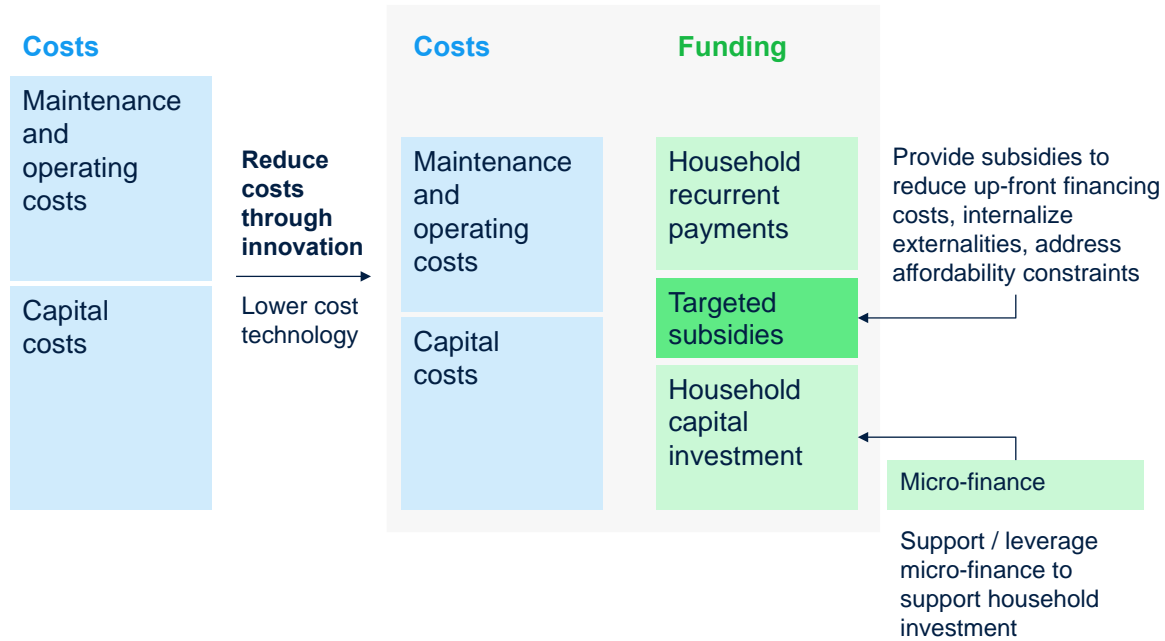


Source: World Bank. See [sfa.susana.org](http://sfa.susana.org) for more information on fecal flow diagrams.

The magnitude and type of financing required will therefore depend on the balance of investment on urban sewerage infrastructure versus fecal sludge management. Well-managed fecal sludge management systems can be five times cheaper than sewer-based systems (Dodane et al. 2012).

Targeted and strategic public sector investments in developing the fecal sludge management chain can help to stimulate, rationalize, and professionalize the subsector. Public investments in this model are targeted at catalytic investments such as professionalizing private sector emptying services, providing transfer stations, or scaling treatment solutions. Where the urban sanitation service is built around on-site sanitation and fecal sludge management, as in most developing countries, services would continue to be financed mainly by households, but with opportunities for leveraging microfinance (see figure 3.7).

Figure 3.7. Financing Strategies for Household Investments in Urban Sanitation



Source: World Bank.

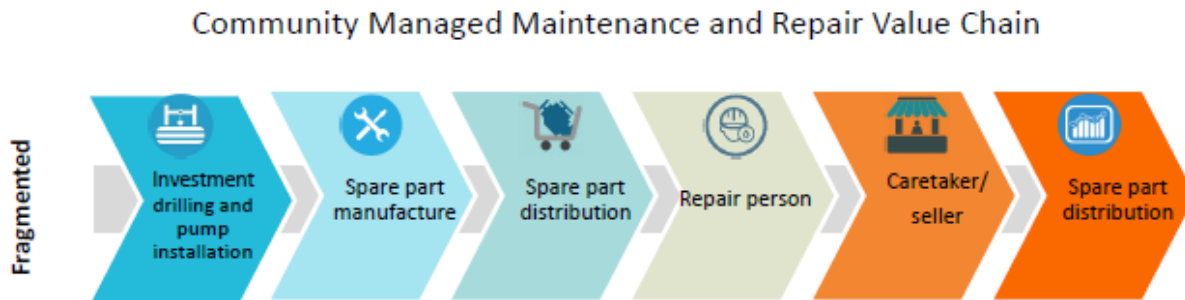
### 1.2.3. Rural Water Supply

In rural water supply, one of the greatest areas for efficiency gains is in improving the functionality of water supply systems. Before the 1980s it was common for donors to finance the capital expenditure (CAPEX) for rural piped schemes and for developing country governments to finance the operating expenditure (OPEX). This led to a lack of community ownership, unsustainable dependence on scarce public revenues, and extremely high system failure rates. Innovation since the 1980s led to the widespread adoption of hand-pumps in rural areas and management of water points by local committees, with some element of cost recovery from users for OPEX. However, in many countries, the functionality of rural water supply systems is still notoriously poor. Water point breakdown rates of 30 percent are common, and are often higher (Tincani et al. 2015). Breakdown rates increase with the age of system due to weak local management institutions and a lack of maintenance, monitoring, repair, and supply mechanisms. Too often, driven by expediency, the default response is to fund the replacement of old systems with new systems rather than to incentivize service providers to invest in maintaining existing systems. This response undermines efforts toward sustainability, such as investment in support mechanisms following construction, and results in value being lost.

Over the past decade, considerable research has been done to identify more sustainable methods of managing rural water supplies. This research indicates that the first step in financial sustainability is to adopt a life-cycle approach to costs to ensure that all aspects of a service are recognized: construction, operation, maintenance, rehabilitation, and eventual replacement of infrastructure (IRC 2012). The full range of sector actors must also be understood. The rural sector in particular can be marked by high

degrees of fragmentation within a single service chain, leading to less accountability and less opportunity for efficiencies (figure 3.8).

Figure 3.8. The Fragmented Value Chain for Community-Managed Maintenance and Repair of Rural Water Services



Source: UNICEF.

Good practice emerging from this research points to a combination of public and private sector responses needed to sustain rural water supply. This includes a greater public sector role in planning, monitoring and back-stopping local management of rural water supply, as well as enabling a private sector role in maintaining both hand-pumps and piped systems.

