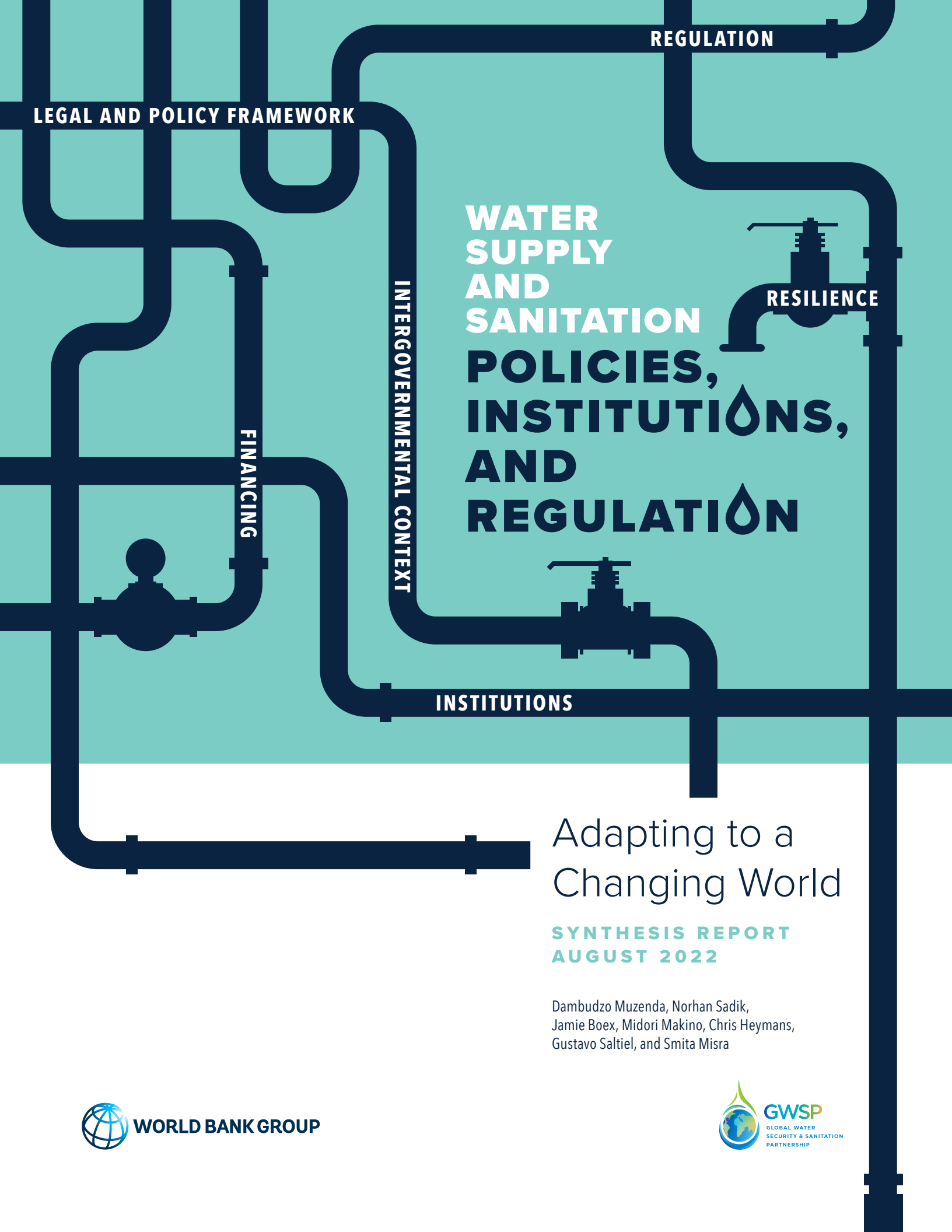

WATER SUPPLY AND SANITATION POLICIES, INSTITUTIONS, AND REGULATION

Adapting to a Changing World

SYNTHESIS REPORT
AUGUST 2022

Dambudzo Muzenda, Norhan Sadik,
Jamie Boex, Midori Makino, Chris Heymans,
Gustavo Saltiel, and Smita Misra

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Acknowledgments

This report was prepared by a core team at the World Bank led by Dambudzo Muzenda (Senior Water and Sanitation Specialist, World Bank) and comprised of: Norhan Sadik (Program Analyst), Jamie Boex (Decentralization Specialist and World Bank Consultant), Midori Makino (Lead Water and Sanitation Specialist), Ilan Adler (Policy Specialist and World Bank Consultant), Chris Heymans (Senior Water and Sanitation Specialist), and Smita Misra (Senior Water and Sanitation Specialist). The report was prepared under the overall guidance and direction of Gustavo Saltiel, Global Lead for Water Supply and Sanitation.

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Executive Summary

Context And Objectives Of The Study

Policies, institutions, and regulation (PIR) are essential to achieving the Sustainable Development Goals (SDGs) related to water and sanitation, but need a considerable boost to be effective. A rich body of analytical work has been developed to support this idea. Nevertheless, this report argues that the mainstreaming and implementation of PIR into concrete reforms, investment programs and infrastructure is still sporadic at best. At the same time, the stakes for getting PIR right are higher than ever. PIR needs to be strengthened, adjusted, and scaled up to meet the needs of a changing world.

The World Bank has reviewed the experience of various countries with PIR and has documented its insights in a new report. This report has two main objectives. The first is to reflect on the body of PIR knowledge and experiences accumulated globally and in selected countries to refine the PIR concept based on lessons learned. The second is to advocate for greater action on PIR by policy makers, development partners, international financial institutions, and civil society by using projects and investments as implementation vehicles. A companion piece to this report, the PIR Framework Tool, provides more detailed guidance on undertaking policy dialogue on PIR, identifying reform options, and applying PIR concretely in practice.

The Case for an Intensified Focus on Water and Sanitation PIR

Since the adoption of the SDGs, there has been increasing global concern about the sustainability of attempts to increase access to, and improve the quality of, water supply and sanitation (WSS) services. The SDGs set an ambitious agenda that includes universal access to WSS services with the requisite quality, reliability, equity, and sustainability essential for overall human and economic development. While the financial needs and technical solutions are well known, there has typically been less appreciation of the transformational role of sector governance—that is, the laws, policies, regulations, institutions, and systems that can help mobilize financial and technical solutions and enhance their impact on WSS services (Mumssen, Saltiel, and Kingdom 2018).

The World Bank launched the PIR initiative in 2016 as a new approach to water sector reform. Previous global initiatives offered a range of promising technical solutions to expand water and sanitation infrastructure but did not have a sufficient understanding of the policies, institutions, and regulatory framework necessary to improve service delivery and to operate and maintain water and sanitation infrastructure in a sustainable manner. The initial phase of the PIR initiative (2016–19) sought to build strong empirical and literary foundations through the seminal report "Aligning Institutions and Incentives" (Mumssen, Saltiel, and Kingdom 2018). Based on an extensive literature review that analyzed trends and theories on public sector reform as well as the insights gained from 10 country case studies, this report formulated the initial PIR Conceptual Framework (appendix A). This framework posited that integrated policy, institutional, and regulatory interventions can help align incentives for more sustainable WSS service delivery.

The second phase of the PIR initiative (2019–22) was recently concluded. Its objective was to put the concept into practice and learn from its implementation to further refine the PIR concept, draw operationally applicable lessons, and inform the development of a tool for operationalizing PIR in government and development partner programs. The review of the application of the PIR framework globally—summarized in this report—reconfirms the importance of policies, institutional arrangements, and the regulatory context in improving governance and the alignment of incentives to support more effective and sustainable WSS service delivery. In addition, the second phase identified three cross-cutting areas that are key to sustainable WSS services: sector funding and financing, the intergovernmental context, and enhancing the sector's ability to be resilient in the face of stresses and shocks. These issues have emerged as both the biggest constraints to progress toward SDG 6, and the areas in which governments and other sector actors have expressed the strongest need for reforms and technical support.

Recently, there has been growing recognition that PIR—and water governance more generally—is the missing link for resolving some of the chronic challenges undermining WSS services. For example, a 2021 survey of ministers, agency heads, and other senior officials in the water sector found that institutional fragmentation is the foremost challenge to achieving good water management (Water Policy Group 2021). Further, inadequate infrastructure is not a top priority for decision-makers in addressing water management challenges, with PIR aspects such as improving data and resolving conflicts among water users taking precedence (Water Policy Group 2021). At a national level, some countries are realizing that PIR reforms are essential in the context of more frequent shocks and growing stresses in the water sector. In South Africa, for example, where several provinces or cities are at or close to a "tipping point" (as continuous supply is no longer the norm and many locations are experiencing intermittent water supply), the National Treasury and Department of Water and Sanitation are working with local governments to address PIR-related binding constraints to improved water security. At the heart of this interest in PIR is the recognition that infrastructure and investment solutions are not enough to tackle the "wicked problems" facing the water sector.

The urgency of a renewed and updated focus on PIR stems from several factors. Several cities increasingly face "day zero" events or risk crossing a "tipping point" at which WSS service provision starts to degrade. Water utilities and other service providers, which traditionally had narrow mandates, have to increasingly tackle problems outside their remit, such as the public health crisis related to the COVID-19 pandemic. The interconnectedness of water and sanitation with other development priorities such as health, environment, social, and economic goals, is putting pressure on the siloed approach to WSS services, while new technologies and innovations offer unprecedented opportunities to transform the water sector. Climate change is compelling many policy makers, regulators, and other actors to change their way of developing WSS services by adapting to increasing water security challenges. This requires dramatic change in the current course of action to address these growing pressures and achieve better WSS services for all. The PIR report provides several examples of how some countries have successfully undertaken PIR reforms and interventions that have led to improved WSS outcomes.

Given the pressing challenges as well as opportunities facing the WSS sector, the narrow focus on PIR is no longer enough. In addition to the three fundamental building blocks of policies, institutions, and regulation, this report proposes an expanded analytical framework that includes some important but hitherto less developed themes: intergovernmental context financing, and resilience. Figure 1.2 illustrates this expanded analytical concept of PIR, encompassing a deeper analysis of financing, intergovernmental issues, and resilience in a constant feedback loop. These themes were identified through the application of an institutional diagnostic tool as well as stakeholder consultations; other relevant methodologies; and various water, governance, and infrastructure assessment tools. Through this process the PIR concept and the PIR Framework Tool were updated to provide more granularity on key PIR-related binding

constraints to improved water supply and sanitation outcomes, particularly around the intergovernmental context finance, and resilience.

Summary of the Overarching Messages of this Report

Key Message 1: Understanding the PIR context of WSS provision is a precondition for all other efforts to achieve meaningful and sustainable WSS outcomes.

This report argues that the design and integration of incentives into WSS operations are still a work in progress that will require more scale-up and action to succeed. Mumssen, Saltiel, and Kingdom (2018) have already pointed to the *de jure–de facto* gap, whereby PIR measures are developed, often with great expectations, but fail to be effective due to the lack of necessary measures for their implementation. Their report presents findings from various cases showing how incentives such as legislative requirements, budget allocations for implementing entities, benchmarking of utilities and other service providers, performance-based grants, and career opportunities for water professionals can all make a difference in the impact of PIR initiatives. In addition, while the report echoes previous calls for a reform champion to spearhead reforms, it advocates for a collaborative leadership model, where multiple actors at all levels of the sector work together for change. Despite the positive examples offered, this report is frank about the paucity of good practices and the need for more deliberate efforts to align policy goals with implementation incentives to achieve sustainable WSS outcomes.

Key Message 2: Progress in achieving meaningful PIR reforms starts with a rigorous assessment of the root causes of WSS service bottlenecks.

This report argues that part of the reason for recurrent service delivery challenges is the lack of attention paid to identifying the root causes of weak service performance. Water and sanitation governance assessments often highlight the same endemic challenges, such as fragmentation among institutions, political interference in regulation, or tensions between local and national governments regarding WSS roles and responsibilities. But often these assessments only skim the surface rather than identifying the real "pain points." For example, assessments frequently point out that a lack of local capacity contributes to the WSS delivery challenges. However, if we probe deeper into the root causes of these challenges, it becomes clear that the intergovernmental system itself—its design, incentives, and coordination structures—is often the real issue, rather than local capacity or national governments' reluctance to delegate services. In the absence of a proper diagnostic, initiatives and projects consider a lack of administrative capacity or funding as the leading cause of service delivery failure, whereas the reasons might run much deeper or lie elsewhere. More efforts are needed to identify the stakeholders and interests that contribute to service delivery bottlenecks and the incentives (including resources) that could compel them to act differently.

Several tools and approaches exist to support a root cause analysis of PIR service bottlenecks, including the World Bank's new PIR Framework Tool. The tool is an updated methodology for undertaking PIR diagnostic assessments and facilitating policy dialogue on reforms. It covers the six themes of the PIR Conceptual Framework: policy, institutions, intergovernmental context regulation, finance, and resilience. There are other approaches and methodologies, such as the problem-driven iterative approach encapsulated in other analytical work, including the World Bank Governance Practice's GovEnable initiative. Elements of these approaches have been adopted in the PIR Framework Tool and are reflected in this report.

Key Message 3: PIR reforms are long term in nature and require mechanisms that foster evaluation, learning, and adjustment.

While some PIR interventions can and should be done in incremental steps, fundamentally, all PIR reforms require sustained efforts over a long period of time for impacts to materialize. The report illustrates this

by documenting long-term reforms in a selection of countries. Deep-dive policy briefs of some of these cases (Bosnia and Herzegovina, Brazil, the city of Chennai in India, Colombia, Mozambique, and Uzbekistan [World Bank 2022a–f]) have been developed as a complement to this report. The example of WSS regulation in Colombia, for instance, illustrates how incremental but intentional and well-conceived steps over a 25-year period have positioned the Water and Sanitation Regulatory Commission of Colombia (Comisión de Regulación de Agua Potable y Saneamiento, CRA) as a leading regulator. The careful use of regulatory cycles that are revised and adjusted every few years to reflect new challenges and opportunities are among the cornerstones of the regulatory successes reviewed under this work.

The WSS sector is in flux—the growing impacts of climate change (which are manifested through the water cycle) and COVID-19 are cases in point—and sector institutions need to develop the adaptive capacities to respond accordingly. A focus on PIR needs to be tailored toward the long term with aligned approaches that consider how ad hoc laws, policies, regulations, programs, and projects can best contribute to building and sustaining momentum for WSS reforms over time.

Conclusion

While PIR is an essential piece of the WSS puzzle, it is not the only one. The report does not assume that the six areas it covers offer the definitive response to tackling WSS challenges but it provides insights from a wide range of countries that endorse a more robust focus on PIR. It also points to other tools that offer more specific resources for topics beyond the scope of this report. The PIR methodology will continue to evolve and be adjusted accordingly as new insights emerge and lessons are learned from its application in participating countries.

Moving forward, the report advocates for the use of the renewed PIR approach through projects, technical assistance, and structured policy dialogue with key sector stakeholders around the world. The systematic use of the PIR Framework Tool in WSS operations (investment projects, performance-based financing, technical assistance, and advisory services) can help to facilitate stakeholder dialogue, identify root causes of systematic service delivery challenges, and lay the groundwork for incremental, long-term reforms.

Abbreviations

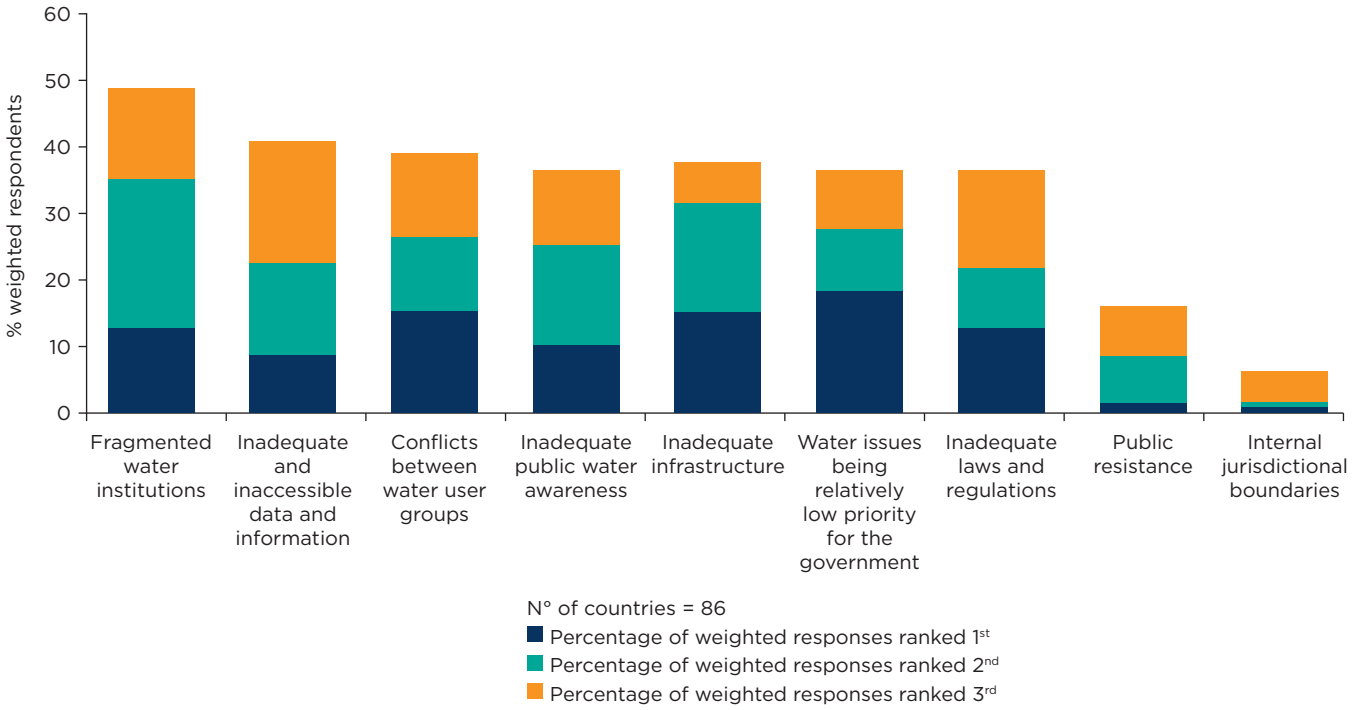
ARERA	The Italian Regulatory Authority for Energy, Networks and Environment
CRA	Water and Sanitation Regulatory Commission (of Colombia)
CSP	Cities Support Program
FLLD	field-level leadership development
IFI	international financial institution
LMIC	lower-middle-income country
NPM	new public management
O&M	operation and maintenance
OECD	Organisation for Economic Co-operation and Development
PBG	performance-based grant
PEFA	public expenditure and financial accountability
PEMANDU	Performance Management and Delivery Unit
PIR	policies, institutions, and regulation
RBF	results-based finance
SDGs	Sustainable Development Goals
WASH	water supply, sanitation, and hygiene
WASREB	Water Services Regulatory Board
WSS	water supply and sanitation

1. Introduction

Since the adoption of the Sustainable Development Goals (SDGs), there has been increasing global concern about the sustainability of attempts to increase access to and improve the quality of water supply and sanitation (WSS) services. The SDGs set an ambitious agenda that includes outcomes such as universal access to WSS services with the requisite quality, reliability, equity, and sustainability to contribute to overall human and economic development. While the financial needs and technical solutions are well known, there has typically been less appreciation of the transformational role of sector governance, that is, the laws, policies, regulations, institutions, and systems that can help mobilize financial and technical solutions and enhance their impact for WSS services (Mumssen, Saltiel, and Kingdom 2018).

