WATER GLOBAL PRACTICE

Aligning Institutions and Incentives for Sustainable Water Supply and Sanitation Services

Report of the Water Supply and Sanitation Global Solutions Group, Water Global Practice, World Bank

MAY 2018

Yogita Mumssen, Gustavo Saltiel, and Bill Kingdom

with support from Berenice Flores, Norhan Sadik, Ilan Adler, and Economic Consulting Associates

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The global study and this report have been developed by a World Bank team led by Yogita Mumssen (Senior Infrastructure Economist) and Gustavo Saltiel (Lead Water and Sanitation Specialist), with support from Ilan Adler, Berenice Flores, and Norhan Sadik (Project Analyst Consultants).

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Executive Summary

Part I: Global Study Objectives and Approach

Context and Study Objectives

The objective of this study is to analyze how integrated *policy*, *institutional*, and *regulatory* interventions (or, "institutional interventions," in short) can help align incentives for more sustainable water supply and sanitation (WSS) service delivery.

Aligning institutional incentives refers to harmonization between the objectives for the sector, rules of the game, and the organizations and mechanisms that implement actions based on such objectives and rules. The rules of the game reflect 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.). This report focuses on the formal policy, institutional and regulatory interventions that are available and/or prevalent to the WSS sector, although recognizing the critical importance of the informal rules of the game that will be a key factor in the success of any incentive regime.

The context for the study is the enhanced global concern about the *sustainability* of attempts to increase access to, and improve the quality of, WSS services. This concern is included in the Sustainable Development Goals (SDGs) (WSS is included in SDG 6), which have a completion target date of 2030.

Previous global initiatives offered a range of promising technical solutions which have often proven to be unsustainable. New thinking is needed, which draws on not only infrastructure economics, but also understanding political economy, and behavioral and institutional economics. This new thinking needs to be grounded within the differing contextual realities of countries globally, learning lessons from what has worked or not worked with regards to achieving specific objectives.

This report synthesizes the findings from more detailed analysis carried out through a literature review and 11 deep-dive case studies (Salisbury, Head, and Groom 2017; World Bank 2016a-f; 2017a-d), supplemented by wider experience of development practitioners, especially Bank colleagues, who have been analyzing the role of sector reform, in particular the use of policies, institutional arrangements, and regulations in the WSS sector.

A literature review was undertaken and describes how many past WSS initiatives have failed to produce the expected results, and how sustainable improvements may be achieved in the future. Specifically, the topics covered in the literature review (and briefly described in this main report) include: trends in public sector reform and intervention; policy and institutional reforms in WSS service delivery; regulation of WSS services; and the political economy perspective.

The case study countries were chosen to represent a diversity of experiences through different contexts (e.g., level of income, legal and institutional traditions, etc.) and

different types of reforms attempted (with or without success). The deep-dive countries include:

- Colombia and Brazil, two large Latin American countries with contrasting experience in managing decentralization and regulation of WSS services, and different approaches to involvement of the private sector;
- Albania, which illustrates general national reforms across the entire policy, institutional, and regulatory spectrum, some more successful than others;
- In Africa, Burkina Faso was chosen to look into in innovative private sector participation (PSP) in urban water supply and demand-driven sanitation uptake; Mozambique for its example of delegated management; and Zambia for its "textbook" reforms which allowed for some improvements, mostly in rural coverage rates, but have overall produced lack-luster results;
- In Asia, the Bangladesh case study explores the basis for the success of community-led total sanitation (CLTS); Indonesia has a complex history of decentralization and lessons from the current policy-led drive to achieve ambitious national targets; and the Philippines is interesting given the differentiated roles of the central and local governments, and the resulting role filled by small private operators and other entities (including nongovernment and community-based organizations); and,
- Two high-income case studies, Portugal, with interesting lessons on aggregation and the benefits of a pro-active regulator, and New South Wales (NSW), Australia, transforming the urban WSS sector "from a heavily subsidized and engineering-focused industry subject to strong political intervention and control, into a competitive and financially secure industry" where institutional reform evolved non-linearly over a period of 30-plus years.

The full literature review and the detailed deep-dive case studies are provided separately in appendixes (World Bank 2017e).[1] This report also draws lessons from successful, failed, or ambiguous reforms throughout the globe—whether the UK, Jordan, Bolivia, or Nepal—with boxes presented throughout the body of the report to provide illustrative examples.

Part II: Understanding Drivers for Reform and Incentives

Definition of Incentives

In this study "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:

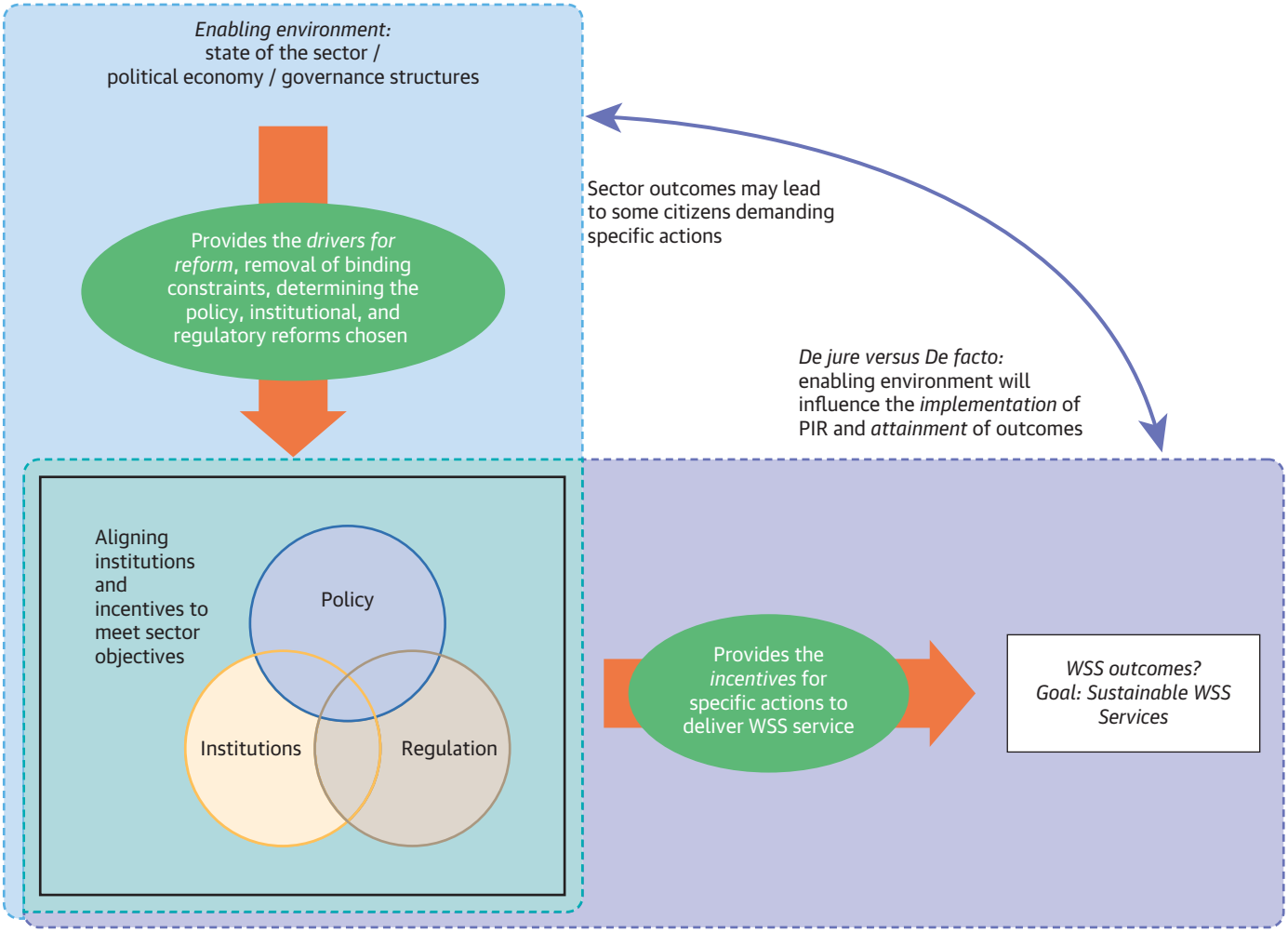
- Incentives can emanate from the enabling environment, which in turn are the drivers for reform that shape the creation of specific policies, institutions and regulations; and,

- Incentives can emanate from the specific institutional reform interventions themselves, 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*).

Figure ES.1 depicts the role and interlinkages of the enabling environment and policy, institutional, and regulatory interventions in providing the drivers for reform and incentives for sustainable WSS services provision.

Drivers for reform and the enabling environment. The enabling environment comprises the broader national political economy and governance framework within which the sector sits. The enabling environment provides incentives to undertake specific actions and to initiate (or not) reform. To address the problems and binding constraints in the sector and to

FIGURE ES.1. Schematic: Aligning Institutions and Incentives for Sustainable Water Supply and Sanitation



Note: WSS = water supply and sanitation.

undertake the actions and reform that the enabling environment encourages, key actors initiate specific policies, empower institutions, and design regulations.

The actors that initiate the reforms mainly include politicians, senior government officials, and donors. These actors will choose which types of policy, institutional, and regulatory interventions are to be implemented to address the problems and constraints faced by the sector to achieve sustainable WSS services.

The drivers for reform and in turn the types of reforms initiated do not arise in a vacuum, but are influenced by prevailing thinking in public sector service provision and overall government policies. For example, decentralization has typically been advocated in the WSS sector as an aspect of a national drive to decentralize government responsibilities, not as a unique WSS initiative. The study has shown that decentralization reforms that were not specifically aimed at WSS services were more likely to result in problems for the sector.

The drivers to initiate and carry out WSS reforms come from both internal and external sources:

- *Endogenous drivers for reform* arise from political processes within the country in question;
- *Exogenous drivers for reform* typically arise through external pressures or the offer of external financing and may include financing from development partners, among other foreign sources.

Endogenous and exogenous drivers for reform are not mutually exclusive. There is considerable potential for internal and external originators of reform to interact, assess lessons from other countries in relation to the national situation and sector priorities, and to forge a consensus on the way forward.

The political economy has a significant impact on the success or otherwise of reform efforts, and political economy constraints are a particular threat to the sustainability of improvements in WSS services. There are examples described in the study which demonstrate how de jure reforms may be "textbook" in terms of well-articulated interventions, yet the results in terms of access and levels of service have fallen well short of expectations. Political economy constraints cannot be eliminated, and need not be a reason for inaction. There are even instances where strongly positive WSS outcomes are evident in situations of limited governance as we know it, such as in the success of CLTS in some cases, or the successful private provision of WSS services in small towns when central government has withdrawn from the sector.

Definition of Public Policy, Institutions, and Regulation

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. Different policy processes and tools exist by which policies are created and

implemented. For instance, policies can be implemented through laws, regulatory measures, courses of government action, and financing priorities. In addition to its role in providing guidance over specified actions, policies also serve as a tool that enhance accountability between government and citizenry.

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 policymakers to frontline service providers. They also determine the costs and benefits associated with alternative choices available to stitutional actors as well as the legitimacy of their actions.

Regulation in the broad legal sense can be define 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. Economic regulation refers to the "setting, monitoring, enforcement and change in the allowed tariffs and service standards for utilities" (Groom, Halpern, and Ehrhardt 2006). In the context of developing countries, this definition has sometimes been broadened to encompass social or development goals of access and equity.

Figure ES.1 shows how the three interlinking circles—policy, institutions, and regulation—overlap, depicting that they do not have wholly separate identities. For example, what may in some cases may be considered a matter of policy might also be an institutional design, or what may be an institutional structure could also be considered an aspect of regulation.

Incentives that emanate from policy, institutions, and regulation. The policies developed, the institutions created and empowered, and the regulatory mechanisms designed and implemented 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 of course depend on how the interventions are designed and implemented. The actors that are involved in and/or are affected by the implementation of the reforms include the 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), as well as the consumers.

Feedback-loop. The arc-like arrow in figure ES.1 depicts a feedback-loop between the enabling environment and the outcomes related to the policy, institutional and regulatory interventions. The nature of the problems and constraints that emanate from the enabling environment regarding reform and actions will influence not only the type and extent of reform intervention, but will provide the context for implementation and will

determine the difference between de jure and de facto reforms. On the other hand, the outcomes of policy and institutional interventions could influence certain stakeholder groups to react (e.g., due to poor or absent services) and these stakeholder groups could voice their concerns to government to take action. Thus, although the scope for intervention to influence the enabling environment is not always obvious, feedback loops may exist or be created between the drivers for reform and the incentive regimes resulting from interventions.

Holistic Approach

A holistic approach requires consideration of the drivers of reforms, which influence how the institutional reforms are designed. Some reform programs are designed specifically for the WSS sector and have strong interlinkages between the different reform interventions. Others exhibit more *ad hoc* institutional interventions, often without any specific focus for the WSS sector.