Looking ahead, initial CAPEX costs will increase as rural and peri-urban boundaries blur and there is a transition to piped systems, which can provide a higher level of service (stand posts closer to houses and household connections). Such cost increases make the sustainability of systems even more critical from an economic perspective. However, the higher service levels achievable with piped systems also improve the prospects for raising more revenue from tariffs from household connections in increasingly densely settled areas. With this, new opportunities for commercial financing may emerge.

A critical policy decision, therefore, is how the currently high levels of public and transfer funding, relative to household investment, can be used more effectively to ensure sustainable services and avert the need for continual reinvestment. If the same amounts of investment were directed toward business models with higher levels of cost recovery and better sector management, it would be possible to stimulate opportunities for commercial finance, including microfinance, development of micro-utility models, or clustering of rural schemes into larger utilities able to borrow commercial finance.

#### 1.2.4. Rural Sanitation

In rural sanitation, large efficiency gains have been achieved by using public sector resources to create demand for sanitation products and services, rather than for direct subsidies for household latrines. Sanitation is one of the best investments a government can make, with cost-benefit analyses showing global rate of return of \$5.5 for every \$1 spent, ranging from \$2.8 to \$8.0 between developing regions (Hutton 2012). The negative impacts of poor rural sanitation, even when practiced by only a few households, are borne by an entire community, and these negative impacts on health and well-being

accumulate over time and across generations. The question, then, is not whether government should invest in scaling rural sanitation, but *how*.

Globally, households have directly funded most of the existing sanitation facilities in rural areas, but this investment has not been sufficient to drive progress toward the MDGs, let alone the SDGs. Rural households are both constrained for cash and faced with competing demands for resources; many lack the motivation to channel their investment toward sanitation facilities.

Government attempts at scaling up rural sanitation through direct subsidies to latrines have had limited success for several reasons, including that unless demand for sanitation is systematically developed, households are unlikely to use the subsidized facilities and maintain or upgrade those facilities. Direct subsidies can also stifle innovation and local markets. Most importantly, the number of people gaining access to sanitation is limited by the total available funding envelope for subsidies.

Over the past decade, many governments have found that a more effective investment than direct “hardware” subsidies is to provide support for the “software.” This “software” includes investments in community-led total sanitation (CLTS), where raising community awareness is used to reach a collective decision to stop open defecation, build basic latrine facilities, and reach open defecation free (ODF) status. The public investment is in mobilizing this awareness through trained CLTS facilitators, often community extension workers from the ministry of health, and in building the markets to make sanitation and hygiene products and services available. This public investment aims to change behavior and leverages household investment in the latrine.

Reaching universal rural access to basic services will require increasing both household and public expenditure. The core policy decision to be taken is on how to use tax revenues strategically to complement and leverage households’ purchasing power and thereby expand rural sanitation markets. This balance of household and public investment will vary from context to context and needs to be calibrated through regular monitoring.

Given that rural sanitation services are mostly self-provided, households look to reduce the costs of their investment in sanitation solutions. Public investment in developing innovative solutions and achieving economies of scale in distribution can reduce household costs. For example, in Cambodia, the development of cheaper latrine solutions boosted sales as compared to traditional latrines. Sales were boosted further when this was combined with by increasing households’ access to finance for sanitation facilities. In India, the market for “toilet loans” has grown rapidly and the loans have high repayment rates. Loans have helped households build more durable latrines by spreading the costs over time (Trémolet, Mansour, and Muruka 2015).

Recurrent public sector resources are still needed to sustain open defecation free status in communities to prevent households from reverting to open defecation and to drive investment in facilities that advance households up the sanitation ladder toward safe management and treatment of waste. Only by moving to safely managed sanitation services and improved hygiene behaviors will the full health and economic benefits be felt.

A case can still be made for providing targeted subsidies that enable poorer households that cannot afford to take on a loans, but still want to build improved facilities. Providing this subsidy through methods that ensure that they are used for latrine facilities, such as through vouchers or rebates, are among the most effective ways of channelling subsidies to the sector (Robinson and Gnilo 2016). These efforts can be complemented by rewards for communities as they reach ODF status.

### 3.4 Aligning Aid Transfers with Domestic Priorities to Facilitate and Support Sector Reform

The thoughtful use of technical assistance and concessional loans, grants, and investments to trigger the transition of the sector toward a framework that builds the confidence of users and financiers will be important to the evolution of sector financing. This strategic use of aid for sector reform might support the establishment or refinement of the legal, regulatory, organizational, and institutional structures and instruments that build sector transparency and reliability. Such changes that can encourage consumer payment and sector investment. Equally, aid might be used effectively for the development of specific sector interventions (also referred to as “sector building blocks”), like planning, capacity, and monitoring, necessary to sustain WASH services over time. Used in these ways, concessional aid transfers can stimulate more reliable flows of finance and greater sector efficiencies.

Too often, however, aid transfers are thought of as “stop-gap” funding rather than strategic inputs. Concessional finance flows to the sector have increased over the last 20 years: for example, aid flows to the water sector at large grew by 120 percent between 2003 and 2014 (Winpenny et al. 2016), with aid to water and sanitation services absorbing approximately two-thirds of such flows. Official development finance to the water sector reached a peak of \$18 billion in 2012, including grant financing and all forms of development bank financing.<sup>9</sup> These amounts are nowhere near what needs to be mobilized to meet the SDGs, however. The costs of extending access to water and sanitation services alone are estimated at \$114 billion per year (Hutton and Varughese 2016).

Additional concessional finance to the sector may come from climate finance. An estimated \$391 billion went to climate finance in 2014, according to the Climate Policy Initiative (Buchner et al. 2015). Only a small percentage of these funds has so far gone into the water sector, however. Adaptation finance per se totaled \$ 25 billion, of which \$14 billion was directed to water and wastewater management. Some 93 percent of all climate finance went for mitigation, which was largely accounted for by renewable energy, energy efficiency, and sustainable transport. Such funding can indirectly support the water sector: for example, water pumping systems account for almost 10 percent of global electricity demand, some estimates suggest. But mobilizing climate finance will take time, particularly when there are many competing priorities for the use of these climate funds. By contrast, and despite repeated calls over the

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<sup>9</sup> Official development finance is defined by the OECD as the sum of bilateral official development assistance (ODA), concessional aid, and nonconcessional resources from multilateral sources, and bilateral other official flows made available for reasons unrelated to trade.

years to boost commercial finance for the sector, this type of financing has remained at very low levels for water sector investment in developing countries.