Recently, there has been growing recognition that policies, institutions, and regulation (PIR)—and water governance more generally—are essential for resolving some of the chronic challenges undermining WSS services. For example, a 2021 survey of ministers, agency heads, and other senior officials in the water sector revealed that institutional fragmentation is the top challenge for achieving good water management (figure 1.1) (Water Policy Group 2021). The same survey showed that inadequate infrastructure is not front of mind for decision-makers addressing water management challenges, with PIR aspects such as improving data and resolving conflicts among water users taking precedence (Water Policy Group 2021).

FIGURE 1.1 Challenges to Achieving Good Water Management according to Water Leaders



Source: Water Policy Group 2021.

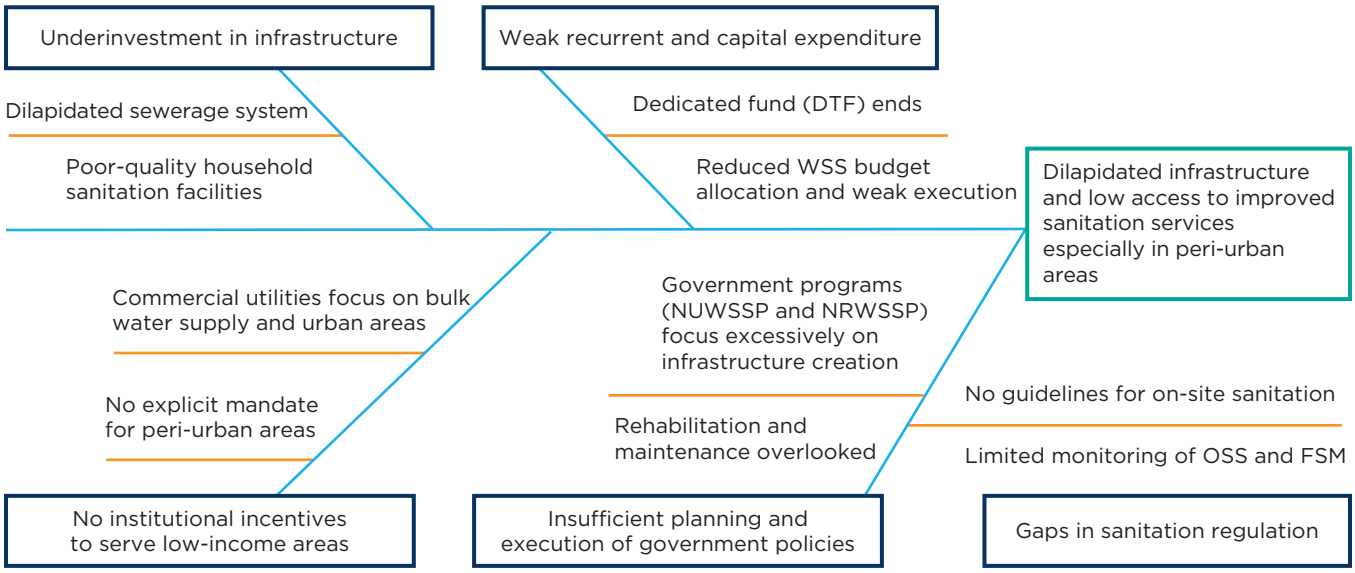
FIGURE 1.2 The Policy, Institutions, and Regulation Concept

Source: Original to this publication.

In addition to the three fundamental building blocks of policies, institutions, and regulation, this report proposes an expanded analytical framework that includes some important but hitherto less developed themes: intergovernmental context, financing, and resilience. Figure 1.2 illustrates this expanded analytical conception of PIR, encompassing a deeper analysis of financing, intergovernmental issues, and resilience in a constant feedback loop. These themes were identified through the application of a previous institutional diagnostic tool as well as stakeholder consultations; other relevant methodologies; and various water, governance, and infrastructure assessment tools. Through this process, the PIR Conceptual Framework and the PIR Framework Tool were updated to provide more granularity on key PIR issues, particularly those concerning intergovernmental relations, finance, and resilience.

An example, drawn from Zambia, illustrates how a careful analysis of sector blockages helped identify how PIR issues were undermining effective service delivery, in this case, sanitation services (figure 1.3).

FIGURE 1.3 A "Fishbone" Analysis of Sanitation Service Challenges in Zambia before Reforms



Source: Original to this publication. Based on the Zambia Water and Sanitation Governance Study (World Bank 2020).
Note: DTF = Devolution Trust Fund; FSM = fecal sludge management; NRWSSP = National Rural Water Supply and Sanitation Programme; NUWSSP = National Urban Water Supply and Sanitation Programme; OSS = on-site sanitation; WSS = water supply and sanitation.

However, important reforms emerged from this sound understanding of the blockages, which is already starting to yield good results for improved services (see chapter 6 on regulation).

1.1 Structure of This Report

This report aims to present a detailed synthesis of the current state of the PIR Conceptual Framework to a broad audience, including policy makers, development practitioners, World Bank task teams, civil society, and other interested actors around the world. Appendix A of this report presents a background on the foundations of the PIR concept, as presented in the report "Aligning Institutions and Incentives for Sustainable Water Supply and Sanitation Services" (Mumssen, Saltiel, and Kingdom 2018).

The remainder of this report is structured in line with the six clusters of the current articulation of the PIR framework; water and sanitation policy (chapter 2); water and sanitation institutions (chapter 3); water and sanitation in an intergovernmental context (chapter 4); water and sanitation regulation (chapter 5); water and sanitation financing (chapter 6); and resilience of water and sanitation services (chapter 7). Each chapter comprises two subsections: The first subsection provides a summary of the analytical foundations of the framework (generally based on the findings from Phase 1 of the PIR initiative), and the second subsection emphasizes the current state of the framework based on lessons learnt from the application of the PIR framework in practice in a rapidly changing global environment (Phase 2). The final chapter of this report, chapter 8, provides the conclusion and proposes next steps.

2. Water and Sanitation Policy

2.1 Analytical Foundations

Previous analytical work provided a solid basis for understanding the substance of policy. The report "Aligning Institutions and Incentives for Sustainable Water Supply and Sanitation Services" notes that "policies act as signals: they set the tone for the direction of the overall legal, institutional and regulatory frameworks that influence the actions and decisions of all sector (and sometimes non-sector) stakeholders, including private investors and consumers" (Mumssen, Saltiel, and Kingdom 2018). Sometimes, countries operate without a clear WSS strategy or policy; or there are policies or strategies but no necessary resources, actionable goals, or indicators to monitor progress. In other cases, goals have been defined but they are unrealistic. The absence of a clear, coherent sector policy framework—consisting of the sector's policies, laws, strategies, and plans that together guide how the sector aims to achieve its development objectives by defining who is responsible for what, and how improvements in service delivery will be achieved and funded—is often a significant obstacle to successful improvement of WSS outcomes.

Previous analytical work on PIR emphasized the role of WSS laws, a key part of the overall policy framework, in catalyzing reforms. Decrees and ministerial declarations are often used to enact policies and government priorities. The key benefit of having water legislation is that it reflects political commitment to reform. Moreover, as the experience of power sector reforms has shown, legislation can also help support long-term sustainability of reforms (World Bank 2019). However, laws alone rarely shift the policy and operational landscape, and political will demands the alignment of political interests to support change. This may entail rational argument, but it also hinges on persuading certain interest groups about how they stand to gain from proposed reforms, while mitigating the drawbacks to groups that gain less.

The role of champions in advancing sector reforms has also been acknowledged. The "Aligning Institutions" report, for example, emphasized the role of leadership at multiple levels to facilitate reforms and the need for "distributed agents" to implement change on the ground (Mumssen, Saltiel, and Kingdom 2018). The World Bank (2016) report, "Providing Water for People in African Cities Effectively: Lessons from Utility Reforms," demonstrates that reformers need to "work with the grain," starting with "what is," rather than "what ought to be." The importance of champions seems to be a cross-cutting issue, as evidenced by an analysis of power sector reforms over 20 years which found that more than half the countries lacking a reform champion largely failed to deliver on any of the reform announcements, whereas all those with reform champions made considerable progress (World Bank 2019). As another example, a report on the political economy of sanitation found that the support of influential champions helped to move sanitation investments up on the list of priorities of governments (World Bank 2011).

2.2 Lessons Learned from Practice

1. It is important to understand the historical legacies and political economy context of water and sanitation services.

In Bosnia and Herzegovina, the constitution obliges coalition building among the three ethnic groups.

This requirement reflects some of the peace-building mechanisms built in the country following the civil war (1992–95). Moreover, water is perceived as a public good that must be available to all, in part due to the socialist legacy. For instance, water utilities are legally not allowed to shut off water service to households that do not pay the bills. As another example of history impacting WSS services, in South Africa, the municipal model of WSS service provision is tied to the political agreement reached when the post-apartheid intergovernmental system was negotiated in the early 1990s. Understanding this historical context is important as it guides stakeholders as to the levers by which sector reforms can be delivered. In South Africa, the locus of responsibility to turn a municipal water business around rests with local governments, which have a large degree of political, managerial, and financial autonomy from other spheres of government (national and provincial), but also must operate within a policy and legislative framework set by the national government. This includes constitutional provision for a national government intervention when a local government is deemed to have failed to meet its service delivery mandate. Nevertheless, details on the types and level of services under this mandate remain unresolved, and the country has recently fallen behind some of the targets it would have to meet if it is to achieve the SDGs (UNDP 2013; Department of Water and Sanitation 2018).

2. Policy dialogue is not only important for integrity purposes, but more transparent and inclusive policies and legislation increase the probability of success.

A study in Brazil found that informing mayors about research on a simple and effective policy increases the probability by 10 percentage points that their municipality implements the policy (Hjort at al., 2021). Yet, despite the importance of dialogue, very few countries have well-structured and inclusive modes of sectorwide reflection and exchanges. While workshops, conferences, and one-off events are common, the assessments suggest that more formalized and ongoing dialogue platforms are rare but sorely needed. In Kenya, for example, the tensions between the national government and county governments stem in part from the perception by stakeholders that county governments are not adequately consulted on the planning and activities undertaken by the water service boards and that counties often do not agree with the boards' project priorities. The lack of coordination can lead to duplication and waste. In Chennai, for instance, the Greater Chennai Corporation and Chennai Metropolitan Water Supply and Sewerage Board each executed its own geographic information system (GIS) modeling initiatives instead of pooling resources. Bosnia and Herzegovina is a counter example with its Platform for Dialogue (box 2.1). More generally, the PIR tool offers a comprehensive approach and sound methodology to facilitate policy dialogue.

BOX 2.1 Bosnia and Herzegovina: Example of an Effective Policy Dialogue Platform

The Platform for Dialogue in Bosnia and Herzegovina was launched in 2017 by the Association for Water and Environmental Protection Sector (Aquasan) Network to facilitate consultations among stakeholders and to align them on main issues and possible reforms. The members act as advocates for reforms in the sector by preparing policy papers, organizing regional conferences, and communicating with the media. The results of the consultations were published in 2019 as a policy paper, which outlined the key findings in the sector and proposals for reforms. One of the reasons for the initiative's early success is the support of the international community, especially the EU delegation in Bosnia and Herzegovina, which was an important incentive for the participation of governmental authorities. In this way, as stakeholders noted, the Platform for Dialogue shows how the push for reforms can derive more from motivated individuals than from the existing institutional framework.

3. Water laws can provide powerful incentives for the adoption of new behaviors, models, or approaches to service delivery.

Concretely, this requires the following actions:

- **Ensure coherence among sectoral and local governance laws:** For instance, in many countries, it is not unusual for the Local Government Act to assign WSS services as local government functions, while the sectoral act (e.g., the Water Act) or the sectoral policy often assigns *de jure* and/or *de facto* responsibility for WSS services to the central level. Chapter 4 on intergovernmental relations explores these issues in more detail.
- **Clarify legal responsibilities for service providers:** In Uzbekistan, stakeholders have noted that having no legal definition for an operating entity prevents any effective formulation of its service obligations and undermines the efficiency of performance management across the water utilities.
- **Provide incentives for decentralized services:** In Kenya, the constitution in principle devolves WSS services to the counties and local governments but there are no provisions or incentives for coordinating much-needed investments at the national level.
- **Provide resources for implementation of legal requirements:** One stakeholder noted that "if targets are not set, and funds are not made available then the law can be considered non-binding."
- **Develop clarifying regulations:** The 1997 Water Supply and Sanitation Act in Zambia, for example, catalyzed a long process that saw utilities expanding their traditional sewerage mandate to include on-site sanitation (Kennedy-Walker et al. 2020). Importantly, the regulator, the National Water and Sanitation Council, stepped in to ensure that the provisions of the law were translated into action through clarifying regulations and the use of licenses and targets as regulatory tools for ensuring compliance.

Box 2.2 provides an illustration from Brazil, which adopted a new water law in 2020 that has already had significant impact on the trajectory of WSS service outcomes. Lastly, the experience with sanitation in eastern and southern Africa shows how legislation can help bridge the gap between *de jure* and *de facto* responsibilities for sanitation. Similar reforms are at early stages in Tanzania, Rwanda, and Kenya.

BOX 2.2 How a Water Law Can Trigger Shifts in the WSS Sector

The case of Brazil illustrates how a water law can trigger fundamental shifts in reform. The 2020 Saneamento Law includes regulation and private sector participation as key areas of reform across all government levels. First, the law empowers the National Water Authority (Agência Nacional de Águas e Saneamento Básico, ANA) to set policy guidelines for the state-/municipal-level regulatory agencies, support capacity building of these agencies, facilitate coordination on regulatory matters across all levels of government, and mediate in case of disputes. Implementation of this mandate would harmonize regulatory standards across all the states and increase the federal government's ability to ensure enforcement of its guidelines.

The 2020 law also levels the playing field between private water operators and public water utilities, by forbidding direct awards of service delivery contracts by municipalities to state-owned companies. In addition, the contracts in force will be conditional to proof of the economic/financial capacity of

box continues next page

BOX 2.2 continued

the contractor, by own resources or by debt contracting. This serves to make the universalization of services in the bidding area viable until 2033 and creates the space for private sector participation in a competitive market. The law has set coverage goals for water (99 percent) and for sewerage collection and treatment (90 percent) by 2033, as well as quantitative goals for reducing water losses and improving treatment processes.

To achieve these coverage targets, the new law prioritizes the delivery of services and encourages utilization of private capital to meet investment needs, estimated at R$750 billion ($140 billion). The water and sanitation sector in Brazil is currently dominated by state-owned water utilities that serve three-quarters of the population, while private companies cover less than 10 percent, with municipalities serving the rest.

Public and private institutions have already begun adjusting their actions to reflect the new legal framework. The main water and sanitation utility in Rio Grande do Sul state, Companhia Riograndense de Saneamento (Corsan), plans to invest at least R$10 billion ($1.8 billion) through 2033 to improve water and sewage services. Various states have begun launching the procurement process for concessions and public-private partnerships to take advantage of the greater opening toward the private sector that the 2020 law provides. The law has therefore laid the basis for sector reforms that could have positive ramifications over the long term.

Sources: IFC 2021; World Bank 2022b.

3. Water and Sanitation Institutions

3.1 Analytical Foundations

Sector institutions require strong incentives to make them function. As "the humanly devised constraints that structure political, economic, and social interaction" (North 1990), institutions are the rules of the game in a society.[1] In the water sector, institutions take various forms—government entities, service providers such as utilities and municipalities, water user associations, river basin agencies, and so forth. The literature is clear, though, that without adequate incentives, WSS institutions will not perform as they are supposed to. As the "Aligning Institutions and Incentives" report (Mumssen, Saltiel, and Kingdom 2018) noted, incentives act as motivating influences or *stimuli* driving the behavior of organizations, ministries, service providers, customers, and other stakeholders in the WSS sector. This report also distinguished between positive and perverse incentives.

