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Reform and Finance for the Urban Water Supply and Sanitation Sector

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Preface

The World Bank and Urban Water: A Brief History

For decades the World Bank has supported national governments to expand access to basic water supply and sanitation (WSS) services through technical assistance and lending operations. Most World Bank funding to the WSS sector has gone to urban infrastructure operated and maintained by public service providers (hereinafter "utilities"). Infrastructure investments were sometimes complemented by technical assistance to strengthen water institutions, as well as in support of broader sector reforms related to water pricing, governance, regulation, and access for the poor.

Several low- and middle-income countries (LMICs), from Cambodia to Uganda, have completed urban water sector reforms that brought forth vast improvements in health and development outcomes. And while the World Bank has provided complementary support to those national programs, there are many other examples where long-term Bank investments have failed to foment lasting change. This is because, until recently, approaches have tended to focus on a sub-set of issues rather than the sector as a whole.

Early approaches emphasized selection of the "right" delivery model, such as a move toward corporatization or the use of private sector participation. A mandate for full cost recovery tariffs, sometimes written into project covenants, was another attempted remedy. Even sweeping reforms—such as those to replace entire regulatory frameworks—were often unsuccessful. The lesson learned from these experiences is that even when interventions are based on sound principles, no single delivery model or policy can shift the trajectory of an entire water sector. Sustainable reform requires multiple interventions that are harmonized and well-coordinated.

More recently, and with the aim of improving outcomes in the urban water sector, the World Bank has taken more comprehensive approaches to understanding reform. These include identifying the key characteristics of well-performing utilities and designing and maintaining a global database on performance indicators from thousands of utilities worldwide.[1] These efforts have provided more objective insight into the factors of good sector performance. And while the recommendations stemming from these and other analytical pieces have been embedded into the design of the current generation of urban water reform programs, the outcomes of this shift are yet to be fully realized.

The Stimulus for this Work

In 2015, the World Bank looked to its own operational experiences to develop a new, comprehensive global framework for improving WSS sector performance. The concurrent formation of a new Water Global Practice (GP) provided a timely opportunity to consult WSS experts across the Bank to formulate a strategy.

The group concluded that there was both a "science" to delivering WSS services, or factors within the control of the utility itself, and an "art" generated by external factors, such as the broader enabling environment and political economy context of a given country. Countries needed to take a more holistic view; one that focuses on the underlying incentive structures that enable or prohibit successful sector reform.

These discussions led to an expansion of the purview of the sector reform agenda, moving from the traditional focus on infrastructure economics to also encompass a deeper understanding of the behavior of and between sector institutions and of the people within those institutions. Staff proposed splitting the work in two: what works at the sector level, and what works at the utility level.

When the Water Supply and Sanitation Global Solutions Group (GSG) was launched in 2016, the GP dedicated resources to develop a global strategy for urban water reform. A deep dive analysis was required to meet the objectives. Three unique global initiatives were thus created:

1. Policy, Institutional, and Regulatory (PIR) Incentives, which looks at the broader sector enabling environment, or the "art" of reform;
2. Water Utility Turnaround Framework (UTF), which looks at utility level reforms, also called the "science" of delivery; and
3. Maximizing Finance for Development (MFD) for the water sector, which looks at shifting the financing paradigm to reach the SDGs.

A Holistic Approach

Between 2017 and 2019 the GP published more than a dozen new analytical pieces under these three initiatives (appendix A), including a global framework, or flagship document, for each initiative which summarizes various analyses and case studies developed under that initiative.

The frameworks discuss reform cases from around the world to show how different countries have approached—some successfully and others less successfully—their sector challenges. Each of the three global frameworks concludes that there is no one-size-fits-all solution and puts forth a set of guidelines and tools for developing a reform program tailored to a specific local context. The reference materials are meant to be applied by countries at various stages of sector maturity.

The three frameworks—and as a compendium—set forth the key principles of a holistic approach to reform. This summary paper collates the main themes and conclusions of the three global frameworks. Its primary aim is to integrate the three lines of work—utility reform, sector reform, and sector finance—in order that readers understand the critical links between the three frameworks, and how improvements in one area directly affect progress in another. The new contribution of this paper is the *Maturity Ladder for the Urban Water Sector* (figure 5.1), which summarizes the key stages of reform and delineates a few of the key ways to make gradual improvements in line with a comprehensive strategy.

A secondary aim is to help readers refer to the suite of documents for guidance on the specific challenges and topics that are most relevant for their context, and to more easily cross-reference and navigate the rich set of materials. They can then apply the relevant tools to begin the improvement process.

Note

1. The International Benchmarking Network for Water and Sanitation Utilities (IBNET).

Acknowledgments

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Abbreviations

CESAN	Companhia Espírito Santense de Saneamento
DPL	development policy loan
FIT	financial innovation team
GDP	gross domestic product
GP	global practice
GSG	global solutions group
GWSP	Global Water Security and Sanitation Partnership
IDT	institutional diagnostic tool
IPF	investment project financing
LMIC	low- and middle-income country
MDB	multilateral development bank
MFD	Maximizing Finance for Development
OCCR	operating cost coverage ratio
ODA	official development assistance
O&M	operation and maintenance
ONEA	L'Office national de l'eau et de l'assainissement
NRW	nonrevenue water
PBC	performance-based contracts
PER	public expenditure review
PforR	program for results
PIR	Policy, Institutional, and Regulatory
PPP	public-private partnerships
PSP	private sector participation
SDG	Sustainable Development Goals
SJPNL	Shimla Jal Prabandhan Nigam Limited
SMC	Shimla Municipal Corporation
UTF	Utility Turnaround Framework
WASH	water supply, sanitation, and hygiene
WHO	World Health Organization
WSS	water supply and sanitation

Chapter 1
Background

Today, more than half of the world's population lives in an urban area. By 2050, the proportion is expected to rise to 68 percent, equivalent to 6.6 billion people, and just 12 years from now, the world will have 43 megacities with more than 10 million inhabitants each (UN 2018). These epicenters are on a continual path of expansion and change, gaining millions of new residents every month.

The developing world is being transformed. An estimated 90 percent of urbanization will happen in Africa and Asia alone, with 35 percent in just three countries: India, China, and Nigeria (UN 2018). These trends are a result of both population growth and rural to urban migration—and for good reason. Cities offer economic opportunities, more mobility, better access to health care and education, as well as services like electricity, water, and sanitation. Although urban economies benefit from the influx of workers, local governments are simultaneously under pressure to absorb new residents and to meet their basic needs.

Water and Sanitation in Cities

Despite significant progress toward combating poverty and boosting shared prosperity, many governments of low- and middle-income countries (LMICs) continue to grapple with providing safe and affordable water supply and sanitation (WSS) services to citizens. Add to this the more recent stressors of urbanization and water variability, and even countries with relatively high rates of access to WSS are finding it difficult to keep up with the needs of an ever-growing customer base.

Significant investments have been made to expand access to basic WSS around the world. Global rates of access to basic water supply and sanitation are at 89 percent and 68 percent, respectively. To date, urban areas have fared much better than rural areas in the race to bring basic access to all.

However, urbanization across the developing world is so rapid that it is now eclipsing progress. Between 1998 and 2008, the same time frame in which 1 billion urbanites gained access to an improved water source, the urban population grew by 1.1 billion, essentially decreasing the proportion of the total population provided with access.[1]

To bring basic WASH access to everyone in the world, including operation and maintenance (O&M) costs, would require LMICs to spend between 0.8 and 0.9 percent of gross domestic product (GDP) annually (Rozenberg and Fay 2019), an investment that will yield significant returns. And yet countries are striving to achieve much more than this, in line with the global Sustainable Development Goals (SDGs) set in 2015. Many are looking to provide *safely managed* WSS services, which, over and above basic access, denotes WSS services that meet quality standards, are more convenient, and are properly managed to reduce contamination and pollution.

These larger goals will require more investment. From a global perspective, reaching the WSS SDGs (6.1 and 6.2) will cost LMICs an estimated US$406 billion to US$509 billion annually (equivalent to between 1.1 and 1.4 percent of GDP) (Rozenberg and Fay 2019).

Even if what is currently invested in the sector is spent efficiently (that is, well-targeted and transparent), it still covers only about one-third of the way to the SDGs. More public investment at both the national and subnational level is clearly needed, in addition to tariff setting policies that allow for more cost recovery. Public spending alone will be insufficient.

BOX 1.1. The Cost of Water for the Poor

Fifty liters of water per person per day (the minimum World Health Organization [WHO] requirement) from a private vendor costs the following, based on a typical daily salary of a low-income person living in each city:

- Port Moresby, Papua New Guinea: 54 percent of daily salary
- Accra, Ghana: 25 percent of daily salary
- Maputo, Mozambique: 14 percent of daily salary

Source: WaterAid 2016.

In line with global best practices, the WSS sector must also tap into private markets, whether through public-private partnerships (PPPs), bonds, microfinance, or other forms of commercial finance. Most of the investment need for meeting the SDGs is in urban areas. This brings us back to cities, where the investment needs are highest, as are the opportunities to leverage private markets.

According to a 2016 study of 140 countries, another 3.2 billion urban residents still need access to safely managed sanitation (only 26 percent have it); and another 2 billion urban residents still need access to safely managed water (only 68 percent have it).[2] Most of those still without WSS services live in informal and overcrowded parts of large cities or on the outskirts of cities—areas that are difficult to reach with a traditional piped network. These urban residents are willing to pay for formal WSS services, which often come at a more affordable rate than informal provision (box 1.1). But few urban utilities are reaching these underserved areas. If the demand for more and better water services exits in cities around the world, why are there still so many without access?

Notes

1. As cited at https://www.un.org/waterforlifedecade/water_cities.shtml."
2. The 140 countries included in this study represent 6.12 billion (84 percent) of the world's projected 7.3 billion population in 2015 and 7.15 billion (85 percent) of the projected 8.4 billion population in 2030. The majority of the world's LMICs are included, as well as a few selected high-income countries with low coverage of basic WASH services (Hutton and Varughese 2016).

Chapter 2
The Challenge at Hand

The Status Quo: Low Access, Poor Quality Services

Public utilities deliver water, and often sanitation, services in most large cities. Like other public entities, utilities in low- and middle-income countries (LMICs) are often poor performers, stemming from low levels of efficiency. Although they have the mandate to deliver services in support of national water supply and sanitation (WSS) targets, many often lack the expertise, resources, and incentives they need to reach their targets.

The result is that residents are not guaranteed high-quality services and are forced to find alternative solutions to address the deficiency, often at a much higher price. In turn, when customers are unwilling to pay for poor services, utilities do not have the strong customer base they need to sustain revenues at levels that allow for proper asset maintenance. Ironically, this vicious cycle results in deferred maintenance with huge rehabilitation costs (figure 2.1).

In response, many governments choose to fill the gap with an operational subsidy. These funds are often provided without conditions, such as requirements for the utility to first achieve access targets or cut costs. Rather, operational subsidies act as an implicit, perverse incentive for the utility to maintain the status quo of low-service quality and to remain dependent on public resources.

This cycle of poor performance—a detriment to achieving the Sustainable Development Goals (SDGs)—has been the status quo for decades. Thus, despite billions of public dollars invested in WSS, many countries are not expanding services quickly enough to keep pace with urbanization rates. Rather than addressing the foundational issues around more efficient public spending and designing incentives that work, some countries continue to use bandages to manage a systemic problem, essentially surrendering to the vicious cycle.

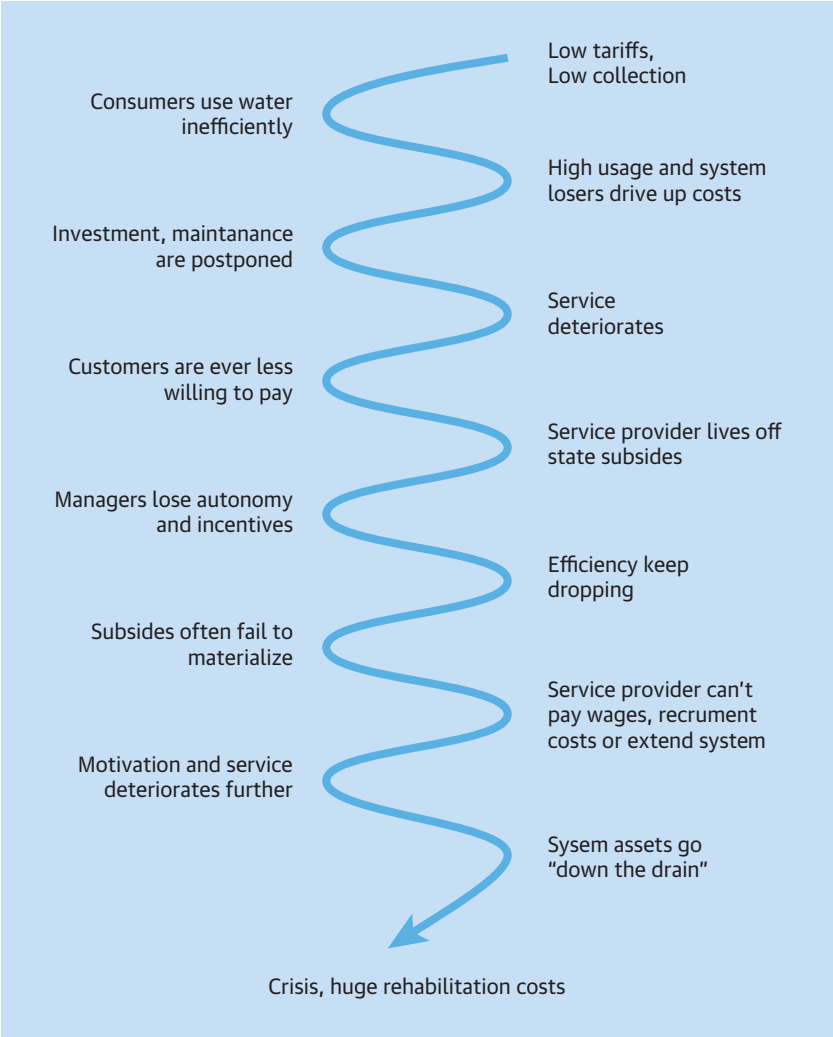
The Utility of the Future: Credible, Accountable, Autonomous

This paper argues that, despite these major shortcomings, utilities are often still the best mechanism available to reach large areas of unserved populations. This is because many utilities are already well-established entities with legal mandates, expertise, and the potential to attract commercial finance. Moreover, as will be detailed further in this paper, it could be more efficient to work within the prevailing institutional arrangement and try to change the way existing utilities operate rather than create new utilities or other types of service providers.