Aid to the WASH sector is typically fragmented. Responsibilities are often spread among ministries and functions are decentralized. Equally, aid support (transfers) are targeted at different aspects of the WASH sector, including health benefits, environment concerns, gender issues, and infrastructure. As a basic human need, WASH also benefits from the contributions of faith-based groups, nongovernmental organizations (NGOs), and civil society organizations (CSOs). More than 200 organizations report internationally on their funding to the sector in developing countries (Winpenny et al. 2016).

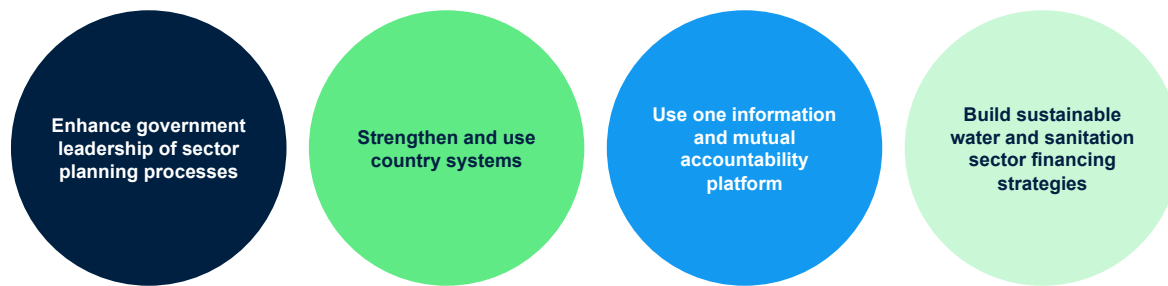
In addition to originating from a large number of sources, aid is targeted toward a variety of purposes, often driven by the priorities and indicators of donors and NGOs. Donor priorities may not be coordinated with the recipient government's own priorities. Aid is also channelled through different stakeholders, and often in the form of projects. A multitude of stand-alone projects adds to the government's coordination burden and leads to duplication and inefficiency. The results are that donor finance is often directed toward more readily tangible activities such as new water supply infrastructure or generating gains in access, rather than in building the sector institutions that can sustain outcomes. Bypassing government priorities and systems can undermine the ability of governments to develop strong planning and oversight of sector development and WASH services.

The financial impacts of unsynchronized aid flows to WASH include:

- Increased transaction and monitoring costs among the donor community
- Inefficiencies in project delivery through lack of leveraging among projects and short-term horizons that undermine sustainable approaches
- An opportunity cost in terms of the potential to develop government ownership and systems necessary to sustain services and achieve long-term development outcomes
- Diminished potential for WASH goals to be collectively financed by country resources (taxes, tariffs) as well as transfers as part of a sector financial plan.

To counteract fragmentation, changes in the partnership arrangements between the government and donors are required. The changes in the government and donor relations can be articulated as Collaborative Behaviours, formulated by the SWA partnership. The tenets of the approach, shown in figure 3.9, encourage the aligning of development finance with priorities identified by the government, and where possible channelling them through government systems.

Figure 3.9. The Four Sanitation and Water for All (SWA) Collaborative Behaviours



Source: SWA.

This approach aims for collaborative behaviours to evolve through Joint Sector Reviews or a Donor Coordination Groups to bring government and donor actions into ever closer alignment. Adopting these behaviours provides a platform to discuss the comparative advantages of one source of funding against another for specific investments in sector management and infrastructure, as well as the incremental improvements to the consistency and modalities used to fund the sector.

The financing modalities that would support these behaviours include:

- Strategic financial planning for the sector to make most effective use of the variety of financial resources, such as a sector-wide approach (SWAp)
- Instruments to consolidate funding with identified sector priorities, including pooled funds, cofinancing, output-based aid, and general/sector budget support
- Building the efficiency and commercial viability of product and service providers
- Credit enhancements that reduce the risks to new lenders
- Technical assistance to build financial markets and products.

Aid transfers should not displace other sources of funding. Rather, they should be strategically applied to build local capacity for stronger institutions and development processes, to strengthen the creditworthiness of the sector through efficiency gains, and to support innovations in the sector.



## 4 Accessing New Resources for the Sector

Because existing domestic resources fall far short of the resources needed to cover the financing requirements to achieve SDG 6 (including SDG 6.1. and 6.2.), it is essential to look beyond them to see how repayable financing can be mobilized for the sector, especially from private sources.

### 4.1. Increasing the Share of Private Finance

Repayable financing allows investments to be brought forward without having to wait to accumulate sufficient funds upfront to cover the entire investment or wait for grant or low-cost capital to become available. It also helps with smoothing cash flows for water service providers, which is particularly important given the lumpy nature of water sector investments, with large upfront costs. For households, for example, the costs of building a durable household latrine can exceed that household's annual revenue, which means that, in order to invest in a latrine, it is essential that households get access to forms of finance that allow them to spread such investment costs over a longer period of time.

Traditionally, most repayable finance for the sector has come in the form of concessional finance: that is, finance provided by development finance institutions at interest rates that are below-market rates, or with longer tenors and grace periods. Private sector financing, another form of repayable finance, accounts for a meagre 7 percent of total spending on water and sanitation in developing countries (WHO and UN Water 2012) and in Sub-Saharan Africa the figure was estimated to be less than half of 1 percent (Foster and Briceño-Garmendia 2010). Increasing the level of private financing for the sector would allow service providers to borrow and invest in expanding service and improving quality, without having to wait for scarce public resources to be made available or rely on limited concessional financing.

Private finance can be accessed by both public and private water sector providers: it is not equivalent to introducing private sector participation into the sector. In fact, in many developed countries, publicly owned water service providers have leveraged substantial commercial financing without relinquishing control over management of the service or selling shares.