The experience of a wide range of countries shows the recurrence of the same institutional issues: weak technical capacity, limited sector planning, inadequate coordination, and poor data management to name a few. This is not surprising given how entrenched these problems are and the complex interplay of financial resources, long-term commitment, and accountability mechanisms needed to make sector institutions perform well. As an influential study by the Organisation for Economic Co-operation and Development (OECD 2011) showed, even developed countries struggle with governance gaps in the water sector, specifically administrative, financial, objectives, accountability, information, and policy and capacity gaps.

It is clear that the design of institutional reforms and integration of incentives into WSS operations is still a work in progress that will require more scale-up and action to succeed. One challenge is that while the connection between strong institutions and sectoral performance is evident to any experienced government official or practitioner, it is hard to pin down precisely (World Bank 2012). There have been attempts to measure the impact of institutional performance on service delivery. For example, van den Berg and Danilenko (2017) suggest that institutional performance in the case of water utilities can be measured by looking at financial, organizational, and customer performance. One telling indicator of financial performance is the operating cost-recovery ratio, which indicates how well a utility can cover its operating costs through its revenues and in turn have the means to provide good-quality services to customers. Among their findings were: (i) economic development had a positive impact on customer performance indicators; and (ii) having a regulatory agency had a positive impact on customer protection, an important measure of service quality. However, this work relied on a small sample of utilities and thus cannot be extrapolated too much. Nevertheless, it does offer a few elements of how to assess institutional performance in the WSS sector.

Another challenge is that there is significant uncertainty about the institutional forms that are suited for improving public sector performance in any given context. While governments can introduce formal reforms upstream in the public sector results chain (for instance, by introducing a sector program), it

is much more challenging to change the actual behavior of frontline public agents. Finding effective entry points for changing engrained behaviors and values is hard. It takes expert judgment to identify such entry points, to carefully manage reforms, and to ensure that the changes are anchored in sustainable systems and structures.

3.2 Lessons Learned from Practice

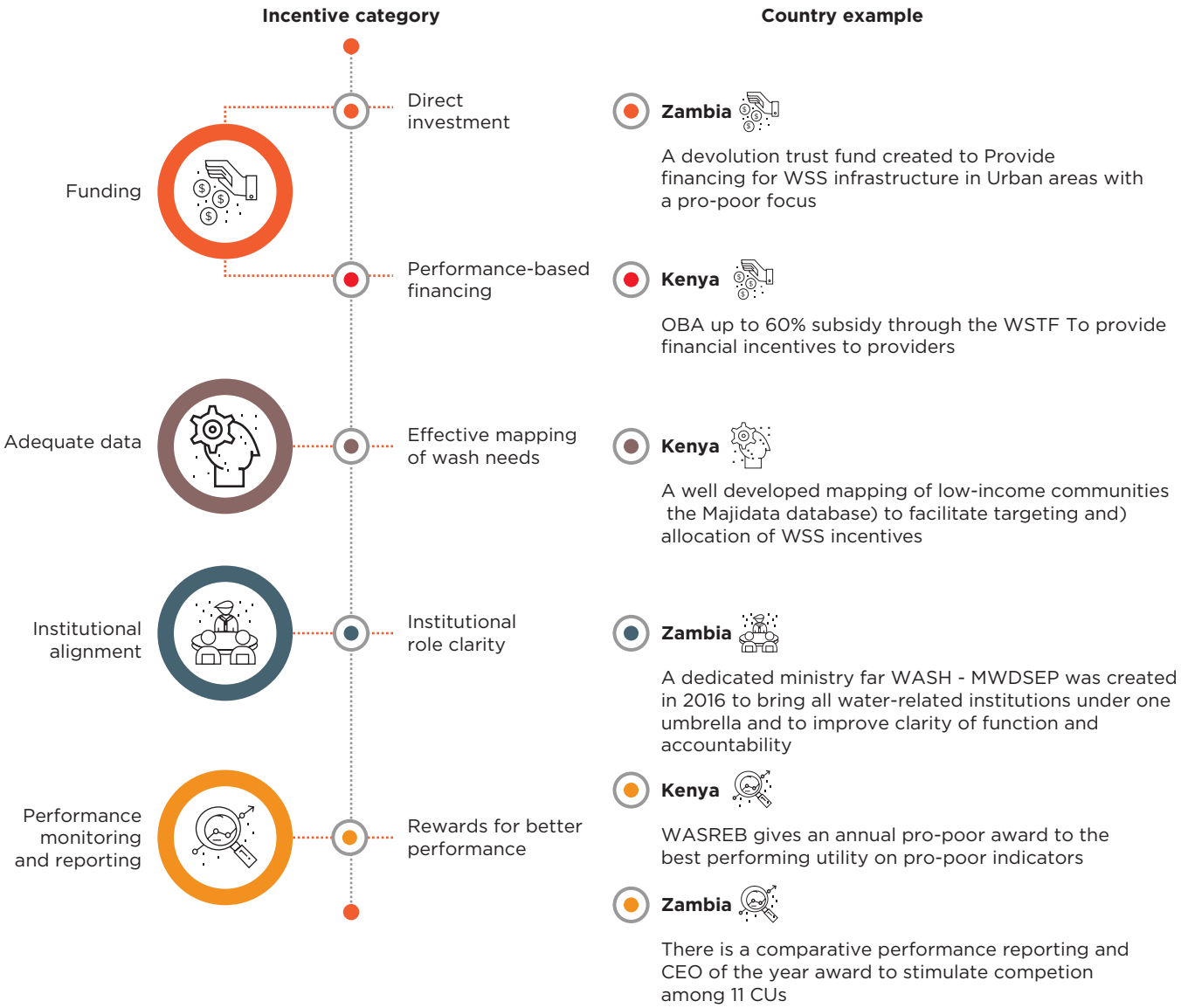
1. The traditional understanding of water institutions needs to be expanded to reflect all service delivery models and actors.

The water sector in most countries is typically comprised of multiple actors across many different segments (urban/rural/water supply/sanitation/water resources management), which can be a coordination and management challenge as well as an opportunity. While many government programs and international financial institution (IFI) interventions tend to focus on formally established entities as the recipients of funding and implementing bodies, there needs to be a more pragmatic expansion of "who drives actions" in WSS services. The review of country experiences points to certain stakeholder groups that tend to be overlooked in PIR and service delivery interventions, but which are crucial to better service outcomes. Specifically, informal service providers and community-based groups can be mobilized for better institutional performance.

a. **Informal service provision** needs to be recast as a modality of service provision among many, with incentives needed for it to contribute to positive WSS service outcomes. With an estimated 676 million urban dwellers relying on off-grid water supplies that are not safe, accessible, or reliable (Misra and Kingdom 2019), it is pragmatic to accept that informal providers will continue to service this underprivileged population. The case studies highlight that in many cases informal operators help to fill a void when the formal system fails. In Chennai, for example, private water tanker companies, also known as the "tanker mafia," were identified by stakeholders—including end users—as an illegal but integral part of the water supply system. Since these informal activities exist because of a failure of the public services, they are tolerated by the established order. WSS stakeholders have noted that many of these informal service providers, if not the majority, seek to operate formally. They require licenses, to reduce their operational risks and facilitate their access to financial resources. However, in Chennai, regulators (the Chennai Metropolitan Water Supply and Sewerage Board and the Public Works Department department) have failed to meet this need due to an inability to monitor the licensing system and its renewal. As noted in a report commissioned for this study, the opportunities for partnering with WSS service providers is strengthened by the finding that negative prejudices against slum communities are very rare among sector professionals (WSUP and World Bank 2021). An important first step is developing the right incentives, as several countries have done (figure 3.1).

b. **Consumers and communities are a powerful source of information for improving WSS planning and sector performance.** Having informed and empowered communities involved in decision-making can be a strong asset to support reforms that may be socially sensitive, such as a revision of water tariffs. For this to happen, service providers and government authorities should develop better outreach programs to engage with citizens and manage public relations (including enough human resources capacity for community engagement, structured citizen engagement programs, etc.). However, there is often little effort to understand or respond to the needs of end users. For example, a water consumer survey conducted as part of the Chennai PIR assessment found that while many consumers had never raised a complaint regarding WSS services, of the ones who had, nearly 80 percent were of the opinion that complaints raised were not resolved.

FIGURE 3.1 Incentives for Improving the Contribution of Informal Service Provision



Source: Original to this publication.
Note: CU = commercial utility; CEO = chief executive officer; MWDSEP = Ministry of Water Development Sanitation and Environmental Protection; OBA = output-based aid; WASH = water supply, sanitation, and hygiene; WASREB = Water Services Regulatory Board; WSS = water supply and sanitation; WSTF = Water Sector Trust Fund.

The 2021 World Development Report notes that user-generated content can be used to map water/flood events in real time for water management and food security (World Bank 2021b). Moreover, citizen-generated data are often used when government data are missing (in regions that are too far or too expensive for government bodies to reach) and to verify government data (Lämmerhirt et al. 2018 as cited in World Bank [2021b]). These groups can also provide oversight and catalyze corrective actions enabling improved performance of water utilities. For example, Colombia has a well-established approach to citizen participation in regulatory matters. Following the provisions of the Constitutional Court in Sentence C-150 of 2003, the Water and Sanitation Regulatory Commission of Colombia (Comisión de Regulación de Agua Potable y Saneamiento, CRA) saw its first citizen participation process begin with the issuance of Resolution 276

of 2003. This participation process is mandatory for the issuance of any resolution related to tariff formulas and consists of publishing draft versions of the regulatory instruments to receive comments and reactions from the public before the issuance of the final instrument.

2. The role of individuals in designing, implementing, and sustaining reforms is hard to understand but crucial for PIR success.

Individual reform champions, while useful and necessary in many cases, can pose some limitations and risks. The "Aligning Institutions and Incentives" report (Mumssen, Saltiel, and Kingdom 2018) highlighted the role of intrinsic incentives—that is, the internal motivation of individual leaders—as a key determinant of the success of policy design and implementation. At the service level, the importance of a competent utility manager has been identified as a crucial condition for well-performing utilities (Soppe, Janson, and Piantini 2018; World Bank 2021a). In all the countries analyzed, identifying a leader who can coordinate the reform implementation and define the roles and responsibilities of other stakeholders was mentioned as one of the conditions for successful reforms. However, while a single individual can have a major impact on WSS reforms, there is a risk of dependency on individuals whose tenure may not be secure over the long term and who could be replaced by equally supportive individuals (Andrews, Pritchett, and Woolcock 2021).

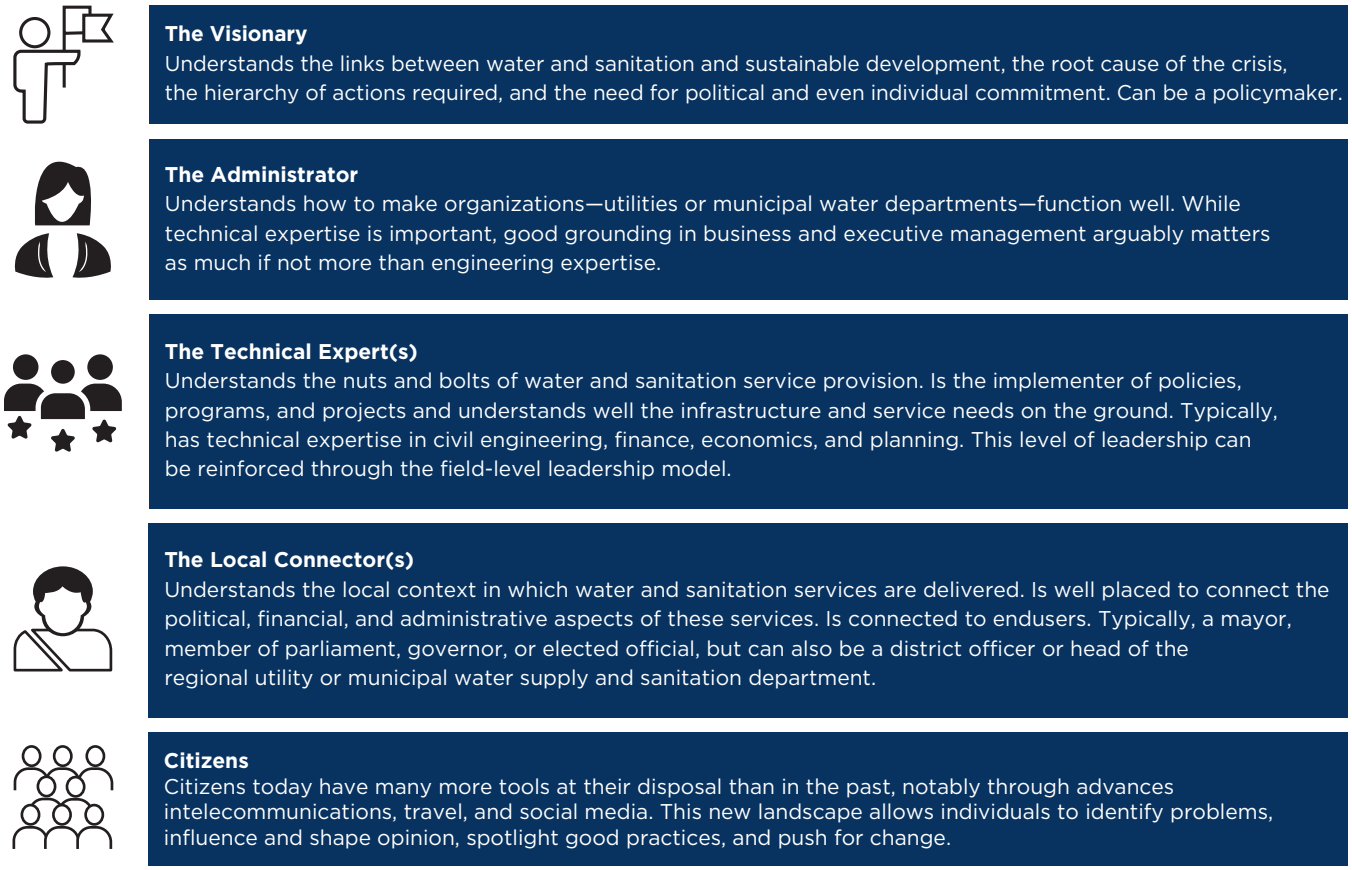
Collaborative leadership, that is, with reform champions at every level—policy, legislative, regulatory, service delivery, and citizen—are needed for reforms to succeed and be sustainable. In one specific example, the field-level leadership development (FLLD) initiative piloted by the World Bank between 2016 and 2019 empowered individual public servants in agencies that implement policies and provide WSS services. The FLLD pilots affirmed the importance of public servants who have a high degree of discretion in how they conduct their tasks, and whose behavior is a critical determinant of outcomes. Specifically, it showed that (i) while champions may be a minority, they are not rare; (ii) they exist at all levels in institutions, and not just at the top; and (iii) they can be efficiently and systematically identified, as a motive force for positive change. Figure 3.2 offers a preliminary typology.

Strengthening water institutions requires investment in staff across the board—but so far, ad hoc approaches seem to be the default. One of the major reasons for suboptimal institutional performance identified by WSS stakeholders is the limited or nearly absent incentives for individual performance of staff in water institutions. In Uzbekistan, remuneration levels are set at unsustainably low levels across all aspects of sector operations (including water utility operations, regulatory functions, and executive functions), disincentivizing diligent and professional performance of duties and promoting corrupt and negligent modes of operation. A lack of career prospects can have a direct impact on the quality of services. For example, the Uzbekistan assessment notes that disenfranchised customers facing poor-quality WSS services, dismissive treatment by the water utilities, and unresponsive treatment by regulators have no incentives to accept higher levels of tariffs affording full cost recovery and sustainable mode of operations.

3. Strong water institutions can have a positive impact on service delivery outcomes, but this link needs to be further explored.

PIR assessments provide insights into what makes water sector institutions perform well in terms of service delivery. While there were no quantitative or statistical analysis available to inform this report, the experiences of various countries provide some insights into the factors that make institutions perform well. In the PIR context, performance can be determined based on how well institutions meet their objectives, typically service delivery outcomes, as per the stated goals and mandate of the designated institutional entities. Several initiatives exist to assess sector performance in this regard, such as the International Benchmarking Network,[2] which comprises various indicators of utility performance (e.g., operating costs and revenue) and the Utility of the Future (World Bank 2022g), which assesses how well water utilities perform based on criteria such as commercial operations, technical operations, financial management, human resources,

FIGURE 3.2 Typology of Collaborative Leadership in the WSS Sector



Source: Original to this publication.

and organization and strategy. In addition, based on the classic understanding of institutions as providing "a structured, predictable manner by which people interact" (North 1990), water sector institutions can also be assessed based on the perceptions of individual—since institutions are ultimately designed to influence individual thinking and actions. The use of polls and perception surveys, for example, as in the South Africa PIR assessment, could be standardized and provide useful insights into how individuals with knowledge of institutions (both insiders and outsiders) perceive the effectiveness of the institutions in question.

Nontechnical competencies are underdeveloped in the water sector but are crucial for strengthening service delivery. In particular, as the World Bank's GovEnable initiative on improving service delivery finds, communication is a skill that is often underdeveloped among service delivery entities such as water utilities and municipalities. One regulator framed the issue as the "public participation principle," which is instrumental in communicating the regulator's position on strategic matters to raise public awareness (Gakubia 2021).

