

Financing Options for the 2030 Water Agenda

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Introduction

The sector is in the process of repositioning itself toward the Sustainable Development Goals (SDGs). Under the Millennium Development Goals (MDGs) the international focus of the water sector was predominantly on increasing access to water supply and sanitation (WSS). With the advent of the SDGs the agenda is much broader covering all aspects of water (WSS, water resource management [WRM], and irrigation) and their sustainability.

The SDGs come with new and very significant financing needs. For WSS they have been estimated at US\$1.7 trillion, or three times the amount historically invested in the sector (Hutton and Varughese 2016). For irrigation, the International Food and Agriculture Organization (FAO) estimates that some US\$960 billion will be required between 2005/07 and 2050 to ensure water for agricultural production in 93 developing countries (Koochafkan, Salman, and Casarotto 2011). No WRM estimate is available but failure to address WRM could diminish national growth rates by as much as 6 percent of GDP by 2050. These amounts are all well above historic allocations.

The water sector is not well equipped to face these new financing challenges. The sector has historically

relied on public financing to meet its investment needs—through domestic and development partner concessional funds and/or lending. Institutionally many parts of the sector are government departments where mobilizing private finance is almost non-existent. Even when they are established as corporate entities, such as some WSS providers, it is rare for them to borrow from commercial lenders due to weak incentives and/or poor creditworthiness.

Mobilizing additional concessional funds will help—but will not be sufficient. New sources of concessional finance might be tapped (e.g., climate finance) but the gap cannot be filled simply by increasing the volume of concessional funds and lending from governments or development partners.

A new sector financing paradigm is required based on four broad themes. The sector has to realign itself around actions that (a) improve sector governance and efficiency (*i.e., improving creditworthiness*), (b) crowd in or blend private finance (*i.e., leveraging capital*), (c) allocate sector resources more effectively to deliver the maximum benefit for every dollar invested (*i.e., targeting capital*), and (d) improve sector capital planning to reduce unit capital costs (*i.e., minimizing capital requirements*).

Achieving the new financing paradigm requires a more collaborative approach with all stakeholders playing an active role. The sector will reach its SDG goals only if all stakeholders play their part, specifically in the areas that are outlined in the text that follows.

Governments

1. Facilitate mobilization of domestic finance by (a) developing policies and incentives that improve efficiency and governance of service providers to make them more creditworthy, (b) improving the financial enabling environment, including price regulation, and (c) incentivizing leveraging of public funds with commercial finance.
2. Mobilize additional volumes of public and concessional funds into the sector and target those funds to the most productive uses.
3. Encourage greater capital efficiency in the sector.

Development Partners

1. Orientate support toward improving efficiency and creditworthiness and mobilizing domestic finance.
2. Increase use of guarantees and other instruments to crowd commercial finance into the sector.

Private Sector

1. Partner with the public sector toward improving capital and operating efficiency.
2. Reach out to the public sector to explore potential financing relationships and transactions.

The remainder of this document summarizes the characteristics of current sources of financing in the sector, identifies the key challenges and opportunities to mobilizing new sources of sector finance, and lays out a series of recommendations to address the financing challenges that result from the adoption of the water SDG.