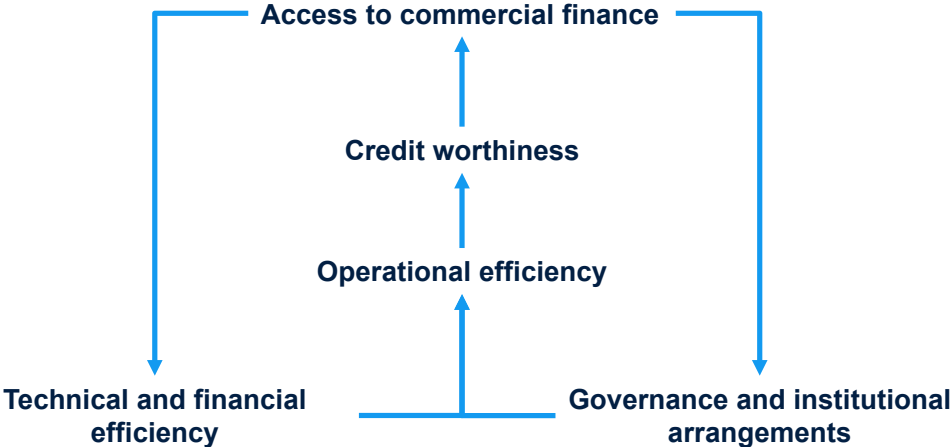
Private finance can come from either domestic or international sources. International commercial finance is provided by financiers operating in global markets and typically provided in hard currency such as U.S. dollars or euros, except where currency swaps are available. The fact that funds are denominated in hard currency means that water sector borrowers, which receive nearly all their revenues in local currency, are exposed to a significant foreign exchange rate risk. Domestic commercial finance can provide a more attractive alternative in countries with weak currencies: the funding is provided in local currency by financiers located in the borrower's country, which limits the foreign exchange risk. Market conditions on domestic financial markets may be less favorable, however, with short tenors (to limit lenders' risk) and comparatively high interest rates. Liquidity might also be an issue. Conversely, in some countries, "captive" liquidities (that need to remain invested in the country, such as funds managed by institutional investors) may be substantial and in search of long-term financing opportunities in domestic markets.

At present, in most developing countries, water sector providers are still reliant on accessing relatively easy money from concessional financing sources, from either governments or donors. While the role of

private sector investment has been abundantly discussed in the past in international forums, very few service providers have successfully tapped into commercial finance, whether from domestic or international financiers. There are a few notable exceptions, with both private and public water service providers. For example, Manila Water in the Philippines, Companhia de Saneamento Basico do Estado de São Paulo (SABESP) in Brazil, and the Phnom Penh Water Supply Authority (PPWSA) in Cambodia have tapped into local and international financial markets to access resources.

Private finance is often associated with better supervision and management, if only because the providers of finance tend to pay attention to how their money is used. As shown in figure 4.1, commercial finance usually goes hand in hand with greater investment discipline and transparency, which in turn can help improve efficiency—an objective for most water sector reform efforts around the world.

Figure 4.1. The Virtuous Cycle of Financing the Water Sector

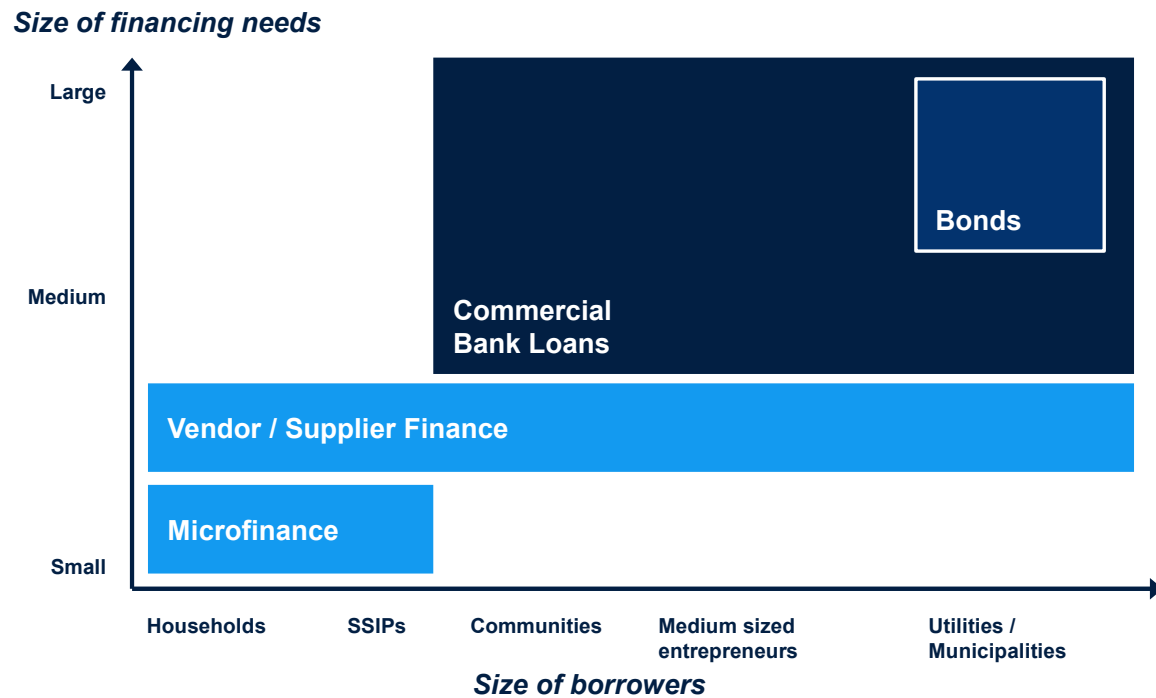


Source: World Bank.

Private finance can come in various forms, such as vendor or supplier finance, microfinance, commercial bank loans, bonds or equity. Private finance providers can include water equipment suppliers, microfinance institutions, commercial banks, private investors or investment funds via capital markets.

Infrastructure, with its long life cycle, is ideally suited for long-term investors such as insurance companies and pension funds, which have long-term liabilities and therefore seek long-term investments. Yet these types of institutional investors have a limited presence in many emerging markets. There are, however, many other sources of private finance available to meet the financial needs of different sector actors. These range from microfinance institutions supporting households and small and medium enterprises at one end of the spectrum to short-term commercial debt to long-term capital market lending at the other (see figure 4.2).

Figure 4.2. Types of Private Finance Available, depending on the Size of Borrowers and Size of Financial Needs



Source: World Bank.

Note: SSIPs = small-scale independent providers.

These different types of private finance can be summarized as follows.

**Vendor or supplier finance.** Supplier finance occurs when a private company offers financing to a customer or a potential customer to purchase products or services. By doing this, the company increases its sales by financing its own products. This form of financing has tended to focus on pumps and solar energy units, although water utilities also offer financing to their customers to purchase household connections. Increasingly, producers of latrine products also extend credit for purchases.