As with policies and regulation, other aspects that influence how well sector institutions perform include: incentive structures (endogenous, exogenous, and intrinsic, e.g., conditional grants provided by the national government to local service providers as in the case of Peru); the feedback loops that exist among key sector actors including policy makers, regulators, utility staff, management, consumers, unions, consulting firms, and contractors (e.g., the Bosnia and Herzegovina Water Dialogue Forum); and clear institutional mandates and definition of roles (e.g., Niger) (see box 3.1).

More detailed study is needed to understand the full dynamics of water sector institutions and how to make them perform better. While case studies

BOX 3.1 Leveraging Public and Private Institutions to Improve Water Services in Urban Areas of Niger

After decades of poor water services in Niger, the government launched important reforms in 2001 that focused on improving the institutional arrangements for service delivery in urban areas. The government split service responsibilities into two separate entities. The first, Société de Patrimoine des Eaux du Niger (SPEN) was established as an asset-holding company, with a legal identity as a public corporation and with a 10-year concession contract with the government. SPEN's responsibilities include developing water infrastructure. In parallel, a private operator, Société d'Exploitation des Eaux du Niger (SEEN), was engaged through a 10-year *affermage* contract to operate and maintain the facilities in four urban areas, under a lease contract with SPEN. SEEN has a joint ownership structure that includes 51 percent holding by French water operator Veolia, 34 percent by local private investors, 10 percent by its employees, and 5 percent by the state. The contract was renewed in 2011 for another 10-year period. Following a successful initial implementation period, the concession contract with SPEN was also renewed in 2014 for another 10 years.

These institutional reforms proved to be successful and have been attributed to Niger's achievement of the Millennium Development Goals for water access in urban areas in 2015 (91.2 percent). The quality of services also improved, with water supply increasing from an average of 12 hours a day in the capital, Niamey, and other major cities before 2001 to virtually 24/7 supply in the same areas. Other significant service delivery gains include an increase in water distribution efficiency from 78 percent in 2001 to 84 percent in 2015; an improvement in bill recovery from 78 percent in 2001 to 90 percent in 2015; and net profitability for SEEN of CFAF 1,049 million (about $1.6 million) in 2017. As for SPEN, its financial performance has been strong with the company managing to recover both its operating and capital costs, with no need for government subsidies.

Part of the reason for the good outcomes in Niger is the clarity of the institutional arrangements. Both SPEN and SEEN had clear legal and regulatory instruments underpin their functioning. There were also strong monitoring mechanisms in place.

are valuable to document and illustrate the interplay between water institutions and service outcomes, there is a dearth of quantitative data and analysis of this relationship. A first step would be a robust mapping of formal and informal water sector institutions, encompassing the policies, laws, regulations, and service delivery entities (such as utilities, municipalities), and spanning subsectors (such as rural, urban, water supply, sanitation, and even water resources). Second is the development of performance criteria that include but are not limited to the organizational aspects that have been so well defined for utilities. There is a need for matrices to assess the performance of informal service providers and community-based groups involved in service provision. Last, some robust quantitative analyses could shed light on the determinants of institutional performance and water service outcomes.

NOTES

1. Rules of the game refer to "agreed principles, established through political and/or social processes and can either be formal (e.g., law, decrees, regulations) or informal (e.g., customs, social norms, established relationships, etc.)" (Mumssen, Saltiel, and Kingdom 2018).
2. https://newibnet.org/

4. Water and Sanitation in an Intergovernmental Context

4.1 Analytical Foundations

That global development challenges cannot successfully be addressed by a single level of government is increasingly embraced within the broader governance literature and practice, as well as across other sectors. Whereas decentralization was seen by some in the past as a goal in itself, it is increasingly understood as a means to an end, whether that goal is greater public sector efficiency, a more inclusive and responsive public sector, greater political empowerment and accountability, or better service delivery results (Boex, Williamson, and Yilmaz 2021). Actors within public sector governance are increasingly developing tools to ensure that public sector governance and public financial management ensure better services (e.g., OECD 2019; PEFA 2021; World Bank, forthcoming). The recognition that centralization versus decentralization is not a binary policy choice and that public service delivery often takes place in hybrid (devolved and nondevolved) forms, with nuanced impacts on service delivery outcomes, is increasingly being documented and recognized in health, education, and other sectors (Boex and Edwards 2015; Miller, Hart, and Hadley 2021; Smoke, Löffler, et al. 2021).

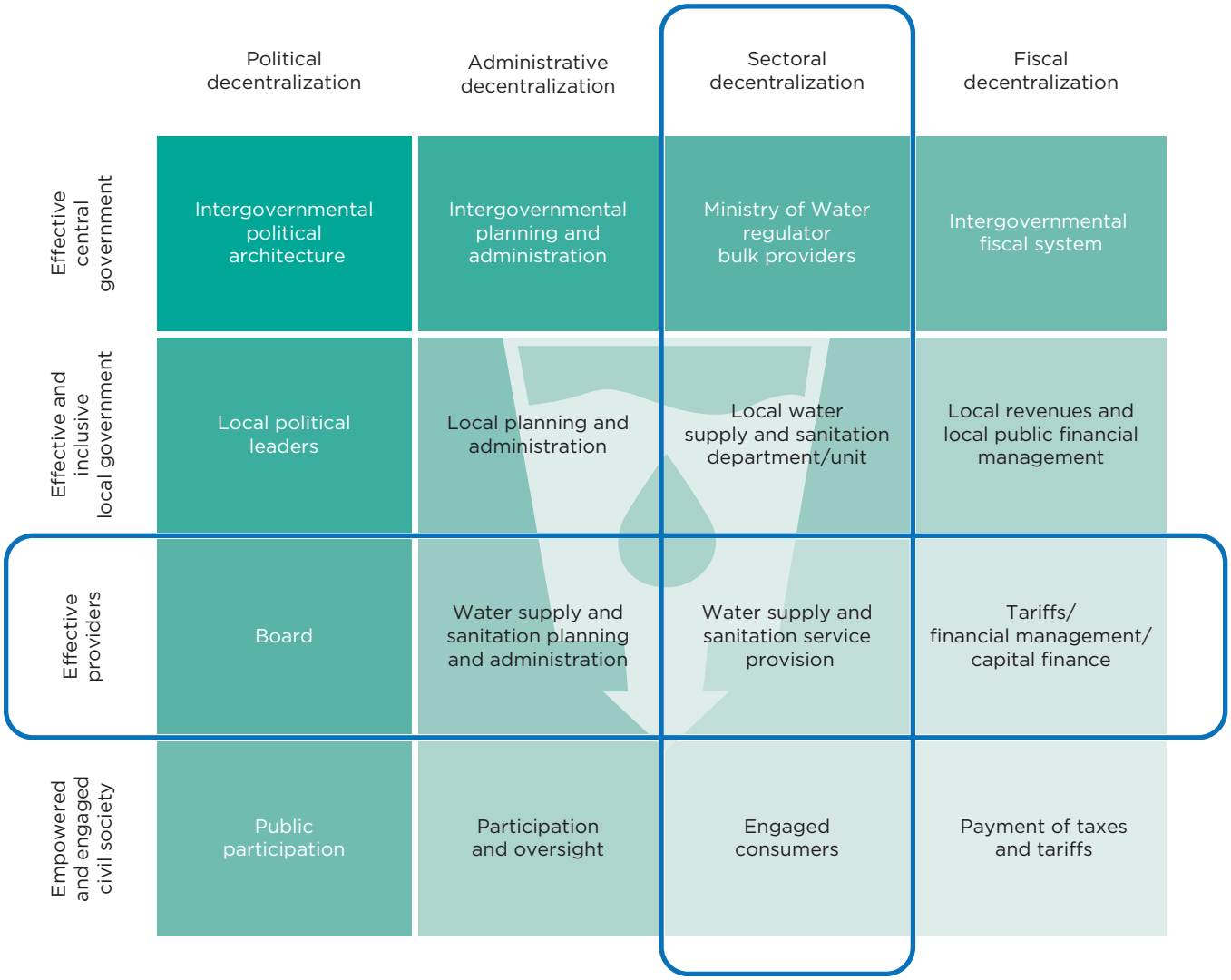
Managing water for all is often not only a question of resource availability and funding, but equally a matter of good governance. In places where providing access to WSS services continues to be a challenge, the "water crisis" is often largely a governance crisis—which typically has a strong intergovernmental dimension (OECD 2011). This is true irrespective of the degree to which WSS services are centralized, as they have a critical vertical or intergovernmental component, regardless of the approach to localization. The more that is learned about how policies, institutions, and regulations work in different countries, the clearer it becomes that the vertical or intergovernmental aspects of WSS services, and the multilevel nature of water governance, is a major dimension of the sector's policy framework, as well as of its regulatory structure and financing.

4.2 Lessons Learned from Practice

1. Multilevel aspects of water sector governance are an important part of the enabling environment for effective WSS service delivery.

WSS services typically have a critical vertical or intergovernmental component, regardless of how centralized or decentralized the sector is. Figure 4.1 provides a framework for understanding how WSS, PIR, and intergovernmental dynamics all intersect. Until recently, to the extent that the tools available to assess the governance of WSS services focused on subnational aspects of sectoral service delivery at all, many focused exclusively on sector-specific institutions and processes at different government levels. They paid little or no attention to the other elements of the multilevel governance environment. For their part, when left to their own devices, decentralized governance specialists have tended to focus on the political, administrative, and fiscal aspects of decentralization and intergovernmental relations, without making the connection to sector-specific institutions, frontline service delivery facilities, or service providers.

FIGURE 4.1 A Framework for Assessing the Intergovernmental Context of Decentralized Water Supply and Sanitation



Source: Original to this publication.

The intergovernmental system is key to understanding WSS binding constraints. As noted in the Introduction, the failure to look at the intergovernmental context of WSS services in a comprehensive manner may result in a diagnosis that identifies proximate causes of poor WSS service delivery (i.e., the symptoms) rather than the root causes of the public sector's failure to ensure adequate access to water and sanitation. A wider analytical lens—one that considers the entire intergovernmental context—allows analysts to draw linkages between the effectiveness or ineffectiveness of sectoral service provision, and the governance, administration, and financing of the provider and/or the government level that owns the provider and to which the service delivery provider is (or should be) accountable.

The design of a country's intergovernmental system often pits service delivery goals against political economy motivations. PIR analyses suggest that recent decentralization reforms—as well as the resulting design of intergovernmental (fiscal) systems—

in Kenya, Nepal, and Mozambique were mainly driven by conflict dynamics and political economy forces unrelated to sectoral service delivery issues (box 4.1). Multilevel governance arrangements in many countries reflect tension between political motivations (e.g., using decentralization to provide space to a wider range of political actors) and service delivery motivations, such as to "get the job done." Nonetheless, there is widespread hesitance within the sector to structurally engage with local governments, which are seen as having politicized

BOX 4.1 Understanding Political Economy Tensions in Decentralized Water and Sanitation Services

Kenya. The Constitution of Kenya (2010) states that "[t]he functions and powers of the county" include "county public works and services, including . . . water and sanitation services." Despite this fact, the Water Act of 2016 established a number of water works development agencies under the Ministry of Water and Sanitation. In 2019/20, development expenditures under the Ministry of Water and Sanitation accounted for K Sh 49.6 billion, while no sectoral support was provided to county governments. The Council of Governors has contested the constitutionality of the act in a court case (still underway) and does not accept the role of water works development agencies.

Nigeria. In 2018, President Muhammadu Buhari declared a national emergency to tackle the water and sanitation crisis in Nigeria amid a rampant outbreak of cholera and other waterborne diseases. The declaration of a national emergency resulted in the Partnership for Expanded Water Supply, Sanitation and Hygiene (PEWASH) and the National Action Plan for the Revitalization of Nigeria's WASH Sector (2016). Despite this national crisis and the National Action Plan, the federal government does not take an active role in the regulation of water and sanitation provision and—although it is willing to on-lend international donor financing to state governments—does not provide sectoral funding for state and local water infrastructure.

Nepal. Prior to 2006, a single parastatal company—the Nepal Water Supply Corporation—had a monopoly on urban water and sanitation provision in the country. In 2006, policy reforms and legal reforms were made to abandon this central government provider and to transition to a situation where each urban area (or urban conglomeration) in principle was to have its own Water Supply Board. Despite the introduction of a new federal constitution in the intervening decade, the Nepal Water Supply Corporation continues to exist, and the country continues to experience difficulties transitioning to more decentralized local water boards (which would be fully in line with the new constitution).

Mozambique. Subnational or intergovernmental tensions can occur even in deconcentrated contexts. In Mozambique, the Law of Local Organs of the State (LOLE 2003) and its regulations (2005) assigned the responsibility for water and sanitation provision to provincial- and district-level administration. In practice, however, the National Directorate of Water and Sanitation (Direcção Nacional de Abastecimento de Água e Saneamento, DNAAS) not only formulates and proposes policies, but also controls the sectoral budget and directs the implementation of activities across the WSS sector, rather than building the capacity of provincial departments to take on this responsibility. The passage of new decentralization laws in 2019 and 2020 provides a renewed opportunity for decentralization.

decision-making, being administratively weak, and being unwilling or unable to contribute their own resources to water investments.

2. Problems related to weak local capacity for water and sanitation service provision cannot be resolved by technical solutions alone.

Given common challenges with local WSS delivery at the local level, there is a tendency to focus on the local PIR dynamics rather than the overall intergovernmental system. For instance, there is a common expectation in the water sector that local government leaders should ensure that local WSS providers collect adequate tariffs; and that they monitor the performance of these providers and hold their managers accountable. In reality, local government officials often face conflicting political or institutional incentives: they may face political party pressure from higher levels to resist imposing higher tariffs and may lack political or institutional incentives to strengthen local water departments or to monitor the performance of a WSS provider. This is especially true if local governments have few—if any—levers to ensure more inclusive or effective performance of WSS providers. On the other hand, sector line ministries at the central government level—and their counterparts in the development community—tend to pursue technical interventions or programs that limit the role of local governments in WSS provision or that bypass local governments, rather than pursuing reform of intergovernmental systems that would systematically strengthen local governments' role in WSS provision.[1]

Upon closer inspection, local weaknesses are often found to be *proximate causes* of poor WSS service delivery rather than the *root causes* of the public sector's failure to ensure adequate access to water and sanitation. It is therefore important to interrogate *why* local politicians lack the incentives to promote better local services; *why* both sector ministries as well as elected local leaders often fail to invest in administrative capacity within the sector; and *why* intergovernmental fiscal systems often fail to shift resources where they are needed most. This leads back to the point raised above, that the intergovernmental system itself is often designed in a manner that does not lead to optimal service delivery outcomes. Unless the differences in perspectives and incentives are understood and resolved through effective dialogue and coordination, central government efforts to bypass or minimize the role of devolved local governments tend to create contentious relationships between WSS stakeholders at different government levels.

3. Recognizing the unique features of WSS service—and aligning them with the prevailing intergovernmental framework—is often the key to successful service delivery outcomes.

Although there are advantages and disadvantages to both centralized and decentralized public sector systems, it is generally accepted that—if local governance systems work well—it is better to have effective WSS providers that are owned and operated by local governments than to have a national water monopoly that is bureaucratic and nonresponsive.

Assigning part of the functional responsibility for water and sanitation to the local government level does not necessarily mean that all aspects of WSS service delivery should be decided by local officials. For instance, if tariff setting tends to be politicized at the local level, the power to set or approve tariffs could be assigned to a national-level regulator (with the caveats indicated in chapter 6 on regulation). Likewise, the degree of local government involvement in the development of WSS infrastructure can be attenuated in proportion to the effectiveness of local government stewardship over sectoral services. While in some countries, providing support to local WSS services through sectoral infrastructure grants may be appropriate (i.e., through local government accounts, as in Indonesia), channeling funds directly to local water utilities may be more appropriate in cases where local government accountability (and local involvement in WSS provision) is weaker (e.g., as in the Philippines).

Intergovernmental fiscal transfers are a major and permanent element in funding frontline services as part of a sound multilevel governance system.

These transfers can broadly be categorized into: (i) unconditional transfers or equalization grants; (ii) conditional sector grants that leave a degree of discretion for subnational officials; and (iii) earmarked conditional transfers that must be allocated to specific programs of investments approved by a higher-level government. Box 4.2 provides an example of how funding has flowed in an intergovernmental context in South Africa. Given the political economy forces that characterize WSS service provision, sectoral grants and subsidies are often underused tools to promote inclusive and effective WSS services in many countries.

BOX 4.2 Funding Local Water and Sanitation Infrastructure and Provision: South Africa's Experience

In South Africa, the provision of water supply and sanitation (WSS) services is constitutionally assigned to the local or municipal government level. By law, the WSS service function is allocated either to the district municipality or to the local municipality for a given area. Municipalities have almost complete administrative authority and autonomy over local service delivery, including WSS services. Virtually all local governments provide WSS services directly themselves (in-house, through their own WSS departments), rather than through a municipal-owned utility company or contracted service providers.

In line with the country's collaborative, multilevel governance approach and its commitment to equal access to public services, South Africa's intergovernmental fiscal system plays an important role in ensuring that local governments are in a financial position to provide municipal services to indigent households (defined as those who cannot afford to pay for such services through user fees).

Like many countries, South Africa's national government provides a series of conditional local infrastructure grants to provide funding for the development of municipal WSS infrastructure, including extending water and sewer connections to public housing developments.