Utilities can realize their full potential as professionalized organizations that meet the demands of their customers. Many utilities across high-income countries, as well as in LMICs like Brazil (SABESP, a state-owned company), Cambodia (Phnom Penh Water Supply Authority, a municipal-owned company), and the Philippines (Manila Water, a private company), have become world-class service providers, in part because they are able to leverage commercial finance. It is important to note that leveraging commercial finance is not the same as privatizing water services. The former refers to the source of finance, while the latter denotes who owns or manages the sector's assets. Well-run public utilities often tap into commercial markets to finance their infrastructure needs.

A series of well-designed changes to improve the performance of a utility can add up quickly to transform its culture. Once a utility is focused on measuring and incentivizing performance improvements, it will start

FIGURE 2.1. Vicious Cycle of Utility Performance



Source: Goksu et al. 2017.

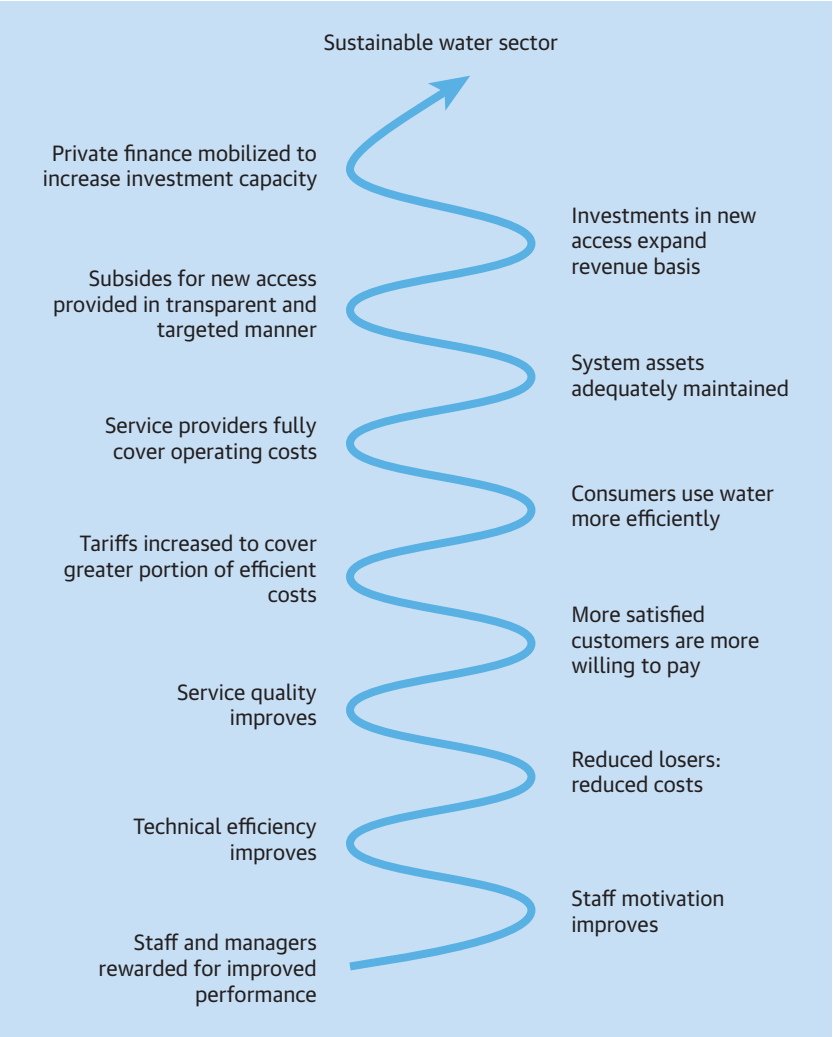
on an upward spiral that leads to better customer orientation and financial sustainability (figure 2.2). From there, a focus on building the utility's creditworthiness will enable it to leverage commercial finance.

But utilities do not function in a vacuum. They require the right incentives to emanate from the surrounding environment. With those incentives in place, a utility can transition out of the status quo toward a more sustainable business model that enables independence, autonomy, and a greater capacity to finance improvements on its own.

How the Sector is Financed

The WSS sector receives revenue from three main funding sources: tariffs (customer fees and investments by households), transfers (grants from donors and charitable foundations), and taxes (provided as government subsidies or grants to utilities) (figure 2.3).

FIGURE 2.2. Virtuous Cycle of Utility Performance



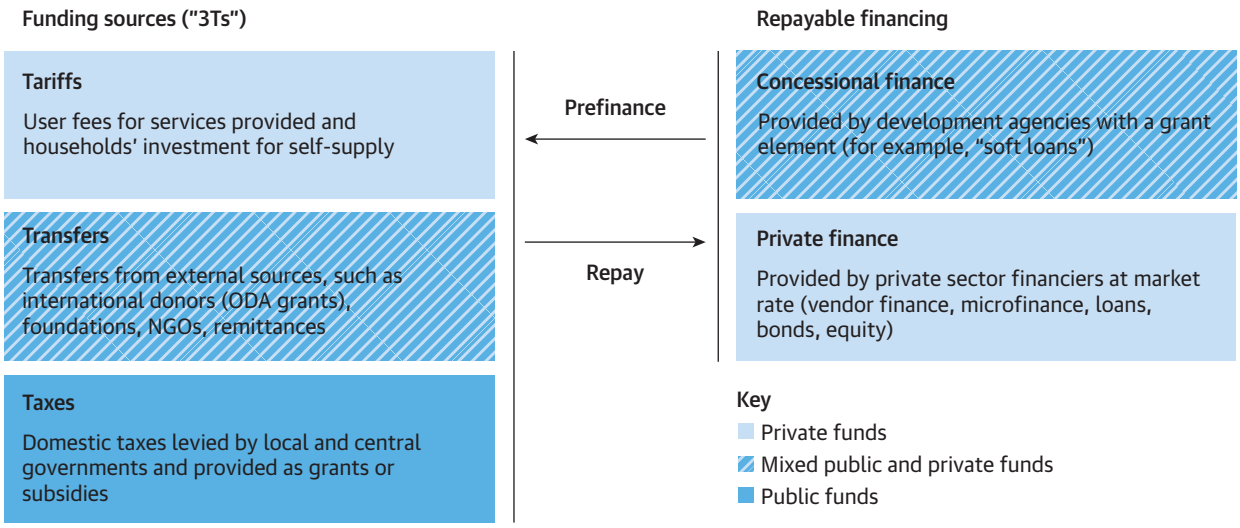
Source: Goksu et al. 2017.

Government funding to utilities is, generally, either transferred for building new infrastructure (capital subsidies) or for covering the gap between operating revenues and costs (operational subsidies).

Many emerging market countries also rely on some form of repayable financing in the form of official development assistance (ODA). Low-income countries often use "soft loans" from multilateral development banks (MDBs) like the World Bank, offered at below-market interest rates.[1] These soft loans are the most affordable form of repayable finance for most countries. ODA has peaked at only US$8 billion globally (Winpenny et al. 2016), far behind ODA for health or education; but in 24 of the lowest-income countries, it still accounts for a large share of water sector finance (WaterAid 2016).

A second type of repayable finance is offered at market rates. This includes microfinance, bonds, equity, and commercial bank loans. More market-oriented finance from the private sector will be harder to attract but is

FIGURE 2.3. Traditional Revenue Sources for the WSS Sector



Source: Goksu et al. 2017.
Note: NGOs = nongovernmental organizations; ODA = official development assistance.

required to meet the SDGs. Moreover, commercial finance—in and of itself—offers important incentives for utilities to directly sustain high levels of performance, a prerequisite for ensuring sustainable service delivery for all.

Because public funds are scarce, they are best directed where other funds are unavailable, such as to provide access to the poor in periurban and rural areas and to strengthen the sector's institutional and regulatory frameworks. If subsidies are needed, they are best directed to areas where costs cannot be recovered through tariffs, such as to serve the poor; to promote merit goods, including sanitation; or to generate external benefits.

Note

1. Also codified as concessional loans, "soft loans" contain a minimum grant element of 25 percent, calculated at a discount rate of 10 percent.

Chapter 3
What Will It Take?

The current status quo, shaped by the size and flow of government funding, is insufficient to reach the Sustainable Development Goals (SDGs). The water sector needs substantive reform measures that can tackle the sector's pervasive inefficiencies, low service quality, and poor performance of urban and rural providers.

The Maximizing Finance for Development (MFD) approach posits that commercial finance will be required to meet the SDGs. MFD calls for public investment in the sector to be used as leverage to crowd in additional sources of finance. The agenda starts with urban utilities, which have the highest potential for tapping into commercial finance.

There are thousands of utilities across low- and middle-income countries (LMICs) currently operating under quasi-business models with the potential to begin strengthening their balance sheets through efficiency improvements. What they need are stronger incentives from the surrounding enabling environment to encourage them to become more efficient and to move away from the status quo toward a new financing model.

A second challenge, beyond improving the performance of utilities, is attracting the interest of lenders. Commercial financiers have steered clear of investing in water supply and sanitation (WSS) in LMICs because of the perceived risks of the sector, namely its politicization stemming from the social importance of WSS. When given a choice, investors seek more stable returns from the transportation and energy sectors rather than the water sector. This paper proposes that the changes needed to improve utility performance will require the broader sector reforms needed to reduce borrower risk. Thus, progress on one challenge will invoke progress on the other.

Change is difficult. As with any new policy or strategy, government support and successful piloting will be critical to changing mind-sets. Governments and development institutions will need to lead the paradigm shift by viewing utilities as future borrowers of commercial finance. Development banks have an especially important role to play in bridging the interests of utilities with those of potential lenders by designing innovative transactions that make commercial borrowing less expensive for utilities and less risky for lenders.

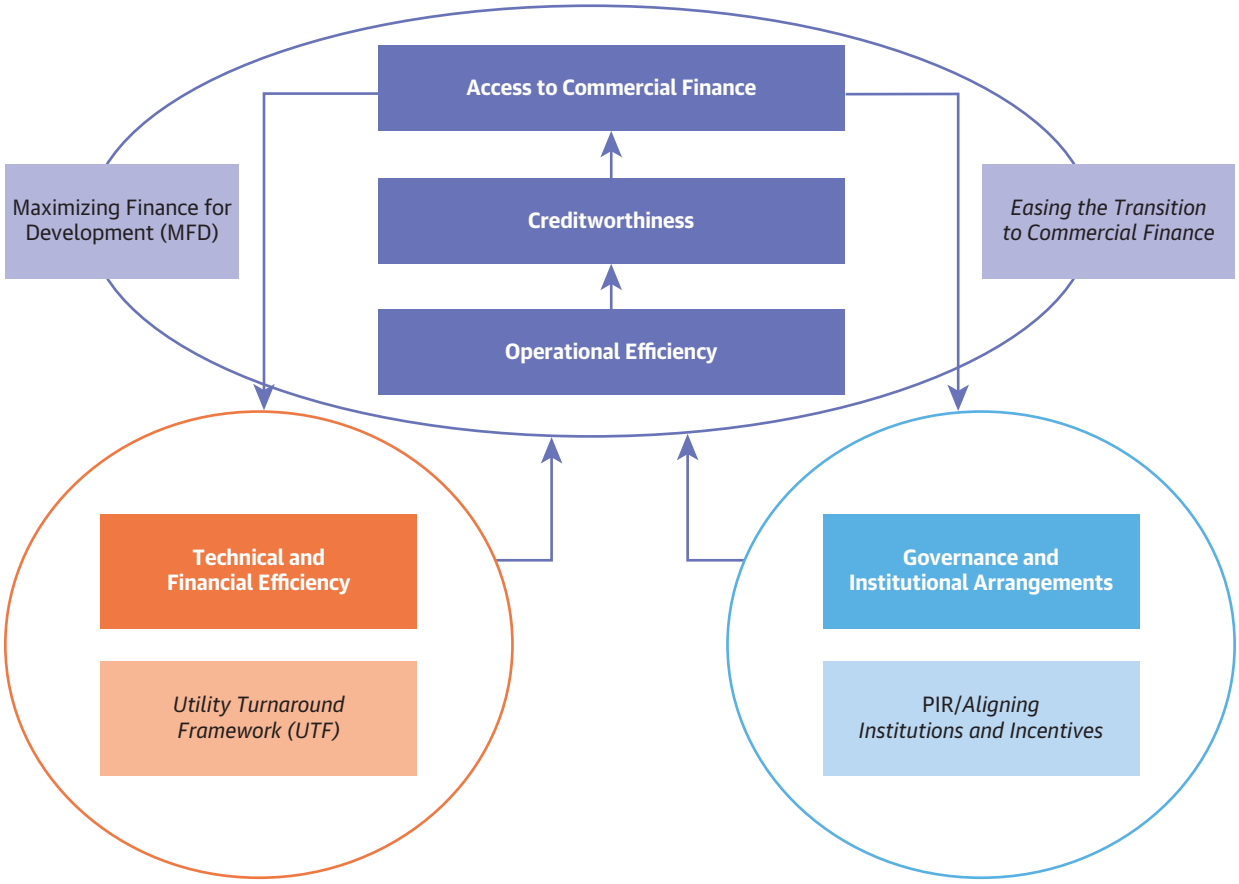
> "This stark reality calls for a major shift in the way resources are allocated in the sector. Each country is different and will require a customized solution that, where possible, leverages public funding … to mobilize commercial finance—either international or domestic."
>
> – *Easing the Transition to Commercial Finance for Sustainable Water and Sanitation*

The MFD agenda for urban water is not just about expanding the investment envelope. It requires using existing and new money in smarter ways that will attract, rather than crowd out, commercial finance. It is a new way of thinking about reaching the SDGs, and it promises to make safely managed services, not just basic access, more sustainable for all.