**Microfinance.** Small-scale independent providers (SSIPs) play an active role in supplying water infrastructure in peri-urban and rural areas, and in some urban areas. In most cases, they have limited access to commercial bank financing. SPSPs may lack formal legal status or may be too small or informal to have financial statements that can be audited. Countries like Bangladesh, Cambodia, India, Indonesia, Kenya, and Malawi have growing microfinance sectors that have experimented to various degrees with lending for water sector investments. These microfinance institutions typically offer small loans to individuals, entrepreneurs, and communities that do not have access to traditional credit. These loans can finance items such as rainwater harvesting tanks, water connections, shallow wells, pumps, ventilated improved pit (VIP) latrines, septic tanks, sanitation slabs, and biogas toilets.

**Commercial bank loans.** Worldwide, commercial banks provide local governments and utilities with a tremendous amount of debt, but most of it is relatively short term and expensive. Long-term lending for infrastructure by local commercial banks in developing countries is relatively rare but is very common in developed countries. Accessing a commercial bank loan can be the first step for water service providers toward adopting a diversified financial policy. To do so, water service providers need to be in a position to repay their debts and therefore be deemed to be creditworthy.

**Bonds.** Bonds are a debt instrument whereby the lender provides financial resources to the borrowing entity. Bonds are commonly used to finance water infrastructure in many developed economies, but have been used much less in most emerging markets. Tenors tend to be longer and interest rates are lower than most commercial banks, although the upfront transaction costs can be high. Most multilateral development banks have been encouraging their partners to look to capital markets to meet part of their infrastructure financing needs. A number of developing countries have tried to kick-start municipal bond programs, including programs to finance water sector investments. Notable examples include efforts in the late 1990s in India, Indonesia, and the Philippines, although none of these efforts have been replicated at scale.

**Equity.** Equity finance is the mostly widely used capital allocation mechanism for private businesses. It involves selling shares (also referred to as equity) to finance business operations. The shares can be sold in regulated stock exchanges, where a variety of formal listing requirements (including listing fees) must be met by the sellers. For public infrastructure, equity finance is a controversial form of finance because it entails some form or level of private ownership of assets used to deliver a public service. This is especially true in the water sector. Most listed water companies are in member-countries of the Organisation for Economic Cooperation and Development (OECD) and are based in Europe, the United Kingdom, and North America, or in China. A few listed companies exist in Asia (such as Manila Water Company in the Philippines) and Latin America (such as Companhia de Saneamento Basico do Estado de São Paulo, SABESP, in Brazil).

## 4.2. Leveraging Private Finance through Blending

There are many reasons why private finance has not been forthcoming so far in the water sector. The long-term nature of water infrastructure investments calls for long-term finance, whereas most commercial banks may be able to lend only at medium-term maturities. Returns on water sector investments tend to be lower than in other sectors, and legal restrictions may limit private investment in the water sector. Households and small-scale water service providers, even in developed markets, have difficulties accessing commercial debt finance. Their individual investment needs are often not large enough to attract commercial finance, except at high interest rates.

The robustness of the financial architecture at the country level also affects private financing options. For example, in some countries, water service providers or subnational governments are precluded from borrowing, even when they are managed prudently. More generally, the more sophisticated the financial instrument, the more robust the financial architecture needs to be to support the investments.

Capital market authorities and pension fund or insurance regulators need to be in place and functioning in order to provide lenders with the confidence to make long-term investments. Attracting these forms of private capital also requires commercial banks and microfinance institutions to operate in regulated markets.

Given that the current starting point is limited or no commercial financing, there needs to be a gradual move toward mobilizing such funds. This means improving the financial performance of utilities through a mix of improved technical/commercial efficiency and through governance and regulatory reforms. These improvements will generate the financial surplus that provides the opportunity to borrow funds through commercial channels, thus complementing the limited public funds currently available.

Blended finance—the strategic use of public taxes, development grants and concessional loans to mobilize private capital flows to emerging and frontier markets—can leverage additional funds for the sector and reduce borrowing costs compared to a fully commercial arrangement. Blending can help overcome affordability and/or political constraints. The concessional element is used to catalyze more commercial investment than would occur without blending. Blended finance can create new understandings, relationships, and potential new opportunities between the water and financial sectors, which can promote the long-term goal of increasing commercial financing. A mix of instruments can be used, such as capital subsidies, partial credit guarantees, tenor extensions, political risk insurance, and dedicated lines of credit. A mix of instruments can be used, such as capital subsidies, partial credit guarantees, tenor extensions, political risk insurance, and dedicated lines of credit. These are shown in figure 4.3.

Figure 4.3. Types of Blending Instruments to Leverage Private Finance

**BLENDING: smart public finance to leverage private finance**

Grants / subsidies	Concessional loans / public finance	Credit enhancements
<p><b>Results-based subsidies,</b> <i>e.g. to support access extension</i></p> <p><b>Capacity-building and training</b> <i>e.g. training of borrowers and lenders</i></p> <p><b>Technical assistance</b> <i>e.g. sensitize banks to market opportunities, assess water investment projects, project preparation, shadow credit ratings</i></p> <p><b>Support water sector pooling /</b> grouping to access larger commercial finance providers</p>	<p><b>Provide liquidity to commercial finance providers</b></p> <p><b>Blend concessional with commercial finance to soften lending terms</b></p> <p><b>“First loss” agreements</b></p> <p><b>“Patient capital”:</b> equity participations at below market-rate return expectations can signal commitment</p>	<p><b>Guarantees:</b> reduce risk perception, leading to lower interest rates and longer tenors</p> <p><b>Revenue intercepts, escrow accounts:</b> to secure access to funds and reduce risk of non-payment</p>

Source: World Bank.

To date, blended finance in developing economies has not been widely used at scale in the water sector. A few isolated experiences have been supported by international donors, but these have mostly been in middle-income countries and they have so far failed to be replicated at scale. Examples of the use of blended finance range from facilitating access to microfinance for households to invest in water and sanitation in Bangladesh and Cambodia, all the way to setting up a revolving fund for utility investments in the Philippines (Leigland, Trémolet, and Ikeda 2016). Box 4.1 describes the experience with blended in finance in Bangladesh, where grant funding from the Water and Sanitation Program of the World Bank was used to support the development of a sanitation microfinance market, for both entrepreneurs and households.