Characteristics of Water Development Finance

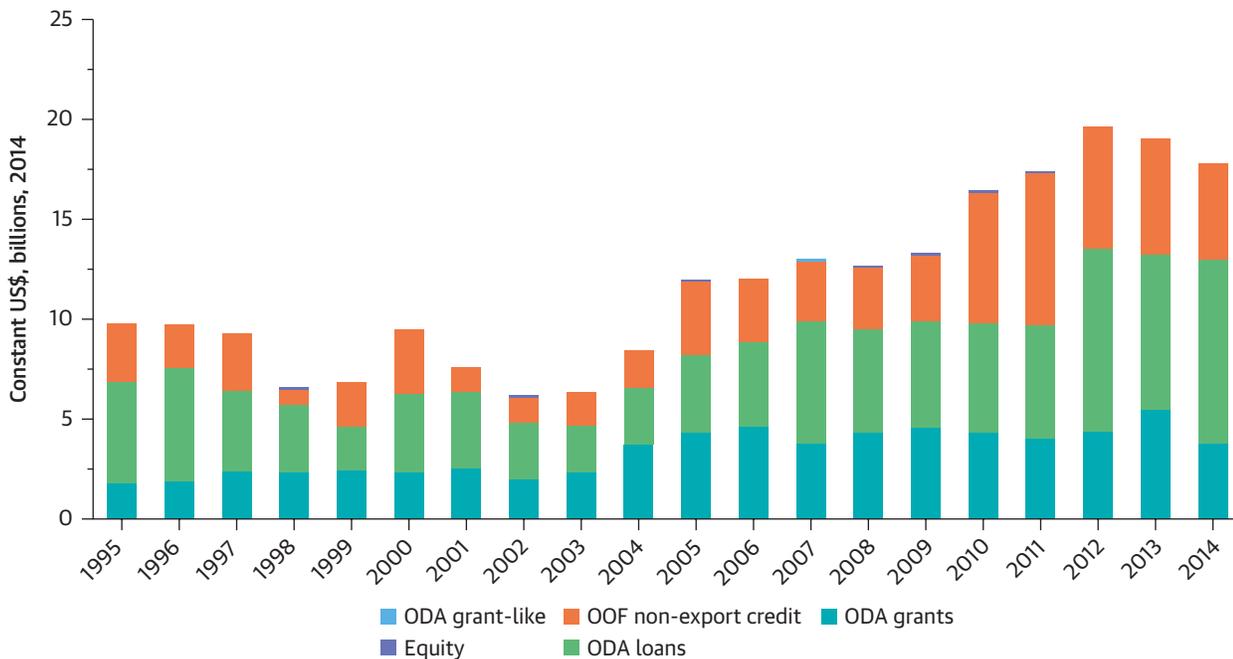
Official development finance (ODF) to the water sector comprises concessional financing (referred to as Official Development Assistance,¹ or ODA) and nonconcessional financing (referred to as Other Official Flows, or OOF). As per the OECD/DAC definitions, ODA comes in the form of grants and concessional loans provided by official agencies on concessional terms. Development banks would typically adapt their lending terms to countries' circumstances. They can make concessional loans through a "soft-lending" window (such as the International Development Association [IDA] of the World Bank Group) and nonconcessional loans through their traditional lending window (such as the International Bank for Reconstruction and Development [IBRD] of the World Bank Group). Whereas concessional loans count as ODA, nonconcessional loans would be included in total ODF but not in total ODA.

ODF to water nearly tripled between 2003 and 2014, rising from an annual allocation of \$6 billion in 2003 to close to \$18 billion in 2014. This increase coincided with the implementation of the MDGs and the International Water Decade adopted by the United Nations, which ran from 2005 to 2015. This response is in keeping with the appeal to international financiers made by the Camdessus Report of 2003 to double the annual flows of financing to water (World Panel on Financing Water Infrastructure 2003).

Between 2010 and 2014, 42 percent of ODF funds in the water sector was allocated as loans, 28 percent as grants, and 29 percent as nonconcessional loans, as shown on Figure 1. Equity and other grant-like financing represented only minuscule amounts.

ODA to the water sector also nearly doubled from 1995 to 2014, rising from US\$6.8 billion to US\$12.9 billion per year (in constant 2014 prices). ODA for water did not keep pace with the growth in ODA for all

FIGURE 1. Official Development Finance for the Water Sector by Type, 1995-2014



Source: Adapted from the OECD DAC Database, accessed October 25, 2016.
 Note: ODA = official development assistance; OOF = other official flows.

sectors combined, however, which increased from US\$42 billion in 1995 to US\$140 billion in 2014 (Winpenny, Trémolet, Cardone et al. 2016). While water ODA grew by 90 percent during this period, overall ODA increased by more than 230 percent.

The water sector has historically attracted smaller amounts of ODA than other social sectors, including education, health, population planning, and government and civil society. The sector has lagged relative to other social sectors.