In addition, however, South Africa's intergovernmental fiscal system is unique in that it explicitly recognizes that local governments are expected to provide services to all residents, including local residents who cannot afford to contribute to basic municipal services through either property taxes or service fees. As such, the Basic Services window of the country's unconditional grant schemes—the Local Government Equitable Shares (LGES) grant—is computed as the amount of funding needed for each municipality to provide municipal trading services (including electricity, water, sanitation, and solid waste management) to all indigent households. Although the LGES is unconditional (and thus does not require local governments to use these resources for WSS services as a condition of the grant scheme), the mechanism provides local governments with the necessary resources to ensure basic service provision for all residents (and adequate operation and maintenance of WSS infrastructure), thereby preventing a common downward spiral that results from underfunding, reductions in operation and maintenance spending, declining service delivery, reduced tariff revenue, and further underfunding.

Source: Based on World Bank 2017.

NOTE

1. It is not unusual for sectoral ministries to limit the negative impact of local politics on local WSS services by limiting the power of local officials over local water providers; ensuring that WSS providers have a high degree of operational autonomy; and by funneling resources directly to the WSS providers (i.e., circumventing local government budgets), even in countries where local water providers are legally owned and managed by local governments. For instance, in line with the prevailing legal framework, the Philippines Department of the Interior and Local Government reminds local authorities with some regularity against interfering with local water district operations (DILG 2019).

5. Water and Sanitation Financing

5.1 Analytical Foundations

According to the UN-Water Global Analysis and Assessment of Sanitation and Drinking Water, released in 2017, a radical increase in water and sanitation investments is required to finance SDG 6. Achieving SDG 6 for water and sanitation by 2030 requires estimated investments of $114 billion per year. The present value of the total investment needed is $1.7 trillion—excluding operation and maintenance (O&M) costs. Investments in water compete with other sectors for financiers' attention, driven primarily by the attractiveness of the risk-return profile. This depends on two factors: (i) a stable revenue stream; and (ii) how the range of risks related to water investments are shared between public and private actors. Mobilizing commercial finance, in particular domestic sources, needs to be based on policy reforms of the water sector to promote efficiency gains, cost reduction, and cost recovery, as well as improving the balance of tariffs and taxes as sources of finance (OECD 2018).

Insufficient financing as well as inadequate financial planning and management appear to be binding constraints to improving access to WSS services. Over 80 percent of countries report insufficient financing to meet national water supply, sanitation, and hygiene (WASH) targets, let alone the higher level of service that are the focus of SDG 6. While over 70 percent of countries use data when deciding how and where to allocate funds, only one-third of them have financial plans that are defined, agreed, and consistently followed.

Whereas the financing requirements of WSS investments receive considerable attention in the sector, the recurrent funding requirements of WSS are often treated as an afterthought. Recurrent funding requirements—including the cost of O&M, as well as the repayment of capital investments—are funded through a mixture of revenues from the so-called "three Ts": tariffs, taxes, and transfers (OECD 2018). However, the division of responsibilities for recurrent WSS services among different government levels on one hand, and between general government entities and WSS providers on the other hand, complicate policy decisions regarding the appropriate level and composition of sectoral funding sources.

5.2 Lessons Learned from Practice

1. There is an urgent need to build institutional capacity to plan and monitor WSS funding and financing.

While the global investment needs for WSS have been identified, the PIR contributions to the financing agenda are less well understood. The United Nations estimates that about $114 billion a year needs to be mobilized to meet SDG 6. Over 80 percent of countries report insufficient financing to meet national WASH targets, let alone the higher level of service that is the focus of SDG 6. The financing challenge is certainly considerable, but the experience of various countries shows that it is more than simply a question of mobilizing funds. Equally important is investing in the planning, execution, and monitoring capacities of institutions that need to generate and execute these funds for infrastructure projects, O&M, and social and environmental priorities. The PIR framework recognizes that the way in which WSS is funded and financed is an important driver of effective service delivery. Not only do funding and financing arrangements constrain or empower actors to improve infrastructure and services, but these arrangements can also provide incentives—either positive or negative—

for different institutional stakeholders to perform and act in an efficient and accountable manner.

Against the backdrop of investment needs, it is often difficult to generate a complete picture of total WSS revenues and expenditure. While information on some funding sources—such as central government spending on water infrastructure or support by IFIs—is relatively easy to collect, other funding streams, including those at the local level, are more elusive. It is also difficult to develop a solid understanding of WSS costs, which have knock-on impacts on tariffs (Andres et al. 2021). In federal and other multitiered, devolved countries, the intersection of intergovernmental transfers, general municipal revenues, and WSS-specific revenues further exacerbates the challenge of dissecting water revenue flows in a clear and transparent way. Nevertheless, there are some good practices and exceptions, such as in South Africa, where municipalities account for water revenues and expenditures as part of their regular budget. In addition, the National Treasury has recently published service-level financial reports for the first time on its website. While some challenges related to financial transparency remain, these practices provide a sound basis for additional reforms in the future.

Water service providers often lack the capacity to prepare business plans or execute investments. Technical capacity for absorbing budget allocation and executing a program of expenditure for WSS projects appears weak, particularly at the municipal and local government level for all studied countries. In the case of Brazil, budget execution for WSS channeled through the social assistance, health, and environment government functions presents very weak execution rates, often at 70 percent of the allocated amounts. In basic sanitation, well under half of the funds committed were disbursed between 2015 and 2019. Other common concerns related to WSS planning and budget formulation include the extent to which sectoral policies, planning priorities, and sectoral spending are actually connected. In addition, stakeholder interviews have found that water users are not fully aware of the real cost of WSS services and have affordability concerns. In Chennai, for example, there has been considerable public resistance to metering and previous attempts have failed amid fears of unjustified tariff increases without corresponding service delivery. Consequently, only 5 percent of service connections are metered.

The link between the financial resilience of service provision and water security is coming into focus. A study of COVID-19 responses in Latin America (World Bank and IDB 2020) found that water utilities with sound, accountable systems of financial and operational management tend to be better equipped to deal with challenges to resilience than those without such systems. In Colombia, service providers with sound financial information and management systems in place were more able to quantify existing and projected funding gaps, shift priorities, buy time, and offer short-term relief without fundamentally compromising their long-term viability. While the pandemic showcased the financial vulnerability of utilities to shocks, in some of the cases considered for this report, the lack of stable and sufficient revenues has undermined efforts to invest in technical innovations that could buttress water services from shocks. The Chennai case, for example, illustrates the importance of aligning long-term financial resilience with overall water security. After 20 years without any tariff revisions, the local government implemented a sharp increase without adequate communication or planning. Consequently, the population switched to drilling boreholes, thereby contributing to the already alarming depletion of vulnerable groundwater sources. Strengthening the financial resilience of the sector by ensuring adequate revenue for operations, maintenance, and investments while ensuring the affordability of end users is critical to protect water resources and prepare for future shocks.

2. Performance-based financing is an emerging area that can be a game-changer for service provision.

To maximize transparency and autonomy, it is important for countries to adopt formula-based transfer allocations. In particular, fiscal transfers should be allocated to close fiscal gaps and deliver the services where needed. The allocation of fiscal transfers often results in interjurisdictional fiscal inequality. While the distribution of unconditional grant resources is often formula based, the allocation

of conditional sector resources is less commonly done based on an allocation formula. This is especially true in countries where WSS infrastructure is severely underfunded. Central government budget allocation decisions in the water sector tend to be made on a discretionary basis—often driven by a mix of political and technical considerations—instead of relying solely on evidence-based resource allocation rules. It is not unusual for WSS funding to be mostly detached from the financial and operational performance of water utilities, entailing no incentives for sustainable or improved institutional performance. This is the case in Uzbekistan, as reported by WSS stakeholders, who note that the worst-performing utilities tend to be the priority for receiving state subsidies and benefitting from IFI projects. Sometimes, the worst performers are granted flexibility from the Ministry of Finance to increase water tariffs to address the poor conditions of their assets and operations.

The use of performance-based financing mechanisms is relatively rare in the water sector, although there is increasing interest in them. Box 5.1 provides an overview of how these instruments work. A conditional grant is an example. It provides local governments with predictable formula-based capital (development) funding when certain minimum conditions are met. In addition to providing local governments (that meet certain minimum conditions) with greater access to capital development resources, performance-based grants (PBGs) typically provide local governments with a higher grant allocation (e.g., a 20 percent "performance bonus") if a qualifying local government adheres to certain good governance practices or satisfies specific institutional performance standards as determined by an annual performance assessment (typically conducted by a neutral third party).[1] Performance incentives should be considered and tailored to the baseline situation of the service provider.

3. PIR is often the binding constraint, and opportunity, for increasing financial flows in the water sector.

Utility creditworthiness is a precondition for accessing commercial finance and requires the application of PIR principles. Legislation, regulatory obligations, and policy decisions all provide incentives for utilities to prioritize good corporate governance and cost recovery. For example, in Colombia, the regulator, CRA, requires regulated entities to maintain certain financial performance targets, such as cost efficiency as practices. Even in countries without a dedicated regulator, the use of performance contracts between the state and the utility typically includes financial targets which, if well enforced, could propel the utility toward creditworthiness.

The quality of the legal and regulatory framework is a key determinant of private investment in WSS services. For example, a study commissioned by the Inter-American Development Bank to assess investor sentiment showed that regulatory uncertainty was by far the most significant barrier to increasing investment in sustainable infrastructure in Latin America and the Caribbean, behind the quality of project pipelines and financial transaction issues (IDB 2020). The PIR assessments also bear out this finding. In Mozambique, private operators must overcome administrative burdens, such as the complex taxation model. Complex procurement procedures and delays generated by investment obligations by public agencies can also be a deterrent to private actors.

Reform-minded service providers have a higher likelihood of attracting financing. In the case of Brazil, the federal government's new legal framework expanded the economy's financing alternatives and promoted capital markets as a long-term source of funds, especially for infrastructure projects. Law 12,431/2011 was introduced to lower the cost of accessing the capital market, and to strengthen bank competition so that the financing conditions of private banks could be more attractive. An International Finance Corporation (IFC 2021) study noted that these improvements in the legal framework have helped addressed long-standing binding constraints to public and private investment in Brazil's water sector.

The trade-offs of each funding source (tariffs, taxes, and transfers) need to be well understood and alternatives identified accordingly. In the case of Brazil, 37 percent of WSS investments over 2017–19 came from public development banks, including

BOX 5.1 Performance-Based Water Supply and Sanitation Grants

A performance-based grant (PBG) is a particular type of conditional grant, providing funds from the central government to regional or local governments for a specific development objective. Rather than merely providing regional or local governments (or service providers) with greater capital development resources, PBGs tie access to these resources to improvements in institutional governance or administration. PBGs are commonly used in governance operations (e.g., the Bangladesh Local Governance Support Project) and urban operations (e.g., the Kenya Urban Support Project).

While less common in the water supply and sanitation (WSS) sector, conditional grants and PBG operations are increasingly used in support of decentralized WSS provision. For instance, under the Second Kerala Rural Water Supply and Sanitation Project in India, *gram panchayats* (rural local governments) will qualify for access to project funds on compliance with minimum eligibility criteria, including the availability of up-to-date accounts and acceptable audit reports. Similarly, under the PAMSIMAS water supply and sanitation project in Indonesia, grants are provided to districts and villages on the basis of water and sanitation Community Action Plans. These plans are required to meet certain local co-funding requirements and approval conditions related to sustainability and equity in order for local governments and their communities to be eligible to receive grant funding.

In more advanced PBGs, it is not unusual for minimum conditions and performance standards to be determined as part of a formal annual performance assessment process (typically conducted by a neutral third party) to assess the institutional performance on the basis of which PBGs are allocated or released. For instance, under Egypt's Sustainable Rural Sanitation Services Program-for-Results, WSS companies must meet a number of institutional performance conditions (including in the areas of operations, financial management, institutional development, and citizen engagement) in order to receive performance-based capital grants from the Ministry of Housing, Utilities and Urban Communities.

By tying access to funding to the attainment of minimum conditions and performance standards, the PBG construct leverages the capital funding provided to the local level by not only producing the direct benefit of the infrastructure investment itself, but by using the capital development funds as a carrot for local political buy-in and/or local institutional strengthening. At the same time, the sectoral funding scheme could be used as a carrot for the central line ministry to pursue (or accept) certain institutional reforms, primary among them acceptance of a (non-earmarked) conditional sector grant modality itself.

The experience in the application of PBGs so far has been mixed, but mostly positive. Among the lessons learned is the need to use the grant schemes to incentivize institutional reforms as well as short-term improvements in service delivery results to ensure more sustainable improvements in service delivery outcomes. Another lesson learned is that PBG schemes should not impose excessively detailed performance standards (ostensibly to incentivize adherence to program requirements), as this merely imitates the excessive top-down controls associated with the centralized projects or earmarked grant schemes that formula-based PBGs are supposed to replace. A balance between rigorous standards and flexibility for beneficiary entities in meeting them seems like the right approach.

Caixa Econômica Federal and the National Bank for Economic and Social Development (BNDES). However, private financing is limited or nonexistent in all studied countries. In Mozambique, the WSS sector is heavily reliant on grants and concessional loans from development partners. This has contributed to increased unpredictability of funding and inhibited budget planning efforts, leading to increased risk and uncertainty about sector programs. Similarly, relying on tariff revenues alone can be disastrous where there is little appetite or means of increasing tariffs for end users.

Partnerships with the private sector can be a powerful means of improving service performance and efficiency, provided that the enabling PIR framework is in place. While the results are mixed in Chennai (India), Tashkent (Uzbekistan), and Maputo (Mozambique), the experience in the Minas Gerais and Ceará states of Brazil show that the private sector can be more agile in the execution of contracts compared to the public sector. While the public sector executed only 16 percent of contracts signed six years back, private entities achieved 100 percent completion of contracts within the same period (World Bank 2021d). The role of private operators, service contractors, and other arrangements should be explored in addition to financing as they can generate significant operational and managerial efficiencies, which can be impactful for the achievement of WSS goals.

NOTE

1. Results-based grants form a general category of results-based finance (RBF) mechanisms. While PBGs could be considered a specific type of RBF scheme, a typical RBF scheme provides funding based on specific service delivery outcomes or results. For instance, in the WSS sector, a sector program may provide a local government or a WSS provider an output-based grant per household based on the number of households connected to piped water in the previous year. RBF schemes—unless carefully designed as a permanent part of the grant system—risk doing little to transform public sector systems in a sustainable manner. By contrast, PBGs tend to be designed as an integral part of the country's grant system and aim to incentivize the adoption of improved institutional/governance practices.

6. Water and Sanitation Regulation

6.1 Analytical Foundations

The realm of regulation should be explored within specific country contexts. In low- and middle-income countries (LMICs), legal and administrative institutions are less developed, with weaker enforcement, transparency, and accountability—and the presence of local history, customs, and traditions can play a significant role in determining reform outcomes. Based on this context, the objectives of regulation in LMICs may be different. For example, increasing access, especially to peri-urban and rural areas, and improving quality and efficiency of services, are common objectives (World Bank 2018).

LMICs have predominantly imported or designed new WSS regulations in the form of a dedicated sector regulatory agency. However, the most effective regulatory forms in these countries have been varied, and depend on a multitude of factors, including the country's legal system, sector policies, governance structure, the extent of decentralization, and whether national state-owned enterprises already exist. The literature on regulation discusses measures that can reduce political interference such as investing in relationships and forming allies within and outside the sector, anticipating political pressures, identifying political costs and benefits driving interference from politicians, and taking steps to diminish losses (Jamieson and Castaneda 2017). The Organisation for Economic Co-operation and Development (OECD 2014) has proposed principles for the good governance of regulators.

Regulators can use numerous tools to strengthen and incentivize WSS service providers to improve sectoral services and achieve sector objectives. Key regulatory functions and their associated tools and approaches found in LMICs include improving financial sustainability; improving service provider performance; increasing accountability, transparency, and consumer voice; and pro-poor regulation (World Bank 2018).

6.2 Lessons Learned from Practice

1. While there is strong interest in the role of regulators, it is just as important to understand how regulatory functions are mapped across various entities.

Country experiences demonstrate an increasing recognition of the value of WSS regulation, with strong interest to establish sector regulators. Stakeholder consultations in Bosnia and Herzegovina, Uzbekistan, and Chennai (India) reveal growing demand to establish a dedicated regulator to advance sector policy and promote institutional reform. In Mozambique, the new decentralization framework enacted in 2019–20 was matched with legal reforms to the regulatory framework. With the redesignation of CRA (the Water Supply Regulatory Council of Mozambique) as Autoridade Reguladora de Agua (AURA) (Decree 8/2019), the regulator is now formally given greater authority, more strongly defining its role in sanitation as well as water supply; this includes authority to require and collect performance data, and to impose fines for noncompliance (WSUP and World Bank 2021). In Nigeria, performance-based contracts between the state government and state water agencies (entities that provide water services in Nigeria, under the authority of state governments) are currently being implemented (World Bank 2021c). While there is no formal regulator, this form of regulation is an approach adopted by many countries where public water utilities are under the supervision of state or federal authorities.

The sharing of regulation functions across different entities is even more pronounced in federal countries. In Brazil, for example, enforcing a common regulatory framework across 26 states requires close intergovernmental coordination between the federal, state, and municipal regulators. Although tariffs are set by local governments in the country, federal and state-level entities can play an important role in defending the interests of operators to achieve regulatory objectives. For example, the main operator in the state of Ceará, Companhia de Água e Esgoto do Ceará (CAGECE), requested a 15 percent tariff increase to cover O&M and investment needs—but the state public services regulation agency, ARCE, ruled against the tariff increase. A combination of regulatory models can offer a potentially more effective approach to meet regulatory objectives.