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#### **Box 4.1. Leveraging Private Sector Finance to Improve Rural Sanitation in Bangladesh**

Bangladesh has made progress in improving sanitation nationwide. The open defecation rate has been reduced to 1 percent of the population. However, only 61 percent of Bangladeshis relied on improved sanitation facilities as of 2015, according to Joint Monitoring Programme statistics. Households primarily invest their own financial resources to buy and install latrines. Many have the ability (and often the willingness) to invest in building improved sanitation facilities, but they are often constrained for cash to afford the very high upfront costs of a toilet or piped water connection. Businesses operating in the rural sanitation sector are very small, which inhibits their ability to develop better-suited latrine models and to access credit. These businesses are unable to offer poor households the option of paying in installments and of spreading purchase costs over time. By contrast, microfinance institutions (MFIs) are well positioned to help. They can provide financial services much more widely across their client networks and can tailor loans to meet local needs.

Over the last few years, the World Bank has been working with the government of Bangladesh to support its sanitation initiatives and encourage private sector involvement in rural sanitation. A pilot sanitation marketing initiative to leverage private sector resources and help households adopt improved sanitation was implemented in 2009 and was scaled up in 2011 after successful results. In 2016, the World Bank approved funding for an output-based aid (OBA) program<sup>a</sup> that channels OBA subsidies to two leading microfinance institutions (MFIs), the Association for Social Advancement (ASA, the second largest microcredit lending institution worldwide) and the Palli Karma-Sahayak Foundation (PKSF, the government of Bangladesh's wholesale microfinance facility).

The World Bank is facilitating the provision of loan products to the two MFIs through a \$3 million OBA subsidy to target poor households. Concessional and commercial financing are blended. The grant is provided directly to the two microfinance institutions (ASA and PKSF), which use their own funds to provide prefinancing to households. PKSF provides wholesale loan financing to retail microfinance institutions (partner organizations) to finance household sanitation loans. ASA provides sanitation loans directly to households. Households use the loans to pay trained and precertified local construction firms to build hygienic latrines. The cost of the latrines built under the program range between \$45 and \$220. The subsidy applies only to loans up to \$128, to ensure that comparatively richer households do not divert the subsidy to finance more expensive installations.

*Source:* World Bank 2016a.

a. Output-based aid (OBA) refers to development aid strategies that link the delivery of services in developing countries to targeted performance-based subsidies.

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Going forward, blending concessional with public resources, even with minimal levels of domestic commercial finance, should be pursued as an efficient use of scarce tax, grant, and concessional resources and a critical start to securing the financing to close the gap in water infrastructure. The amounts of blending, and terms on those commercial funds, will need to be determined by the individual transactions and the domestic financing costs. An incremental approach is not only desirable but critical if the water SDG is to be achieved. While the upfront costs of developing the financial architecture and becoming creditworthy will likely be high, the long-term payoff of eliminating the foreign exchange risk, closing the service backlog, and using public and donor resources more efficiently are significant benefits. Blending commercial finance of even 10 percent or 20 percent of total water infrastructure capital costs with donor or government funds is a crucial first step and well worth the upfront time and investment. Box 4.2 describes Kenya's experience scaling up blended finance for water and sanitation investments and offers some lessons about accessing private finance.

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#### **Box 4.2. Scaling Up Blended Financing of Water and Sanitation Investments in Kenya**

Communities in Kenya operate many small piped-water systems in rural and peri-urban areas. Some of these systems cover operating and maintenance (O&M) costs through user fees (tariffs). Kenya's significant financing gap in the water and sanitation sector could be partially filled through private sector lending to those systems that are financially viable.

In 2007, the World Bank launched a pilot with a Kenyan commercial bank specializing in microfinance lending (K-Rep Bank) to encourage rural and peri-urban communities to access loan financing to rehabilitate and expand small piped-water systems. Under the Maji ni Maisha loan program, investment projects of up to \$200,000 that had potential to cover O&M costs and partially repay the communities' loans were identified. Qualifying communities contributed 20 percent of project cost up front, and K-Rep Bank financed 80 percent through a medium-term loan. An output-based grant of up to 40 percent of project cost was awarded to communities that met pre-agreed targets and successfully implemented subprojects. Communities repay the remaining loans over five years through operating revenues from water sales. Technical assistance was provided to develop bankable projects and related loan applications and supervise project implementation. The program was scaled up with support from the European Union. By 2012, some 35 communities had borrowed \$3.4 million from K-Rep Bank, raised \$1.2 million of equity, and accessed output-based grants of \$2.8 million, which helped 190,000 gain access to piped water services. Participating communities reported an increase in productivity, including supplementary income from micro-level animal husbandry and vegetable farming. Estimates suggest that every \$1 invested in the subprojects has yielded economic benefits of \$3 to \$4.

Several lessons can be drawn from this case in terms of accessing private finance:

- It is essential to have an operating environment and legal structure that are conducive to bank lending. In the Kenyan context, three elements of the 2002 Water Act stand out. First, community service providers are autonomous entities incorporated under the Cooperative or Trust Acts. Second, revenues are ring-fenced within the sector, with income from water sales going toward O&M and capital expenses. Third, there is a functional and independent regulator that licenses service providers.
- Financial instruments that mitigate credit risk for lenders and improve financial viability help encourage both borrowers and lenders and kick-start the flow of commercial finance.

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#### Box 4.2. Scaling Up Blended Financing of Water and Sanitation Investments in Kenya (continued)

- The use of partial credit guarantees and output-based grants were instrumental in accessing commercial finance and making pro-poor investments viable.
- A sufficient scale of customers who are willing and able to pay for piped water is critical for revenue generation. Ideal projects for commercial financing are capable of generating revenue quickly and are likely to include investments in expanding and densifying the network, metering, and improving energy efficiency.
- Commercial debt can bring governance benefits to water service providers in the form of added oversight from lenders and help providers improve capital expenditure planning, operating efficiency, and financial management.
- Technical assistance to assess the financial viability and technical feasibility of investment projects, improve the bankability of service providers, and supervise project implementation was essential in providing additional reassurance to lenders.

*Source:* World Bank 2016b.