ODF for water is primarily targeted to WSS activities as opposed to irrigation or WRM. From 1995 to 2014, WSS received approximately 57 percent of all water sector ODA commitments and 52 percent of nonconcessional financing from multilateral development banks. This was consistent with the MDG focus on WSS. Irrigation and hydropower made up most of the balance. WSS had a higher proportion of grants versus loans (with 31 percent provided through grants) while 82 percent

of irrigation development finance came in the form of loans (both concessional and nonconcessional).

In terms of geographic distribution, from 1995 to 2014 Sub-Saharan Africa and South and Central Asia were the largest recipient regions for ODA, with 29 percent and 25 percent of ODA, respectively. More than 70 percent of the funds were channeled through the public sector and only 1 percent represent support through public-private partnerships. Funding has overwhelmingly supported projects: 91 percent versus 5 percent for core contributions and pooled programs, 3 percent for budget support, and 1 percent for technical assistance.

The largest bilateral funders from 1995 to 2014 were Japan (with an average annual ODA contribution of US\$1.3 billion), Germany (averaging US\$711 million), and the United States (averaging US\$494 million). Other significant funders included France, the Netherlands, Spain, and the United Kingdom.

ODF for the sector is mainly channeled via multilateral agencies, who have seen their share of total development finance flows increase significantly in the last 6 years. The largest multilateral funders were the World Bank Group, with IDA, the soft-lending window topping the list with \$920 million per year on average between 1995 and 2014 and IBRD (International Bank for Reconstruction and Development), the traditional lending window committing an average of \$1.86 billion per year in loans to middle income and low income countries. Other significant multilateral funders for ODA included the EU institutions, Asian Development Bank Special Funds and the African Development Fund of the African Development Bank. With respect to nonconcessional funding, the Inter-American Development Bank (IADB) and Asian Development Bank (ADB) played major roles with \$0.81 billion and \$0.61 billion annual lending commitments over the 1995-2014 period.

Recent analysis of non-trade guarantees from MDBs found that guarantees were a relatively small portion of their portfolio. Overall, the total cumulative commitment from 2000 to 2013 for guarantees was US\$37 billion, or about 4.5 percent of the MDBs' total lending. This number effectively doubled between 2004 and 2012/13, which is an encouraging trend. However, the vast majority of these guarantees was for the banking and financial services sector, with minimal use of this instrument in the infrastructure sector. Unfortunately, no breakdown for water-related investments is available. The World Bank is currently the MDB that makes the greatest use of guarantees, and it has recently agreed to double its portfolio of guarantees from 2017 to 2020.

While international climate finance has risen sharply, the water sector captured only a modest proportion of that funding to date.² An analysis of seven of the major MDBs shows that from 2011 to 2014 their annual commitments to climate finance varied between US\$23 billion and US\$28 billion, (ADB et al. 2016).

The World Bank and the European Investment Bank have been the largest contributors. In 2015, US\$25 billion was committed to climate finance by seven MDBs, of which 80 percent was for mitigation, with the remaining balance allocated to adaptation. Of the amount assigned to adaptation finance, water and wastewater management received 27 percent of the financing, or US\$1.32 billion.

In summary, although ODF to the sector has grown, the purpose of those funds is still very much linked to facilitating investments funded by government resources. Going forward, ODF will likely need to be increased, including to cover the broader remit of the SDGs. It will need to be spent in a much more targeted, catalytic manner to leverage domestic public and private financing sources. The latter have remained elusive in the water sector as compared to other sectors.

In 2015 water only captured 4 percent of total private sector commitments, as opposed to transport (63 percent) and energy (34 percent). Total private investment in the water sector was US\$4.1 billion. The majority of transactions took place in China and Brazil (World Bank PPI 2015).

Key Sector Challenges and Opportunities

This section summarizes a number of the key challenges and opportunities that impact the sector's ability to mobilize commercial sources of financing. Most of these issues are not new and have been discussed extensively in other documents. They are brought together and presented here through the specific lens of meeting the water SDG financing requirements.