There is an emerging move toward a more collaborative relationship between regulators and utilities. As demonstrated by the experience of Kenya's Water Services Regulatory Board (WASREB), establishing relationships, building partnerships with politicians, and understanding political values and priorities can help regulators balance political interests and deliver political value without compromising integrity and risking political interference.

Regulators cannot be viewed in isolation. Regulatory independence and autonomy will always be exercised within a much broader governance landscape that includes policy and politics. Managing undue influence on regulation does not necessarily require absolute independence, but rather good governance principles like clearly defined roles and responsibilities, transparency, and accountability. It is important to work with the grain, building on the regulatory functions and overall governance framework as they are, rather than solely regarding the lack of a dedicated regulator or weak independence of the existing regulator as a stumbling block to good regulation. More deliberate effort is needed to develop a cadre of regulatory professionals in the WSS sector. Stakeholders agree that this requires robust and competitive recruitment processes as opposed to political appointments and improved compensation to attract talent.

WSS regulation can be effective in promoting inclusive, affordable WSS services for lower-income households. Box 6.1 provides an example from Kenya, where the regulator is using its data reporting and collection functions to incentivize utilities to provide water services to the poor.

2. Strengthening governance arrangements for regulation as well as the technical capacity of regulatory entities is crucial for effective regulation.

The accountability relationship between policy makers and the regulator needs to be strengthened. Typically, regulators are held accountable by government, who exercise oversight over regulatory entities, as well as legislatures such as Parliament in some cases. In practical terms, as one regulator noted, mitigating the risk of political interference requires a clear legal mandate spelled out in legislation that delegates authority to the regulator to carry out fundamental functions, such as establishing prices and service standards, enforcing decisions, determining whether regulations are meeting policy goals, and adjusting rules, procedures, and decisions as needed (Gakubia 2021). While the regulator cannot "regulate" the government, there could be ways to enhance dialogue and common understanding, as described in the following subsection. In Chennai, for instance, there is demand for introducing independent members on the governing boards of water utilities, as well as performance matrices across service and functional areas and public information disclosure policies to hold decision-makers accountable.

While many countries have some data collection and monitoring mechanisms in place, a common constraint is lack of capacity to deploy them fully. Data and information systems are crucial for regulators to carry out their mandated functions. the Regulatory Agency for Water Supply and Sewage Services of the State of Minas Gerais (ARSAE), leads the "Projeto Sunshine" initiative, which aims to evaluate the performance of WSS service providers in municipalities on eight key performance indicators annually. However, despite the well-intentioned design, suboptimal institutional capacity and lack of effective tools for data collection and validation have impaired

BOX 6.1 Kenya—WASREB's Pro-Poor Key Performance Indicators

The regulatory framework of Kenya's Water Services Regulatory Board (WASREB) includes a pro-poor metric, often referred to as "the 10th KPI," which it has collected and published for three years, for an increasing number of utilities now including all of Kenya's "very large" and "large" utilities. WASREB's most recent utility performance report states that: "The regulator, has continued to assess utility efforts with respect to improving services in [...] marginalized areas. Ensuing from the development of the guideline, the tool has been further refined to put more emphasis to impact rather than process. The following are the four dimensions assessed with their corresponding weights:

- **Governance (30%):** The sub-indicator has three components namely: adoption of a pro-poor policy; establishment of a pro-poor unit; board representation/ constitution.
- **Access and service levels (30%):** Level of access (water); level of access (sanitation); growth in access over time; service levels with focus on rationing programmes
- **Planning (20%):** Availability of low income areas (LIAs) specific plans (development and implementation); mapping (baseline and regular updating); pro-poor business model
- **Financing (20%):** LIA budget drawn from the plan; resource provision (disbursements) vis a vis budget; equitable allocation of financing

For the reporting period 2018/19 a total of 52 utilities [of a total of 82] submitted complete data on their pro-poor performance compared to 36 utilities in the previous period, a clear indication that utilities are increasingly prioritizing service inequalities within their jurisdictions."

Source: WSUP and World Bank 2021.

its full effectiveness. In Bosnia and Herzegovina, public service agreements between local government and utilities define performance monitoring responsibilities. However, challenges in terms of lack of capacity and decentralization are cited by stakeholders. Similarly, in Chennai (India), stakeholders cite the lack of robust performance monitoring mechanisms and insufficient data as major impediments to effective regulation. Even long-established regulators with substantial resources, such as Ofwat and The Italian Regulatory Authority for Energy, Networks and Environment, note that data collection and monitoring can be problematic.

Nevertheless, there are good practices to start tackling data challenges within the field of regulation. In Colombia, one way to address data collection and management challenges is through "differential schemes" applicable in rural areas, areas of difficult access or management, including areas in which security conditions prevent personnel from carrying out micrometer readings, areas that do not have access to operating vehicles, and areas that do not have basic habitability conditions. These regulatory tools allow operators in those areas to integrate progressively to the system, providing exceptions to supply and coverage targets, measurement, and the overall implementation of the tariff methodology billing services based on estimated values. According to government figures, the program Agua al Barrio has been implemented in 13 cities, benefiting about 171,000 inhabitants (including providing services to 61,204 people that did not have access) living in informal settlements in the cities of Bello, Itagüí, Medellín, and Pasto (Ministry of Housing, City and Territory 2022). Chapter 7 explores other ways of tackling data constraints within the WSS sector.

3. Regulators are gradually shifting from regulating monopolies toward regulation of economic, social, environmental, and health externalities.

Tariff setting remains a core regulatory function, but country experiences reveal new objectives for economic regulation. For example, the evolution of tariff-setting methodologies in Colombia's CRA has led toward incentivizing strengthened resilience to the impacts of climate change through its upcoming tariff cycle (see box 6.2).

Some countries are making progress toward incentivizing green service delivery. In Uzbekistan, the Ministry of Housing and Communal Services and Ministry of Finance are incentivizing green service delivery through a recently approved tariff policy and setting process, directly linked to midterm service performance improvement plans, which facilitate investments in operational efficiency. These regulatory incentives were introduced to allow utilities to capture and retain efficiency gains to improve energy efficiency and reduce energy costs through an energy savings capture model to overcome challenges due to the lack of adequate and sustainable financing (Limaye and Welsien 2019).

Regulation can be an important tool for enhancing water security between water resources and water services. Brazil offers good lessons in this regard. In the State of Ceara (Brazil), due to recurring drought events, a contingency tariff was implemented to promote water demand management in Fortaleza and

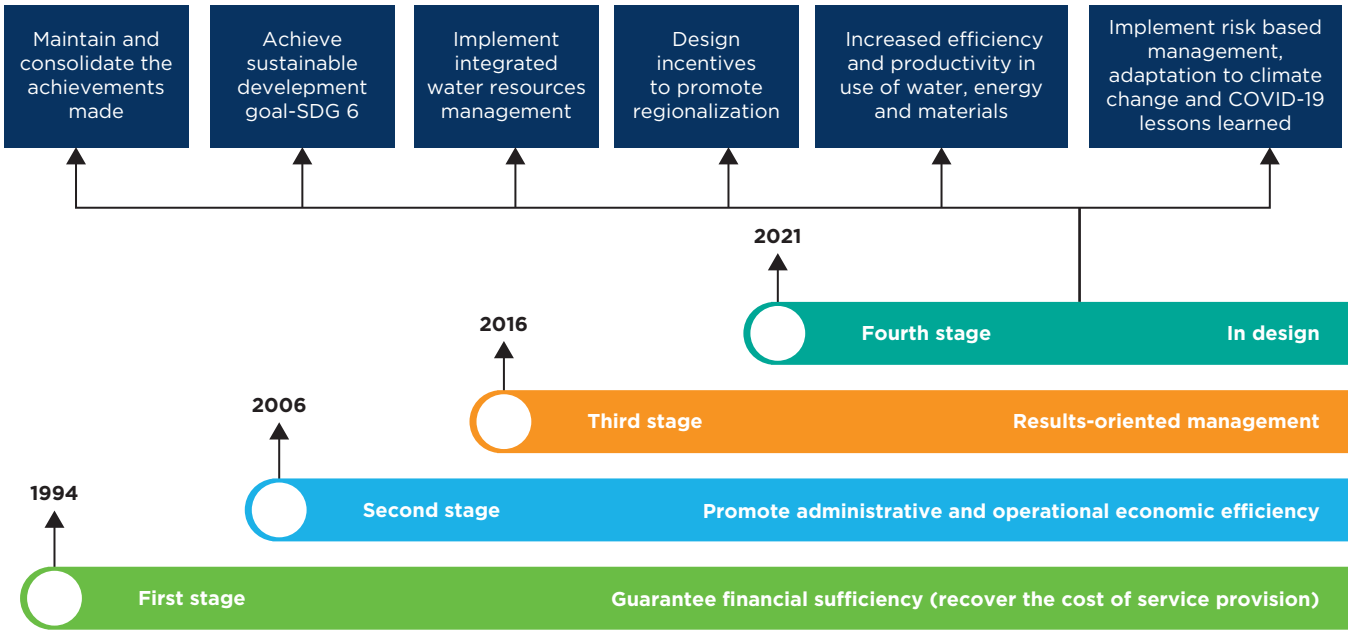
BOX 6.2 The Positive Impact of Regulation on WSS Outcomes

The tariff methodologies of the Water and Sanitation Regulatory Commission (CRA) of Colombia evolved organically over 28 years (three frameworks since 1995) from encouraging cost recovery toward encouraging efficiency and regulating externalities (e.g., investment planning incorporating environmental considerations). This process has not been linear—while each regulatory cycle built on the previous one, developmental dissimilarities in the market demanded continuous efforts to achieve each cycle's objectives simultaneously. The development of each regulatory cycle was guided by sector policies, sector evaluations, and public participation.

The first cycle (1994–2006) aimed to build the financial standing of water and sanitation providers through cost-recovery mechanisms, overcoming artificially low tariffs, and improving coverage indexes and service quality standards. The second cycle (2006–16) incentivized efficiency gains by incorporating incentives to encourage economic efficiency and sustainability through incorporation of the cost of environmental taxes within the methodology and better alignment with municipal urban planning. The third cycle (2016–present) moved toward an operators' output approach and reinforced environmental protection by adding the costs related to the protection of basins and water sources, regionalization, and green growth (incorporating differential schemes and environmental investments) to the methodology. Reforms have been successful, allowing continuous improvement of services during the past decades. However, rapid population growth (+12.5 percent from 2005 to 2018, according to Colombia's National Administrative Department of Statistics, DANE) and increasing climate-change-related risks will continue to challenge their effectiveness.

Source: World Bank 2021d.

FIGURE 6.1 Evolution of Water and Sanitation Regulatory Reforms in Colombia



Source: Polania 2022.

17 other municipalities in the metropolitan region. The revenues are earmarked for investments in water resource augmentation and are allocated to a special account managed by the regulator. In September 2019, revenues from the contingency tariff amounted to R$290 million ($52 million).

Long-established WSS regulators provide insights into how regulation can adapt to evolving contexts over time. Countries seeking to establish WSS regulators cannot benefit from hindsight, but they can look to the experiences of regulators that have been active in the sector for a long time. Colombia offers a good illustration of how regulation—and the work of the regulator, CRA—has evolved from a limited focus of ensuring that WSS providers achieve financial sustainability through appropriate cost-recovery and tariff setting to a much more sophisticated and impactful role in overall WSS delivery outcomes (see figure 6.1). The shifts in CRA's regulatory model have been driven by both internal and external factors—including the deepening of technical competence, increases in staff and resources, and responses to emerging challenges and opportunities such as climate change and service delivery improvements (World Bank 2021d). Key lessons learnt from these experiences include the need to phase implementation of regulation and align regulatory standards with the level of maturity of service providers. Regulators need to assess their own functions, tools, and resources; monitor the WSS landscape; and take the necessary steps to ensure both are aligned.

7. Resilience of Water and Sanitation Services

7.1 Analytical Foundations

One of the biggest risks facing the international community—and especially the developing world—is water insecurity. Between 2010 and 2019, over 1.3 billion people worldwide experienced extreme weather events, with floods and droughts accounting for the greatest human impacts, well beyond the physical damage. Such extreme weather events have a negative impact on water security through service disruptions, damage to infrastructure, and declining rainfall and water quality. The World Bank's recent Water in Circular Economy and Resilience (WICER) report (Delgado et al. 2021) shows how climate change exacerbates preexisting water stresses, with measurable effects on urban water availability, the water cycle, distribution of water, and quality of water. The report shows the scope for the water sector in reducing greenhouse gas emissions through energy efficiency measures, self-generation of renewable energy, and reuse of wastewater. Significantly, this is not only important from an environmental and climate point of view, but also conducive to achieving financial sustainability, and contingent on improved governance.

Resilience is defined as the ability of individuals, communities, institutions, businesses, and systems to survive, adapt, and thrive in the face of stress and shocks and to transform when conditions require it (Delgado et al. 2021). Recent analyses by the World Bank and others identify three features of resilient systems: persistence, adaptability, and transformability (Boltz et al. 2019). These characteristics are closely connected to PIR because they depend on both the planning and guidance set by policy and regulation, as well as the institutional modalities to respond to shocks and stresses in an effective way. Moreover, the PIR linkages to resilience stem from the opportunities that crises present. Previous studies have found that a catalytic event—such as a cholera outbreak, a water shortage, or an upheaval in the broader political environment—can create a space for reform (World Bank 2016). It is therefore important to understand the levers available for building resilience through an enlarged PIR lens.

7.2 Lessons Learned from Practice

1. Understanding risks and planning for stresses and shocks are crucial for maintaining momentum on reforms.

Promoting more resilient institutions and systems requires the application of core PIR principles as described below. Box 7.1 provides some real-world examples of the application of these principles for enhancing water security.

A regular assessment of risks is a valuable but underutilized element of managing WSS services. A seminal 2012 study on understanding water risks noted that water planners and engineers are concerned with uncertainties associated with extreme events like natural disasters (UNESCO 2012). This concern is certainly still valid, but the PIR assessments highlight that the risks facing the water sector have become more varied, ranging from natural disasters like floods and droughts to public health crises (COVID-19, Ebola, and cholera) and financial pressures. While there is a

BOX 7.1 PIR Lessons from Wastewater Reuse to Enhance Water Security

- **Effective national-level policy requires being specific** about the problem that policy addresses. For example, Jordan's 2016 Water Substitution and Reuse Policy clearly states a commitment to wastewater reuse. Such clarity reduces the risk of "isomorphic mimicry," that is, that governments mimic others' successes uncritically, without attention to local conditions.
- **Strong political leadership** can advance wastewater reuse. The governor of Florida (the United States) issued an Executive Order in 2019 to ensure environmental and water resource protection and regulation, showing commitment that mobilized the administration.
- **Public outreach and awareness raising, and pilot projects** could address public concerns about wastewater treatment and reuse. Japan's treatment of mining wastewater, which ends up in the city's municipal water supply, has helped confirm the integrity and reliability of wastewater treatment plants.
- **Strong regulatory frameworks** can incentivize wastewater reuse and other resilience measures and reinforce institutional capacity. The United Kingdom's code of practice for sewage sludge in agriculture provides a practical model for safe use of sewage sludge in agriculture.
- **Explicit disaster response plans**, such as Chile's Superintendency of Sanitary Services (SISS), require utilities to formulate "response plans" to any disaster risk. Before being sent to the SISS, these response plans are discussed with local governments, social actors, and other members of the state with competencies in disaster response to agree on the type of measures to be implemented to ensure resilience in *force majeure* situations. The plans that the utilities must formulate aim to address situations or events that exceed their installed capacities and negatively impact the quality and continuity of services. In addition to requiring the plans, SISS developed guidelines in 2012 regarding the preventive and response actions that utilities should adopt in emergency and disaster situations. This instrument has made an important contribution to the incorporation of disaster risk management as one of the focuses of development in the water and sanitation sector in Chile.
- **Institutional arrangements could be vital in creating incentives for change and performance.** Australia's National Water Initiative encapsulates a shared commitment by all state governments to increase efficiency of water use, based on sound pricing principles for water supply and recycled water, for application by all state governments. Policy development typically lies with national governments, but functions like planning, investment, implementation, and coordination can be delegated or shared between levels of government.
- **Cross-sector collaboration** could prove pivotal to optimize impact. River basin councils in Mexico, for example, actively help coordinate government institutions, water users, and social organizations in shaping and executing programs to improve regional water management and preserve river basin resources.

rich body of quantitative work on some of the threats to water security, such as climate change and water pollution, systematic assessments to gauge stakeholders' perception of the risks that can undermine the quality and sustainability of service delivery are not yet common.

Surveys of top water officials provide helpful insights about how they perceive the main risks and challenges affecting water service provision. The introduction highlighted the findings of one such report. Importantly, risk assessments and surveys can be valuable tools for policy dialogue and can help

identify levers for politically acceptable reforms. Some countries are starting to adopt this good practice at the national level. In South Africa, the government has officially taken some steps to review water risks and their potential impact on the economy.[1] A poll of risks was undertaken with water managers in South Africa's biggest urban areas. A water risk rating was assigned to each of the country's eight metropolitan areas, with a "high" water security risk signifying that demand could exceed supply at a 98 percent level of assurance (currently, or within five years). These efforts in South Africa, spurred in part by its water-scarce context and recent shocks such as the so-called "Day Zero" threat in Cape Town (box 7.2), offer worthwhile lessons on how technical assessments and risk ratings could feed into the policy dialogue process, facilitating better common understanding of risks and possible mitigation measures.

2. The alignment among policies, institutions, and regulations determines the sustainability of reforms to a great extent.