The relative success of these interventions in achieving objectives will be determined by the ability to successfully align these institutional reforms with incentives, in a holistic manner. The principal aim of adopting a holistic approach to incentives is to achieve sustainable improvements in access and service levels for the population, specifically:

- sustainability of reform measures is associated with *positive incentives being embedded* in policy, institutions, and regulatory structures;
- the holistic package should also take in to account the *intrinsic incentives* of actors in the sector.

Embedded incentives are often better placed to establish comprehensive institutional structures that deliver successful outcomes. This is not confined just to those directly involved in WSS service provision, but also people in key government ministries, such as finance, economic planning, local government and related national institutional structures such as regulatory and environmental agencies, and people in corresponding institutional structures at the local level.

When reforms are mainly being driven by donor agencies, one needs to be careful of a possible mismatch between the intrinsic incentives of the donor agency actors, who have high leverage in the lower-income countries with regards to the design of reforms and career-enhancing incentives to design a sophisticated reform package with a large budget, and the actors in the client country. Local institutions need to have ownership of the reform as well as the capability and incentives to implement them, notwithstanding their personal circumstances and intrinsic incentives.

Achieving sustainability is complicated by the recognition that institutional frameworks are dynamic, with reversals which may require adjustments to be made, as well as forward movement. Learning processes associated with reforms may be a better guarantee of sustainable improvements than the specific content of the reforms at any one historical juncture.

Part III: Main Take-Aways from this Global Study

One of the main themes of this report, and as was recently highlighted in the 2017 World Development Report (WDR), is that for reforms to be effective, **development practitioners need to be careful not to over emphasize "best practices" as there are no one-size-fits-all solutions.** It is important to move away from what were previously thought to be universal "best practice" solutions, in favor of new approaches which reinforce endogenous drivers for reform (incentives arising from the internal political processes in the country) and working with governments to design programs that are rooted in local political and administrative realities and capabilities. The design of formal institutional interventions should either complement pre-existing informal institutions in the case there are compatible goals, or should create an environment which accommodates informal institutions should there be conflicting goals.

With these notions in mind, a series of key foundation messages have emerged on how to develop sustainable reforms, which are summarized below and described further throughout this report.

- **Technical solutions alone are unsustainable. For reform measures to persist through time, it is essential for positive incentives to be embedded in policy, institutional, and regulatory structures.** Although addressing technical constraints is necessary and can achieve improvements in sector performance in the short to medium term, achieving sustainable outcomes of WSS service delivery in the long run requires policy, institutional, and regulatory interventions that set the enabling environment to achieve sustainability.
- **Individual policy, institutional, and regulatory interventions must be aligned to ensure sustainability, as misalignment leads to distortion of incentives.** Zimbabwe's WSS sector reforms process, which led to the formation of the Zimbabwe National Water Authority (ZINWA), was in part fostered by the desire of professional staff in the Department of Water Affairs to move into a parastatal. As a result, ZINWA ended up taking on multiple sometimes inherently conflicting roles encompassing regulatory and operational responsibilities in both water resources management and WSS service provision.
- **Specifically, changes in institutional arrangements and the regulatory framework need to be supported by the necessary laws and policies to be effective and sustainable.** Portugal's reform of 1993 was supported by a strong legal framework, that clearly separated the policy making (executive), regulatory and service delivery functions within the sector, and allocated the roles and responsibilities of the institutions. The legal framework also provided guidance on the service provision model: direct public management, delegated public management with multimunicipal systems (aggregation of several municipalities to provide WSS services), or delegation to private sector operators. The regulatory framework, which included an independent regulator to perform the economic regulatory functions, was developed to suit the existing arrangements and to regulate all types of service provider.

- **And vice versa: policy direction and commitment need to be supported by institutional arrangements that are conducive to implementing the policy and achieving the targets**. For example, Indonesia's de jure corporatization failed to transfer decision-making powers, including the freedom to charge cost-reflective tariffs, to the newly formed companies. In this case, incentives were not created for the companies to improve efficiency. Regarding corporatization, the Indonesia case shows that a prerequisite for corporatization to lead to higher efficiency is a legal framework that permits the corporatized utility to operate autonomously and to set cost-reflective tariffs that enable it to be less dependent on government finances.

- **Design and implementation of sustainable institutional reforms requires a nuanced understanding of the local institutional context.** Context affects institutional reform in many ways. Contextual factors including lack of political will and low capacity have often been cited as determinants of poor reform outcomes. Therefore, achieving sustainable outcomes of reform hinges on a deeper understanding of the total institutional logic of the sector including the societal rules and organizations that are defined by the local country context and political economy realities. Institutional reform has often historically been in the form of externally designed interventions targeted at changing local formal institutions, which has a bias towards the use of formal institutions. Interventions include laws, procedures and systems. Countries adopt ambitious reform programs to win outsiders' support in the short term, but these reforms prove to be difficult to fully implement later because of lacking capacity, or contradiction with informal institutions. The result is that of *isomorphic mimicry,* with policy, institutional, and regulatory arrangements that de jure are well designed, but de facto do not function.

- Relatedly, **appropriate local capacity (human and financial resources) to undertake reforms is required to avoid development of gaps between de jure and de facto reforms.** Without a sustainable form of human and financial resources to undertake the reforms, gaps between de jure and de facto reforms become more likely.

- **Building inclusive institutions requires an inclusive reform process.** An institutional context is comprised of multiple institutional structures, which exist across many domains such as marketplace, state, corporation, and civil society, thus continually face multiple institutional logics. This interinstitutional nature of institutions implies that a coordinated interaction of all relevant institutional players is key to achieve sustainability of policy, institutional, and regulatory reforms. Institutional change requires broad engagement. Multiple leaders are required to facilitate reforms and distributed agents beyond these leaders are also needed to implement change on the ground. The exclusion of the agents responsible for implementation of reforms is often the reason why many externally influenced reforms are poorly implemented and ultimately fail to change behavior. Distributed agents responsible for implementation should be engaged early on in finding solutions to challenges to ensure that viable solutions are considered. Central agents like

government ministers, and their policy departments are regarded as the key reformers. By contrast, broader constituencies needed to implement reforms are seldom mentioned. Gaining the buy-in of implementing institutions is therefore critical to the success and sustainability of reforms.

- **Recognizing that there is some misalignment of incentives, actors in donor institutions typically have high leverage in the design of reforms.** Brian Levy, in "Working with the grain," argues the importance of working within the political economy environment in an incremental manner, rather than attempting to fundamentally change it through the reform process. This entails adopting multistakeholder, complimentary and participatory approaches to reform. Box 9.5 describes an interesting case of two reform World Bank projects in Cameroon which illustrates this message. When donors or development partners invest a significant amount of effort and time in understanding political economy factors, the informal institutions of the country and the intrinsic incentives of key stakeholders involved in the sector, there are greater chances of incorporating political economy considerations in projects designed, with key stakeholders taking ownership of the project and achieving sustainable outcomes. Similarly, interventions that can adapt to the evolving situation on the ground are more likely to create sustainable changes in the sector.
- **Reform is not an event or a linear process, and that its success relies on incorporating a high degree of learning.** A reform requires time and planning and implementers must anticipate a series of reform initiatives, interspersed by reversals as well as forward movements, but crucially taking the time to incorporate learning drawing from both success as well as less successful experiences, within and beyond the country's region.

Drivers and Incentives for Reform

Although there are no predetermined best practices, as there are no one-size-fits-all solutions, the study does identify some lessons from what has worked better and what has not worked so well, both in terms of the role of the enabling environment/political economy, and in terms of specific types of policies, institutions and regulation and their impact on incentives for sustainable service delivery. The section below highlights some of the main take-aways that can inform the design and implementation of such reform.

- **WSS sector reforms have traditionally taken place within the context of wider public sector management reforms;** main public sector trends include Traditional Public Administration, to New Public Management, which in turn gave way to New Public Governance which places emphasis on incentives, and tailored participatory approaches to reform.
- When key decision makers **understand the problems** that the sector is facing, as well as the benefits of addressing these problems, the incentive to create change becomes stronger.
- Having incentives for change is the first step, but **having the power to create the change is as important** if not more so. It is therefore key to identify the power asymmetries and

political economy factors in the country, to work with the key decision makers to develop institutional interventions suitable for the prevailing conditions.

- **Long-term commitment from both external and internal actors is needed** for sustainable changes to occur.
- **There is an important feedback-loop** between the drive for reform set by the political actors in the enabling environment and the actual success of specific policies, institutions, and regulations.

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 of this). Of course, 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).

A central incentivizing element is policy on the *financing of the WSS sector,* such as through the *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 that the government is seeking. 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 is being used to good effect in various countries (as described in the Brazil and Mozambique case studies) and new PBF instruments are being tried out (e.g., 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 private sector, which involves the payment to contractors being directly linked to the timely and quality delivery of results.

Incentives created through institutional arrangements. Examples here would 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); 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 created 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—the regulator works 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, as seen in the cases of ONEA in Burkina Faso and SONES in Senegal, which regulate through contracts. Also, for example, establishing a reliable benchmarking mechanism allows highlighting the better and worse performing service providers, thereby creating incentives on organization performance, and providing visibility on the processes and mechanisms that work and that do not.

Guiding Principles and Next Steps in the Process

The analysis leads to the conclusion that **it is difficult, or even mistakenly counterproductive, to attempt to develop a template that can provide a set of policy, institutional, and regulatory interventions that can be used in practice and will produce good results.** Instead, what can practically and usefully be done is to suggest a set of guidelines that identify key factors that can generate positive incentives through the policy, institutional, and regulatory interventions, and outline how these can be coherently combined to create an appropriate set of incentives for sector actors delivering sustainable WSS improvements for the populations they serve.

Based on the analysis herein, and building on the lessons learned listed above, the following are some guiding principles that can help practitioners better understand how incentives can be more effectively created through appropriate policy, institutional, and regulatory mechanisms:

- **Identify key reform drivers and objectives—**these are the objectives and motivation to reform and improve the WSS sector, coming from endogenous factors (politicians and/or government officials), or influenced by exogenous factors (donors and development agencies) which stem from the problems and constraints the sector is facing.

- **Understand the existing institutional environment in the sector—**who are the key actors in the sector, who provides leadership within the sector, is there any national policy or strategy for the sector, is there a legal framework that provides the basic set up of the sector, what is the regulatory framework, etc.
- **Understand the political economy of the country and the sector**—where in the reform process does the country currently lie, how did the public sector develop through time, is there any cultural influence in the design of the public sector, how are cultural attitudes to WSS to be accommodated, etc.
- **Identify intrinsic incentives of key actors**—analysis of the intrinsic incentives of the people who will implement the policy, institutional, and regulatory measures, to help embed effective incentives for sustainable access and service delivery.
- **Design institutional interventions that align exogenous with endogenous incentives**, considering WSS sector specific characteristics, and aiming also to align WSS sector objectives and the institutional intervention with the intrinsic incentives of the key actors.
- **Consider interventions that are fit for purpose,** and not overly complex for the given context and capacities.
- **Provide sufficient capacity support** so that the chosen reforms to meet the desired objectives can be realized. Capacity-building should be grounded in the realities on the ground, including human resources and ownership, to lead to sustainable results.
- **Relatedly, ensure there is sufficient financial capacity** to sustain the results and the required human resources needs to undertake the desired reforms.

This set of guiding principles is not a prescription that can be applied in any country with an assurance of good results but more a process that, if followed, will likely lead to a more informed, more inclusive, and more successful outcome.

Key to the successful planning, design, and implementation of any institutional country-level reform is the close engagement between all sector actors involved, supported by strong government leadership and ownership. The creation of working groups (including client representatives, including both technical as well as senior sector officials) may help to jointly explore the policy, institutional, and regulatory factors in a specific context, and will help ensure client ownership and engagement throughout the reform process.

This report is a first step in collecting early lessons while helping development practitioners in the WSS sector to think through ways to design institutional interventions that will incentivize key stakeholders to deliver sustainable water supply and sanitation services. Taking the learning from this report, development practitioners, in particular task/ project teams interested in exploring and understanding the current policy, institutional, and regulatory situation in a specific client country, may start by employing the **Institutional Diagnostic Tool (IDT).**[2] The IDT may serve as a first step to understand the WSS sector of a specific country, its enabling environment to further understand the institutional dimensions. This tool

has been specifically designed to help World Bank task teams map and evaluate institutions in the WSS sector in client countries, isolate problems (to the extent they can be isolated), determine "entry points," and design appropriate program activities to address the identified challenges. The tool is available to sector practitioners on request as a "Beta test version" with the aim to stimulate discussion among key stakeholders on possible reform approaches and project interventions. The IDT is intended to be tested in a number of countries with lessons learned being incorporated into future updates of the tool.

Notes

1. The literature review has been developed as an input to this global study, and is only available internally upon request to the team of authors.
2. The IDT is an Excel-based tool, which guides the user through a list of targeted questions that were designed to identify institutional gaps, identify priority areas and provide suggested activities to address gaps and strengthen institutions in the WSS sector. The purpose of this tool is to point out certain current weaknesses and gaps in the WSS sector.