Efficiency, Governance, and Creditworthiness

The sector faces institutional and financial challenges that have existed for many decades resulting in underfunding and inadequate service delivery. Misaligned incentives, poor accountability, and limited autonomy have created a low-level equilibrium

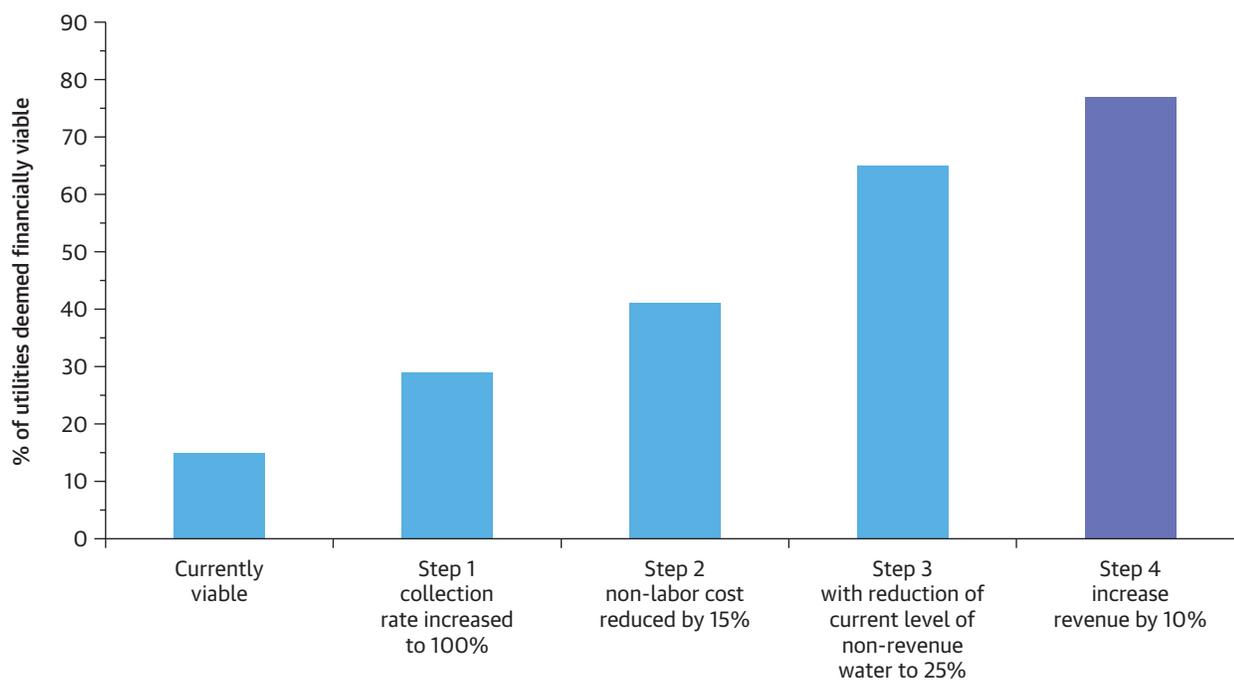
endemic across many parts of the sector worldwide. The lack of financial and technical efficiencies, related to poor revenue collections, high levels of losses, significant operating costs, and poor management, undermine operating efficiency and constrain the sector’s ability to access alternative sources of finance—leaving it to compete against other sectors for the limited fiscus. In the SDG context, however, this provides opportunities. For example, by addressing inefficiency and improving performance it is possible to significantly enhance financial viability of WSS service providers (Figure 2). More specifically, it illustrates how improved collections, reduced non-labor costs, decreased non-revenue water, and increased revenues improves financial viability.

Operational challenges stem from weak governance and oversight in the sector—which can be reversed. Addressing these issues provides the space

to improve performance. This requires the clear separation of roles and responsibilities of sector actors coupled with strong oversight of providers and of the sector as a whole (for example, through a regulatory agency). Such practices lead to defining and applying service standards, achieving capital and operating efficiencies, and setting user charges that can cover the costs of service provision. Along with a clear legislative framework, these good practices will also satisfy investors’ need for transparency regarding governance structure and the ownership of the service provider and its assets. Taken together, this helps make the sector more attractive to commercial finance.