PIR can be a means of ensuring greater integration between water resources management and WSS services. Clear institutional and statutory mandates for water institutions reduce uncertainty, enhance accountability, and open the scope for citizens' participation in planning and strategy development for water resilience. In addition to water resources management and WSS, institutional arrangements are needed across transboundary, international entities, national and subnational governments, civil society groups, and community organizations, and key sectors such as agriculture, industry, trade, and energy. However, good examples of these integrative, whole-of-water-sector institutional models are rare,[2] suggesting that more reflection is needed on ways of formalizing collaboration among water and nonwater actors on cross-cutting issues. As chapter 2 noted, policy dialogue can create opportunities for coalition building across various actors in the water sector. Because resilience is a transversal outcome, pragmatism is needed in setting and adopting goals, and deliberative processes of dialogue, collaboration, and decision-making must help shape movement toward "best-fit" contextual outcomes rather than dogmatic adherence to prefixed institutional models and policy priorities.

COVID-19 has reinforced the importance of institutional agility to deal with shocks. A recent study has found that WSS service providers with viable financial planning and institutional systems in place to plan for and perform their core functions are more able to mitigate short-term financial shocks (World Bank and IDB 2020). Integrated, green, resilient, and inclusive development strategies are needed to repair the structural damage caused by COVID-19 and accelerate climate change mitigation and adaption efforts while restoring momentum on poverty reduction and shared prosperity. Institutions must be able to adapt to change, facilitate dialogue among different interests, ensure accountability for goals and outcomes, and mitigate pressure.[3]

Achieving universal access to water and sanitation will not be possible without integrating policies and institutions outside the water sector. Mechanisms are needed for collaboration with other sectors, particularly with those related to water resources, such as agriculture, energy, and environment, but also in frontline services like health and urban planning, among others. For example, bulk water and reuse cannot be addressed exclusively in the scope of WSS provision. Some of this integration can be facilitated through well-designed intergovernmental mechanisms. The Council of Governors in Kenya, for example, provides a platform for discussion on all developmental topics among the county governors. It has a secretariat that organizes conferences of the governors and showcases innovations and good practices from across different sectors, among other tasks.[4] In South Africa, the National Treasury initiated a Cities Support Program (CSP) in 2011,[5] which is billed as a "vehicle for collaboration and integration" across South Africa's major metropolises. Among other activities, the CSP supports cities in emergency preparedness and response, development planning, and promotes learning and knowledge exchanges among cities on cross-cutting topics like climate resilience. The CSP is a support program, and the institutional reforms that it advances will be telling for longer-term sustainability (World Bank and CSP 2022).[6] As with the example from Kenya, the key

to the success of this approach lies in the provision of an institutional anchor and financial and technical resources to support it.

While emergency measures can help plug gaps in service delivery, they can create a false sense of security. While several governments introduced urgent measures during the COVID-19 pandemic to ensure the continuity of water services, they also revealed an inconvenient fact—that having sound institutions in place during normal business reduces the need for unsustainable, temporary measures to resolve systemic weaknesses. Moreover, in a study of countries in Latin America, utilities that had sound financial systems in place were better able to withstand the shock brought about by the pandemic. In Chennai, which has been impacted by recurrent droughts, floods, and pandemics, the dependence on private tankers in emergency situations has highlighted systemic weaknesses in water supply. When crises hit, there have been arbitrary increases in prices, thus exacerbating rather than alleviating an already difficult situation. The SDG 6 call for "universal," "equitable," and "adequate" access requires a stronger focus on long-term planning and collective actions of diverse and interdependent stakeholders—moving from a contingency approach toward a water security and safety one (as noted in IWA 2018).

Institutional resilience depends as much on systems as on leadership, but it is more effective if it is collaborative in nature. The role of individual leaders is very important during crisis events given their dynamic nature and complexity (e.g., an indebted utility confronting a public health crisis), and the need for quick decision-making. Research on public leadership suggests that the most effective leaders play a limited set of no more than three roles—namely authorizing, convening, and motivating others to oversee crisis response.[7] Because some actors can capitalize on crises to extract maximum gains for their own limited interests, collaborative leadership can be a way to identify and manage different interests. Ongoing and institutionalized platforms for policy dialogue can be useful in these cases. South Africa's Western Cape Region and Bosnia and Herzegovina's Sava and Drina corridors have been benefitting from concerted collaborative leadership to enhance the resilience of WSS services during periods of shock and crisis (box 7.2).

3. Mechanisms are needed to bridge the gaps between policy setting and implementation.

There are examples of central delivery units effectively monitoring progress toward policy goals. Examples include the Performance Management and Delivery Unit (PEMANDU) in Malaysia, described as one of the largest and most prominent in the world, and established in 2009 (World Bank 2017). One of the factors attributed to PEMANDU's success is the development of "the Lab," a consultative process in which an extensive stakeholder engagement workshop is regularly held for a period of six to nine weeks, bringing together stakeholders to focus on a priority area and design solutions to identified policy challenges. Another success factor has been its institutional model. PEMANDU is a special purpose vehicle in the prime minister's office and is not limited to hiring only civil servants and does not follow the civil servant pay structure. Consequently, it has been able to attract staff from the private sector and to develop a results-oriented corporate culture.

In South Africa, Operation Vulindlela[8] is in the same vein as Malaysia's PEMANDU. It is a governmentwide approach driven by the Presidency and the National Treasury to monitor the progress of ministries, departments, and entities charged with implementing reforms and policy commitments. Importantly, a special unit was established within the Presidency; it is staffed with a dedicated team and provides technical support to implementing departments to overcome any implementation obstacles. Other examples of central delivery units can be found in India, the United Kingdom, and Tanzania, to name a few. Some general principles of their effectiveness include: "making sure there is strong, highly visible political backing; committing to a tightly defined remit; anchoring the unit close to a political sponsor; adopting the right hiring strategy, organizational structure and leadership model; ensuring cross-government ownership of the delivery unit's results agenda; and putting routines in place to review effectiveness and refresh operations" (Hudson,

BOX 7.2 Collaborative Leadership for Improving Resilience: The Cape Town and Sava Experiences

The 2015–18 drought in South Africa's Western Cape Region led to severe water restrictions in Cape Town, some 30,000 job losses, and economic losses in agriculture estimated at almost $400 million. The bulk water Western Cape Water Supply System was caught in the midst of these pressures and came under severe stress. Under the World Bank and National Treasury supported City Support Program, a hydroeconomic analysis was undertaken to help align the stakeholders toward a resiliency plan for the shared water system. Participants included the City of Cape Town, the National Water Department, and private sector, agricultural, and other urban users. The analysis seeks to simulate the economic impacts of water resources management decisions. To mediate tensions between competing stakeholders, the process has placed emphasis on developing stakeholder economic narratives in a participatory mode that capture the value of water and lived experiences of water users beyond macroeconomic indicators, facilitating dialogue toward collective solutions to the current sense of uncertain futures. This is important since most of the opportunities for resilience require political and funding support by the diverse institutions at different levels of government. Early indications are that stakeholders are willing to make trade-offs and find collective understanding and solutions for the water resources and economic system.

In Bosnia and Herzegovina, limited cooperation among the riparian countries along the Sava and Drina Rivers have constrained economic development over many years. The effects were powerfully exposed during dry spells and mass flooding in 2010–14, exacerbated by poorly maintained and outdated hydraulic infrastructures. A report commissioned under a World Bank operation projected the Sava basin generating over 20 percent of employment in Serbia, 35.3 percent employment in Croatia, and 54.4 percent employment in Slovenia, and highlighted the vast potential of the Drina corridor for hydropower generation, food production, and tourism (World Bank, 2015). This made a strong case for increasing cooperation between riparian countries on water management issues to support economic growth. The report led to the adoption of the $332 million World Bank–financed Sava and Drina Rivers Corridors Integrated Development Program in 2020. The program aims to improve management and development of the Sava and Drina River Corridors, financing construction and rehabilitation of dykes, improving watershed management, and promoting long-term and climate-smart investments among the four riparians (Croatia, Serbia, Montenegro, and Bosnia and Herzegovina). While the program is still in the early stage of implementation, it points to a new model of promoting long-term sustainability of water resources and water service by leveraging financing, infrastructure, and technical studies.

Hunter, and Peckham 2019). Other PIR tools such as regulatory impact assessments can help track regulations that have been introduced to gauge their effectiveness.

"Working with the grain" is a reasonable approach to tackling the difficult challenge of WSS data. Almost all countries report data challenges regardless of their level of development. For instance, many OECD countries still face challenges with collecting and analyzing data, particularly on economic, financial, and institutional dimensions of water management (OECD 2016). A customized approach that tailors data and reporting requirements to the local context—also known as "working with the grain"—can be a practical and effective way of dealing with data gaps. The use of differentiated targets and indicators for

water and sanitation practiced in Colombia is a good example (see chapter 6). It is also important to build on what works well. For instance, the PIR analysis showed that South Africa does not suffer from a lack of data in the water sector per se but rather from a dearth of time series data on performance. Moreover, a survey of OECD countries found that they had made considerable progress in terms of water quality and water quantity data, as opposed to economic, financial, and institutional dimensions of water management (OECD 2016). Greater precision about what kind of data are available and where the biggest needs for data improvement lie is essential.

Reform initiatives can sometimes face setbacks, but good evaluation and redress systems can ensure sustainability. The optimism and momentum that characterize the launch of some reform initiatives can sometimes fizzle out over time, as the realities of implementation set in and the needed modalities—funding, personnel, political leadership, and data collection, for example—often fall short of the needs. While some of these factors, such as political support for reforms, can be difficult to control or predict, others—such as learning and monitoring mechanisms, can be instituted in a purely technical manner. The use of regulatory review cycles, such as in Colombia, for example, is a case in point. On the policy and institutional front, the case of Benin (box 7.3) offers another example of how long-term reforms in the rural water sector were adjusted after an initial implementation phase proved untenable.

BOX 7.3 Adjusting Rural WSS Institutional Reforms in Benin

In 2007, the government of Benin introduced measures to facilitate the delegation of water services by municipalities to private operators, under the belief that professional water operators would be able to deliver better services than municipalities which suffered from weak capacity. However, this ostensibly noble initiative yielded mixed results with only half of water systems delegated to private operators after the first 10 years of implementation. The government and its development partners, in evaluating the causes, realized that weak capacity of municipal authorities to manage the process of contracting and delegating the water services to private operators was one of the key bottlenecks to making the delegation of services work. Moreover, the initial expectation that private operators would have the requisite financial and managerial resources to provide effective services proved to be only partially true. In reality, local operators did not have the business know-how or track record to be able to successfully bid on contracts to seek financing from commercial banks.

In response to these challenges, the government and its development partners evaluated the initial experience with the new service delivery approach and concluded that without addressing the financial, human resources, and technical capacity gaps on both the municipality and private operator sides, the service delivery model would continue to falter. The government therefore undertook a second phase of reforms, with the support of the World Bank and other development partners, in 2017. It started by creating the National Agency for Drinking Water Supply in Rural Areas (ANAEPRM, after its French acronym) based on a thorough assessment of human resources needs for rural water supply. ANAEPRM is an executive agency under the authority of the Presidency and is responsible for implementing all rural water infrastructure projects and supervising small water operators on behalf of the state and the municipalities. While it is still in its early days, ANAEPRM has

box continues next page

BOX 7.3 continued

to date been effectively designing and supervising the bidding process of more than 100 rural water supply systems, which shows its capacity to implement investment programs. A second axis of the 2017 reforms aimed at improving the capacity of private operators. It developed a well-structured technical assistance program for private water operators, including offering training to distribution network operators and rural water technicians. Simultaneously, small operator contractors were regrouped into three larger regional *affermage* contracts, with support from international financial institutions to develop the requisite bidding documents. The contracts will be for 10 years and will focus on rehabilitation and subsequent operation of rural water systems. The bidding process was faster.

The key lessons from the Benin experience are: (i) PIR interventions can sometimes fall short of expected results; (ii) it is important to course correct and make adjustments as needed to keep the focus on good service outcomes; and (iii) candor in identifying root causes of suboptimal results, as well as strong buy-in of government leaders, is crucial so that reforms ultimately improve services.

Source: Global Water Security and Sanitation Partnership 2020.

NOTES

1. This review was commissioned by the National Treasury in 2017 (see Eberhard 2018).
2. An example of such a model is the National Water Authority Board of Israel, which was established in 2007 as a means of gathering all water stakeholders—including from outside the water sector—to sit at a common decision-making "table."
3. Relevant analyses and collaborative events on these subjects include Hodgson (2004, 2006, 2016); Salman and Daniel (2008); and Stephenson et al. (2007).
4. Council of Governors of Kenya: https://www.cog.go.ke/.
5. Cities Support Program: https://csp.treasury.gov.za/csp/home.
6. The recently reported PIR assessment for South Africa, a joint CSP–World Bank effort, identifies key issues and intervention points in the institutional frameworks and practices for the country's metropolitan municipalities.
7. See, for example, work by Matt Andrews of the Harvard Kennedy School (Andrews 2020).
8. https://www.stateofthenation.gov.za/operation-vulindlela.

8. Conclusion

Developing PIR as the foundation for all WSS interventions, addressing the root causes of endemic WSS challenges, and promoting resilience over the long term—these are the challenges and opportunities in achieving the WSS SDGs. This report provides evidence and illustrations to bolster these three overarching messages through the six clusters of the PIR framework. In this section, an action plan is proposed around three main axes that should help leverage these opportunities. Table 8.1 provides the proposed actions, some examples of good practices, and resources for additional reading.

TABLE 8.1 Overview of Key Messages by Chapter

Policy	• It is important to understand the historical legacies and political context of water supply and sanitation (WSS) services. • Policy dialogue is not only important for integrity purposes, but more transparent and inclusive policies and legislation increase the probability of success. • Water laws can provide powerful incentives for the adoption of new behaviors, models, or approaches to service delivery.
Institutions	• The traditional understanding of water institutions needs to be expanded to reflect all service delivery models and actors. • The role of individuals in designing, implementing, and sustaining reforms is hard to understand but crucial for policies, institutions, and regulation (PIR) to be successful. • Strong water institutions can have a positive impact on service delivery outcomes, but this link needs to be further explored.
WSS in an intergovernmental context	• Multilevel aspects of water sector governance are an important part of the enabling environment for effective WSS service delivery. • Problems related to weak local capacity for WSS service provision cannot be resolved by technical solutions alone. • Recognizing the unique features of WSS service—and aligning them with the prevailing intergovernmental framework—is often the key to successful service delivery outcomes.
Financing	• There is an urgent need to build institutional capacity to plan and monitor WSS funding and financing. • Performance-based financing is an emerging area that can be a game changer for service provision. • PIR is often the binding constraint and opportunity for increasing financial flows in the water sector.
Regulation	• While there is strong interest in the role of regulators, it is just as important to understand how regulatory functions are mapped across various entities. • Strengthening governance arrangements for regulation as well as the technical capacity of regulatory entities is crucial for effective regulation. • Regulators are gradually shifting from regulating monopolies toward regulation of economic, social, environmental, and health externalities.
Resilience	• Understanding risks and planning for stresses and shocks is crucial for maintaining momentum on reforms. • The alignment among policies, institutions, and regulation determines the sustainability of reforms to a great extent. • Mechanisms are needed to bridge the gaps between policy setting and implementation.

There are several efforts that policy makers, IFIs such as the World Bank, and other development partners can undertake to strengthen the focus on PIR.

8.1 Collect data on the impact of PIR on water and sanitation services

The updated PIR tool can be used to undertake stakeholder consultations, policy dialogue, and PIR assessments. It is expected that future PIR support to Bank client countries will make use of the PIR tool. Over time, a body of responses will be collected, providing a rich source of data for quantitative analysis. For example, once there is a substantial number of country responses to the PIR questionnaire, statistical analysis can be undertaken—cross-referencing other sources of data such as the International Benchmarking Network and the World Development Indicators Database—to understand the relationship between PIR and parameters such as access to WSS, utility performance, expenditure, or development funding. This analysis should help move PIR from the realm of qualitative analysis to more robust quantitative assessments.

8.2 Link investments and projects to PIR reforms

While many governments and IFI investment programs and projects include some aspect of PIR, it would be no exaggeration to state that most of these PIR interventions are small scale, ad hoc, or short term in nature. Examples include developing institutional diagnostics, tariff studies, or utility performance assessments; technical assistance grant facilities to utilities to improve their operational and organizational performance; and training and knowledge exchanges for staff working in WSS institutions. While these interventions are important, and often impactful, the next phase of PIR support should aim to enhance investment operations (projects, technical assistance, and infrastructure programs) further by ensuring that:

- **Political economy analysis is incorporated in all project design.** As this report has emphasized, there needs to be a greater understanding of how water sector governance is connected to overall water governance.
- **Operations are founded on country ownership through dialogue.** The systematic use of the PIR tool can help ensure that interventions reflect reform priorities identified by stakeholders and that there is full ownership of the proposed activities by implementing entities. This approach will also ensure that the challenge of vested interests (identified in chapter 3) is mitigated.
- **Operations—even if short term in nature—are anchored in a reform narrative.** As this report has highlighted, PIR reforms take time, and an incremental approach is needed for long-term success. However, this reality often does not align with the urgent priorities of the day—of developing a lending operation or responding to an unexpected crisis. The PIR approach can ensure that each WSS intervention is anchored in a long-term narrative. The use of reform chronologies (see the CRA example in chapter 6, as well as country brief examples) will be a key tool in this regard, as they will compel teams to take stock of previous reform milestones, situate the WSS sector at present, and build a vision for future reform actions.