The Foundations of Urban Reform

Reaching the point where utilities can access commercial finance on their own starts by addressing two foundational issues (figure 3.1). The first is the sectorwide governance and institutional arrangements in a given country that inhibit or enable positive sector outcomes.

FIGURE 3.1. The Cycle of Improved WSS Sector Performance



Note: PIR = Policy, Institutional, and Regulatory; WSS = water supply and sanitation.

The second foundational issue is that of utility performance at a local level, an issue that is itself greatly influenced by the wider governance and institutional arrangements. For most LMICs, commercial finance will not be attainable without first making foundational adjustments to the overarching governance framework and aligning newly created incentive frameworks in support of improved utility performance.

Much like the virtuous cycle of utility performance, found in figure 2.2, the MFD agenda itself is a cyclical process, but it applies to the entire water sector of a given country, not just to its utilities. Starting from the bottom of figure 3.1, the initial changes at the sector (governance and institutional arrangements) and utility (technical and financial efficiency) levels will enable the utility to gradually improve its creditworthiness and, eventually, reach the goal of accessing commercial finance. The financial improvements then allow for further improvements to the foundational issues, which subsequently strengthen the financial capacity of the sector, and so on.

On a practical level, however, the process of successful sector reform is much less structured than the theory suggests. Reforms taken in one of the three areas often overlap—in terms of sequencing and scope—with another. For this reason, a deep-dive analysis has been conducted for all three components of the approach to tease out important considerations for each.

FIGURE 3.2. Three Global Frameworks

Aligning Institutions and Incentives for Sustainable Water Supply and Sanitation Services, the flagship document of the PIR initiative, looks at how integrated policy, institutional, and regulatory interventions can help align incentives for more sustainable WSS services. This report also recognizes the critical importance of the informal conventions that will be key factors in the success of any incentive regime.

The Water Utility Turnaround Framework: A Guide for Improving Performance draws on empirical evidence from turnaround case studies that were both successful and unsuccessful, identifying key factors for starting and maintaining utility performance improvements. It also provides a four-phase, step-by-step approach to designing and implementing a turnaround program.

Easing the Transition to Commercial Finance for Sustainable Water and Sanitation, the flagship work of the MFD agenda for water, encourages more efficient use of public funds to mobilize new sources of finance. By explaining the costs and benefits of commercial finance, the report seeks to guide sector leaders to tap into new financing as both a means to and an incentive for improving sector performance.

Note: MFD = Maximizing Finance for Development; PIR = Policy, Institutional, and Regulatory; WSS = water supply and sanitation.

Components of the Integrated Approach: Three Global Initiatives

The three components of the cycle (figure 3.1) correlate with three global initiatives, the conclusions of which were published in various research papers by the World Bank between 2017 and 2019 (appendix A). Each initiative has a corresponding global framework, or flagship document, that summarizes the research conclusions of that initiative (figure 3.2). Each global framework provides concrete examples of how governments have successfully reformed and put forth a set of principles and processes to follow for designing a successful reform agenda. The unique scope of each of the three global frameworks can be found in figure 3.2 and the subsequent text.

Policy, Institutional, and Regulatory Incentives

The Policy, Institutional, and Regulatory (PIR) incentives initiative, jointly undertaken by the Water and Governance Global Practices (GPs), was conducted around four major topics: political economy perspectives, regulation of WSS services, trends in public sector reform and intervention, and policy and institutional reforms in WSS. The initiative, to date, is composed of a suite of global research on regulation and institutional frameworks, as well as case studies and a regional PIR application for South America (appendix A). PIR offers a comprehensive and holistic view of the key institutional and governance components of a country's water sector (box 3.1).

The flagship publication of this initiative, titled *Aligning Institutions and Incentives for Sustainable Water*

BOX 3.1. PIR (Policy, Institutions, and Regulation) Defined

Public policy is a framework through which government decisions are made. The implementation of policy is often done through the enactment of laws, regulatory measures, and financing arrangements. Policies set goals and expectations, which can provide guidance and enhance accountability between government and citizenry.

Institutions are defined as "social, political, and economic relations governed by formal and informal rules and norms. They provide a structured, predictable manner by which people interact and shape incentives for people and organizations, which in turn can also contribute to institutional development" (North 1990, as presented in Mumssen et al. 2018). One key factor for the successful implementation of incentives is to have both vertical (across levels of government) and horizontal (across ministries) alignment of institutions.

Regulation is the "control exercised usually by a public agency over activities that are valued by a community" (Ogus 1994). In water supply, economic regulation is used to control tariff setting and service standards, and some countries may use regulatory mechanisms to help ensure social goals like access and equity of water services. Forms of regulation vary from country to country and include regulation by agency or by contract.

Supply and Sanitation Services (also referred to here as the PIR framework), is the synthesis report. The framework is centered around the broader sector enabling environment, characterized by the sector's institutional and governance arrangements and the incentives that emanate from them. One can view the enabling environment as either conducive to reform actions or presenting binding constraints to reform actions.

Well-designed PIR interventions provide the incentives to deliver specific actions that lead to positive sector outcomes. There are two levels of incentives: (1) endogenous and exogenous drivers for reform, which stem from the enabling environment; and (2) PIR incentives that stem from specific PIR interventions. It is important to note that P, I, and R are not wholly separate spheres; they often overlap (figure 3.3).

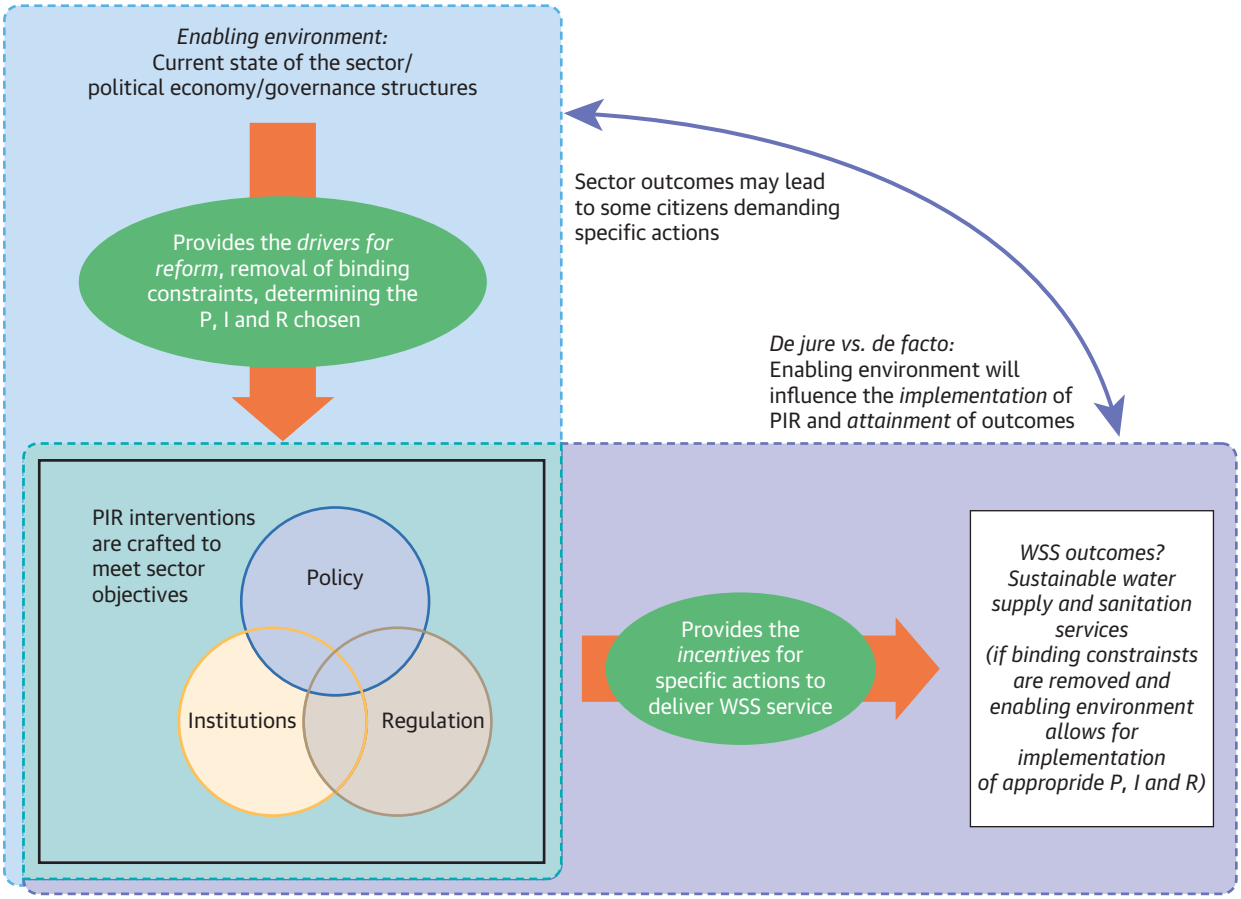
None of the incentive setting happens in a vacuum. Both levels of incentives are influenced by one another. There are also intrinsic, or personal, incentives at play. For example, utility staff will have intrinsic incentives that will determine whether and how reforms are implemented. This can determine the difference between de jure (implemented as planned) and de facto (implemented not as planned) reforms.

The final factor to consider is the feedback loops that exist among the actors. The actors involved in and affected by the PIR process include: policy makers, regulators, utility staff and management, consumers, unions, consulting firms, and contractors. Consumers' feedback to their government on the quality of service can, in turn, influence the enabling environment for the next round of reforms.

The document is a guide for reform-minded governments to assess their sector situations, understand drivers for reform, anticipate the potential constraints they will face, and plan interventions under a broad set of principles. The principles have been shown to work well across a variety of country contexts, pulled from a series of 11 case studies.

Figure 3.4 demonstrates the diversity of country experiences (the size of the bubble indicates the relative level of access to WSS services, and the numbers reflect country rakings in terms of gross domestic product [GDP] per capita, with 1 as the highest GDP per capita). Higher-income countries tend to have endogenous drivers for reform and better access to WSS services, as is the case in Australia, Portugal, Brazil, and Colombia. Secondary factors, like whether reforms are

FIGURE 3.3. Schematic of PIR Interventions and Incentives within the Enabling Environment



Source: Mumssen, Saltiel, and Kingdom 2018.
Note: PIR = Policy, Institutional, and Regulatory; WSS = water supply and sanitation.

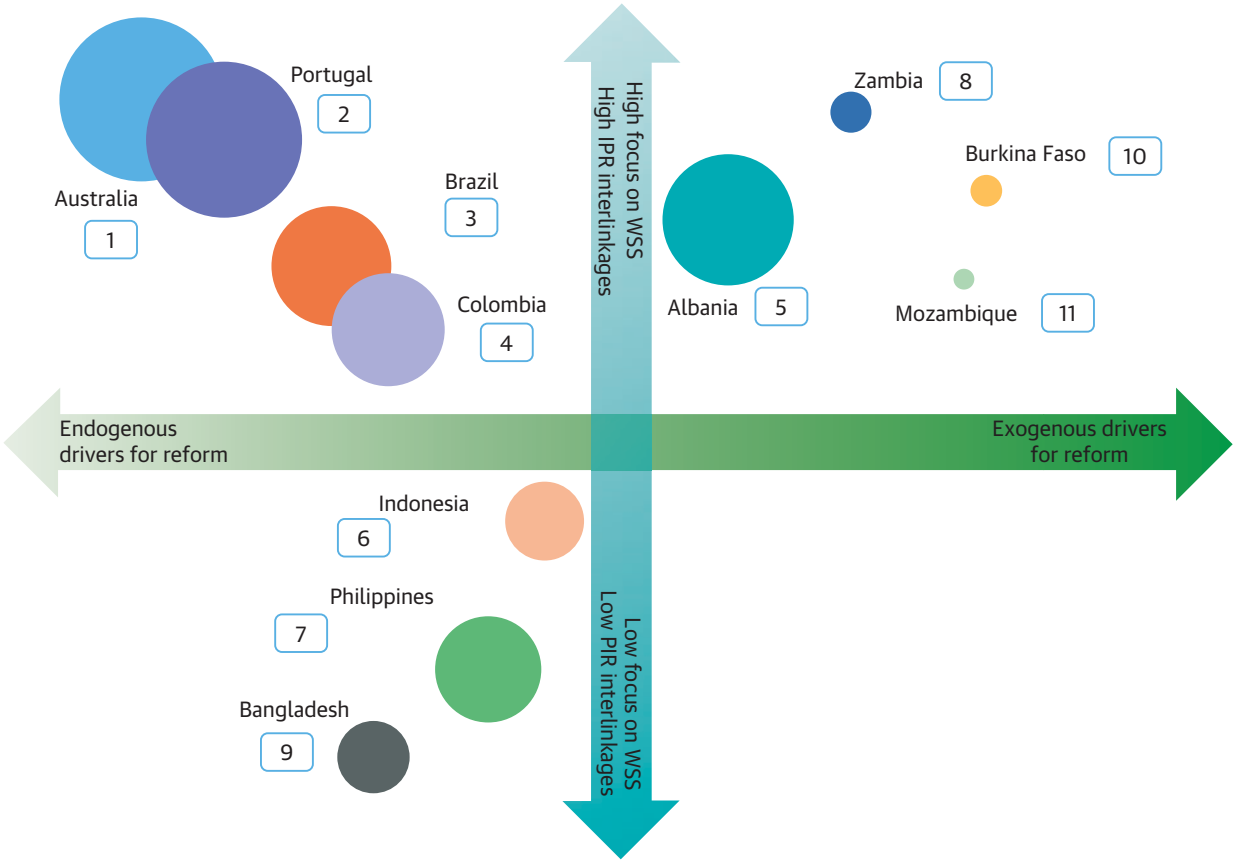
WSS-specific, show more mixed results. In all cases, the success of reform programs is strongly influenced by the political economy of the country. Details on each case study, as well as comparisons between case studies, can be found in the document.