Technical and financial efficiency, coupled with transparent governance and regulation, are the building blocks of creditworthiness. If a provider is creditworthy, then by default it is operating in a way that is sufficiently efficient and financially

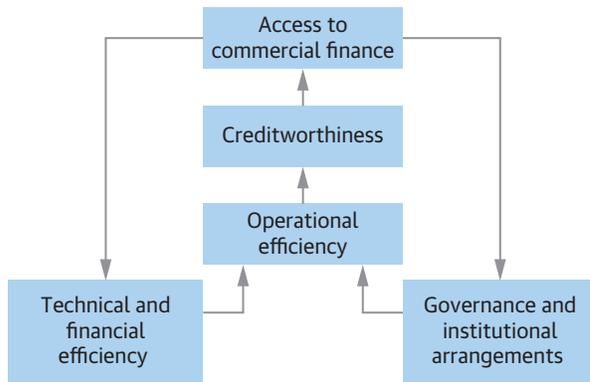
FIGURE 2. Operating Efficiency and the Impact on Financial Viability



Source: IBNET database, accessed 2016. database.ib-net.org.

Note: Based on a sample of 690 utilities in selected emerging markets. Financial viability is deemed achieved when utilities have an operating ratio >120 percent.

FIGURE 3. The Cycle of Water Sector Financing



credible and with an acceptable level of oversight. Figure 3 illustrates the relationship between technical and financial efficiency, coupled with governance, and how they result in operational efficiency and ultimately, creditworthiness.

Setting revenues to properly operate and maintain assets and create a surplus for debt service is a key ingredient to securing commercial finance. Revenues in the water sector, regardless of country or subsector, are limited primarily to tariffs, user charges or taxes. Transfers are available from donors but are not constant, and private commercial finance is not an additional source of revenue because it ultimately must be repaid. Sometimes governments want to maintain low tariffs or user charges even when customers are willing to pay higher fees for a good service. Governments need to balance the different sources of revenue. If user charges are to be supplemented by tax revenues then the latter should be predictable so as to provide comfort to potential lenders concerning the security of any debt service payments.

Sector Commercial Financing

There are many forms of commercial finance in emerging 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 financing available. These range from microfinance institutions supporting households and small and medium enterprises at one end of the spectrum through short-term commercial debt to long-term capital market lending at the other.

The robustness of financial architecture in developing countries impacts private financing options. For example, in some countries water service providers or sub-national governments are precluded from borrowing, even when they are managed prudently. More generally, the more sophisticated the financial instrument, the more robust a financial architecture is needed to support the investments. Capital market authorities and pension fund or insurance regulators all need to be in place to give confidence for long-term investments. Commercial banks and microfinance institutions also operate in regulated markets and having rules and regulations in place is a pre-requisite to attracting any private capital. Without this financial architecture, it is difficult to draw commercial finance to the water sector.

Foreign exchange risk inhibits the use of international commercial finance in most water infrastructure. International commercial finance is provided by financiers operating in global markets and typically is provided in hard currency such as U.S. dollars or euros. Although global interest rates are at a historical low, high country and borrower risk premiums applied by international finance providers make such financing costly for many water service borrowers in developing countries. In addition, 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, as it limits the foreign exchange risk.

While there are challenges with local currency, such as shorter tenors, limited liquidity and comparatively higher interest rates, risk mitigation tools can assist to ease many of these issues.

Sector Planning

The water sector generally remains characterized by poor sector and project planning, particularly financial planning. In emerging markets, the sector has been challenged at capital expenditure planning, especially when it comes to structuring water infrastructure for potential commercial finance. The planning that does occur tends to be driven by lending from the MDBs, large central government investments, or national plans that have little or no relationship with mobilizing commercial financing. Where capital investment plans do exist, they are often developed with inadequate data, unrealistic service levels, poor links to affordability, inattention to capital efficiency, and little or no relationship to financial plans. This limited planning is a major hindrance to addressing the financing gap.