Abbreviations

AIAS	Administration for Water Supply and Sanitation Infrastructure (*Administracao De Infra-Estruturas de Agua E Saneamento*; Mozambique)
CBO	community-based organization
CCT	conditional cash transfer
CLTS	community-led total sanitation
CRA	Water Regulatory Council (*Conselho de Regulação de Águas*; Mozambique)
CRA	National Water Regulatory Commission (Colombia)
CU	commercialized utility
DCM	Decision of the Council of Ministers
DMF	delegated management framework
DTF	Devolutionary Trust Fund
EPI	economic policy instrument
ERSAR	Water and Waste Services Regulation Authority *Entidade Reguladora Dos Servicos De Aguas E Residuos*; Portugal
EU	European Union
FINDETER	Financial Development Territorial SA (*Financiera del Desarrollo Territorial SA*; Colombia)
GoB	Government of Burkina Faso
GoI	Government of Indonesia
GoL	Government of Lesotho
IDT	Institutional Diagnostic Tool
IEG	Independent Evaluation Group
IPART	Independent Pricing and Regulatory Tribunal
IMF	International Monetary Fund
JVA	Jordan Valley Authority
KPI	key performance indicator
LA	local authority
LG	local government
LGU	local government unit
LWUA	Local Water Utilities Administration
MDG	Millennium Development Goal
MFI	microfinance institution
MRA	Microcredit Regulatory Authority
NGO	nongovernmental organization
NPG	new public governance
NPM	new public management
NSW	New South Wales

NWASCO	National Water Supply and Sanitation Council
NWP	national water policy
NWRB	National Water Regulatory Board
O&M	operation and maintenance
OBA	output-based aid
ODA	official development assistance
ODF	open defecation free
PBC	performance-based contracting
PBF	performance-based financing
PBGS	Performance-Based Grant System
PDAM	local government-owned utility
PFI	private financial institution
PfR	payment for results
PLANSAB	National Basic Water and Sanitation Plan
PPP	public-private partnership
PSM	public sector management
PSP	private sector participation
PWRF	Philippines Water Revolving Fund
RBF	results-based financing
SABESP	The State Water Utility of Sao Paolo (*Companhia de Saneamento Básico do Estado de São Paulo*; Brazil)
SDE	Senegalese Water (*Senegalaise des Eaux*; Senegal)
SDG	Sustainable Development Goal
SNIS	National Information System for WSS (*Sistema Nacional De Informacoes Sobre Saneamento*; Brazil)
SONES	National Water Company of Senegal (*Société Nationale des Eaux du Sénégal*)
SSPD	Superintendence of Public Services (*Superintendencia de Servicios Publicos Domiciliarios*; Colombia)
SWC	Sydney Water Company
SWSC	Swaziland Water Services Corporation
TPA	traditional public administration
TTL	task team leader
WASH	water supply, sanitation, and hygiene
WDR	World Development Report
WRA	Water Regulatory Authority
WRM	water resource management
WS	water sector
WSS	water supply and sanitation
ZINWA	Zimbabwe National Water Authority

Part I Global Study Objectives and Approach

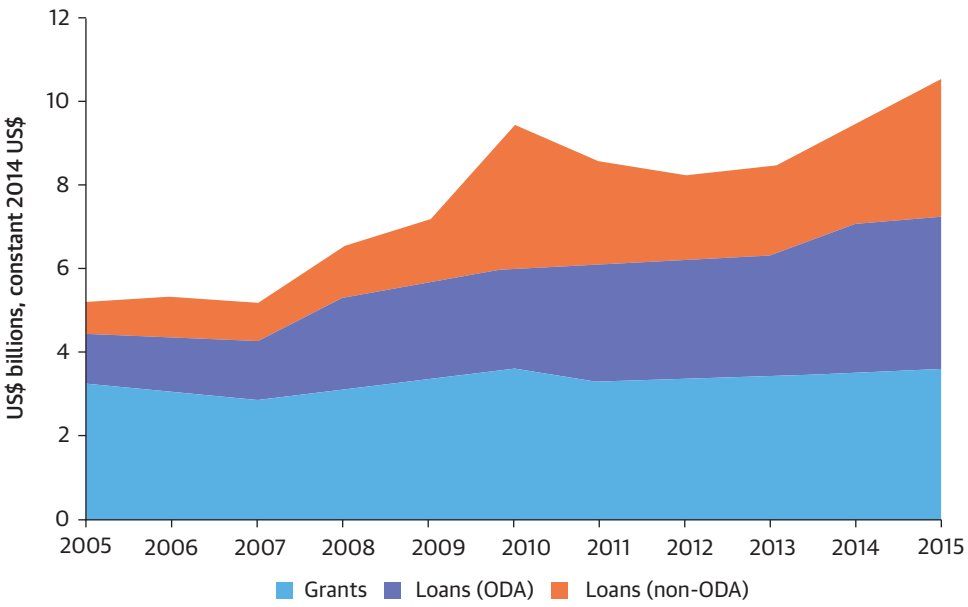
Chapter 1 Introduction

There has been a significant increase in resources expended on WSS infrastructure investments in efforts to achieve the Millennium Development Goals (MDGs). According to the OECD, official development assistance (ODA) has been rising sharply, from average annual commitments of US$ 3.3 billion during 2002/2003 to US$ 8.3 billion in 2009/2010, and disbursements have continued to increase between 2012 and 2015 from US$ 6.3 billion to US$ 7.4 billion (see figure 1.1) (GLAAS 2017; World Bank 2012b). As a result, much progress has been achieved during the MDGs with an additional 2.1 billion people worldwide gaining access to improved sanitation since 1990 and 91 percent of the global population now using an improved drinking water source (see table 1.1 for summarized WSS access indicators) (UN 2015). Additionally the number of children dying from diarrheal diseases, which are strongly associated with poor water supply and sanitation, have steadily fallen over the last two decades from approximately 1.5 million deaths in 1990 to just above 600,000 in 2012 (UN Water 2014).

Yet, 2.4 billion people remain without access to improved sanitation and nearly 700 million lack access to improved drinking water sources, and those who have access to WSS services often must cope with poor service quality, including intermittent supplies (WHO and UNICEF 2015). Millions are exposed to dangerous levels of biological contaminants and chemical pollutants in their drinking-water due to inadequate management of urban, industrial or agricultural wastewater, continued environmental degradation, and financially weak service providers also put into question the sustainability of the services that are being provided (UN Water 2014). Furthermore, the GLAAS 2014 report indicated a large gap between sector aspirations and reality. Despite political support for universal access, these aspirations are impeded by weak capacity at country level to set targets, formulate plans, undertake implementation and conduct meaningful reviews (World Health Organization 2014).

Globally, governments must be prepared to address the plethora of interrelated challenges that place the attainment of a water secure world for all at risk. Today, the WSS sector is confronted with the detrimental realities of climate change and the ever-increasing demographic pressures that threaten availability of water resources. An estimated 1.6 billion people currently live in countries with physical water scarcity, and this number is expected to double within the next two decades. Furthermore, it is estimated that by 2030 global water demand will exceed current water supplies by 40 percent. Diminishing water supplies combined with the host of environmental complexities resulting from inadequate access to sanitation, impact water resource availability and, can have detrimental impacts on sustainable economic growth as well as poverty. In some instances, growth rates could decline by as much as 6 percent of GDP by 2050 because of water-related losses. The far-reaching consequences of water scarcity further stress the inevitability of addressing the constraints to access to sustainable WSS services.

FIGURE 1.1. Trends in Official Development Assistance Grants, Loans, and Non-Concessional Lending (Disbursements)



Source: OECD-CRS 2016.
Note: ODA = official development assistance.

TABLE 1.1. GLAAS 2017 Water Supply and Sanitation Indicators

Indicator	Value (Percent)
Global population using an improved sanitation facility	68
Global population using an improved drinking water source	91
Countries reporting insufficient financing to meet national water, sanitation, and hygiene targets for	
Urban/rural sanitation	87/90
Urban/rural water	78/90
Countries with cost recovery of more than 80%	
Urban/rural sanitation	39/34
Urban/rural drinking water	45/24
Average non-revenue water	43

Source: GLAAS 2017.
Note: GLAAS = UN-Water Global Analysis and Assessment of Sanitation and Drinking-Water.

Policies, Institutions, and Regulation: Incentives for Sustainable Service Delivery

Building on the achievements delivered under the MDGs, the Sustainable Development Goals (SDGs) agenda addresses key challenges of WSS service delivery, going beyond improved access and places a major new emphasis on sustainability. Thus, the transition

from the MDGs to SDGs calls for renewed approaches for development of WSS sector policies, institutional strengthening, and regulation, that deliver sustainable WSS outcomes through increased efficiency and improved financial mechanisms (GLAAS 2017). There are, however, common challenges which pose binding constraints to achieving the SDGs. For one, political incentives often encourage governments to prioritize investment in highly visible infrastructure projects and to allocate less resources for interventions that may improve effectiveness and efficiency of service delivery. Moreover, weak policy, institutional, and regulatory frameworks (or, "institutional frameworks" in short) fail to provide suitable incentives and an enabling environment within which public and private sector organizations can function and deliver.

An evaluation led by the Independent Evaluation Group (IEG) of WSS sector projects implemented by the World Bank between 1997 and 2007 has found that support for institutional reform and capacity building has had limited success in the WSS sector. Institutional reform, institutional strengthening, and capacity building have been the activities most frequently funded by Bank water-related lending. Yet these interventions have often been less than fully effective, and weak institutions have often been responsible for project shortcomings. Furthermore, the evaluation finds that a significant number of WSS projects are affected by underlying challenges that are political in nature.

The Bank and the wider development community have since emphasized the greater need to better understand the underlying constraints and consider alternatives that might work in specific, local contexts. Emphasis has been placed on good governance. However, it has become increasingly evident that technically strong designs combined with "best practice" legal and regulatory rules were insufficient to develop good institutions. Effective policy and institutional reform requires a sound understanding of the political underpinnings and drivers that shape how institutions develop and how decisions are made as well as the interactions between de jure and de facto institutions. Given this challenge, there have been increasing efforts to understand stakeholder incentives. Incentives are fundamental to ensure that institutional actors embrace the reform and allow for consistency within the dynamics of institutional reform implementation. Incentives that allow actors to commit to agreements are thus crucial for effective policy design and implementation. Furthermore, stronger incentives enhance accountability of institutional actors as they strengthen voluntary compliance through the successful delivery of commitments which in turn help to strengthen trust in institutions.

Policies. Policies can be defined as the framework by which governments undertake decisions that guide specific actions with the objective of achieving specific goals. Different policy processes and tools exist by which policies are created and implemented. For instance, policies can be implemented through laws, regulatory measures, courses of government action, and financing priorities. Policies can promote development of the underlying institutional and regulatory frameworks and engender the incentives required to deliver

sustainable services. However, as cited in the 2017 World Development Report (WDR), policies that are designed to achieve positive development outcomes often end up being unsuccessful if they are only de jure and not implemented and, in the event they are implemented, achieve suboptimal outcomes.

Despite much effort to learn which policies and interventions are needed to achieve greater positive outcomes, less effort has been expended to gain a deeper understanding of which reform approaches work in which contexts. It is often the case that when policy and technical solutions fail to achieve their intended outcomes, institutional failure and weakness in capacity takes the blame, as reported in an evaluation led by the IEG of WSS sector projects implemented by the World Bank between 1997 and 2007. In response, the development community has largely focused its reform attempts on designing additional policies based on "best-practice" that seek to strengthen institutions. However, it is often the case that sector reform interventions are developed with a failed understanding and sensitivity to the fact that there are different models that can arrive at the desired results. Additionally, it can often be the case that adequate physical and administrative capacities exist, however, policies designed according to the best practice model without an understanding of the existing informal institutions such as societal norms which shape behavior and responses to incentives can reinforce the formal institutional arrangements (whether positive or perverse) of the sector.

Institutions. Institutions include the rules of the game and the organizations and mechanisms that are established to formulate policy and implement actions on the basis of such rules. The rules of the game reflect agreed principles, established through political and/or social processes. They assign roles (or functions) to either organizations (i.e., a group formed of people with a shared purpose) or institutional mechanisms (i.e., an institutional process for delivering a specific outcome because of the combined effect of different rules and organizations). The rules of the game can either be formal (e.g., law, decrees, regulations) or informal (e.g., customs, social norms, established relationships, etc.).

Institutions have a crucial role to play in service delivery as they govern the design, delivery, and regulation of services and define policies, laws, and administration. Incentivizing improvements in utility performance is key to ensuring the provision of affordable and sustainable WSS services for all. Traditional technical approaches led by centralized technocratic institutions have proven to be inadequate to achieve this as they do not address the incentives that strongly influence the sustainability of WSS interventions. There are a number of common institutional and governance constraints to efficient and sustainable service delivery, including ill-defined mandates, misaligned policies, lack of clarity on roles and responsibilities, incoherent financing frameworks, poor regulation and law enforcement, and lack of accountability (ODI 2012). Accordingly, a comprehensive institutional framework comprising executive, legislative, service delivery, regulatory, and civil society bodies, with clear roles and responsibilities, is required to incentivize sustainable access to WSS services.