> "Improving the performance of water utilities is difficult because the issues affecting their performance are complex and multidimensional."
>
> The Water Utility Turnaround Framework

Water Utility Turnaround Framework

The Water Utility Turnaround Framework (UTF) initiative seeks to understand what makes a successful utility turnaround—or the upward movement on the virtuous utility cycle of performance toward providing more reliable, convenient, and safe water services. *The Water Utility Turnaround Framework* was designed through careful study of five turnaround case studies in Benin, Brazil, Burkina Faso, Peru, and Vietnam and references 15 other case studies from around the world.[1]

FIGURE 3.4. Correlation between Enabling Environment and PIR Interventions



Source: Mumssen, Saltiel, and Kingdom 2018.
Note: PIR = Policy, Institutional, and Regulatory; WSS = water supply and sanitation.

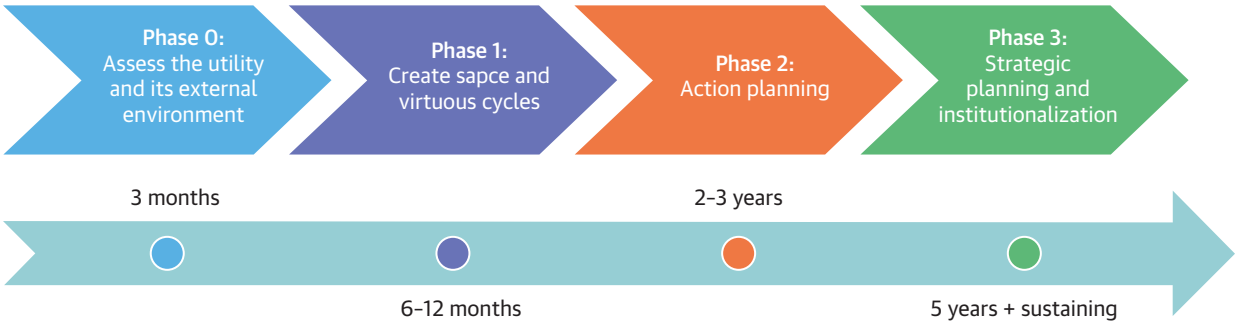
By studying these 20 cases, the UTF was able to verify eight key lessons from previous World Bank analytical work conducted on urban water reform and nuance those previous findings. The new evidence is beginning to shift the World Bank and its clients' approach to reform on three critical issues: creating institutions, reforming tariffs, and borrowing money (table 3.1). These conclusions have informed the sequencing and resources discussion in Chapter 4 of this paper.

The key conclusion of the UTF is that though there is no one-size-fits-all solution for a turnaround program, key success factors include strong management and a clear

TABLE 3.1. The Evolution of Water Utility Reform Sequencing

Former approach	New approach
Create institutions first: water law and policy; create regulatory; corporatize utility	Improve service and financial performance first; build formal institutions progressively
Raise tariffs to cost recovery quickly	Utilities should use the resources at their disposal to build credibility before adjusting tariffs
Borrow money to finance major infrastructure quickly	Use available resources first; build capacity and information base before making sizable capital investments

FIGURE 3.5. Four Phases of the Utility Turnaround Framework



customer-oriented vision. A second key conclusion is that a successful turnaround program will be a gradual series of improvements using the existing resources of the utility. Finally, there are a few key conditions to starting a turnaround: a competent and incentivized manager with a minimal level of managerial autonomy and a government champion who is committed to making the changes to promote the right incentives.

In addition to providing key principles and good practices, the UTF sets out a four-stage process for planning and executing a turnaround. Figure 3.5 provides the phases along with an illustrative timeline. A utility is first assessed by its maturity in five areas: organization and strategy, human resource management, financial management, technical operations, and commercial operations. Then priority actions are identified and carried out through an action plan. Once initial reforms have been successfully completed, and the requisite political support and enabling environment are in place, the utility then moves on to strategic planning and institutionalization of the performance improvement system.

The World Bank has applied the UTF in two client countries, Vietnam and Botswana. In both cases, the UTF has been tailored to the specific conditions of the utilities and has thus far proven to be a comprehensive way to assess performance and to provide the tools for planning a turnaround program. The series of UTF tools includes three types: decision tools, navigation tools (including checklists for moving from one stage of maturity to another), and analysis tools to assess performance and maturity and to prioritize actions.

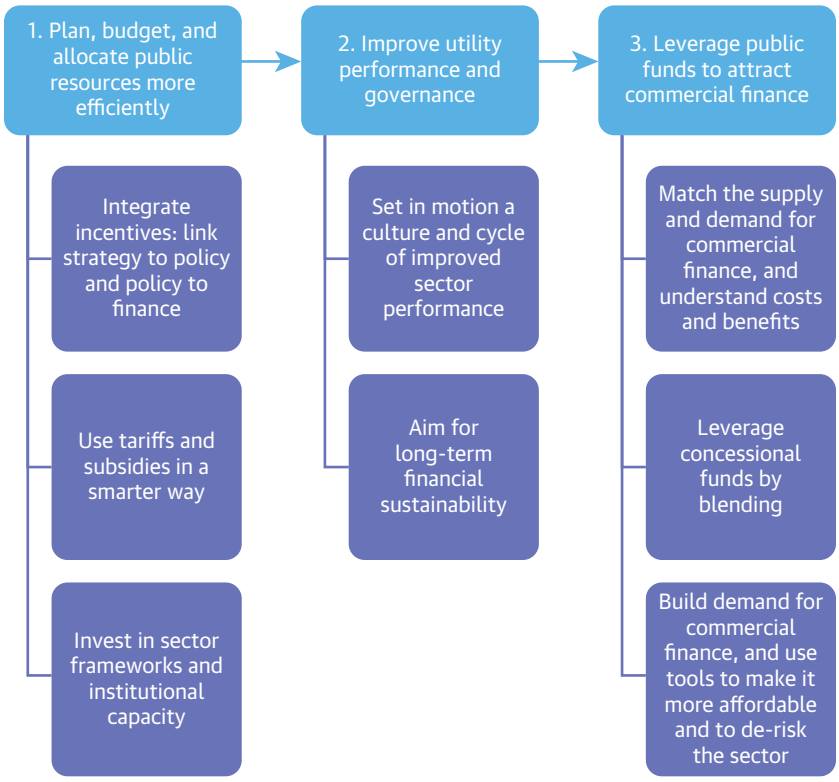
Maximizing Finance for Development

The MFD initiative is a World Bank–wide strategy for supporting LMICs in meeting their SDG-related targets by leveraging commercial finance. The World Bank has developed several advocacy pieces to catalyze support for the MFD agenda in water, as well as practical guidance tools and training sessions on preparing water institutions to leverage commercial finance (appendix A). Within the World Bank, teams continue to identify synergies between IBRD/IDA, IFC, and MIGA to support MFD at the country level.

For the urban water sector, *Easing the Transition to Commercial Finance for Sustainable Water Supply and Sanitation* is the flagship MFD document. The document lays out a three-step approach for governments to support utilities to move toward greater financial sustainability through efficiency gains and better use of public resources (figure 3.6).

The document then lays out different measures that will help make commercial finance work for borrowers (affordability) and for lenders (reduce their risk), and how governments canprovide incentives for these two

FIGURE 3.6. The MFD's Three Components and Key Recommendations



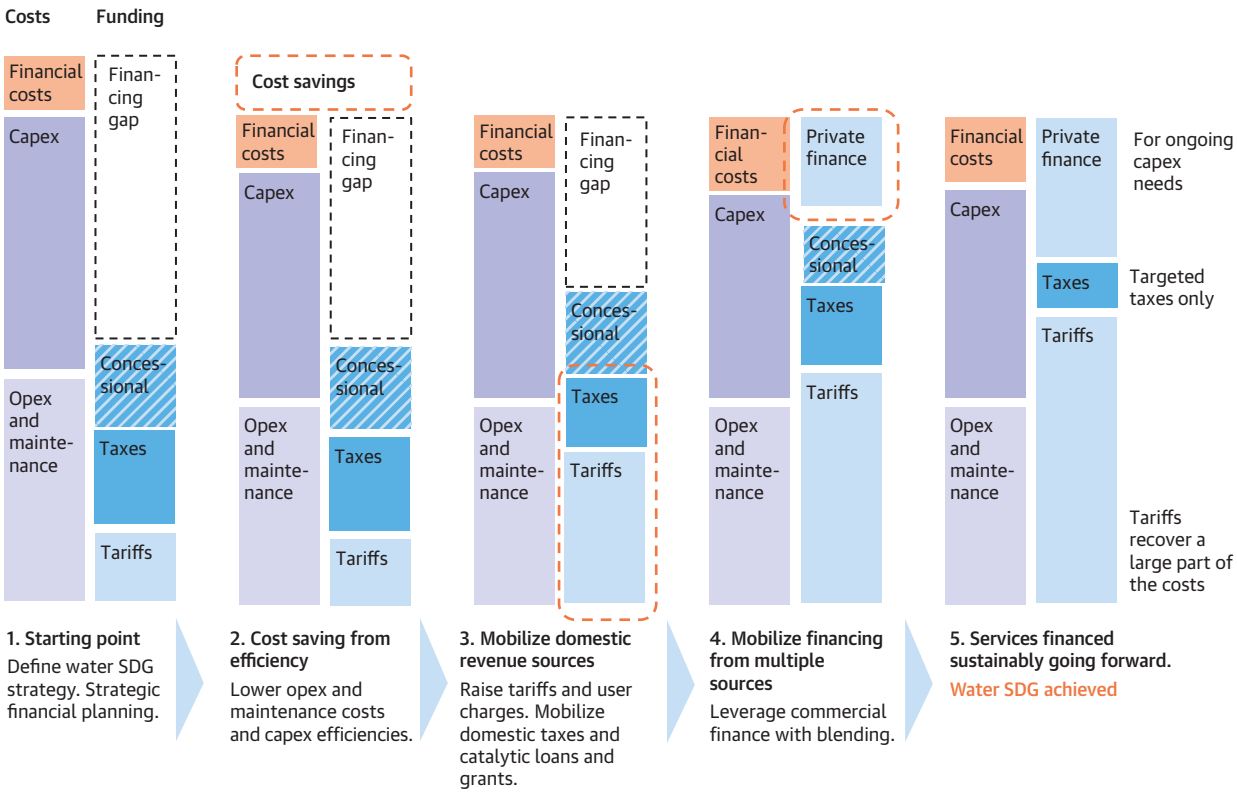
Note: MFD = Maximizing Finance for Development.

spheres to begin to work together. Challenges to be addressed at this final stage include building the creditworthiness of utilities, mitigating the risk perception of potential lenders, and designing innovative transactions that help ease the transition to commercial finance.

Eventually, the current financing gap in urban water should be filled by a mix of lower costs, larger tariff revenues, and less (but more targeted) taxes. The paper advocates for replacing larger shares of public funding (taxes) and concessional finance with private finance over time (figure 3.7).

Finally, the paper attempts to dispel the myth that donor funding is always less expensive than private finance. A comparative analysis of a typical concessional loan and a typical commercial loan demonstrates how, despite the lower interest rates and longer grace periods offered by concessional loans, currency risk and the opportunity cost of preparing and approving concessional loans can add significant costs to the long-term repayment of a concessional loan. Private finance, on the other hand, is often more readily available and, if provided in the domestic market, eliminates currency risk.

FIGURE 3.7. Potential Pathways to Fill the WSS Financing Gap



Source: Winpenny et al. 2016.
Note: capex = capital expenditures; opex = operating expenditures; SDG = Sustainable Development Goal; WSS = water supply and sanitation.

Note

1. The utilities in the five case studies are as follows: Companhia Espírito Santense de Saneamento (CESAN) (Vitoria, Brazil); SEDAPAR (Arequipa, Peru); ONEA (Ouagadougou, Burkina Faso) and SONEB (Cotonou, Benin); and DAWACO (Da Nang, Vietnam).

Chapter 4
Maturity of the Urban Water Sector

Taken together, these three global initiatives provide complementary sets of tools and processes that governments can draw from to design their urban water sector reform strategy. In addition, this summary paper puts forth two final reference tools—the *maturity matrix for urban water reform* and the *maturity ladder for the urban water sector*—which show how the three frameworks can be compiled to visualize improvements over time.

The matrix (appendix B) provides a cohesive view of the scope of the three frameworks by detailing stages of sector development across five topics: Policy, Institutional, and Regulatory (PIR); finance (Maximizing Finance for Development [MFD]); and utilities (Utility Turnaround Framework [UTF]). The matrix starts with Stage 1, which characterizes a poor-performing and inefficient sector, and ends with Stage 5, which characterizes a credible and professionalized sector that supports utilities to leverage performance improvements and, eventually, access commercial finance.

The matrix is intended as a reference tool to help governments and utilities assess their own maturity. It provides a general idea of the most common characteristics seen in the literature and is not a complete view of any country's water sector.

Reform is not a linear process. Rather, as concluded in the PIR, reform is an iterative process with unparalleled progress and reversals across the five different topics. This idea is reiterated by the matrix, where governments may find themselves starting at different stages on each of the five topics and may need to build resources or capacity in one area as a prerequisite to maturing in another.

> For more specifics on utility performance, see the UTF's five-stage maturity matrix (from elementary to world-class) for each of its five areas: organization and strategy, human resource management, financial management, technical operations, and commercial operations.

Regardless of where they begin, a government should aim to move to the next stage by considering each of the factors associated with each topic. In general, a move from one stage to the next will require either removing a constraint or barrier to sector improvement (such as a perverse subsidy) or by creating a new incentive to improve sector outcomes (such as mandating the expansion of access for the poor).