Recommendations

Given the challenges and opportunities facing the water sector, these recommendations offer a range of proposals to increase existing resource mobilization; improve performance and governance; facilitate domestic commercial finance mobilization; maximize asset value; improve policies and incentives; and advance research.

Increase Mobilization of Existing Funding Sources

Improve flows from user charges and tariffs. 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 can be examined to ensure they recover operation and maintenance costs and, if needed, can finance any commercial borrowing. Senegal reformed its water supply sector so that tariffs

recovered costs, including a portion of the capital expenditures. Affordability issues can be addressed by tariff structures that provide lifeline tariffs for basic consumption levels.

Mobilize domestic taxes. Taxes may be used as targeted subsidies to meet national objectives, they may recognize the externalities of some services such as sanitation, or they may simply serve as a general resource to help finance the sector. Regardless of the rationale, governments can explore the opportunities to allocate more tax revenues to the water sector. Both Mozambique and Nepal have taken steps to increase their national budgets for water.

Increase access to concessional finance. Given that ODA flows into the water sector have not kept pace with flows to other social sectors, there is a need to explore ways that water can garner a significantly larger share whilst identifying the best mix of grants and concessional loans to address needs.

Make more effective use of international climate funds in the water sector. International support and financing for climate change mitigation and adaptation is growing, but the water sectors' access to these funds remains limited. Clearer and simpler rules for accessing these funds, or the creation of dedicated climate financing mechanisms for subnational entities, would be particularly helpful to the water sector.

Improve Performance and Governance

Improve commercial and technical efficiency, as well as governance, to help raise the creditworthiness of service providers. These foundational issues are the bedrock that ultimately create the opportunity for service providers to secure commercial finance. Addressing weak collections, poor energy efficiency, and high losses or leakage levels will help many providers move toward achieving a financial surplus, which is fundamental to accessing commercial finance. At the same time, improved governance will attract commercial finance on better terms.

Support development of regulatory organizations.

Financing institutions seek high levels of certainty when making lending decisions. A robust regulatory system can help provide greater certainty about sectoral approaches to cost recovery and the quality of service provision of potential borrowers. Regulators form a part of the overall institutional framework that clarifies roles and responsibilities of ownership, service provision, oversight, and financing. The WSS regulator in Kenya has been particularly active at encouraging service providers to improve their operations and become more creditworthy.

Facilitate the Mobilization of Domestic Finance

Encourage private domestic capital mobilization.

Mobilizing domestic commercial finance should be embraced by relevant sector and finance ministries as a way to leverage additional financing and to reduce the foreign exchange risk, despite the short-term challenges. Significant challenges remain as many providers are unaware of the needs of the commercial financiers, while many investors are wary of the water sector.

Use government and donor funds better to catalyze commercial finance via blending. Blending of concessional or government finance with domestic commercial finance provides an opportunity to start closing the financing gap in an incremental and affordable manner. In structuring these transactions, the blended funds should not distort the domestic market or add to sovereign debt. 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. Examples of blended finance being successfully used in water projects has occurred in Colombia, Jordan, Kenya, Mexico, and South Africa.

Improve financial architecture and enabling environments. It is important to consider the overall financial architecture in a particular country. For example, the

ability to attract commercial or bond investments will be driven by the laws and regulations related to the financing of subnational entities and state-owned enterprises. Effective rules and regulations likewise can drive smaller lending activities, as microfinance regulators oversee small-scale financiers who support household water and sanitation investments. Microfinance for sanitation in India was supported 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” commercial finance to the water sector.

Maximize the use of enhancements such as guarantees and other instruments. To support this blending model, an array of risk mitigation tools is available to enhance the attractiveness of water investments for commercial financiers. These include partial credit guarantees, tenor extensions, political risk insurance, and dedicated lines of credit. They may be available from several different donors, private providers, or both.

Make tax transfers to service providers predictable. Where governments choose to provide tax-sourced financing to the sector, it can be used to support commercial borrowing by the recipient. However, such transfers must be predictable and reliable for a potential lender to consider them in their assessment of the borrowing entity. South Africa’s equitable share is a good example of a predictable revenue transfer.