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## 5 The Way Forward: Defining an Action Plan to Close the SDG Financing Gap

In response to the financial challenges facing the WASH sector, this discussion paper has outlined a range of proposals for using existing financial flows more effectively, improving the efficiency of existing funding sources (tariffs, taxes, transfers), and increasing mobilization of domestic private finance, a largely untapped financial resource to the sector. These multiple pathways toward greater financial sustainability are mutually reinforcing and need to be implemented in a coordinated manner. The optimal sequencing and balance will vary from country to country and by subsector. The financial attractiveness of the sector will develop incrementally, as the creditworthiness of water sector institutions improves and as capital markets in a country evolve.

The starting point for these multiple pathways is with key policy decisions about setting sector objectives, social priorities, and desired service levels and standards. The discussion and agreement around these core policy tenets set the parameters for discussions on the volume and source of financing needed, will help shape financing strategies, and will inform the approaches used to fill financing gaps.

### 5.1 Building Political Will

With more than a three-fold increase in funding required to meet the water and sanitation SDGs, a new deal between ministers of finance and ministers responsible for water, health, and environment is essential. This deal needs to recognize the public benefit to government investment in water and sanitation, while also demanding much better performance and efficiencies from existing service providers to leverage commercial finance and free up fiscal resources to develop and extend water and sanitation services for the poorest.

Striking this deal also requires building a consensus among ministers of finance about the fact that water and sanitation can be transformed from a "spending sector" into one that can effectively contribute toward economic growth and poverty reduction. The meeting of finance ministers in April 2017 at the World Bank/IMF Spring Meetings—for which this discussion paper is an input—will be a timely and significant step in building this consensus.

### 5.2 Crafting Financing Strategies

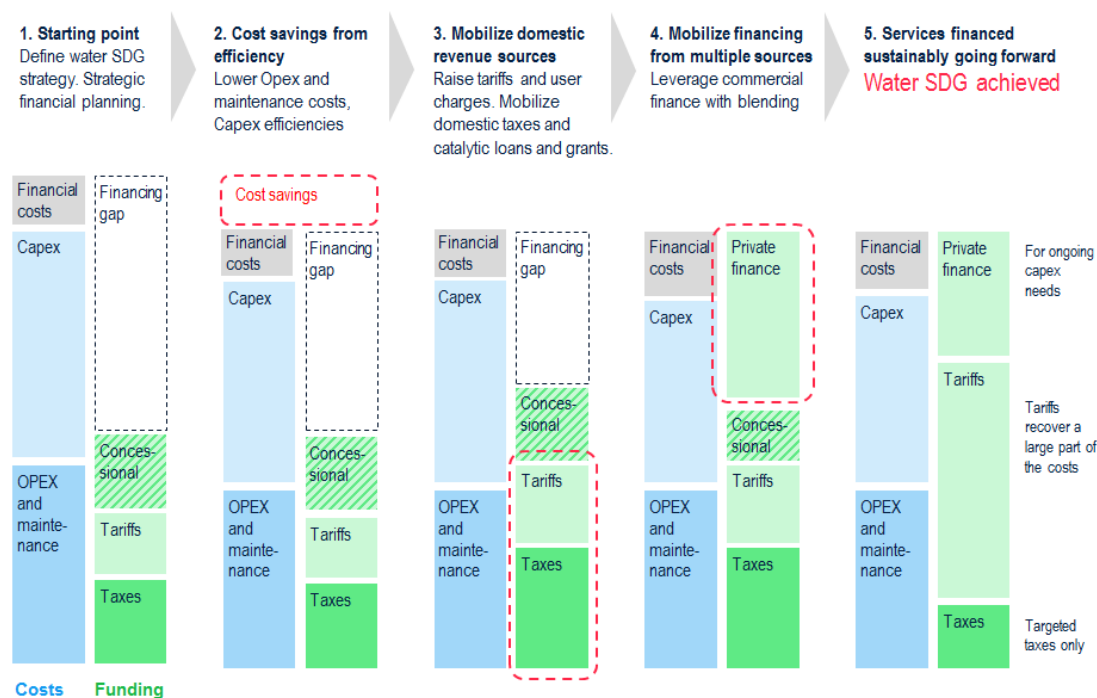
As governments set their sector objectives, they must craft sector financial strategies to improve coordination and synergies among sources of funding (taxes, tariffs, and transfers) and sources of financing (microfinance, utility finance, infrastructure bonds; see section 3).

These financing strategies should, at least, set subsector targets for coverage and performance improvements; estimate investment costs to achieve and sustain SDGs; and identify funding streams to cover each category of costs. An effective financing strategy will start by identifying what savings can be realized in the sector through efficiency gains and through increased sector funding from tariffs and

taxes, as well as through reallocation of inefficient subsidy funding. This analysis will need to be conducted for each subsector.

These initial actions provide the foundation for attracting repayable finance, particularly domestic private finance to minimize foreign exchange risk and grow local markets, with the support of blending. Such a path toward sustainable water and sanitation financing is represented in figure 5.1.

Figure 5.1. Toward Sustainable Financing for Water and Sanitation



Source: World Bank.

Note: Capex = capital expenditures; opex = operating expenditures; SDG = Sustainable Development Goal.