The most common actions taken to mature a water sector are summarized in the maturity ladder (figure 5.1). The actions listed are general markers and are not meant to be prescriptive for any single country or utility context. Rather, this paper encourages governments and utilities to utilize the UTF, PIR, and MFD resources to design their own unique maturity ladder as part of a strategic reform process. Finally, while the maturity matrix and the maturity ladder point to similar content (see colored text in both), they maintain separate objectives; thus, the actions and characteristics are relatively—but not perfectly—aligned across the stages.

The New Status Quo

In the past, governments and donor institutions alike have sometimes tackled sector reform as a series of high-profile changes to sector policies and

infrastructure, often through individual, uncoordinated projects. Many projects designed to jumpstart major sector change, such as raising tariffs (prematurely) or building large-scale infrastructure, were done without first making the requisite adjustments to the foundational issues of utility performance and sector governance. Using this approach, billions invested in the urban water sector have failed to reap the expected outcomes. For example, expanding water supply without first reducing leaks in the network only puts greater risk on the long-term sustainability of a utility's operations by increasing both costs and inefficiencies.

However, learning from these experiences—and processing that learning through the development of the three global frameworks—has helped define a new status quo. Governments and donors should work together to take a long-term (20-year) view to improving urban water sector performance. A comprehensive blueprint that encompasses long-term financial planning should be the new norm for any sector reform program. Utility reform should be part of a much broader effort to make the necessary, commensurate adjustments to sector governance frameworks and should include the objective of bringing the utility closer to accessing commercial finance.

Sequencing and Resources

The UTF concludes that while there is no official recipe for a turnaround, "successful turnaround strategies sequence similar actions in roughly the same order." Many of the most typical actions are shown in the maturity ladder (figure 5.1). The first three stages set the foundation for an affordable, quality service for customers, whereas the final two stages promote innovative approaches to maximize financial and technical performance while ensuring equitable service coverage. It is important to note that broader sector level reforms are ongoing while utility level reforms are underway, and progress at one level is often a prerequisite for progress at another level.

Ideally, Stages 1 through 3 will use the utility's existing resources to build its credibility. The focus should be on improving quality of service such that customers will be willing to pay a higher rate that is closer to cost recovery. Utilities should invest in areas that will save costs, enhance efficiency, or improve staff capacity. These "soft" investments should be viewed as the preliminary stages of a long-term sector improvement program. Governments can look for support primarily from bilateral donor technical assistance funds and, in some cases, may find assistance from multilateral development banks (MBDs), such as the World Bank's development policy loan (DPL) instrument, which supports policy and institutional change.

Another well-documented case of comprehensive sectorwide reform by milestones—at the national level—can be found in the Australia Urban Water Reform Story (Salisbury, Head, and Groom 2017).

The Shimla DPL is one such World Bank-financed operation that approaches reforms from a holistic perspective. The project is an example of how sector and utility level reforms are planned through medium-term milestone targets, which act as the basis for project disbursements (box 4.1).

Only after the foundational issues have been improved should a government or utility attempt to make sizable capital investments while moving up to Stages 4 and 5 of the ladder. These investments can be financed with concessional loans from MDBs but should also attempt to crowd in public investment through blending instruments, where feasible. In some cases, commercial finance may be preferable to concessional loans, especially given high currency risk or high opportunity costs associated with the time it takes to finalize concessional loan agreements. Governments should assess all options before selecting the lender and lending instrument.

BOX 4.1. Medium-Term Planning Boosts Sector Reforms in Shimla, India

In 2018, the World Bank approved the US$40 million Shimla Water Supply and Sewerage Service Delivery Reform program, the first of three planned development policy loans (DPLs) to support the government of Himachal Pradesh's water supply and sanitation (WSS) reform strategy. The medium-term plan builds on the 2018 incorporation of a new autonomous utility—Shimla Jal Prabandhan Nigam Limited (SJPNL)—to begin transforming the sector toward a service-delivery orientation. The Shimla Municipal Corporation (SMC) delegated WSS service delivery to SJPNL in 2018.

The program relies on significant capacity-building support to both SMC and SJPNL, including through a partnership with a global publicly owned WSS utility to advise the managing director cum CEO of SJPNL. The holistic agenda touches on all three aspects of sector reform:

- Sector governance and policy: New regulatory mechanism to govern tariff and subsidy policies toward cost recovery; performance-based contracts (PBCs) for service improvements; grievance redress mechanisms
- Utility performance: Energy efficiency; competitive hiring processes; staff performance incentive system to affect one-third of staff salaries
- Sector and utility finance: Initial public capital grants to finance service expansion under modernized procurement framework; commitment to transparent and predictable subsidies; SJPNL eventually to tap into commercial finance to expand services to satellite towns

The program is implemented through a series of targets enforced through the DPL. The initial major milestones for 2018–21 are shown in figure B4.1.1.

FIGURE B4.1.1. Major Milestones of the Shimla Water Supply and Sewerage Service Delivery Reform Program, 2018–21

Note: O&M = operation and maintenance; PBC = performance-based contract; SJPNL = Shimla Jal Prabandhan Nigam Limited.

Source: World Bank 2019.

World Bank projects that use instruments like investment project financing (IPF) and program for results (PforR) can be leveraged for both the financing they provide to governments and the long-term capacity building and technical assistance they provide to implementing agencies (box 4.2).

This new status quo will necessitate much better donor coordination than exists in most countries today. Bilateral donors, which most often provide technical assistance, and MDBs, which most often provide loans or credits for capital investments, need to work together to support different aspects of the reform agenda over

BOX 4.2. World Bank Lending Instruments to Support the Water Supply and Sanitation Reform Agenda

- Investment project financing (IPF): Supports capital-intensive investments and service delivery improvements with a 5- to 10-year horizon. IPF also provides continued technical assistance, including support to project preparation and implementation throughout.
- Development policy loan (DPL): Includes budget support to clients whereby funds are made available after the successful completion of a reform program or policy or institutional action programs.
- Program for results (PforR): Links disbursement of funds to achievement of results. PforRs support a piece of a government's own program, using and building country systems in parallel with implementation.

time to ensure that the planning is done right before sizable capital investments are made, as shown in the case of Burkina Faso (box 4.4). International protocols should be developed to guide where and how donors coordinate to both ensure the correct sequencing of interventions and confirm their shared commitment to maximizing finance for development.

Five Stages of Reform

The remainder of this chapter outlines five general stages of reform (appendix B), along with the typical challenges one would find at each stage and a few approaches that sector institutions, including utilities, could apply to move to the next stage (figure 5.1). It also points the reader to the relevant tools within each framework that may support implementation of the various approaches.

Stage 1: Battling Inefficiencies

Typical Challenges

This stage is typically characterized by low rates of access to water supply and sanitation (WSS) services. There may be no clear policy direction at the national level or a policy signal that has yet to be translated into local goals. Under this scenario, the sector may be fragmented across institutions without clear delineation of roles and responsibilities, making it difficult to know which institutions are authorized to access which funding source(s) to meet national targets.

Moreover, some countries are facing declining service coverage or utility performance in this stage. Even those that can function in the short term will not be prepared to respond to new risks like drought or conflict. It is also common that long-term goals are being ceded to short-term political gains. In dysfunctional political economies, where incentives are not aligned with overall sector goals, employees of sector institutions sometimes prioritize personal or political goals instead (box 4.3).

Approaches to Moving to Stage 2

Understand why the sector operates as it does. By taking a "problem-driven approach based on binding constraints," the sector can begin to know how to address the major political economy challenges, which itself creates an incentive for change (Mumssen, Saltiel, and Kingdom 2018). Understanding the underlying power asymmetries in a country sheds light on why a sound policy is not being implemented or why institutions are unable or unwilling to fulfill their mandates.

The institutional diagnostic tool (IDT) is a first step governments can take to map institutions, isolate problems, and determine "entry points" to design appropriate interventions.

Create the space needed for change. Reform is sometimes imposed by external circumstances, such as a chronic water shortage in Burkina Faso (L'Office national de

BOX 4.3. Discovering Perverse Incentives

Water sector institutions sometimes operate for purposes that are contrary to their mandates. For example, as concluded in the Policy, Institutional, and Regulatory (PIR) framework, an agency or person in that agency may have stronger incentives to prioritize short-term personal gains over long-term social well-being.

A regulatory agency may keep tariffs below the cost of service or allow certain institutions to not pay their water bills to support political goals to the detriment of the financial sustainability of utilities. Similar types of perverse incentives are documented in the Utility Turnaround Framework (UTF), such as using utility jobs to secure votes or building overdesigned and more expensive infrastructure that eases opportunities for rent seeking. Eliminating such incentives requires first understanding their source and then designing positive incentives to reverse course.

l'eau et de l'assainissement [ONEA]) or a threat of privatization in Brazil (Companhia Espírito Santense de Saneamento [CESAN]). It is important for water sector institutions to leverage these events and disruptions as opportunities for positive change.

Define and support local implementation. When reforms are imposed from the top, as part of a national decentralization effort (Albania) or an effort to boost economic productivity (Australia), sector institutions benefit already from high-level political leadership. In those cases, it will be important to effectively translate the new national policies to the local WSS sector level and outline how the reforms will take shape. There are many cases of national decentralization policies that failed because local utilities still lacked the administrative authority, responsibility, or funding to deliver services. Sometimes this change in authority is even resisted by high-level government officials who risk losing power. Understanding the power asymmetries and other binding constraints is thus a precursor to creating the space needed for reform.

Design governance arrangements that support competent, autonomous leadership. Each UTF case study had a government champion: someone who worked with autonomy to maintain reform programs without political interference from other parts of the government. Equally important was the competence of the general manager of the utility. In one case without such a utility manager—SEDAPAL (Peru)—reforms were unsustainable. Moreover, managers need to have autonomy because only they can "maneuver within their space for change" (Soppe, Janson, and Piantini 2018).

Stage 2: Building Capacity

Typical Challenges

Many capacity-building resources exist for practitioners to learn on different topics, such as the Danube Learning Partnership (D-LeaP), which has programs on nonrevenue water (NRW), energy efficiency, commercial efficiency, asset management, and water safety planning.

Sector institutions in Stage 2 are often operating at low capacity for various reasons. There is often a difference between how institutions act (de facto) and how they are intended to act (de jure), which depends on whether they are composed of staff with the requisite capacity and skill level needed to complete their tasks. Stuck in a cycle of poor performance (figure 2.1), public utilities operate without autonomy to make their own business decisions and are therefore not accountable to their customers.

Utilities may lack the funding to properly attract or retain the right talent or even the autonomy to make

hiring decisions. The UTF case studies show how turnarounds can be achieved without dramatically changing the staff composition of a utility. However, where retrenchment was possible, it played a crucial role in the success of the turnaround. Where retrenchment is not possible, due to the prevailing political economy conditions (and staffing is therefore static), utilities are best served by first investing in the capacity and skills of their existing employees.

The UTF concludes that any type of public investment will be more efficient and effective if resources are focused first on strengthening the internal capacity of the recipient utility. Capacity building was an early step in several successful turnaround programs, including ONEA (Burkina Faso) (box 4.4). The same can be said for the institutions that channel and manage sector funding. The MFD concludes that sector institutions without the "absorptive capacity" to take on more funding are not able to help the sector efficiently spend additional public resources when they become available.

Approaches for Moving to Stage 3

Understand sector financial flows and how they create implicit and explicit incentives for sector institutions. As recommended by the MFD framework, governments should first budget and allocate public resources more efficiently. Governments can then redirect the funds to more efficient uses to generate the right incentives for reaching sector goals. However, budget allocation in and of itself is a complicated process with inherent political tradeoffs. Subsidies to the water sector still often disproportionately benefit the wealthy in contradiction to stated policy goals.

A public expenditure review (PER) can help governments assess the flow of funds to the sector (transfers, subsidies, grants), including level, trend, and composition, as well as budget prioritization, allocation, and spending. A PER can also assess the efficiency and equity of expenditures.

Use public funds as an incentive to improve performance. Many countries have had success by linking public funding to utility planning and capacity building. For example, Indonesia and Portugal required business plans as a prerequisite for utilities to access government funding. But governments must also ensure that utilities respond correctly to the incentive, which may require the removal of additional barriers. In the case of Brazil, capacity constraints need to be removed (box 4.5).

Colombia coupled capacity building with funding to create sustainable improvements in access. Following decentralization in the 1980s, the government created a new institution—FINDETER—to provide technical

BOX 4.4. Addressing Capacity Constraints First

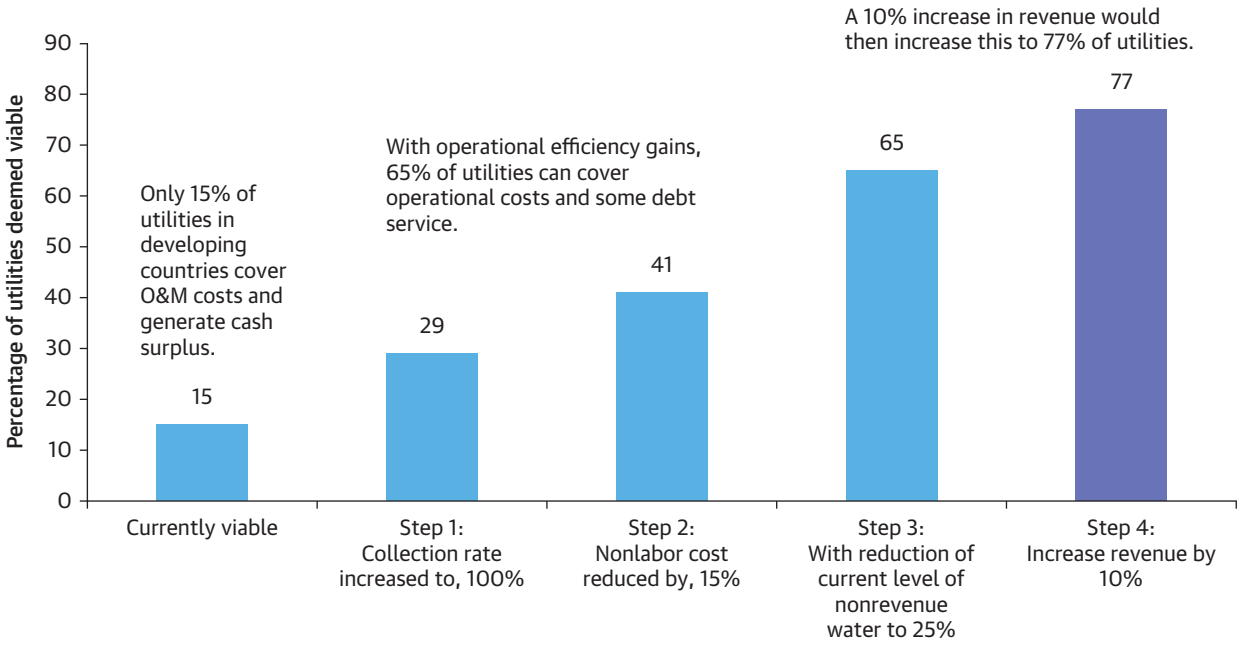
L'Office national de l'eau et de l'assainissement (ONEA), the national water company serving urban areas throughout Burkina Faso, attempted its first turnaround in the early 1990s. Before it was able to access World Bank financing to build the US$200 million Ziga Dam and treatment plant to expand water supply, it had to strengthen its internal capacity to manage a large project. Funding from German Technical Cooperation Agency and the Danish International Development Agency provided ONEA with managerial and technical assistance focused on establishing a baseline, increasing managerial autonomy and efficiency, and developing a staffing plan. These critical foundational changes paved the way for building the new dam and meeting the service expansion goals.