Expand finance at the household level. World Bank programs in Bangladesh, Indonesia, and Kenya demonstrate a growing opportunity for microfinance to support household level investment in water services. Other microfinance organizations and non-government organizations such as Water.org are also actively seeking to use this financing mechanism. Efforts to scale up water-related microfinance is worthy of further assessment.

Maximize Asset Value

Improve project preparation. All new investments need to be screened to ensure they will meet their objective in the most efficient manner. The overdesign of assets diverts funds that can be used more productively elsewhere. Project preparation should include upstream planning and financial studies, feasibility studies, and detailed cost-benefit analyses to determine whether the project is economical as well as affordable. In the context of this paper, consideration should be given to the extent that investments can be partially or fully financed from commercial sources.

Improve asset management. While much of this paper focuses on closing the SDG financing gap, it is important to ensure continued operation and maintenance of the existing asset base—whether a pipe, a canal, a levee, or a dam. Failure to allocate sufficient resources for these activities leads to shortened asset lives and expensive failures—both of which drain resources that could be used more productively for new capital expenditures.

Improve Government Policies and Incentives

Undertake strategic financial planning. Because grants and concessional finance are limited, many water service providers delay making capital expenditure investments until those funds become available. However, waiting for grant or low-cost capital has numerous direct and indirect consequences that can drive up expenditures, despite the lower cost of funds. The unwillingness or inability to secure commercial finance and the lack of sufficient concessional or public resources has, in effect, caused the current financing gap. To overcome this, there is a need at the national policy level to undertake strategic financial planning to better understand the various sources of funding and how any gap can be financed—including through commercial financing.

Ensure maximum benefit from every unit of public investment. Governments should develop models to

estimate how to maximize the benefit from public financing within and across the various water subsectors. The definition of benefit is context specific but the question to be asked is where government should spend its next dollar within the context of meeting the SDG. For example, specifically looking at only SDG targets 6.1 and 6.2, should the funds flow to the water or sanitation subsectors? Likewise, would public funds be better utilized in urban or rural communities?

Create the right incentives. Service providers, government departments, and households all respond to incentives. 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. Results-based policies that encourage efficiency, good governance, and other improvements that lead to the mobilization of new sources of revenue are to be encouraged.

Advance Research

Enhance analytical work and knowledge products in selected subsectors to facilitate the flow of commercial finance to all service providers. As noted earlier, much of the attention to date has focused on the WSS subsector and particularly large-scale, urban-based infrastructure. There is a need for further research and training in other areas including (a) financing opportunities through microfinance and vendor or supplier finance; (b) constraints and potential structures to financing irrigation and WRM-related investments; and (c) outstanding challenges related to foreign exchange risk, securitization, and construction finance.

Table 1 summarizes the suggested actions and identifies the stakeholders which should take the lead in their implementation. Collectively they lay out a credible path to achieving the water SDG and related goals and objectives.

TABLE 1. Recommendations to Improve Water Sector Efficiency and Financing

Policy/instrument	Stakeholders			
	National governments	Service providers/ local governments	Development partners	Private financiers
<i>Increase mobilization of funding sources</i>				
Improve flows from user charges and tariffs				
Mobilize domestic taxes				
Increase access to concessional finance				
More effective use of international climate finance funds				
<i>Improve performance and governance</i>				
Improved efficiency and governance lead to creditworthiness				
Improve regulations				
<i>Facilitate mobilization of domestic finance</i>				
Encourage private domestic capital mobilization				
Use government and donor funds to catalyze commercial finance				
Improve financial architecture				
Maximize use of credit enhancements				
Make tax transfers predictable				
Expand household level finance				
<i>Maximize asset value</i>				
Improve project preparation				
Improve asset management				
<i>Improve government policies and incentives</i>				
Create incentives				
Undertake strategic financial planning				
Maximize public investment benefits				
<i>Advance research</i>				
Enhance analytical work				