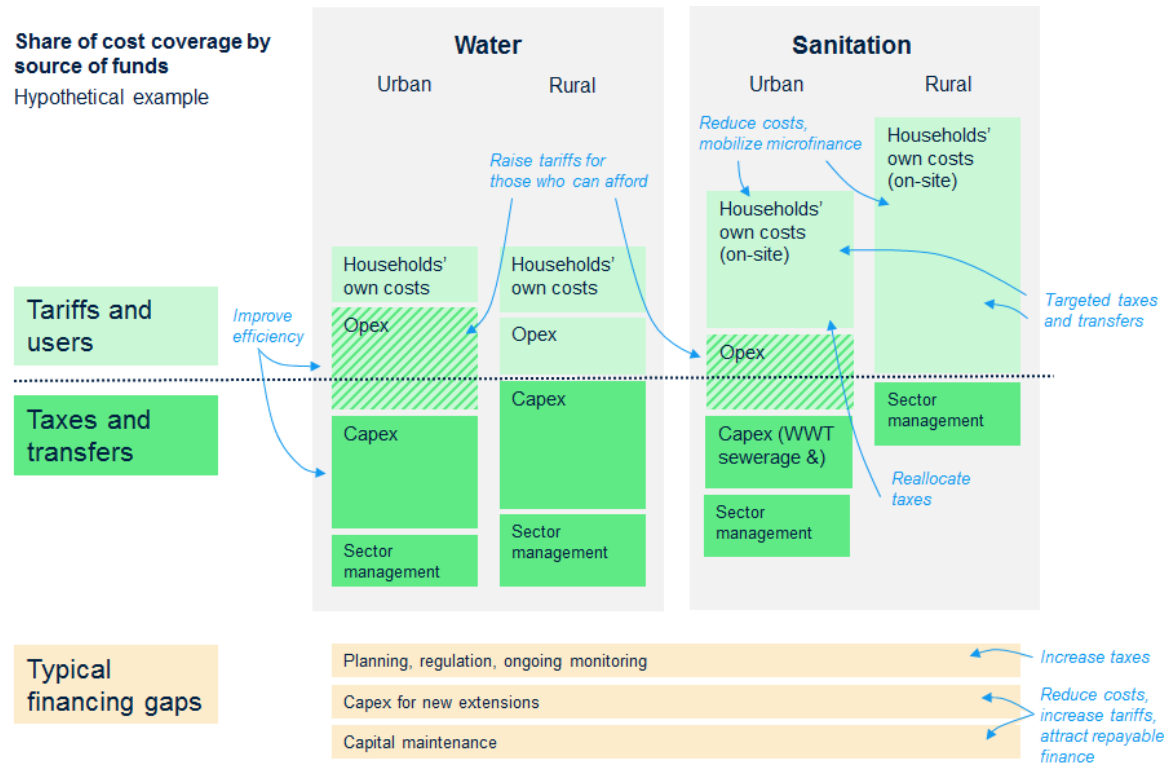
Some service providers or subsectors (such as urban water supply) have greater potential to attract private finance in the short to medium term. It will be important to help them graduate from reliance on public finance to private finance. In many cases, such graduation will require an initial investment to make these entities or subsectors creditworthy. Equally, time and resources will need to be invested to develop the financial products to meet this new demand. Mobilizing private finance for subsectors or service providers will allow public resources to be freed up, which can then be directed toward social priorities and toward strategically supporting the sector’s evolution. The unwillingness or inability of governments to work to secure private finance and the lack of sufficient concessional or public resources has, in effect, exacerbated the current financing gap.

### 5.3 Making the Financial Strategy Operational

The financial strategy can be made operational through a series of actions to maximize the impact of existing funding and to enhance the attractiveness of the sector to new forms of finance. Figure 5.2

illustrates a range of possible actions that can be adopted to do this, including increasing the efficiency of operating expenditures and capital expenditures, increasing tariffs for those who can afford them, using taxes in a more targeted manner to catalyze investments, and ensuring that critical sector oversight mandates are funded.

Figure 5.2. Bringing Together Multiple Interventions to Improve Subsector Efficiency



Source: World Bank.

Note: Capex = capital expenditures; opex = operating expenditures; WWT = wastewater treatment.

Specifically, the actions to realize the strategy should include some or all of the following:

**Encourage water service providers to reduce costs.** Service providers, government departments, and households all respond to incentives. Thus results-based policies that encourage efficiency, good governance, and other improvements that lead to cost reduction, efficiencies, and the mobilization of new sources of revenue are to be encouraged. Current funding practices need to be examined, including a tendency of many water service providers to delay making capital expenditure investments until grants and concessional finance funds become available. Waiting for grant or low-cost capital has numerous direct and indirect consequences that can drive up expenditures, despite the lower cost of finance. An alternative is to free up resources through efficiency improvements.

**Set tariffs to achieve better cost recovery and adopt targeted subsidies as needed.** Well-run service providers bill and collect for the services they provide. Such revenues are considered relatively reliable

and create incentives for the provider to deliver good quality services. The level and structure of user charges and tariffs should be examined to ensure that they recover operation and maintenance costs and if needed, can leverage commercial borrowing, as it was done in Senegal. Affordability issues can be addressed by tariff structures that provide lifeline tariffs for basic consumption levels.

**Mobilize tax and transfer funding toward areas of greatest need or potential impact.** Taxes may be used as targeted subsidies to meet national objectives (such as equity) or to address negative externalities. Regardless of the rationale, governments should explore the opportunities to allocate more tax revenues to the water sector against identified priorities and to use them in a more targeted manner. Both Mozambique and Nepal have taken steps to increase their national budgets for water.

**Mobilize household investment, particularly for sanitation.** World Bank programs in Bangladesh, Indonesia, and Kenya demonstrate a growing opportunity for microfinance to expand and support household-level investment in water services. Efforts to scale up water-related microfinance are worthy of further assessment.

**External sources of support to the sector should be mobilized, such as from climate finance.** International support and funding for climate change mitigation and adaptation is growing, but the access of the water sector to international climate funds remains limited. Clearer and simpler rules for accessing these funds, or the creation of dedicated climate funding mechanisms for subnational entities, would be particularly helpful to the water sector.

**Leverage domestic private finance through policy, incentives, and blending.** National policy should assess the need to expand new sources of financing, understand the root cause of barriers to accessing such financing, and then set out sectoral and financing policies that will incentivize the behaviors to address them. Microfinance for sanitation in India was supported, for example, by broader financial regulation that compels commercial banks to invest in social sectors. Regulations should be assessed on their ability to help prudently “crowd in” private finance to the water sector. The amounts of blending, and the terms on those commercial funds, will need to be determined for the individual transactions and by the domestic financing costs. An array of risk mitigation tools can enhance the attractiveness of water investments for commercial financiers.

## Glossary

Blended finance — the strategic use of public taxes, development grants and concessional loans to mobilize private capital flows to emerging and frontier markets

CAPEX – Capital expenditure

Commercial finance – Finance provided by private sector financiers at market rate (loans, bonds, equity, vendor finance, microfinance)

Concessional finance – Finance provided by development agencies with a grant element (such as “soft loans”)

OPEX – Operational expenditure

Repayable finance – Concessional or private finance that must be repaid

Tariffs – User fees for services provided and households’ investment for self-supply

Taxes – Revenues from domestic taxes levied by local and central governments and provided as grants or subsidies

Transfers – Support from external sources, such as international donors (official development assistance grants), foundations, nongovernmental organizations, or remittances

Three Ts – Tariffs (user fees), Taxes (allocation of tax revenues), and Transfers (external support)

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