Source: Soppe, Janson, and Piantini 2018.

BOX 4.5. When Incentives Elicit the Wrong Response

Brazil's current sector funding program, the National Sanitation Plan (PLANSAB), requires that municipalities complete a basic sanitation master plan before they can access funding for needed investments. The plan is also used to define goals, which regulators then use to monitor progress. The prerequisite, while a good incentive to ensure funding is tied to sector goals, is not in line with local capacity constraints across the country. Given the economic and social diversity of the country's more than 5,000 municipalities, a portion of them do not have the funds or skills needed to complete the planning, essentially barring them from participation.

FIGURE 4.1. Initial Utility Performance Improvements and Their Impact on Financial Viability



Source: Modified from Kolker et al. 2016.
Note: O&M = operation and maintenance.

assistance to local government utilities to design service projects. At the same time, FINDETER transferred central government funds through commercial bank loans to the utilities, working to bridge the knowledge gap between borrowers and lenders. This institutional arrangement was critical to reducing public lending in water while expanding WSS access.

Reduce inefficiencies, cut costs, and increase revenue at the utility level. The MFD framework estimates that a low 17 percent of utilities in low- and middle-income countries (LMICs) cover their operation and maintenance (O&M) costs and generate a cash surplus. By improving bill collection rates, reducing labor costs, and reducing nonrevenue water (NRW) to 25 percent, 65 percent of these utilities could generate a cash surplus (figure 4.1). And while these steps are relatively simple to undertake, they require the right enabling environment conditions to be in place. For example, improving collection rates may require utilities to

disconnect customers in arrears or enforce payment from public institutions that have not traditionally paid their bills. These issues often go back to the PIR incentive structures and require broader government support.

The UTF case studies confirm that taking steps to reduce inefficiencies can make a big impact over a short time period. Such measures demonstrate the commitment of the sector to improving performance while building the capacity, credibility, and autonomy of the utility. Upon this foundation, utilities, such as CESAN (Brazil) (box 4.6), have been very successful in implementing a robust action plan to make further improvements that transform their culture to one based on sustainability and customer orientation.

Support utilities in aiming for financial viability. Viability means that a utility has an operating cost coverage ratio (OCCR) of 1.2 or better, giving them 20 percent additional cash (beyond operating expenses) to provide a cushion for future expenses and to service debt. For each of the UTF's successful cases, the OCCR was above 1.2 and collection rates were above 90 percent by the end of the turnaround. If utilities are unable to charge cost recovery tariffs, it is still important to aim for financial sustainability by ensuring that government subsidies are provided in a transparent and predictable manner such that the utility can conduct long-term planning.

Stage 3: Aligning Institutions and Incentives

Typical Challenges

In Stage 3, governments are often funding the sector in a progressive way that generates positive incentives. Most will need to turn their attention toward a better alignment of these incentives across finance, policy, institutions, and regulation and at the utility level. For example, regulatory and institutional frameworks need to complement one another, and they need to be supported by the right policies and laws that enable their implementation or enforcement.

When incentives are not aligned, there is the risk that reforms will not be sustainable or that perverse incentives will ensue (box 4.2). In the case of Indonesia, competing policies confused sector institutions. A 2004 water law permitted the use of private sector participation (PSP) and declared that water had economic properties. Ten years later, the law was found to be unconstitutional in that it conflicted with the 1945 Constitution's definition of water as a social good (Mumssen, Saltiel, and Kingdom 2018). Aligning incentives thus requires taking a holistic view to the way in which institutions (vertically and horizontally) interact with one another to ensure they point to the same overarching sector objectives.

BOX 4.6. CESAN's Turnaround: Credibility Paves the Way for a New Corporate Culture

Brazil's Companhia Espírito Santense de Saneamento (CESAN), which serves about 4 million people in the state of Espírito Santo, experienced a successful turnaround between 2003 and 2011. At the start of the turnaround, CESAN's newly appointed manager committed to stabilizing CESAN's finances. By focusing both on cutting costs and increasing revenues, CESAN started generating profits only nine months after the manager had been appointed. With this credibility, the manager persuaded the governor to invest in CESAN and negotiate a repurchasing agreement to buy back CESAN's shares. The governor also supported the manager's decision to implement new management practices and thereby change CESAN's corporate culture and revitalize the company.

Source: Soppe, Janson, and Piantini 2018.

Countries with a federal structure have an additional layer of institutions and incentives to be harmonized. Brazil's experience has shown both the advantages and disadvantages as it has attempted to balance the federal government's role in setting PIR incentives. National sector strategies have unified heterogenous states toward common goals, but federal funding programs have enhanced disparities among states in terms of WSS services. In contrast, the role of the federal government in Australia was to instigate WSS reforms as part of improving economic growth. The strategy created healthy competition among states through performance-based fiscal transfers to improve WSS services.

Approaches to Moving to Stage 4

Quantify the costs and benefits of different institutional arrangements, such as whether to decentralize service provision to the local level or to aggregate utilities into larger providers. Regardless of the model, what is most important is the alignment of financial, governance, and regulatory arrangements that will support the long-term rollout of the model and ensure stakeholder commitment to the reform process.

> A road map for governments considering aggregation of utilities into larger providers is part of the Toolkit on the Aggregation of Water and Sanitation Utilities.

Engage early and often. A wide spectrum of sector stakeholders should be engaged in this important decision-making process, as well as the specific planning and implementation of interventions. The PIR recommends starting with a "goal consensus" approach to help understand what is possible within the prevailing incentive structures. Reforms that require smaller, incremental changes that are less disruptive to the prevailing conditions are more likely to be sustained than sweeping reforms.

Understand the intrinsic incentives of individual actors. The PIR framework states that "(t)he exclusion of the agents responsible for implementation of reforms is often the reason why many externally influenced reforms are poorly implemented and ultimately fail to change behavior." This can be the case with exogenous drivers of reform, especially cases where donors are heavily involved in the design of the reform program. This was the case in Zambia where "textbook" reform was not carried out as planned for lack of local institutional ownership, resulting in what the PIR calls "isomorphic mimicry."

Align institutions. For example, regulatory frameworks should be designed considering the WSS service delivery model and existing regulatory structures outside of water. Regulation can have one or more objectives (improving service quality, controlling pollution, ensuring affordability) and, as such, can take several forms (by contract or by agency, national or decentralized, multisector or single sector). The form and function of regulation determine both its costs and benefits. The PIR framework promotes the concept of "good enough" governance, showing that broad regulatory frameworks that exist in some high-income countries tend to be too expensive and onerous. In the case of Brazil, where a regulatory vacuum persisted from 1998 to 2007 in terms of formal institutions, national performance reporting and benchmarking tools were used to enhance transparency in an informal manner.

Embed incentives. Incentives can be embedded in different mechanisms. For example, the UTF finds that initial utility improvements can be made without an overhaul of the legal framework. Once improvements were made to enhance the autonomy and credibility of the utility, they were followed by complementary changes to the legal and regulatory frameworks (setting out possible service delivery model[s], institutional roles and functions, and laws on PSP or commercial finance). In some cases, a strong policy aided successful reform; and in others, where a comprehensive policy framework was absent, a strong set of laws was sufficient. In Brazil, the alignment of laws

with funding programs toward common sector objectives was enough to expand affordable access. The key is that incentives are aligned and mechanisms do not contradict one another.

Make the route to public accountability shorter. This is an important principle for both the PIR framework (figure 4.2) and the UTF. Continuing with the regulation example, a fit-for-purpose regulatory framework will also respond to the demands of local citizens, which will help reinforce the accountability of utilities toward their customer base. Ghana goes beyond just publishing utility performance data online to using regulation to protect consumers, resolve consumer disputes, and include stakeholders in tariff reviews and decisions (Mumssen, Saltiel, and Kingdom 2018). Citizens are an important part of the PIR framework's continuous feedback loop, which demonstrates how the incentives generated by reforms both shape and are shaped by the broader enabling environment.

Stage 4: Incentivizing Performance

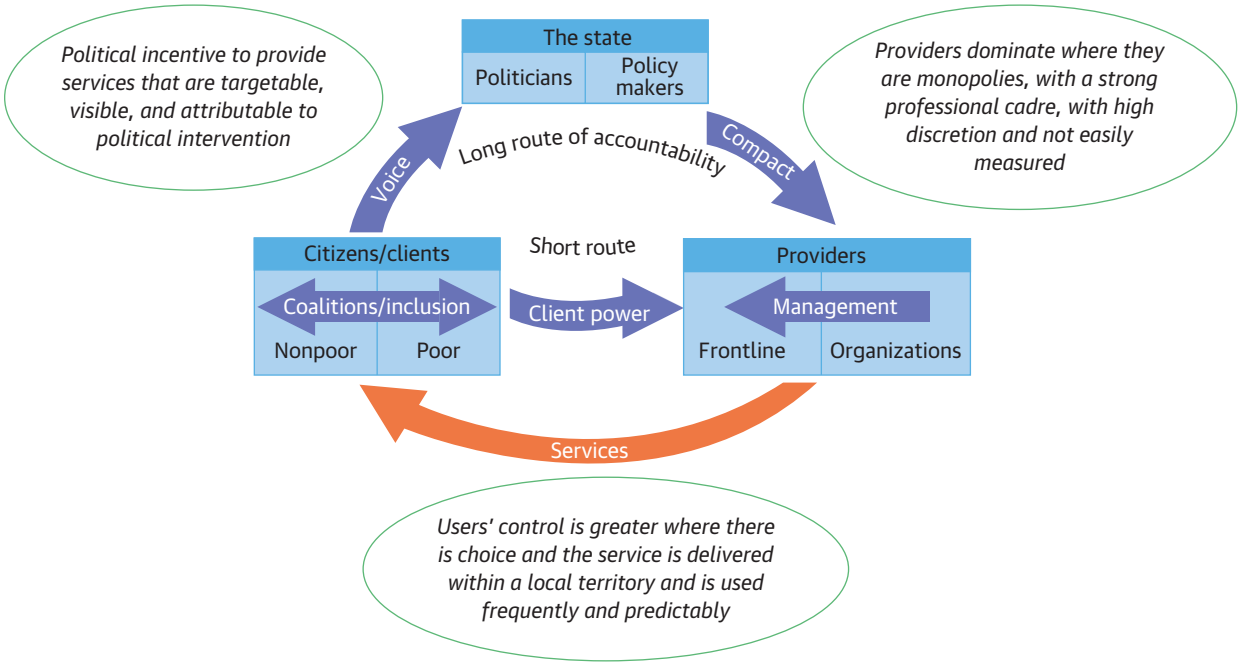
Typical Challenges

Countries in this stage may be ready to reflect on which incentives have spurred progress toward sector outcomes and which have not. The PIR framework concludes that reform is an iterative process that requires significant learning and will inevitably lead to progress and reversals over time. Governments are best served if they remain flexible and open to new ideas for continuous improvement and consider that what may have worked in the past may not be right for today's evolving conditions.

Governments may also need to reassess the status of the sector vis-à-vis long-term goals or shifting policy objectives. Utilities that are already financially sustainable may need additional incentives to reach new markets, especially the poor.

Moreover, it may be necessary to take steps to ensure that progress already made is sustained by institutionalizing

FIGURE 4.2. Incentives of Key Actors in the Water Supply and Sanitation Sector



Source: Wild et al. 2012 as referenced in Mumssen, Saltiel, and Kingdom 2018.

the positive incentive structures and the processes and procedures required to continue producing the desired outcomes. For example, to ensure that utilities continue to make the best business decisions, governments may consider reformulating rules and norms around technology choice, service levels, or procurement.

Approaches to Moving to Stage 5

Monitor and benchmark utility performance. Investing in data collection and management will support regulators to engage with utilities in a transparent and objective manner. Benchmarking can show differences in performance among similar utilities, helping point to the gaps and constraints that need to be addressed.

Performance monitoring also sets the foundation for long-term strategic planning or business planning, which was a key action for each of the successful UTF case studies (box 4.7). For example, CESAN produces a strategic plan in agreement with the regulator—ARSP—which is a basis for monitoring performance and is tied to tariff adjustments.

BOX 4.7. General Sequencing of Successful Turnarounds

1. Establish a baseline as key input for business planning
2. Set clear objectives and multiyear targets
3. Develop sustainable business plans
4. Improve human resource and management information systems
5. Increase revenues and/or reduce costs
6. Sign performance contract with government, defining improvements to be made and government support to be provided
7. Make sizable capital investments

Source: Soppe, Janson, and Piantini 2018.