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. An effective regulatory environment for the WSS sector is essential to ensure the delivery of affordable, quality and sustainable services to citizens. WSS services constitute a natural monopoly and hence, service providers may tend to overcharge or provide poor quality services, and keep its customers because there are no viable alternatives available. Economic regulation of WSS services has the objective to limit abuse of the monopolistic power of service providers.

Economic regulation of WSS service is the traditional mechanism, particularly in developed countries such as in England, France, and parts of the United States, where private or corporatized firms operate WSS services, to control monopoly abuse by establishing the rules and organizations that set, monitor, enforce and change the allowed tariffs and service standards for water providers (Groom, Halpern, and Ehrhardt 2006). Yet, globally, public sector run utilities are more common than privately operated ones. By owning the utility, governments intend to ensure that the utility serves the public interest, rather than mainly pursuing monopoly profits. Publicly owned utilities have traditionally not been regulated to the same extent as private sector utilities. The assumption has been that government, through its control of the utility, could strike the right balance between cost recovery, affordable tariffs and acceptable levels of service. In the last two decades, however, public regulation of public utilities has been growing in response to the deteriorating quality of WSS service delivery and, in many cases, as a result of the return of service provision to the government after failed PPP attempts. This approach has been found to have important advantages, in particular by depoliticizing tariff setting and providing independent oversight. Countries as different as Portugal, Australia, Peru, and Colombia are using regulation, and regulatory institutions, as part of the mix of policy instruments that seek to ensure that public utilities offer good value and quality services to the public. This is possible in part given the variety of forms that regulation can take, to be "fit for purpose" (e.g., regulation by contract, when more feasible or appropriate than regulation by a separate legal agency).

There is a large spectrum of functions performed by regulatory institutions in relation to WSS services. Regulation does not only relate to tariffs, but also to the monitoring of standards for access to and quality of services, establishment of efficiency incentives, collection of information and monitoring of performance, and the organization of users' participation, among other critical functions (OECD 2015). Further, the portfolio of regulatory or institutional incentives for improving service delivery is widening, for example, through incentives provided by the financial markets, or, through incentives provided by increased customer voice demanding access and services.

Financing. Access to finance is a potential constraint to achieving sustainable service delivery in the WSS sector. Despite reported increases in national water supply, sanitation, and hygiene (WASH) budgets at an average rate of 4.9 percent per year, more than 80 percent of countries have reported insufficient financing to meet SDG targets. Moreover, future aid

commitments have declined since 2012 from US$ 10.4 billion to US$ 8.2 billion placing financing as one of the key binding constraints to achieving the SDGs (GLAAS 2017). Achieving targets 6.1 and 6.2 which call for "universal and equitable access to safe and affordable drinking water, sanitation and hygiene" will require annual capital financing of US$ 114 billion, several times current levels, and full cost recovery of operation and maintenance (O&M) costs in addition. Further exacerbating financial unsustainability is the common issue of cost recovery, with 50 percent of countries reporting insufficient tariffs to recover O&M costs (GLAAS 2017).

The premise of this analysis is that if institutions, including the policies that guide them and the regulations they implement, are developed appropriately for the context, this should help unleash the potential for greater access to finance. A corollary is that to access the finance required, the enabling environment must be conducive. For example, fiscal decentralization, and associated performance-based fiscal transfers, are being increasingly explored to create the incentives necessary to provide improved WSS services as it allows for increased accountability, responsibility, autonomy of decision making and resources which provides local governments with the right incentives to deliver sustainable WSS services. Although the increase of capital inflows is a necessary condition, it is insufficient. Increased coverage of sustainable WSS services will require implementation of financial and institutional strengthening measures in tandem to ensure that capital investments translate in to effective, efficient and sustainable services. Governments will need to explore options for strengthening WSS sector policies, institutions and regulations including the use of a mix of public and private financing, increasing financial efficiency in infrastructure development, service delivery and asset management, and developing viable approaches to tariff-setting and subsidies that address the trade-offs between cost recovery and affordability.

One of the key messages of this report is that there are no one-size-fits-all solutions. To produce positive and sustainable service delivery outcomes, incentives must be tailored to local circumstances and must consider political economy realities. Crucially, incentives in one institutional reform area need to be harmonized with incentives in the other areas if the overall incentive framework is to be effective. As such, this report does not intend to provide normative recommendations on how governments should undertake institutional and governance reforms and how public policy interventions should be structured to deliver sustainable outcomes. Nor does it provide a best-fit institutional model to be implemented in each context. What this report does, however, is provide WSS practitioners with a broad overview of the process by which incentives of the WSS sector are affected by and, in turn, affect the political economy of a context. The report attempts to provide a balance between theory and practice using case studies to demonstrate key policy and institutional concepts in practice. As such, the report seeks to be an agent of change by providing a platform from which practitioners can identify the incentives that are likely to achieve sustainable outcomes.

Structure of this Report

This report aims to provide the underpinnings to help those working on WSS issues understand better how the enabling environment and broader country/sector context and objectives shape the policies, institutions, and regulations designed for the sector, and how these policies, institutions, and regulations in turn can lead to more sustainable outcomes, and if not, what may lead them to fail. This study benefited from a deep-dive literature review and case studies undertaken specifically to help understand how institutional reform can influence sector outcomes in Bank client countries. Further, two major recent publications in this realm are "Making Politics Work for Development," published in 2016, and the 2017 WDR, entitled "Governance and Law." A particularly strong theme in the WDR is that political asymmetries are not immutable—the powerful need to be challenged and formal avenues for contestability used. Other levers for change are incentives ("stronger incentives to hold policy makers accountable can also strengthen voluntary compliance"), and preferences and beliefs (trying to influence and coordinate decision-making actors so that outcomes "will enhance welfare and will be responsive to the interests of those who have less influence") (WDR 2017). This report also benefitted from contributions from a series of additional knowledge products produced by the Water Supply and Sanitation Global Solutions Group, including: (a) the study on the impact of decentralization on WSS services and case studies; and (b) the study on overview of WSS regulation.

This report synthesizes the main findings from a rigorous literature review and a spectrum of illustrative examples taken from case studies, the summaries of which are discussed in chapters 2 and 3. The report then provides a depiction of the analytical framework and approach adopted in this study and explores the levels of incentives (including the drivers for reform stemming from the enabling environment) in WSS service delivery in chapter 4. Chapter 5 delves into the drivers for reform and 6, 7, and 8 provide a nuanced perspective to analyzing policy, institutional, and regulatory incentives and delve in to the details of their functionalities and enabling environment conditions to successfully deliver sustainable outcomes. The report concludes with chapters 9 and 10 which discuss the need for a holistic approach, and which summarize the main findings, lessons learned, and suggested next steps.

Chapter 2 Literature Review and Main Findings

This chapter summarizes the extensive literature review undertaken to inform the analysis synthesized in this report. The literature review explores existing theories and studies on how policy, institutional, and regulatory incentives can impact service delivery outcomes, depending on the interactions between the political economy and governance structures of the sector. It also investigates where past international WSS initiatives have succeeded or failed to produce desired results, and provides some insights on select factors to consider for future reforms. Political economy factors, isomorphic mimicry, and behavioral economics were found to be particularly important contributors to implementing reforms that incentivize service delivery.

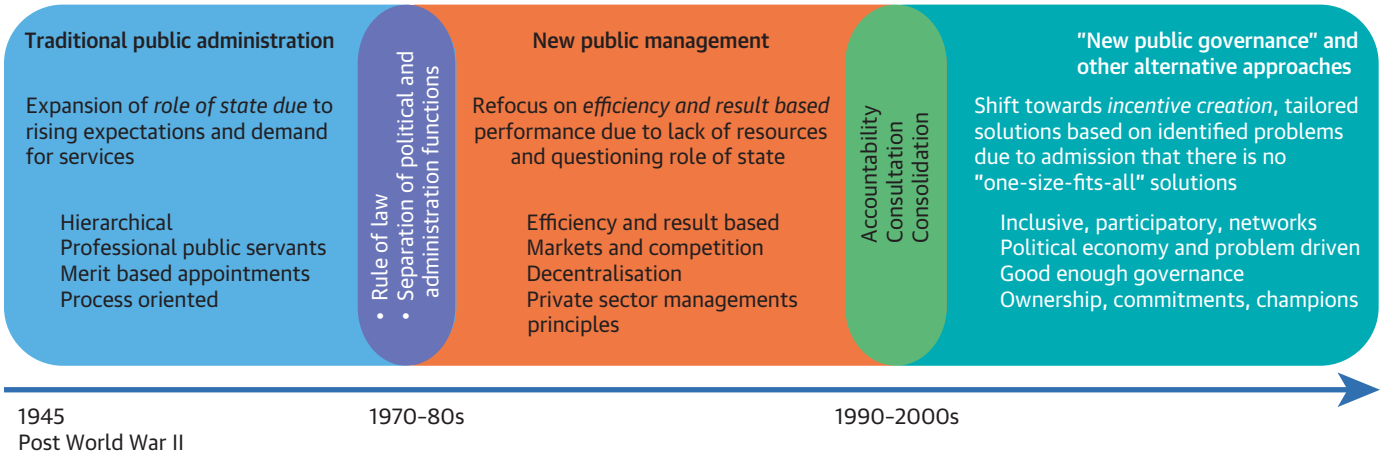
The literature review starts with an overview of trends in public sector reform since 1945, setting the scene for discussion of the incentives arising from the specific policy, institutional, and regulatory developments that have characterized WSS service delivery. The review then surveys literature on policy, institutional, and regulatory reforms in the WSS sector, followed by a political-economy perspective on public-service delivery which provides insights on incentives for and through reform. The full literature review is available as a separate report (World Bank 2017e).

Historical Context of Institutional Interventions: Trends in Public Sector Reform

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

FIGURE 2.1. Main Trends in Public Sector Reform since World War II



New Public Management

Financial distress, lack of resources, and inefficiencies in the public sector are some of the factors which demanded re-thinking the role of the state in the 1970s and early 1980s (Hyndman and Liguori 2016), and implementation of NPM reforms (Pollit 2014). NPM shifted the focus of public services from "administration," which concerns processes and bureaucracy, to "management," which places importance on delivery of results, outcomes, and performance. This shift incentivized achievement of targets, improved performance, and efficiency. However, Pollitt (1993, 2014), Hood (1991, 1995), and Brinkerhoff (2015) noted that NPM's focus on performance and efficiency led to a reluctance to serve poor or rural areas, as these areas are difficult and costly to serve. Furthermore, decentralization and private sector involvement fragmented public services further. NPM reforms were often promoted as a group of different interventions to be implemented as a package resulting in *isomorphic mimicry* (Brinkerhoff and Brinkerhoff 2015). Key features of NPM included:

- ***Market Structure and Competition:*** a dominant feature of NPM reforms was the introduction of greater competition in service markets, hoping it would promote multiple benefits including efficiency, innovation, and consumer responsiveness, as it has done in the private sector. For performance-oriented competition to be effective a certain level of disaggregation is required, which motivated decentralization of service delivery. The implied positive relationship between competition and service performance was critiqued by Williamson, who finds that transactions through markets function best in conditions where the number of service suppliers is high and information costs and asset specificity are low. Where the opposite case applies, service provision through a hierarchical structure is a better alternative. Furthermore, competition has been criticized because although

it can increase efficiency and responsiveness, this comes at a trade-off with equitable service provision, leaving disadvantaged groups in society unserved (Hood, C. 1991).

- ***Regulation:*** related to introduction of market structure and competition of public services, regulatory instruments were introduced including auditing, financial controls, performance indicators, plans, annual reports, and inspection. Regulation has commonly been justified for its positive role in enhancing accountability, however evidence in its role in improving service performance has been mixed for reasons including lack of expertise of regulator; multiple regulatory bodies setting different expectations and restrictions which disincentives improved performance; and imposition of more than one method of regulation (Hood 1991).
- ***Organization:*** two key elements of organization targeted by reforms under NPM were: ***(1) aggregation versus decentralization:*** with arguments in favor of aggregation of local small service delivery units on the grounds of improved service coordination and scale economies, and arguments for the benefits of responsiveness and efficiency that arise from decentralization; and ***(2) internal structure of service providers:*** focusing on how the structure of a provider and its service performance can vary depending on the political economy and enabling environment (Hood 1991).
- ***Performance Management:*** introduced the concept of pre-defined indicators and targets in monitoring systems and mechanisms (Hyndman and Liguori 2016). Performance management reforms sought to achieve efficiency improvements by generating information on goals through strategic planning and levels of performance through performance measurement. Greater knowledge about the performance of programs and process allows more informed allocation decisions (Moynihan 2008).

New Public Governance and Other Alternative Approaches

In the last two decades, the weaknesses of 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 inter-governmental 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. To a great extent, 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).