8.3 Promote collaborative leadership

The report has highlighted the need for strong, collaborative leadership across the entire water sector and beyond. It has also cautioned against investing only in individual reform champions but rather (a) thinking of reform champions across different levels of the sector and (b) building a coalition of champions. More work is needed to advance this idea by exploring the role of leadership through knowledge events, profiles of effective teams, and case studies. The field-level leadership development initiative is a promising example of collaborative leadership that can be scaled up and supported, with stronger integration of PIR.

Appendix A. Background on PIR and Aligning Institutions

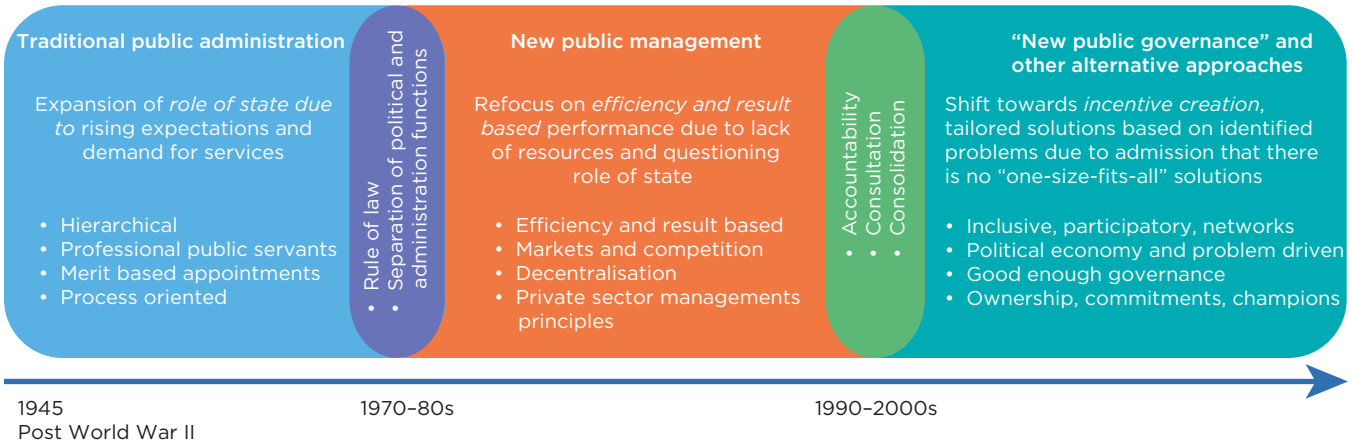
This appendix provides the background on the foundations of the policies, institutions, and regulation (PIR) concept, as defined in "Aligning Institutions and Incentives for Sustainable Water Supply and Sanitation Services" (Mumssen, Saltiel, and Kingdom 2018). Key excerpts from the report are included to provide the reader with concepts and definitions.

The *Aligning Institutions and Incentives* report draws on case studies and a literature review to construct a PIR analytical framework. First, it contextualized PIR in the broader context of public sector administration:

After the Second World War, public sector reform focused on expanding role of the state to satisfy demand for public services. To address shortcomings of traditional public administration (TPA), during the 1960s and 1970s public policy regarding infrastructure sectors largely focused on building up "technical" capacity, considering only broad macro policies. This transitioned in the 1990s to more comprehensive fiscal policies and articulating "best practices" amid the "Washington Consensus" embrace of open markets. Public Sector Management (PSM) reforms began to incorporate public sector incentives but paid little attention to the role of political actors. The importance of institutions emerged in the 1990s in response to "New Growth Theory" and stagnating development results. Institutions including the World Bank began seeking to match reform content to broad institutional contexts.

These concepts grew deeper in the 2000s as political constraints and the incentives of political actors received more attention in PSM theory. Figure A.1 captures the main trends in public sector reform since the Second World War. TPA, with the state expanding to meet public service obligations, was replaced by New Public Management (NPM), which aimed to improve efficiency through introducing markets, PSP, and decentralization. This in time gave way to New Public Governance (NPG), which

FIGURE A.1. Main Trends in Public Sector Reform Since World War II



Source: Mumssen, Saltiel, and Kingdom 2018.

focuses on incentives and tailored participatory solutions to service delivery challenges.

New Public Governance and Other Alternative Approaches

In the last two decades, the weaknesses of new public management (NPM) led to the need to have tailored approaches to reforms, which focus on creating incentives for service delivery rather than applying one-size-fits-all solutions. Hyndman and Liguori (2016) use the term NPG for this shift in public sector thinking which is characterized by: (1) a focus on inclusivity, participation, and networking between the public sector (governments), private sector (businesses), and civil society; and (2) negotiated and consultative-based solutions. These characteristics imply that governments must successfully administer and promote effective coordination mechanisms vertically across different intergovernmental levels, and horizontally across organizations. This challenge is commonly referred to as the "coordination problem" in which national and sub-national governments experience fragmentation and an absence of coordination (Peters 2015).

Politically, individuals and organizations may pursue specific policy and political goals which are divergent to each other and thus reduces incentives to coordinate for fear of reducing probabilities of reaching those goals (Peters, B. Guy. 2015). Issues of vertical coordination are becoming more important as "multilevel governance" becomes a common challenge for governments. Even in a centralized institutional context, subnational levels of government exercise some level of autonomy which requires a desirable level of coherence among decisions makers across the different levels of government (Peters, B. Guy. 2015). Federal institutional arrangements, however, will permit greater levels of diversity in program delivery as the intention of a federal design is that local conditions and local preferences may be expressed more clearly in policy choices, and hence vertical coordination is less of a concern (Peters 2015), but devolved semi-federal systems – such as Kenya and South Africa have also experienced challenges due to national-subnational contestation. In addition, Brinkerhoff and Brinkerhoff (2015) identify other alternative approaches to public sector reforms post-NPM:

- *Political economy approaches and identification of specific problems and entry points for stakeholder collaboration and finding solutions.*
- *The concept of "good enough governance," as promoted by Grindle (2004, 2007), which focuses on feasible, implementable, and best-fit solutions (as opposed to "best practice"), rather than assuming perfect or standards "solutions"; and*
- *Focus on promoting ownership, identifying reform champions, and creating commitment and collective action from interest groups, institutions, and people more generally within the country undergoing reforms.*

These characteristics also come with their own limitations. Implementing accountability measures becomes more challenging as reform processes become more complex as results are more difficult to measure. However, Pollitt (2014) asserts that the NPG reforms can be a positive development, in that:

- *Reforms in developing countries are no longer limited to model NPM packages, but mostly are not linear.*
- *The emergence of cultural and context-specific frameworks provides growing knowledge on what solutions can work for what problem and how they may need to be adapted to achieve impact; and*
- *Having specific interventions to address specific problems may make it more manageable to monitor outcomes than was the case in large-scale reform programs.*

Within this context, 11 deep-dive case studies were selected to analyze the role of policies, institutional arrangements, and regulation in water supply and sanitation (WSS) sector reform. Complemented by consultations with stakeholders and sector experts, the report sought to define and identify the types of incentives which may contribute or impede the delivery of WSS services:

> *[…] "incentives" within the WSS sector are defined as: Motivating influences or stimuli driving actors (organizations, ministries, service providers, individuals) in the WSS sector to pursue certain objectives or to behave in a certain way. More specifically incentives can emanate from:*

- *The enabling environment, which in turn are the drivers for reform that shape the creation of specific policies, institutions, and regulations; and*
- *Specific institutional reform interventions, developed to meet specific objectives, and with success determined by many factors including the ability to effectively implement the interventions (i.e.,* de jure *versus* de facto*).*
- ***Policy, institutions, and regulation** that provide the incentives for the delivery of specific actions and resulting outcomes. For example, tariff regulation policies can incentivize demand management on the part of consumers and encourage efficiency gains on the part of service providers.*

The relative success of these interventions in achieving the desired outcomes depend on how the interventions are designed and implemented. This rarely is a linear process, as the actors involved in and/or affected by the implementation of the reforms include institutions and individuals responsible for demand and supply of WSS services such as the managers and staff of regulatory organizations, government ministries, service providers (public or private), and consumers.

***Incentives created through policy.** Policy that inspires WSS actors and creates incentives to perform may be through the promulgation of formal policy statements (Burkina Faso, Mozambique, and Zambia) as well as through governments announcing WSS development strategies backed by sufficient finance for targets to be met (Brazil is a good example). The difference between* de facto *and* de jure *will hinge on implementation capacities, and on the enabling environment (i.e., the importance of the feedback loop).*

Mostly, a central incentivizing element is policy on the financing of the WSS sector, such as through conditional access to finance. Access to finance can be conditional on demonstrating central government requirements have been met, for instance the formulation and approval of a five-year plan or other sector improvement process. Brazil, Indonesia, and Portugal provide examples of governments committing to sector financing, with actors incentivized to access the available resources to improve WSS access and service quality. Financial incentives can be enhanced through performance-based financing (PBF) mechanisms, which are being used to good effect in various countries (as described in the Brazil and Mozambique case studies) and new PBF instruments being tried out, such as the World Bank's Program for Results). Incentives can be enhanced through the use of performance-based contracts (through for instance design-build-operate contracts; build-operate-transfer contracts; etc.) with the private sector, which involves payment to contractors being directly linked to the timely and quality delivery of results.

***Incentives created through institutional arrangements** include corporatization/commercialization of WSS services, which create incentives for a more commercial, customer-oriented provision of services. Evidence for this comes from examples as disparate as NSW and Zambia. The effects of these incentive effects can be further enhanced through PSP (the Philippines, Colombia, Brazil, etc.).*

Decentralization *is intended to create incentives for improved service delivery in a more responsive, inclusive, and accountable manner, as local government are the closest level of government to citizens. However, several of the case studies (Indonesia, Colombia, the Philippines, Albania) reveal a mixed picture because of a variety of problems at the local government level. On the other hand, lack of managerial and technical capacity and the desire to achieve economies of scale may lead to the move to aggregate service providers or jurisdictions (Portugal provides an example of a successful approach to aggregation).*

***Incentives through regulation.** Some successful WSS reforms have had the establishment of an autonomous national regulatory agency as a central feature (e.g., Albania, NSW Australia, Mozambique, Portugal, and Zambia), while other reform efforts which have arguably also been successful do not feature a national regulator and have much more dispersed and opaque regulatory arrangements (e.g., Brazil, Indonesia, the Philippines). In part, this is a question of the scale of the WSS sector and the country's governance structure. For example, in Colombia the heavily decentralized structure of the WSS sector has rendered regulation costly and extremely demanding, requiring regulators to effectively regulate the 1,300 service providers over which they had oversight. A regulatory framework can quite directly impact the efficiency in the sector through the creation of incentives such as performance requirements in tariff awards or the*

more informal approach of national benchmarking which encourages emulation of the best performing utilities.

The Portuguese and Albanian cases provide good examples of regulators working closely with utilities and provides capacity building. Regulation by contract can also create incentives to improve sustainable service delivery. For example, incentive-based regulation which relies on the use of rewards and penalties to encourage good performance, and in turn requires "shareholders" to win or lose depending on the performance of the WSS utility. Such cases include ONEA in Burkina Faso and SONES in Senegal, which regulate through contracts. Also, establishing a reliable benchmarking mechanism may allow highlighting the better and worse performing service providers, thereby creating incentives for organization performance, and providing visibility on the processes and mechanisms that work and that do not.

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Glossary

Financing	Financing refers to the process of securing money or capital primarily for investment purposes. It is usually provided by financial institutions, such as banks or other lending agencies, in expectation of a return. This money needs to be repaid.
Funding	Funding refers to the ongoing collection and expenditure by governments and providers of recurrent own-source revenues (including tariffs and fees, as well as tax revenues and other nontax revenues) as well as the receipt of intergovernmental revenues (or intergovernmental fiscal transfers).
Incentives	Incentives are motivating influences or stimuli driving actors (organizations, ministries, service providers, individuals) in the water supply and sanitation sector to pursue certain objectives or to behave in a certain way (Mumssen et al. 2018).
Institutions	Institutions are commonly defined as the 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). Institutions shape service provision as they outline the roles and responsibilities of actors from national policy makers to frontline service providers. They also determine the costs and benefits associated with alternative choices available to institutional actors as well as the legitimacy of their actions (Mumssen et al. 2018).
Intergovernmental context	The intergovernmental context can be defined as the interacting network of institutions and stakeholders at different levels of government or administration (national, regional, and local), created and refined to enable public sector institutions at different levels to achieve their respective policy and service delivery objectives.
Policy	Public policy is a highly flexible concept but can be described as a framework by which governments undertake decisions that guide specific actions with the objective of achieving specific goals (Mumssen et al. 2018). Policies act as signals: they set the tone for the direction of the overall legal, institutional, and regulatory frameworks that influence the actions and decisions of all sector stakeholders (and sometimes nonsector stakeholders), including private investors and consumers. Some countries operate without a clear water and sanitation strategy or policy; or there are policies or strategies but with no actionable goals or indicators to monitor progress. Sometimes, goals have been defined but they are unrealistic.

Regulation	Regulation in the broad legal sense can be defined as "the sustained and focused control exercised by a public agency over activities that are valued by a community" (Ogus 1994). It involves setting rules and ensuring that those rules are enforced. Regulatory functions can be categorized into economic regulation and other forms of regulation. Economic regulation refers to the "setting, monitoring, enforcement and change in the allowed tariffs and service standards for utilities" (Groom, Halpern, and Ehrhardt 2006). Other regulatory functions include service standard setting, performance monitoring, pro-poor regulation, enhancing accountability and transparency, and use of natural resources. Multiple regulatory models exist, such as sector-specific national regulators, subnational regulators, multisector regulators, regulation by government departments, and regulation by contracts (public-private and public-public contracts).
Resilience	Resilience is the ability of individuals, communities, institutions, businesses, and systems to survive, adapt, and thrive in the face of stress and shocks, and even to transform when conditions require it. Three capabilities characterize a resilient system: persistence, adaptability, and transformability (Delgado et al. 2021).

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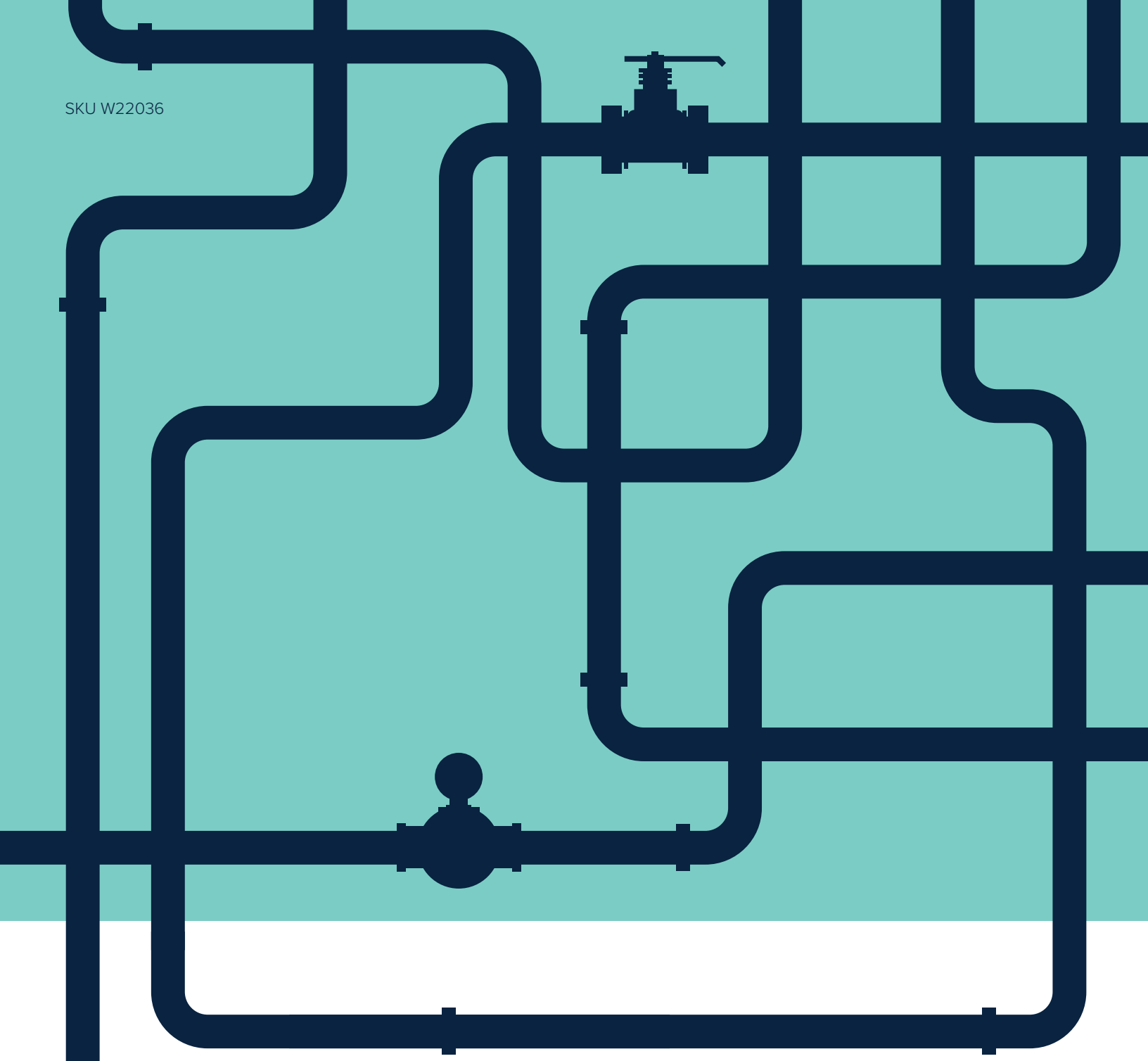

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