Build a professionalized sector based on performance improvement and accountability. As the MFD framework states, "incentives for improving efficiency come from policy makers and trickle down through local governments and service providers, including management and technical staff," which reinforces the PIR framework's focus on intrinsic incentives.

The UTF recommends different types of incentives for staff, including profit-sharing systems, prize systems, bonus policies, and large differentiation between salary grades as mechanisms for ensuring long-term staff development and delivery of targets. ONEA uses performance objective contracts, signed between staff and their managers, as the basis for staff evaluations, rankings, and promotions.

As the sector matures, consider advanced delivery models, such as greater use of PSP. For example, corporatization or commercialization of large utilities allows them to use a more business-oriented operational model, resulting in positive incentives to deliver better services to customers. These incentives can be further enhanced by using PSP. The PIR framework concludes that PSP seems to have the added value of insulating utilities from political interference in their finances and management.

Forms of PSP are varied and include large-scale public-private partnerships (PPPs) for building, operating, and maintaining new infrastructure (leveraging private finance), such as in the Philippines, and delivery models that delegate management to the private sector (leveraging private expertise), as in the case of Mozambique.

PSP can also be used to help the utility meet a specific objective like reducing NRW, which is a typical step taken to improve financial viability (figure 4.1). Performance-based contracts (PBCs) for NRW reduction are a low-risk tool for improving service quality and financial sustainability of a utility and have been used worldwide.

The *Use of Performance-Based Contracts (PBCs) for Nonrevenue Water Reduction* (Kingdom, Sy, and Soppe 2018) is an operational manual for developing PBCs. Contractors are paid for outputs such as the amount of water saved, the number of customers receiving continuous water supply, or the number of illegal connections detected.

Encourage a higher rate of cost recovery through tariffs while balancing policy goals related to affordability and equity. Chile has had one of the most successful cases of sector reform, where the dual goals of financial sustainability and equity were balanced through well-designed tariffs and subsidies (box 4.8).

In some countries, regulatory institutions may consider new tariff regimes that also build in capital costs for additional outlays to reach the unserved. In other countries, there may be fewer or different types of barriers to extend access to the poor. For example, ONEA (Burkina Faso) looked to informal settlements as a potential new market to increase revenues, rather than as a risk, given the poor were already paying more than ONEA's tariff to informal providers. ONEA built thousands of kilometers of pipeline to the perimeter of informal settlements and delegated construction inside the settlements to private operators. This approach resulted in rapid revenue growth for ONEA and thousands more people with clean and safe WSS services.

Stage 5: Going to Market

Typical Challenges

The aim of improving sector performance across Stages 1 through 4 is not only to spend public funds and tariff revenues more efficiently but also to improve the financial viability of the utility to enable the sector to attract nonpublic sources of finance. Countries in Stage 5 will see a greater portion of public funding and concessional finance being replaced by market finance. Public resources will then be freed up from the urban water sector to be invested in other priority areas such as WSS services in rural areas or supporting sanitation services in selective communities.

Stage 5 is not the end of the road for a country's urban water sector. As new challenges arise, such as changing demographics, climate, or customer demand, governments can continue making reforms to maintain or expand services in an affordable and efficient manner. Even in cities with universal access to safe WSS services, emerging threats, population growth, and the continual need for adequate maintenance will always require vigilance on the part of sector institutions. Furthermore, capacity and political will are always required to make additional reforms.

BOX 4.8. Successful Sector Reform Balances Efficiency and Affordability

Chile's 1980 Constitution codified the government's desire to eliminate state subsidies for public services. This provided the impetus for a gradual shift from a public to a private model of water supply and sanitation (WSS) service provision, with utilities decentralized over a period of 20 years through a three-stage reform process. Reforms were sequenced to first ensure service efficiency and tariff setting to support financially healthy public operators. A 1988 law established a new tariff system based on the principles of equity, efficiency, and transparency. It mandated universal access while stating that tariff increases would be approved only in line with the marginal cost of service as applied to a model company. This forced operators to make efficiency improvements, which were translated into lower costs for consumers. At the same time, a consumer subsidy program was established to ensure the poor (comprising 15 percent of customers) could afford a basic amount of water.

Source: Flores Ariasuijtewaal, Goksu, and Saltiel 2018.

Thus, the integration of new reforms within the prevailing enabling environment will always be required to sustain progress. By embedding positive incentives and ensuring they are supported by new policies and regulation, water sector institutions will continue to meet more ambitious sector goals. Finally, the continued alignment of changes across policy, institutions, regulation, finance, and utility performance will help ensure that one aspect of the sector does not regress or become subject to political capture because of the next economic, financial, or political crisis.

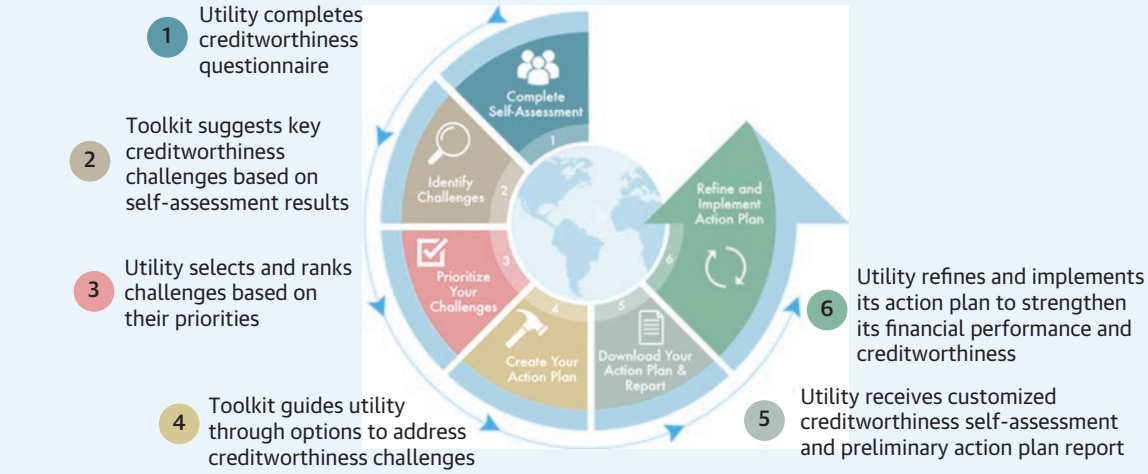
Beyond Stage 5: Approaches to Sustaining Reforms

Move from financially viable to fully creditworthy. Creditworthiness, which implies that a utility can service its debt obligations, requires a reliable cash flow from operations and cash reserves. As a general rule, creditworthiness—as determined by potential lenders or independent parties—is more likely to occur for utilities that recover 150 percent or more of their operating costs (Goksu et al. 2017). The process of moving up the ladder of financial sustainability (figure 4.3) will slowly open greater opportunities to leverage greater volumes of commercial finance. Governments and donor agencies can start by providing shadow credit ratings or other benchmarking systems to help utilities assess and plan for improvements.

Quantify the true costs and benefits of alternative financing schemes. Commercial finance is costlier than nonrepayable government grants or subsidies and likely—but not always—costlier than concessional finance (box 4.9). On the other hand, the long-term benefits of commercial finance (for example, a more sustainable service provider, larger investment capacity, quicker access to commercial finance, and a reduced need for public subsidies) most likely outweigh the difference in costs.

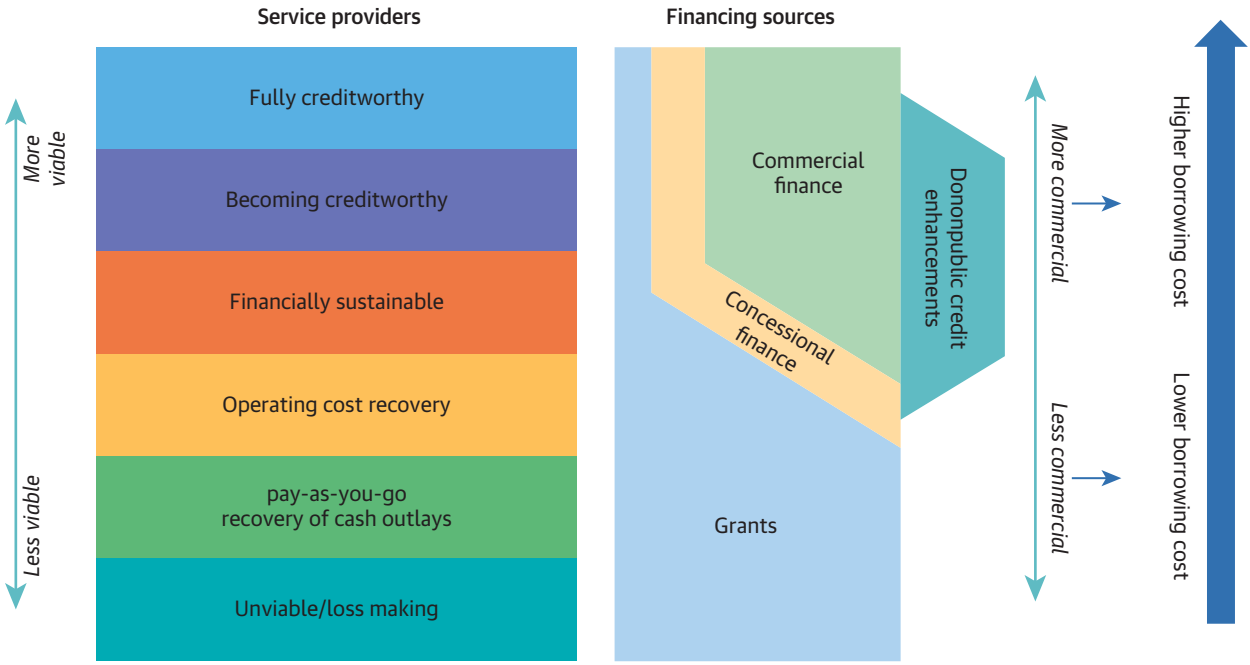
Start by blending commercial and concessional finance. Under the MFD agenda, donors and governments will have incentives to work together to identify and leverage the full spectrum of commercial financing mechanisms, such as blending commercial and concessional finance. Blending instruments can include grants; concessional loans and equity; and credit enhancement, such as guarantees. Blending can support different types of commercial finance, including loans, microfinance, and vendor finance (a detailed list of the types of commercial finance is provided in Appendix A of *Easing the Transition to Commercial Finance for Sustainable Water and Sanitation* [Goksu et al. 2017]).

Water Creditworthiness Initiative—Self—Assessment and Planning Toolkit



Source: http://www.watercred.org.

FIGURE 4.3. Improved Financial Performance Changes the Mix of Financing Sources



BOX 4.9. The Cost of Commercial Finance

The Maximizing Finance for Development (MFD) framework concludes that though concessional finance is generally offered at lower interest rates than commercial finance, it does not necessarily cost a country less in the long run, especially when commercial finance can be provided in local, rather than foreign, currency. Governments should carefully consider all relevant factors, including tenor and grace periods and currency risk, when determining loan affordability.

Blending will require a paradigm shift in the way development institutions function. As the PIR framework acknowledges, the intrinsic incentive of donor agency staff is to maximize the volume of concessional lending. The MFD approach turns this incentive structure on its head, asking agencies to step back from lending to financially sound utilities and rather use their resources more strategically to crowd in commercial finance.

Coordinate across donor agencies. MFD inherently promotes the proper planning for reform in a logical sequence under one long-term sector blueprint. For example, technical assistance grants should be focused upstream, such as for the application of the UTF and short-term efficiency improvement projects, before capital investment funds are tapped to expand infrastructure. Bilateral and multilateral donors must better align efforts within a country to ensure their programs are working with the same timeline and toward the same MFD goals.

Broker partnerships between borrowers and lenders. Instruments such as tenor extensions, project preparation facilities, and output-based aid can be used to make commercial finance more affordable for utilities. Donors can also help de-risk the sector for potential financiers by designing transactions that use insurance, hedging instruments, or guarantees.

Chapter 5
Bringing It All Together

The urban water maturity ladder (figure 5.1) set out here combines three distinct global frameworks—Maximizing Finance for Development (MFD), Utility Turnaround Framework (UTF), and Policy, Institutional, and Regulatory (PIR). The ladder, in synthesizing the key elements of each framework, puts forth a series of actions to move up to higher stages of sector maturity. As a simplified version of the maturity matrix (appendix B), the ladder emphasizes the most critical aspects of reform: leadership and political commitment, capacity, efficiency, performance incentives, alignment, and harmonization.

Although each framework approaches urban water sector reform from a unique vantage point, there are several common principles and approaches that can be summarized as follows:

The first step in any reform process is to identify the existing problems and to understand how the prevailing political economy context constrains positive sector outcomes. Countries should, according to the PIR framework, take a "problem-driven approach based on binding constraints." The UTF recognizes the need to first assess institutional strength and then plan improvement programs based on performance measurement. Similarly, the MFD posits that a full assessment of how public resources are being spent is critical to engaging decision makers in discussions on reform. As such, the identification stage in and of itself can provide the critical first steps to build stakeholder consensus.

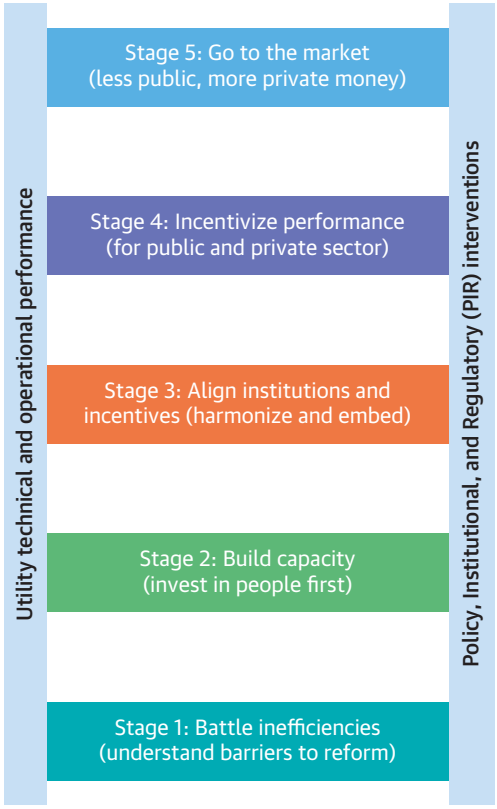
Work within the current context. Each framework concludes that there is no "best practice" formula for successful reform. Rather, countries should look for the "best fit" for the prevailing conditions. In the unpacking of the complex enabling environment, the role of informal institutions should not be discounted because they often substitute where formal institutions are weak. Understanding context goes beyond the written rules and formal institutions and should include a study of the de facto functioning of the sector, including political economy influences and informal rules of the game. This also extends to sector funding, which will have implicit and explicit incentives that impact the way institutions function.