In addition, Brinkerhoff and Brinkerhoff (2015) identify other alternative approaches to public sector reforms post-NPM:

- Political-economy approaches and identification of specific problems;
- 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"); and
- Focus on promoting ownership, identifying reform champions, and creating commitment and collective action from the people 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 NPM packages;
- The emergence of cultural and context-specific frameworks provides growing knowledge on what solutions can work for what problem; 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.

Policy, Institutions, and Regulation in WSS in the Literature

The literature review took a close look at how aspects of reform have been addressed, through the main areas described below, and the impact they had on WSS service delivery. It should be noted that some of the topics discussed under "policy" or "institutions" or "regulations" could as easily be moved to the other category given the substantial interlinkage and overlap across the three.

WSS Policy

The following section describes the current thinking captured in available literature on policy reforms and interventions in the WSS sector.

Legal Reforms supporting policy: de jure *and* de facto—The legal and policy framework of a sector refers to the set of policies, laws, regulations and orders, case law (where

applicable), legal conventions and contracts that govern the development, management and service delivery of that sector. Policies (and to a lesser extent, legal instruments) can also contain statements of principle or goals that are intended to guide or direct decision-making and operations. Given the plurality of roles in WSS, policy incoherence in policy design, structure and roles often causes some or all the policy design to become un-implementable or unimplemented (Wild et al. 2012). Further, in many countries there is a large gap between the de facto situation in the WSS sector and the de jure framework created by the main WSS laws and associated regulations (secondary legislation). Good laws may fail to change incentives or support the policies or regulatory processes for a variety of reasons. Franceys and Gerlach (2008) note that they may fail:

- where sound legislation exists on paper but the organizations or institutions it purports to create or empower (such as a regulator) are weak and ineffective and/or poorly resourced
- where the judicial system is not strong and independent
- where legislation exists but stakeholders are not aware of its existence or understand it

There is increasing recognition that the form and normative content of the legal framework is important. This work stresses the importance of laws being both available and accessible if they are to serve the interests of the poor and underserved and to enable participation (Franceys and Gerlach 2008; Albuquerque 2012) and if they are to provide clear signals for service providers and other stakeholders.

Sector development planning is an essential process for promoting the development of infrastructure and other programs to meet the needs of residents in a certain area, taking into consideration any changes in the demand for services foreseen in the future (Planning Officers Society 2009). It is important that the institution charged with the development of the WSS sector plan (usually within the national/central government) involves all stakeholders in the process. There is a direct link between the level of budget allocated by the government and the performance of the sector, especially in terms of coverage (Marquez and Berg 2009), hence the importance of the sector development plan to be supported by the government's budget allocation and investment plans.

Policies on Financing

The WSS sector is funded by a mix of public and private sources. To cover expansion, operational, and maintenance costs, service providers receive revenue from the following three main sources:

- Tariffs (and fees) from users for services and on-site infrastructure;
- Taxes in the form of public expenditure, provided for WSS either as subsidies or as "soft loans"; and

- Transfers/grants from external sources: meaning both external to the country (official development assistance [ODA], philanthropic sources) or transfers from central to subnational governments.

Economic theory indicates that the choice between funding by users through tariffs, fees and other charges, and funding from other sources, notably public tax revenues and transfers from donors, should reflect the degree to which the service or goods (in this case, WSS services) is a *private good* on the one hand, and a *public good* on the other.

Tariffs and Fees ('Self-Funding')

In most developing countries, prices for WSS are, or historically have been, set below full cost recovery for political reasons. In relation to drinking water, there are typically implicit and explicit subsidies within tariff structures. Tariffs that do not allow cost recovery, provide an implicit subsidy to consumers that can distort market incentives (Rodriguez et al. 2012). Mason et al. (2014) note that failure to implement financial sustainability strategies to ensure cost recovery, including in relation to subsidies, compromises a service provider's autonomy. It leaves providers dependent on financial bailouts by political players, which can give leverage to actors within government to manipulate the distribution of water supply to political advantage, or at the very least reduce operational autonomy of service providers.

Beyond cost recovery, tariffs may also be used to serve a number of other, sometimes contradictory, purposes or incentive functions (Banerjee et al. 2010). These include:

- Reflecting the costs of provision to give a signal to users about the true cost of the resource (water scarcity) and the service, and in so doing, to provide incentives for conservation;
- Ensuring equitable and affordable access across all socioeconomic groups (e.g., using cross-subsidies between users, increasing block tariffs, free basic water or cross-subsidies between sectors); and
- Giving effect to "polluter pays" principles.

As Mason et al. (2013) note, concepts of cost-recovery and efficiency do not always sit comfortably with rights-based approaches that emphasizes affordability and fairness. Wilde et al. (2012) also note that policies to ensure cost recovery may be undermined by incentive constraints described as failures of "collective action." They identify examples of this in the WSS sector, including in Sierra Leone where users steal from pipes (or do not pay at standpipes), powerful users do not pay, and money is siphoned off.

Tax Revenue Channeled to WSS

Funding from the state's general budget, usually collected through taxes or other levies, may be channeled to utilities or to consumers through supply- or demand-side subsidies.

Rodriguez et al. (2012) suggest that, if well implemented through sound targeting and predictable budgeting and execution, supply-side subsidies (channeled through the service provider) from public expenditure can provide the cash flow needed to start improvements in the sector and ultimately attract private finance. Properly designed *capital subsidies* can be transformational for meeting policy objectives. By contrast *operating subsidies* often create severe distortions in incentives for production and consumption of water supply services. Local authorities or utilities can come to expect annual transfers irrespective of yearly performance, and have little to no incentive for service improvements, efficiency gains or sustainable service delivery. Several authors have noted that Government funding for the sector typically falls well short of stated Government funding policy (e.g., van Ginneken et al. 2011).

On the demand side, consumer subsidies may be an important tool to ensure equitable access. However, the literature suggests that the incentives created by some of the subsidy mechanisms may not only result in failure to achieve the desired equity goal, but may in fact constrain service delivery. For example, subsidizing sewerage networks by surcharges on water bills may exacerbate inequities in sanitation access. Since the water network frequently extends ahead of the sewerage network, so that a larger, and on average, poorer, group of water users subsidize the smaller and wealthier group of sewerage users.

A subsidy's effect on incentives in the WSS sector depends on what is subsidized and who is being subsidized. For example, connection subsidies appear to be better at reaching the poor than consumption subsidies (Mehta 2012; Rodriguez 2012). However, they can create an incentive to generate a greater volume of wastewater, which can make it difficult for poor users to pay for the subsequent water bills. Geographically targeted subsidies are better at reaching the poor than quantity-based subsidies.

Transfers

External transfers (ODA and philanthropic sources) may help bridge the existing financing gap. At a national level, transfers include fiscal transfers from central government to a regional or municipal service provider, and the source of the funding may be general tax revenues or ODA that is channeled through the national budget.

Wilde et al. (2012) note that one of the central incentive problems in public service delivery is moral hazard resulting from the availability of aid or other resources that insulate the state (or others) from the consequences of their actions or inaction. The availability of these resources reduces providers' incentives to develop service delivery systems over the long term, and can weaken governments' incentive to find alternative revenue sources. Yet, donor-supported capital investment programs can make sustainable contributions to the poor if properly designed, like financing models with sustainable cost recovery (e.g., market driven models) and disbursement strategies that "incentivize the development of financially sustainable pro-poor service delivery models" (e.g., performance-based financing) (IRC/WSUP 2012).

Financing of Sub-National Government

For local governments to function efficiently, they must have predictable resources and be accountable for the use of resources both to the higher levels of government and to local citizens (WaterAid 2008). However, in many cases, as part of decentralization, local authorities have been allocated an "unfunded" mandate for WSS. Moreover, WaterAid (2008) note that WSS sector financing often tends to be dominated by project funding that bypasses local government budgets. This practice affects local government control and, combined with the lack of reliable and transparent information, makes it difficult for local governments to plan and budget efficiently.

An international study conducted by UNCDF (2010) found that Performance-Based Grant Systems (PBGSs), where local governments must demonstrate compliance with basic or minimum conditions in order to access grants, create incentives to improve administrative and financial management, infrastructure, and service delivery (measured by allocative efficiency, implementation, cost efficiency, and sustainability). However, while PBGSs may be effective in creating incentives for local governments to adopt and implement central government priorities in relation to reforms and investments, it may undermine efforts to develop responsible subnational governments "with substantial expenditure responsibilities and primary accountability to local residents" (Bird 2012) a central purpose of decentralization.

The funding sources described above are generally preferred because they do not require repayment, however, these sources have proven to be insufficient as shown by the persistent coverage deficit in WSS services—pointing to a financing gap and to the need for other sources of financing to enter the realm to bridge this. In most developing countries, the bulk of repayable finance for WSS has traditionally come from concessional finance. However, to meet SDGs, other sources of repayable finance need to be mobilized with a particular focus on leveraging commercial finance into the sector while at the same time bolstering public funds.

Commercial Financing

In most countries which have not yet achieved universal access, the investment needs far outstrip available 3T public financing sources (tariffs, taxes and transfers). To meet access and quality of service targets, commercial financing is potentially a way to mobilize capital to meet the high up-front capital investment requirements of meeting the SDGs. Commercial finance—which may include vendor or supplier finance, microfinance, commercial bank loans, bonds, and equity—comes from various sources and can be used to meet the great diversity of investment needs. Providers of commercial finance can include water equipment suppliers, microfinance institutions, commercial banks, private investors, or investment funds via capital markets (Goksu 2017). Commercial finance brings

requirements for greater investment discipline and transparency, which in turn supports improved efficiency in the sector, an objective for most WSS sector reform efforts around the world (WSP/PPIAF 2009; Leigland et al. 2016). Marin (2009) notes that "in many countries, increased access to market-based financing without sovereign guarantees provides incentives for public water utilities to improve their financial and operating performance."

Donor financing can be utilized strategically to "crowd in" capital flows. OECD encourage "blended finance" which aims to overcome incentive problems that constrain commercial investments. Options include the use of public guarantees, the issuance of municipal bonds, and the establishment of pooled funds or mechanisms to increase lending at the sub-sovereign level (OECD 2011; Leigland et al. 2016). Mobilizing domestic commercial finance is a particularly attractive option because it would eliminate exchange risk and help reduce transaction costs (e.g., Leigland et al. 2016). However, significant barriers or incentive constraints exist to commercial financing of WSS infrastructure and services, including real and perceived investment risks in WSS services, which flow from the fact that WSS is a politicized commodity, with mixed public and economic goods aspects. OECD (2010) notes that decentralization has created large investment needs among local governments and utilities, but these entities have very limited access to external ("repayable") finance.

It is important to note that commercial financing will bridge the financing gap, but it will not solve the long-term need for increasing sector revenue generating potential (OECD 2010). Further, the ability to attract commercial finance is itself dependent on the broader WSS sector institutional framework and incentive structures. Important factors include investment regulation (e.g., whether the WSS sector is a priority, whether private investment and ownership are facilitated, and whether quality standards are enforced and the technology to do this is available); economic incentives (e.g., tax, land and other incentives, and appropriate tariff structure); and information sources (Whitely 2015).

Results-Based Financing

Results-based financing encompasses a range of mechanisms designed to incentivize improved infrastructure and service delivery through performance-based incentives, rewards, and subsidies. Governments or sub-governmental agencies disburse funds against independently verified results that are within the control of the recipient. Emerging lessons in the design of RBF to incentivize reform include:

- *Results must be measurable and properly measured* (Mehta 2003; Mason et al. 2014).
- *There is a need to address the multifaceted dimensions of the desired outcomes to achieve sustainable results* (Castalia 2015); for example, Kumar and Mugabi (2010) note that sustainability of output-based aid (OBA)-subsidized connection schemes depends on the relationship between the connection subsidy and the tariffs charged for services: if tariffs are unsustainable, new connections will result in further loss of revenue.

- *RBF is a promising mechanism for national levels of government to influence policy at sub national levels of government,* however, care must be taken that transfers do not weaken local incentives to collect revenue (Mehta 2003).
- *Access to finance* remains a major constraint, and shifts performance risk to service providers through their requirement to pre-finance outputs (Mumssen et al. 2010). Pre-financing can be assisted through donors providing guarantees to commercial lenders, or softening the OBA requirements to allow payments against reasonable milestones (Kumar and Mugabi 2010).

WSS Institutions

This section reviews the literature on institutional reforms and interventions in the WSS sector.

Governance. The three core elements to an effective governance framework are:

- *Transparency,* which comprises "all means to facilitate citizens' access to information and their understanding of decision-making mechanisms" (Capnet et al. 2009). Transparency requirements provide incentives for sector players to carry out their tasks in an exemplary fashion.
- *Participation,* which in the context of public services has been defined by Jaglin (2005, cited in Trémolet and Binder 2010) as "the methods by which users intervene in the management and regulation of services." Participation means ensuring users are meaningfully involved in decision-making processes through rights and obligations, thus all stakeholders have incentives to adhere to and comply with legal rules and regulations.
- *Accountability* may be understood to concern "the obligation of one actor to provide information about and/or justification for his or her actions in response to another actor with the power to make those demands and apply sanctions for non-compliance" (Brinkehoff and Wetterberg 2016). Accountability directly determines the primary incentives to which the managers of WSS utilities respond. These incentives are oriented upwards to respond to performance criteria defined by the governance structure (typically a board) and downwards to the customer base.