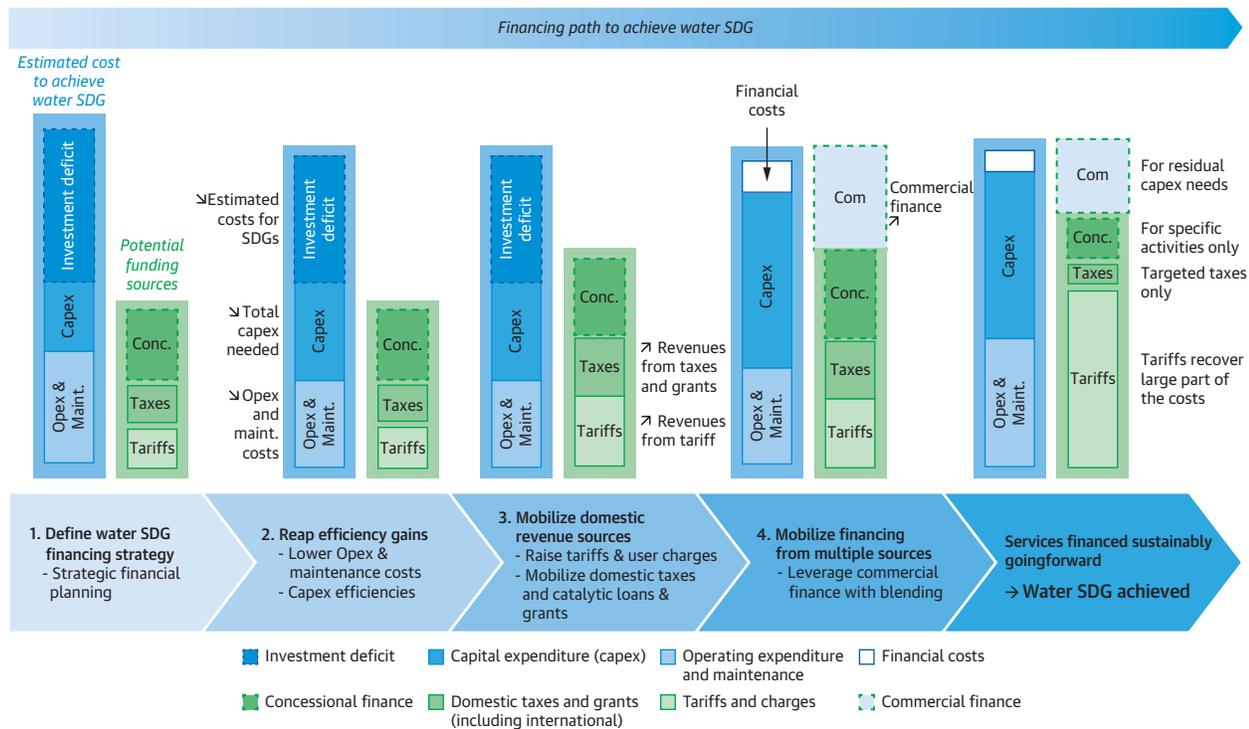
	Leading role
	Contributing role

Sequencing

These recommendations need to be implemented in a sequential manner to gradually move the sector toward greater financial sustainability. This sequencing will vary from country to country and by subsector. It needs to occur incrementally, with important building blocks coming into place as the water sector, other infrastructure sectors, and the

capital markets all evolve. Figure 4 provides an indicative ladder for the WSS subsector that illustrates a number of distinct stages to deliver financially sound services while mobilizing finance from a number of sources, including commercial markets. It illustrates how this process might look as providers become more creditworthy and enabling environments evolve.

FIGURE 4. A Proposed Financing Path to Break Out of the Unsustainable Status Quo to Meet the Water SDG



Notes

1. Official Development Assistance (ODA) is defined as grants and loans provided by official agencies, including state and local governments or their executive agencies on concessional terms. Loans are deemed to be concessional by the OECD/DAC when they meet the concessionality criteria, which is that the financial flow contains a minimum grant element of 25 percent, calculated at a discount rate of 10 percent.
2. International climate finance refers to financing channeled by international entities for climate change mitigation and adaptation activities in developing countries.

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