Capacity is almost always the first barrier to reform. All three frameworks recommend investing in people and institutions before pouring more public money into the urban water sector. The difference between de jure and de facto functioning of sector institutions, a theme seen across several unsuccessful reform efforts, comes down to whether interventions are designed through an inclusive process and are commensurate with the institution's human resource and financial capacity.

Reforms should be inclusive, designed through a comprehensive stakeholder buy-in process. The PIR framework emphasizes the need for "broad engagement" across the wide spectrum of sector actors. Regulatory mechanisms are important for improving transparency with the aim of protecting consumer interests. The UTF mirrors this concept by recognizing how customer engagement should guide performance improvements. A critical part of reform at the sector and utility level is the feedback loop, whereby the dynamics between institutions are shaped by underlying governance structures and political economy factors.

Start with what's possible. Quick wins help garner additional support for even deeper reforms. The UTF recommends that short-term actions, which yield high-impact results, be used to initiate a turnaround effort.

FIGURE 5.1. Maturity Ladder for the Urban Water Sector



Illustrative actions for moving up the ladder:

- Introduce blended finance options
- Consider more sophisticated delivery models (corporatization, PPP)
- Develop shadow credit rating system
- Achieve sector financial sustainability
- Monitor and benchmark performance
- Conduct strategic action planning
- Engage the private sector as a potential technical or financial partner
- Redirect subsidies to reach the poor
- Use performance-based contracts
- Adjust tariffs
- Leverage results-based financing
- Embed policies in the legal framework
- Abandon perverse subsidies
- Engage customers early and often
- Ring-fence utilities
- Back sector goals with consistent and transparent subsidies
- Clarify policy direction and targets
- Achieve financial viability (OCCR > 1.2)
- Reduce NRW
- Create an information base
- Build regulatory enforcement capacity
- Fully resource sector institutions
- Hire based on merit and skill
- Identify strong sector leaders and champions
- Improve metering
- Cut energy and labor costs
- Increase billing and collections
- Conduct a political economy analysis

Note: NRW = nonrevenue water; OCCR = operating cost coverage ratio; PPP = public-private partnership.

This means that actions that cost less and require lower political capital should precede those with higher political and financial costs. Cutting utility operating costs is a typical first intervention, but in some cases, even these changes will require some adjustments in the broader PIR incentive structures. Incremental change is best because staff—whether they sit in a development agency, a utility, or a regulatory institution—are more likely to implement policies that do not require large-scale restructuring.

There is no one-size-fits-all reform program. Although context is incredibly important, successful utility turnarounds had a relatively structured sequence with key actions taken in roughly the same order, pointing to the idea that there is somewhat of a "science" to the process. Similarly, the MFD framework requires a gradual progression away from perverse subsidies and toward financial viability and creditworthiness. PIR, on the other hand, is more of an "art" in that it requires iteration and dynamism with more room for variability in sequence.

Align institutions and incentives to ensure a comprehensive reform program. Isolated interventions can undermine one another if they are not harmonized. PIR interventions should not just point in the same policy direction but should work in tandem to achieve specific sector goals. When interventions are not aligned, they often lead to perverse or distorted incentives. Moreover, well-designed incentives do not always yield the expected response. Decision makers should

carefully follow and measure the result of incentive setting and course correct as needed.

Under the right governance and regulatory frameworks, the private sector can be a productive partner in achieving sector goals. Chile is an excellent case in point. Private sector participation (PSP) enabled very rapid improvements in wastewater treatment levels. However, before PSP was aggressively promoted through legal reforms in 1990, coverage rates in urban areas were already brought very high through efficiency improvements by public utilities (97 percent for water, 84 percent for sanitation). It is important to note that a strong regulatory framework and institution were in place, and these were continually strengthened alongside greater use of PSP.

People drive reform. The conclusions of both the UTF and PIR framework prioritize the role of individuals within institutions. Utilities that understand what motivates their staff—and link institutional performance to those motivations—are likely to see quicker change. And individual leaders—including political champions and competent utility managers—are a prerequisite for positive reform outcomes. Intrinsic incentives should be well understood and, in the case of MFD, will need to be changed to align with new strategies.

Comprehensive reform requires flexibility, learning, and endurance. The PIR framework concludes that "reform is not an event or a linear process … but relies on incorporating a high degree of learning." Those countries that adapted to change, and that continually searched for the most practical next steps, were the ones with the most sustainable reform programs. Realizing the full effects of sector reform in New South Wales, Australia took more than 30 years.

Finally, institutionalization yields sustainable outcomes. Reforms are not single actions taken once to improve sector outcomes for eternity. They are changes to the foundational structures of the sector, institutionalized through processes and systems. Embedding positive incentives into the practices of institutions protects them from future attempts at predation or the co-opting of those institutions for political gain. Institutionalization also safeguards against backtracking on the reform program in the face of future political, economic, or financial crises.

Chapter 6
Conclusion

Many countries have committed to achieving ambitious water supply and sanitation (WSS) goals by 2030, including expanding access to and improving quality of services. These goals must be achieved under the duress of rapid urbanization and climate change. Meeting them will cost upward of three times the current level of sector investment.

With governments strapped for cash, they will be unable to satisfy the growing demand through traditional approaches. A paradigm shift is needed to attract more money to the sector, and it starts with changing the way public money is spent.

Changing the way governments approach meeting their water-related Sustainable Development Goals (SDGs) can help in two ways. First, by taking a holistic view of sector reform, they can tackle the major foundational issues—utility performance and governance and institutions—that have stifled the sector for decades. Second, by taking a Maximizing Finance for Development (MFD) approach, they can use their funds as a positive incentive, turning what used to be a perverse subsidy into a tool to leverage commercial finance.

Successful and sustainable reform is not only possible; it is within reach. From Australia to Benin, countries have transformed an inefficient urban water sector to a commercially viable sector with the autonomy and independence to attract its own sources of financing. And individual utilities across Burkina Faso, Brazil, and Vietnam have implemented turnaround programs by working within the broader enabling environment, allowing the government to redirect scarce public resources to other priorities for poverty reduction.

The cases studied in the three global frameworks—related to utility turnaround, sector reform, and sector finance—indicate that there are multiple pathways to reform. And while reform programs must be tailor-made for each local context, the research shows a few common prerequisites for success, such as understanding of broad political economy structures, competent leadership, alignment and embedding of incentive structures, a focus on performance, and a long-term commitment to moving away from the status quo.

Progress can be made if individual interventions are harmonized, such that incentives across institutions are aligned. Key to harmonizing interventions is to put money behind the policies and programs that aim to shape sector outcomes and to embed sector changes across the legal, regulatory, and policy frameworks. A long-term (20-year) planning horizon works, and all donors should be brought in early to help design coordinated interventions in sequence.

Governments can take steps today to begin to assess, plan, and implement sector interventions. A good starting place is with the maturity ladder for the urban water sector, which points readers to the most typical challenges and approaches that are found in more detail across the Policy, Institutional, and Regulatory (PIR); Utility Turnaround Framework (UTF); and MFD resources.

Improving water sector performance will be neither quick nor easy. But by first assessing the maturity level of their urban water sector, countries will be able to identify barriers to success and create the new incentives needed to take one more step up the ladder. Ultimately, building a transparent urban water sector with creditworthy utilities will put countries on the right path to attaining the SDGs.

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Appendix A
Reference Tools and Documents

Initiative	Name of tool/document
PIR framework	Aligning Institutions and Incentives for Sustainable Water Supply and Sanitation Services (Mumssen, Saltiel, and Kingdom 2018)
Other PIR-related reference tools	Incentives for Improving Water Supply and Sanitation Service Delivery: A South American Perspective (Flores Ariasuijtewaal, Goksu, and Saltiel 2018)
	Institutional diagnostic tool
	Body of Knowledge on Infrastructure Regulation
	Australian Urban Water Reform Story: with Detailed Case Study on New South Wales (Salisbury, Head, and Groom 2017)
	PIR case studies for: Argentina, Brazil, Chile, Colombia, and Peru (unpublished)
MFD framework	Easing the Transition to Commercial Finance for Sustainable Water and Sanitation (Goksu et al. 2017)
Other MFD-related reference tools	Public-Private Partnership Legal Resource Center
	Achieving Universal Access to Water and Sanitation by 2030: The Role of Blended Finance (Leigland, Trémolet, and Ikeda 2016)
	Financing Options for the 2030 Water Agenda (Kolker et al. 2016)
	Aid Flows to the Water Sector: Overview and Recommendations (Winpenny et al. 2016)
	Training courses on creditworthiness and financing access
	Sanitation and Water for All: How Can the Financing Gap Be Filled? (World Bank and UNICEF 2017)
	Mobilizing Finance for WASH: Getting the Foundation Right (Pories, Fonesca, and Delmon 2019)
	Better Use of Capital to Deliver Sustainable Water Supply and Sanitation Services: Practical Examples and Suggested Next Steps (Kingdom et al. 2018)
	Training course on financial analysis for water utilities
	Water Creditworthiness Initiative—Self-Assessment and Planning Toolkit
UTF	Water Utility Turnaround Framework: A Guide for Improving Performance (Soppe, Janson, and Piantini 2018)
Other UTF-related reference tools	Water Utility Turnaround Framework: Volume II (unpublished)
	The Use of Performance-Based Contracts for Nonrevenue Water Reduction (Kingdom, Lloyd-Owen, et al. 2018)

Note: MFD = Maximizing Finance for Development; PIR = Policy, Institutional, and Regulatory; UTF = Utility Turnaround Framework; WASH = water supply, sanitation, and hygiene.

Appendix B
Maturity Matrix for Urban Water Reform

Maturity Matrix for Urban Water Reform					
Color coding refers to actions listed on various stages of the maturity ladder for the urban water sector (figure 5.1)					
Topic:	**Stage 1: Battling inefficiencies**	**Stage 2: Building capacity**	**Stage 3: Aligning institutions**	**Stage 4: Incentivizing performance**	**Stage 5: Going to the market**
Policy	Policy direction; national strategy; good understanding of the underlying political economy constraints and barriers to reform	Policy framework with sector goals and targets backed by consistent financing policy (transfers/budget); decentralization/aggregation/PPPs	Institutional setup; policies harmonized and embedded in other frameworks (institutional/legal/regulatory); capital subsidies aligned with sector goals; economic and social tariff policy; vertical (national/subnational) alignment	Efficient procurement with flexible technology selection; performance-based financing policy with incentives for utility efficiency improvements/sustainable universal coverage; perverse subsidies abandoned	Stable policy environment with policies periodically refreshed to capture changing social contracts at national level; pro-poor subsidies to reach new service areas; implementation of PPPs
Finance	Grants to increase service coverage and improve performance	Grants to achieve minimum service standard; fiscal transfers/subsidies allocated in a transparent manner; utilities ring-fenced	Performance-based grants for utilities; work toward financial viability; results- based financing to increase coverage	Strategic financial planning; matching grants to encourage nonpublic finance; guarantees; shadow credit ratings	Blended finance; financial sustainability; loans; more market finance replacing public finance; public resources freed up for other uses
Regulation	Regulatory impact analysis to clarify regulatory objectives, forms, functions, costs and benefits of regulation, and opportunities for incentivizing utility performance	Institutional capacity strengthened for regulatory enforcement; information base created	Utility performance improved through regulatory functions including performance monitoring, benchmarking, and appropriate performance incentives; public engagement through hearings or other mechanisms; tariffs; adjusted as needed	Broadened regulatory scope to include additional responsibilities such as accounting for the regulatory asset base, gradually installing protocols to cover capital and operating expenditures through tariffs and business plans	Norms and methods to monitor creditworthiness established to raise capital through available markets; new regulations address emerging threats or cover alternative service providers/differentiated services
Institutions	Institutional framework enables separation of functions; roles and responsibilities delineated; supported by legal framework that enables institutions to carry out their core duties	Strong leadership identified; institutions have sufficient resources to carry out their core duties; active program of training and capacity building to fulfill mandates; hiring based on merit and skill; decentralization/aggregation backed by funding and legal and institutional reforms	Service providers ring-fenced; technical capacity embedded in institutions; institutions fully resourced; legitimacy established; legal framework enables implementation of any new policies; private sector considered as productive partner	High level of institutional coordination between levels of government; de facto institutions operate as they were intended (de jure)	Institutions have strong credibility; professional capacity well-established and respected; can proactively adapt to changing environment; corporatization of large service providers; leverage private sector skills, investment, and financing
Utilities	Focus is on improving access and arresting declining coverage; some customer metering; rely on minimal and erratic cash surplus	Vision and mission clarified; billing and collections improved; more systematic metering; limited routine maintenance; water losses managed; energy and labor costs falling; moving away from intermittent supply	Customer orientation/engagement; intermittent service improved; NRW reduced; use of performance-based contracts for PSP; strategic metering; plan for improving cost coverage ratio; multiyear business plan	Clear customer processes; business decisions reflect economic efficiency; transparency; IT/MIS/GPS improved; financial viability; performance-based compensation; budgeted O&M; NRW management	Customer needs serviced; creditworthy; culture of improved performance; full-cost recovery; comprehensive network management; new technologies pursued and deployed

Note: GPS = global positioning system; IT = information technology; MIS = management information system; NRW = nonrevenue water; O&M = operation and maintenance; PPP = public-private partnership; PSP = private sector participation.


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