Brinkerhoff and Wetterberg (2016), note that research on the politics and governance of service delivery in developing countries has highlighted the importance of accountability as a driver of effective service delivery, good governance, and citizen empowerment (e.g., Batley, McCourt, and Mcloughlin 2012). Efforts to improve accountability, and therefore governance, have targeted state institutions, laws and regulations, and processes (the supply side), as well as civil society and citizens (the demand side).

The 2004 WDR argues that "putting poor people at the center of service provision: by enabling them to monitor and discipline service providers, by amplifying their voice in policy making, and by strengthening the incentives for providers to serve the poor."

The report provides a principal-agent analysis of accountability in service provision, connecting citizens to politicians and policy makers, politicians and policy makers to service providers and service providers to citizens, through two routes either the "long-route of accountability" whereby customer voice is exercised through influencing the state—politicians and policy makers); or the "short-route to accountability," whereby customer power is exercised directly in relation to the service provider.

Functional separation. Functional separation was motivated by the move towards more market and competition based public services under the NPM reforms discussed above. Particularly, it was suggested that to enhance competition there should be regulatory independence and a separation of functions which are substitutable as there is less incentive to perform well on all functions assigned to a specific institution if the functions are substitutes for one another. The benefits of separating executive, legislative and service delivery functions include: (1) reduction of conflict of interest; (2) allowance for specialization and thus, improved efficiency; and (3) enhanced governance and accountability.

Decentralization. The essence of decentralization is that responsibility to plan, finance, and provide public services are moved from central governments to regional and/or local governments (Demmke et al. 2006). Experience of decentralization reforms has been mixed in practice and has not been without its challenges. Proponents of decentralization argue that local governments have a better understanding of the needs of the population they serve and the specific challenges they face, and so they are more capable of tailoring the services to the needs of those being served (Oates 1972). Also, Ahmad et al. (2003) and Mclean (2001) find that when local authorities have access to more robust, localized data, they will be better able to provide WSS services, making consumers more willing to pay higher tariffs. However, according to the 2004 WDR, a dependence on the state budget to fund operations is still a major shortcoming of decentralization. This also reduces accountability at the local level. WSS systems require O&M that was often found to be beyond the capabilities of local governments. Efficiencies may be lost as local jurisdictions may be too small to reach sufficient economies-of-scale. It is important to note, however, in the case of rural WSS service provision, decentralization might be an alternative to centralization given the failure of the latter to provide adequate WSS services to rural areas.

A World Bank study (Leigland, Trémolet, and Ikeda 2016) notes, for decentralization to work, it requires a simultaneous understanding of subnational governance systems (degree and nature of political, administrative, and fiscal decentralization) and the governance of decentralized service delivery under WSS authorities—the two should not be studied as separate entities. There is also a need for nuance in understanding the types of decentralization, which the World Bank (2016) differentiates as: *devolution*—the transfer of authority and responsibility for public functions to quasi-autonomous units of local government with corporate status (often used synonymously with decentralization); *deconcentration*—transfer of decision-making authority and responsibility to lower territorial levels of the central

government; and, *delegation*—transfer to semi-autonomous public authorities or corporations, or non-government/voluntary organizations.

Aggregation and regionalization. Aggregation and regionalization are defined as the process by which two or more WSS service providers consolidate some or all their activities under a shared organizational structure, whether it implies physical infrastructure interconnection or not, and whether the original service providers continue to exist or not. The design of an aggregation can be characterized by (World Bank 2005; Goksu, Trémolet, Kolker, and Kingdom 2017):

- *Scope:* Aggregated utilities can provide various services (water, wastewater, water and wastewater, or additionally other local public services) and may execute some or all functions associated with these services (operational, administrative and commercial, investment and finance).
- *Scale*: Aggregated structures may cover several municipalities or the whole national territory.
- *Process:* The aggregation process can be mandated (top-down driven), mandated and supported financially, voluntary and incentivized, or voluntary (bottom-up initiative).
- *Governance:* The aggregation governance arrangements may differ regarding institutional elements, financing, assets and liabilities, and harmonization of processes and practices.

Aggregation has been regarded as an opportunity to improve cost efficiency and performance of service delivery through economies-of-scale and cost-sharing, as well as enhanced human capacity (Tynan 2005). In addition, clustering of services may attract private sector investment in previously decentralized small rural areas that become financially attractive due to an increased scale of operations, customers, and expected income. Other potential benefits of aggregation/regionalization may include enhanced professional capacity and exchange of knowledge, integrated water resources management, and greater access to finance (World Bank 2005).

Despite the potential for economies of scale, one-off or long-term transaction costs may prevent the economies from appearing.[1] Furthermore, there are some expected trade-offs involved in the implementation of aggregation reforms which include accountability at the local level and an increase in operating costs because of adjusted salaries per the highest paid utility without necessarily creating incentives to perform. Further challenges may arise if there is a lack of political will in implementing the aggregation/regionalization reforms. Ultimately, the outcome of a given aggregation should be measured primarily against its original purpose, which might involve economic efficiency or not. In some cases, it may be necessary to acknowledge a permanent transaction cost or change in the cost structure in return for an important externality—for example, a cross-subsidy between low- and high-cost service areas or an environmental benefit.

Marketization and PSP. In the NPM era, there was an emphasis on introducing market and quasi-market mechanisms and competition between service providing agencies, in the

belief that this would promote cost savings and responsiveness by incentivized private actors. It was believed that the introduction of competition and market-based structures including corporatization and PSP would improve efficiency, increase investment, and enhance transparency and accountability (Stern 2010). Competition in infrastructure services can occur as competition *for* the market, *via* capital markets, or *in* the market (World Bank 2006). Marketization aims to incentivize competition within monopolistic public services through the introduction of market-based structures and mechanisms. Common instruments employed include (Pinheiro et al. 2015):

- Splitting service providers into several agencies to allow for competition among alternative providers; and
- Contracting out of service provision to private providers through competitive tenders.

In the WSS sector, the term commercialization is often used to refer to introducing a more business or market orientation in the provision of WSS services by state owned providers. "Corporatization" has also been an important feature that is conversion from a department in a government entity to a company, which subsequently could outsource part of its operations to the private sector or develop some form of partnership with the private sector. Corporatization carries mixed incentives—while operating like a company can incentivize operational efficiency, if the entity is not ring-fenced the owner may be incentivized to use it as a source of funds, hindering financial sustainability of WSS services.

Another way to introduce competition in public service provision is to allow the private sector to directly participate and compete for customers. The main objectives of PSP include efficiency improvements, higher level of investments, and reduction of state budget deficits (World Bank 2004). The main routes through which the private sector can participate in the provision of WSS services are: *small-scale private provision* when private entities are confined to either point sources, selling water from a private well, borehole, or standpipe, or mobile water vendors transferring water in containers (drawn from various sources) (WSP 2004); *PPPs* which involve a contract (usually long-term) between a private entity and the state for providing water supply or sanitation services; or, *privatizing parts of the WSS sector* by transferring of some or all of the assets or operations related to water supply into the private sector.

A large study conducted by Gassner et al. (2007) found that "*PSP is associated with output increases in electricity, and connection increases in water and sanitation, an improvement in bill collection ratios, and improvements in the quality of service in both sectors*." Also, involvement of the private sector in the infrastructure sector can encourage the mobilization of new funding sources and lead to higher investments (World Bank/PPIAF 2009). However, other researchers found that PSP does not contribute to greater efficiency, concluding that "there is no statistically significant difference between the efficiency performance of public and private operators in this sector" (Estache et al. 2005, 12) and that there is no systematic increase in efficiency resulting from PSP in the WSS sector (Hall and Lobina 2005).

WSS Regulation[2]

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. Economic regulation refers to the "setting, monitoring, enforcement and change in the allowed tariffs and service standards for utilities" (Groom, Halpern, and Ehrhardt 2006). In the context of developing countries, this definition has sometimes been broadened to encompass social or development goals of access and equity.

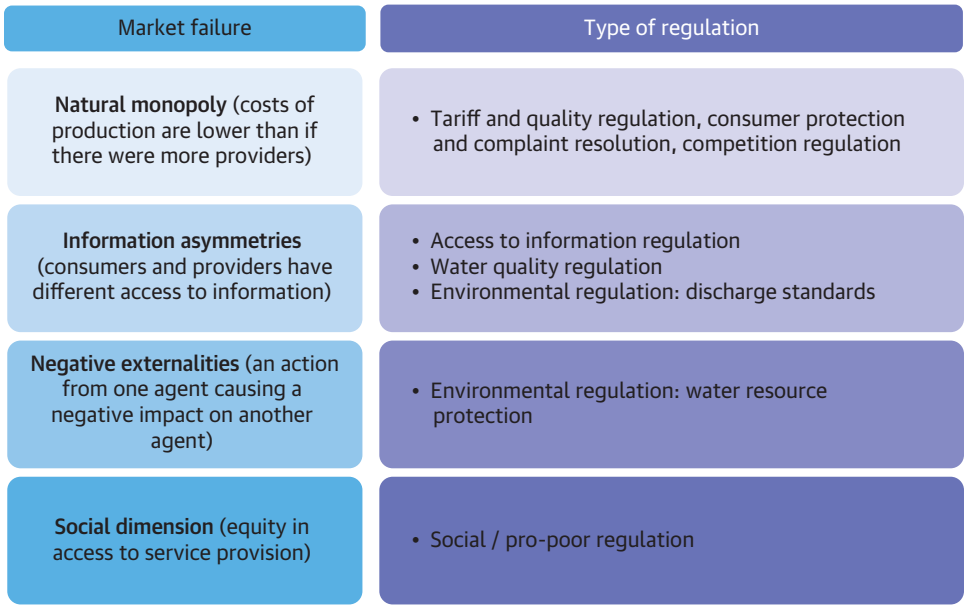
The concept of regulation largely emerged in conjunction with privatization, liberalization, and marketization, including PSP. Franceys and Gerlach (2008) note that regulation and particularly "independent" regulation has been developed in the context of the need to ensure that private operators do not abuse their monopoly position in the drive for profits. However, the public sector which has abused its monopoly position (Franceys and Gerlach 2008), therefore an important element of regulation in WSS is in regulating public utilities. In the case of publicly owned WSS utilities, there may be circumstances for separating the regulatory responsibilities from the governments' responsibilities as the owner (Groom, Halpern, and Ehrhardt 2006):

- When government-owned companies, in effect, are asked to pursue similar objectives to those of private utilities, they may need to be regulated in the same way and for the same reason as private utilities.
- An independent regulator may protect governments from political pressure, making necessary tariff increases easier to introduce—this provides one of the strongest incentives for governments to support the establishment of "independent" regulatory bodies.
- A competent independent body can be an alternative source of information, benchmarking and scrutinizing the utility, and forcing the utility to disclose information and answer criticisms.

The principle difficulty in applying regulation as commonly applied to private companies to government-owned companies is that the rewards and punishments of conventional regulation do not stop with the managers or shareholders of a government-owned utility, but are passed through to customers and taxpayers. However, creating competing streams of advice, providing trusted comparative information, and increasing transparency and public participation may address this downside (Groom, Halpern, and Ehrhardt 2006). This notion is supported by Ryan (2015) who asserts that benchmarking can lead to improved performance in cases where stakeholders have the ability to apply pressure to achieve the target performance.

The reasons for regulation of utilities/public services are manifold but the most prominent reason for regulation is to address instances of market failure (where regulation is deemed necessary to safeguard public interest objectives) (Franceys and Gerlach 2006), as further described in the figure 2.2.

FIGURE 2.2. Market Failures and Scope of Regulation in the Water Supply and WSS Sector



Source: Trémolet and Binder 2010.

Political Economy Perspectives

Political economy is the study of both politics and economics, and specifically the interactions between them. It focuses on political power and how economic resources are distributed and contested and the resulting implications for development outcomes. Political economy analysis also considers interests, incentives, rents/rent distribution, historical legacies, prior experiences with reforms, social trends, and how these factors effect or impede change (Manghee and Poole 2012). One of the starting points in a political economy approach to explaining service delivery failure is to analyze the relationship between key participants (the state, service providers, and citizens). The 2004 WDR focuses the role of *accountability in providing universal access to services, particularly to the poor*. All too often there are inadequacies in the social contract between the state and the citizens and the providers, and the state cannot be held sufficiently to account for the resulting failures, particularly by politically weak poor people.

Given the need for the provider to have well-defined and conducive relationships with the state and with its clients, it is entirely consistent that van Ginneken and Kingdom (2008) attribute autonomy, accountability, and consumer orientation to well-functioning WSS utilities.

Wild et al. (2012) cite the following five common political economy constraints and incentive problems affecting WSS sector performance:

- *Political market imperfections*, in terms of disruptions in the relationships between politicians and citizens;

- *Policy incoherence or contradictions* (both within and across sectors) in policy design, structure and roles;
- *Lack of effective performance oversight*, neither top-down nor bottom-up monitoring being adequate;
- *Collective action challenges*, which result in groups failing to act in their collective self-interest;
- *Moral hazard*, in which actors are protected in some way from the risks associated with their actions or inaction.

Isomorphic Mimicry. Explaining the gap between de facto *and* de jure. "[M]any reform initiatives in developing countries that fail to achieve sustained improvements in performance because they are merely isomorphic mimicry—that is, governments and organizations pretend to reform by changing what policies or organizations look like rather than what they actually do" (Andrews et al. 2012). Isomorphic mimicry allows organizations (and states) to maintain legitimacy by adopting the forms of successful organizations and states even without their functions.

Papers in this field (such as Pritchett et al. 2010; Krause 2013) suggest the solution lies in "endogenous learning and the indigenous debate necessary to create context-specific institutions and incremental reform processes." There are thus no one-size fits all solutions and no international best practices which can be confidently rolled out in different countries. Instead a more subtle, nuanced approach to formulating strategies to address problems is needed, one that is rooted in local realities and ownership.

Behavioral Economics. Behavioral economics helps to identify and explain what is termed as "irrational human behavior" which is contrary to the standard assumption employed in classical economics to explain rational choice theory. It considers the effects of psychological and social factors on the decisions of agents and institutions in an economy (Lin 2011).

- *The concept of intrinsic motivation* may often be a key ingredient in the success of WSS reforms. Heymans et al. (2016), for example, assert that African utilities tend to run for the benefit of vested political and economic interests.
- Tversky and Kahneman (1981) suggest that individuals are impacted more from an aversion to loss than an equivalent gain. The design of incentives should thus consider the perceived probabilities of loss and gain and make allowances for loss aversion.
- *Time (in)consistency* in traditional economic analysis assumes that individuals behave similarly, substituting consumption and leisure intertemporally in a constant manner, for example regarding the real interest rate (Hall 1988). More recently, the behavioral approach has indicated an innate tendency to place greater weight on events today and discount the future heavily (Frederick et al. 2002; Bernheim and Rangel 2005). Such short-termism is particularly associated with elected officials, and there is an extensive literature on the impact of electoral cycles on public service provision (see, e.g., a review of such literature

in Brazil by Drouard 2016). Social loss can arise from the political leaders directly appropriating resources, or from the inefficient use of resources made available for WSS due to short-termism. These have been termed "active waste" and "passive waste." Both can have a significant adverse impact on WSS investments (Bandiera et al. 2008, cited in Drouard 2016).

Notes

1. Transaction costs refer not only to costs incurred during the singular event when the utilities are merged but also to the additional costs in the aggregated utility, which may arise continuously. Therefore, transaction cost is defined here as comprising all costs except production cost, and it may be divided into one-offs and repeatedly incurred costs. (Williamson 1975; Williamson and Winter 1993).
2. An in-depth literature review on WSS regulation in developing countries is being separately prepared by the World Bank's Water Global Practice.

Chapter 3 Case Studies

Ten countries were selected to be subjected to "deep dive" case studies to inform the institutional framework and analysis (World Bank 2016a-f; 2017a-d). The objective of the case studies was to examine practical experiences that cover a range of WSS sector contexts and/or regions, where previous policy, institutional, and regulatory reform programs have been successful or have failed. Also, the analysis of select country experiences intends to illustrate the enabling and restricting conditions for delivery of sustainable WSS services.

The choice of countries was made through an iterative process within the Water Practice, which sought to include a diversity of countries and experiences. The criteria established to guide the selection process were as follows:

- countries should have an interesting perspective to offer across all sectors of WSS (in both urban and rural areas);
- bias towards countries which have demonstrated, sustainable success, but examples of reforms that did not work and/or provided perverse incentives would also be of interest;
- preference for unusual incentives created through policy, institutional, and regulatory interventions which could offer lessons for other countries and preferably multiple such features;
- geographical spread and inclusion of different forms of government that are material to the WSS sector, in particular at least some examples of federal systems;
- practical consideration of availability of information from documents and key informants.

Considering the criteria above and the progress made between 1990 and 2015 in expanding access to WSS services, the countries selected were: Albania, Bangladesh, Brazil, Burkina Faso, Colombia, Indonesia, Mozambique, the Philippines, Portugal, and Zambia.

Diversity within the Selected Case Study Countries

The selected countries provide a diversity of characteristics across regions and economic indicators (appendix C) such as area, population, GDP, access to WSS services, and urban/rural population.

The countries selected not only present different geographical and economic characteristics, but also have a diversity of sector experiences. Burkina Faso, for example, has achieved significant growth (12 percent) in access to sanitation, even though access is still quite low at 19.7 percent in 2015. Mozambique, Bangladesh, and Indonesia have also shown high

MAP 3.1. Map Showing Location of Case Study Countries

Source: World Bank.

growth in access to improved WSS over the period between 1990 and 2015, while Zambia's reform focused primarily on increasing access to improved water sources.

Portugal, Colombia, Brazil, and the Philippines experienced moderate growth in access to improved WSS, having started the period with a high percentage of the population with access to improved WSS to begin with. Due to deteriorating infrastructure, Albania had a slight decline in access to improved water sources during the period from 95.7 percent in 1990 to 95.1 percent in 2015.[1]

Overview of the Policy, Institutional, and Regulatory Arrangements in the Case Study Countries

In all the country studies, there is a rich and complex story that is told, but there are also key elements of each one which merit mention:

- In Latin America, Colombia and Brazil are two large countries with contrasting experience in managing decentralization and regulation of WSS services, and different approaches to involvement of the private sector.
- In Europe, a high income country (Portugal) was chosen because it has interesting lessons for other countries on agglomeration and the benefits of a pro-active regulator; the other case study in this region is Albania, which illustrates general national reforms (first decentralization and PSP, then due to various reasons, including lack of economies of scale and too many small weak local governments, national aggregation reducing the number of local government units [LGUs]) having a significant impact on WSS.

- In Africa, Burkina Faso was chosen for its story in innovative urban water supply and demand-driven sanitation uptake; Mozambique for its example of delegated management, and Zambia for its "textbook" reforms which allowed for some improvements, mostly in rural coverage rates, but have overall produced lack lustre results.
- In Asia, Bangladesh was chosen to explore the basis for the success of community-led total sanitation (CLTS), Indonesia for its complex history of decentralization and the current policy-led drive to achieve ambitious national targets, and the Philippines for the lack of central WSS leadership (in contrast to Indonesia), creating a gap in service delivery which has to a significant extent been filled by small private operators and other entities (involving nongovernmental organizations [NGO] and community-based organizations [CBO]).

Table 3.1 provides a high-level summary of key policy, institutional, and regulatory features of the chosen case study countries. The countries include different national structures for public service delivery, ranging from top-down national structures, to highly

TABLE 3.1. Overview of Policy, Institutional, and Regulatory Arrangements in Case Study Countries

Country	Latest reform period	Service delivery and other important institutions	Formal policy statements	National regulator	Role of private sector
Albania	2016	Water utilities owned by local governments in the form of joint stock companies (can be owned by more than one local governments).	DCM 63 in 2016 for the aggregation of water utilities.	WRA	Limited experience with concession and management contracts with varying degree of success.
Bangladesh	CLTS, a national program since 2003.	CLTS main focus of the case study. Microfinance institutions play an important role.	1999	MRA (Microcredit Regulatory Authority).	Demand driven, small-scale private sector implemented.
Brazil	2013	Public owned regional companies (70%), local public suppliers (25%), private suppliers (5%)—2014 data. Public participation important, for example, through Conselho de Cidades. Community-based SISAR model in some rural areas.	Strategies and plans rather than formal policies, latest is the National Basic Water and Sanitation Plan (PLANSAB).	No national regulator. National WSS database (SNIS) key monitoring tool.	Important in some key urban centers, but limited role from a national perspective.
Burkina Faso	1993–2010	The national water utility (ONEA), communes, Village Water Committees (CVD) overseen by directorates in ministries of water supply and health.	PN-AEP 2006.	Regulation through Performance Contracts and Financial Equilibrium Model.	PSP in ONEA and private operators contracted by ONEA for small centers and to provide sanitation services.
Colombia	2007 (new legal instruments).	Regional Autonomous Corporations, municipalities, private firms; FINDETER an important channel for financing.	1994	CRA and SSPD.	Through various models. Innovative operator-contractor model for small centers.

table continues next page

TABLE 3.1. continued

Country	Latest reform period	Service delivery and other important institutions	Formal policy statements	National regulator	Role of private sector
Indonesia	2014 through the RPJMN.	PDAMs (local government-owned utilities), Local Government departments or other forms of local government entities.	Medium term national development plan (RPJMN) 2015–19 leading to the 100-0-100 policy targets.	No national regulatory body.	Few large concessions attempted in big cities such as Jakarta.
Mozambique		Delegated Management Framework—FIPAG (asset owner), Águas de Moçambique, AIAS, Water Committees.	1995	CRA	Private service providers in peri-urban areas and small centers (earlier had role in large cities).
Philippines	2011	LGUs responsible for service provisions, but can delegate to: water districts (LGU owned utilities) or to private firms. LGU can also operate its own assets and provide the services.	2009–10 National WSS roadmaps.	NWRB plus regulatory entities created for specific concessions.	Significant—large concessions in Manila, but also many small domestic private operators providing services in small urban areas.
Portugal	1993	Multimunicipal System to achieve economies of scale in bulk water and sewage treatment, while leaving control at the municipal level. Águas de Portugal important channel for investment financing.	Strategies and plans rather than formal policies, latest is PENSAAR 2020.	ERSAR—educator as well as regulator.	Private concessions have limited role (2% of bulk water, 18% of retail water, 5% of bulk waste-water, and 16% of retail sanitation services).
Zambia	1994	Commercialized Utilities (owned by municipalities); Water Watch Groups; financing through Devolution Trust Fund.	1994	NWASCO	Marginal

Note: CLTS = community-led total sanitation; CRA = National Water Regulatory Commission (Colombia); CRA = Water Regulatory Council (Conselho de Regulacao de Aguas) (Mozambique); CRA = Comision de Regulacion de Agua Potable y Saneamiento Basico (Colombia); FINDETER = Financiera de Desarrollo Territorial; LGU = local government unit; MRA = Microcredit Regulatory Authority; NWASCO = National Water Supply and Sanitation Council; NWRB = National Water Regulatory Board; ONEA = Office National de L'Eau et de L'Assainissement; PSP = private sector participation; SNIS = National Information System for WSS; SSPD = Superintendence of Public Services; DCM = Decision of the Council of Ministers; WRA = Water Regulatory Authority; WSS = water supply and sanitation.

decentralized structures where community participation is fostered and a high level of social accountability prevails.

The table describes the current situation and notes the most recent key reform dates. As the full case studies make clear, in many cases different institutional models have existed within the same country when the historical development of the WSS sector is considered.

Each case study highlights how different policy, institutional, and regulatory interventions can create incentives for key actors to improve WSS services. An introduction to the main interventions that were initiated in each case and some of the respective outcomes are provided in the paragraphs below. For further information on the specific incentives created through sector reform interventions, and the main takeaways per case study, refer to

appendix B. Also, for a deeper analysis on the (positive or perverse) incentives that were created through the interventions, and the consequent outcome or impact resulting from the interventions, refer to the complementary case study reports.

Albania. Instigated by both endogenous needs and exogenous[2] (EU-related) demands, the Albanian WSS sector has gone through various changes in the last couple of decades, including the attempt to introduce PSP mechanisms, and the implementation of a high degree of decentralization of WSS services to LGUs, which is subsequently being rolled back through regionalization of WSS services following recent administrative territorial reforms. Additionally, Albania's WSS sector relies on the existence of an autonomous regulatory agency (WRE, the Water Regulatory Entity, or WRA, Water Regulatory Authority) which has contributed to the sector's development.

Although a legal framework for PSP was established, there has been very limited applied experience in Albania's WSS sector, and poor results where PSP has been implemented—with performance targets not being met, and private companies becoming financially unsustainable. While the overall framework is quite favorable for PPP, the capacity to design PPP contracts that include enforceable performance requirements was lacking. Thus, private firms are dis-incentivized by the significant changes in institutional arrangements (decentralization then aggregation). On the other hand, there is a positive experience in regulation of public utilities, which are incentivized initially to meet licencing requirements, and later to meet performance targets as part of the licence conditions. WRA has the incentive to encourage water utilities to obtain licences, partly because it is part of its mandate, but also because of the regulatory fee that the WRA can collect.

Bangladesh. Since it gained its independence from Pakistan in 1971, Bangladesh has been facing several challenges in improving the WSS sector's performance. Amongst the factors that have impeded progress have been an unstable political environment, weak administrative structures, and some indications of corruption in the WSS sector. Despite these various administrative problems, which have hindered reform, the country has emerged as a global success story in promoting rural sanitation, having reduced the proportion of people who defecate in the open from 42 percent as recently as 2003 to just 1 percent today. Here, the incentives provided to various actors, in particular to consumers, played a key role.

Bangladesh's remarkable achievement in rural sanitation is grounded in the recognition of the importance of changing attitudes and behavior. Encouraging people to be motivated by the right incentives is at least as important as the development of infrastructure. The CLTS approach, backed later by local sanitation marketing, did exactly that. Recognizing that the health and sanitation situation needed to be tackled, Government and local leaders focused on changing the incentives of communities and created a collective view against the shameful practice of open defecation. However, changing the perceptions of communities alone would not have led to the realized

improvements in the rural sanitation sector. The incentives provided to the local sanitation entrepreneurs to market and supply hygienic latrines, as well as the incentives for microfinance institutions to provide the required financing to scale up improved sanitation products, were key factors in helping more than 90 million people to move from open defecation to improved sanitation practices.

The story of Bangladesh is one of incentives, with the cumulative impact being the virtual elimination of open defecation. Furthermore, Bangladesh's decentralization experience suggests that devolving the provision of sanitation services to the lowest level, that is, the communities, can succeed even if there are no formal institutions or regulations to monitor the market. The emergence of locally adapted solutions, as in the case of Bangladesh, can prove effective in bridging the service provision gap.

Brazil. Brazil has a complex story regarding institutional and policy structures at various levels of government. It reflects the historical progression in global thinking about public service provision, from a state-driven, top-down approach to an environment that is characterized by public participation and a high degree of public accountability.

Brazil has gone through three significant reform periods, which included an early phase (1968-86) characterized by a military government with a central National Water Supply and Sanitation Plan (PLANASA) and the establishment of state-level state-owned WSS companies (CESBs), funded by a national bank and national funds; a second phase (1986-2007) under a democratic government that promoted public sector participation and established a National Information System for WSS (SNIS); and the most recent phase, whereby the passing of a new Water and Sanitation Law (Lei 11.445/07) established a 30 year plan with the objective of achieving universal access through strengthening regulatory institutions with administrative, financial, and budgetary independence, as well as incentivizing transparency and collaboration across all levels of government.

Even though there are still disparities across the country, Brazil has had notable successes, despite operating in a complex federal structure. The establishment of a PLANASA coupled with financing mechanisms allowed expansion of infrastructure, while the national database SNIS promoted competition and transparency, particularly at a time of a regulatory vacuum in the country. It also has notable examples of promoting social accountability and participation in both urban and rural settings, through the Council of Cities and Integrated Rural Water and Sanitation System, respectively.

Burkina Faso. Even though Burkina Faso is one of the world's poorest countries and has faced considerable technical, resource, and capacity constraints, the country has achieved significant improvements in WSS service performance and access. This is particularly so in relation to urban water supply services and the performance of the national water utility, Office National de L'Eau et de L'Assainissement (ONEA)—a public sector provider that is adopting innovative forms of financing and private intervention

These improvements followed implementation of a series of sector reforms (between 1990 and 2010) triggered by donor pressure regarding the dire economic situation of the 1990s

and rapid urban growth rates, paired with the increasingly severe water crisis. The implemented reforms included: (a) policy interventions through development of comprehensive policies and targets to clarify institutional responsibilities and sector goals, (b) institutional reforms in relation to the national utility ONEA to increase autonomy and accountability, improve efficiency, and enter into partnerships with the private sector, (c) improved regulation through the Contract Plan and Financial Equilibrium model, (d) adoption of a policy of demand-led strategic sanitation plans to support sanitation expansion, and (e) adoption of a policy of partnerships with small-scale private sector in rural areas.

Both this reform momentum and the improvement in outcomes have been sustained for over 20 years. Although progress has been slower in relation to rural services generally, there have been some successes.

Colombia. Colombia, a middle-income country and the third most populous country in South America, provides an interesting case of institutional reforms because of the highly-decentralized fiscal and administrative WSS structure (in contrast to Brazil's federal system, for example). Also, in the 1990s and 2000s, Colombia saw the introduction of significant public utility reforms.

The structure of incentives in the WSS sector has primarily been shaped by fiscal and administrative decentralization and democratic reforms introduced in the late 1980s triggered in part by rising violence and social unrest. That process comprised two parallel (though not always complementary) sets of reforms: (a) evolution of responsibility for WSS services to the municipalities in the context of broad government-wide political, fiscal and administrative decentralization reforms; and (b) public-utilities reform driven from the center. These reforms gave the government of Colombia the constitutional responsibility to ensure the population has access to WSS services, which can and are often provided by local or regional utilities. Furthermore, Colombia provides an interesting example of a specialized financing mechanism to expand WSS services, and a "best practice" regulator originally designed for PSP which now regulates a wide spectrum of private, public, and mixed operators.

Even though there is work still to do to support improvements in service delivery, the incentive mechanisms implemented in the past 35 years have been successful in both increasing local participation and voice in the management of WSS services and in opening the door to a range of innovative public, private, and mixed approaches to service delivery, that have together in many cases had positive impact on service delivery. The reforms appear to have contributed to improvements in coverage and service continuity in urban areas. The adoption of the extensive reforms implemented in Colombia in the early 1990s, particularly decentralization and the removal of the State monopoly on service provision in favor of market competition, specialist service providers and PSP, was made possible by several factors in the domestic political environment. These included the critical state of the WSS sector as well as a broader political crisis that reflected loss of faith in central government and its ability to effectively deliver public services.

Indonesia. Indonesia's WSS sector has undergone numerous changes since the country became independent in 1945. The two most salient in the WSS sector have been corporatization and decentralization.

In 1962, a new law (UU No.5 1962 or the BUMD Law) was enacted stating that local government owned companies (BUMD) could be formed to provide public services as well as operate as a limited company and aim to earn profits. This law was not specifically for WSS utilities, but rather gave local governments the option to corporatize state-owned companies. Under this BUMD Law, local governments, as owners of the BUMD, could demand dividend payments from the company, as well as invest in the company (for example to build infrastructure or buy assets). As a result, some local governments chose to change their water utilities to local government owned companies (PDAM). By 1974 three local water utilities had become PDAMs, a number that grew to around 300 PDAMs in 1995 and up to 421 in 2016.

In 1999, the Indonesia enacted the Decentralization Law (UU No. 22 1999), which was officially effective and fully implemented by 2001. Indonesia's decentralization process included devolving administrative, financial and political functions to local governments. This means that local governments took on the responsibility to provide many of the public services and the responsibility to generate income in order to fund infrastructure development and provide public services.

Both reforms were not made for the WSS sector, but rather were general policy and institutional decisions made by the government to deal with infrastructure investment needs and a geographically sparse territory. In practice, they created incentives for local governments to establish PDAMs, but little incentives to invest in them by local governments (which keep tariffs low for political reasons) or central governments (which see PDAMs as local government responsibility). In order to improve on the incentives framework, a new Village Law (late 2016) expects that the central government will allocate a certain amount of funds to over 74,000 villages considering particular needs and demands, and is ultimately expected to reach over 50 percent of the rural Indonesian population (Anggriani 2016). The implementation and effectiveness of these reforms are still to be seen.

Mozambique. By the mid-1990s, the water supply and sanitation sector in Mozambique was in dire need of improvement. Most of the assets had been damaged during the civil war and funds were lacking for rehabilitation and construction of new water supply infrastructure. To address inadequate infrastructure, lack of financial sustainability, and weak institutional capacity in the sector, the Government of Mozambique and international donors (led by the World Bank) formulated a set of comprehensive reforms of the WSS sector.

The reforms began with the approval of a new National Water Policy (NWP) in 1995, which outlined the principles for WSS sector reform, defined water supply and sanitation as an economic as well as a social good and set out the first steps to be taken to improve the sector. The NWP was updated in 2007, building on experiences since 1995 and expanding the Delegated Management Framework and the independent water regulator to include secondary systems and sanitation. In the Delegated Management Framework, responsibility for

WSS provision moves from the government to FIPAG (an asset holding, and management company financed by concessionary loans), and from FIPAG to an operator (could be private or public entity).

The progress made in the sector, despite setbacks, has been in good part due to consistent policies and strategies set by the government, which have provided a stable and predictable environment for the functionaries in the sector to implement the changes. The donor community was ready to both help lead on some reforms, as well as provide financial support, therefore exogenous incentives were strong as well.

Philippines. The Philippines' WSS sector has experienced many institutional and policy changes over the years, going from a centralized service provision since independence in 1946, to decentralized services following the Aquino Administration (1986-92), to the introduction and promotion of PSP during the Ramos Administration (1992-98). These changes have resulted in a fragmented sector, with various institutions within central and local government having overlapping roles and responsibilities, and with many different types of service providers, including small and large private sector operators.

Strong and continuous political support for PPP has allowed the development of the necessary enabling environment for PPP, notably the enactment of a PPP legal framework and institutional support, which overall has created a stable and predictable environment that encourages and incentivizes private companies to seek out opportunities to be involved in water supply and sanitation services. However, overlapping of roles and responsibilities have led to a lack of direction and leadership in the WSS sector, and therefore a lack of incentives to invest.

Portugal. Before 1993, municipalities were exclusively responsible for the provision of WSS services in urban areas. However, local authorities were unable to fund large-scale investments in water supply and wastewater systems that were needed for effective provision of services. This, together with a lack of capacity at the municipal level, led to inefficient WSS service provision.

To address the need of the sector and to comply with EU regulations after having joined, Portugal implemented sector-wide reforms, which were codified through new legislation. In 1993, a genuine revolution in the WSS sector was launched, which revolved around four main axes: aggregation of bulk supply services; PSP in the form of municipal concessions; the establishment (1997), exercise (2000), national expansion (2004), and independence (2014) of a regulatory agency; and comprehensive sector planning.

Following the reforms, there was less financial pressure on municipalities as they were no longer responsible for upstream investments and therefore had an incentive to focus on improving the retail service provision. The way the remuneration of the multimunicipal concessionaires operates (cost-plus model) allows them to fully recover their investment cost, while also making a reasonable profit. This, together with the fact that due to their size and risk sharing mechanism they have better access to financial markets than individual municipalities, allows them to implement investments of greater scale.

The establishment of a skillful and independent regulator contributed to success in the sector. The annual public benchmarking of service operators provides an important incentive to providers to improve their services, and tariff guidelines provide an incentive for utilities to adopt tariffs that meet the requirements of the regulator, leading, among other things, to more affordable tariffs.

Zambia. The Zambian urban WSS sector has undergone major reforms over the last two and a half decades—it has moved from WSS services being provided by departments within municipalities to 11 commercial utilities (CUs) owned by the Local Authorities, plus a handful of private schemes, mostly agricultural and mining operations providing WSS services for their core activities and for their employees.

Zambia's urban WSS sector reforms have been widely commended, particularly the transformation of the municipal WSS departments into CUs and the establishment of a professional and independent regulator the National Water Supply and Sanitation Council (NWASCO). At the time that NWASCO was created, very few countries in the region had a WSS regulator and few additional WSS regulators have been created since then. The framework that was created and some specific innovative interventions which were introduced created incentives for improved sector performance.

The regulator established after the reforms was given a relatively free hand in enforcing regulation to achieve service improvements in the sector. The reforms began with a clear restructuring of WSS service provision and laid out a framework within which the various entities could operate.

Overall, the reforms have shown positive outcomes when it comes to the institutional framework, but issues such as the lack of good governance of the CUs, their financial sustainability due to NRW and inadequate financing in the sector persist. While access to improved water supply and sanitation has achieved impressive growth in rural areas, urban areas have seen a modest decrease in coverage; this is readily explained by the relative demographic growth rates. Overall, access by 2015 fell far short of the MDG targets. The underlying causes for lacklustre performance, despite the coherent and stable policy, legal and regulatory framework, and the considerable support the sector has received from development partners, include the reality that political will for implementation of the reforms that were developed de jure diverged from endogenous incentives, or the reality of the political economy, hence resulting in "isomorphic mimicry" whereby reforms are not as de facto as they are presented.

Notes

1. Deteriorating infrastructure may not be the only explanatory factor—it may simply be a change in the way data was recorded and reported during the Soviet era.

2. See chapter 5 for more details. *Endogenous drivers for reform* arise from political processes within the country in question; *Exogenous drivers for reform* typically arise through external pressures or the offer of external financing, and may include financing from development partners, among other foreign sources.

Part II Understanding Drivers for Reform and Policy, Institutional, and Regulatory Incentives

Chapter 4 Framework for Analysis and the Nature of Incentives

Framework for Analysis

The main objective of the study is to analyze how integrated *policy*, *institutional*, and *regulatory* interventions (or "institutional interventions," in short) can help align incentives for more sustainable water supply and sanitation service delivery. Coming back to one of the main themes of this study, that ***there are no one-size-fits-all solutions***, the analysis is not aimed at finding a set of solutions that can be applied to address certain constraints. Rather, the analysis seeks to find trends from case study examples, which may or may not support the theories discussed in the literature review, that help in answering the main objective of analysis. Figure 4.1 illustrates this framework for analysis, which overlays the theories from the literature review and experience from case studies on the different levels of incentives and the actors involved.

Defining Incentives

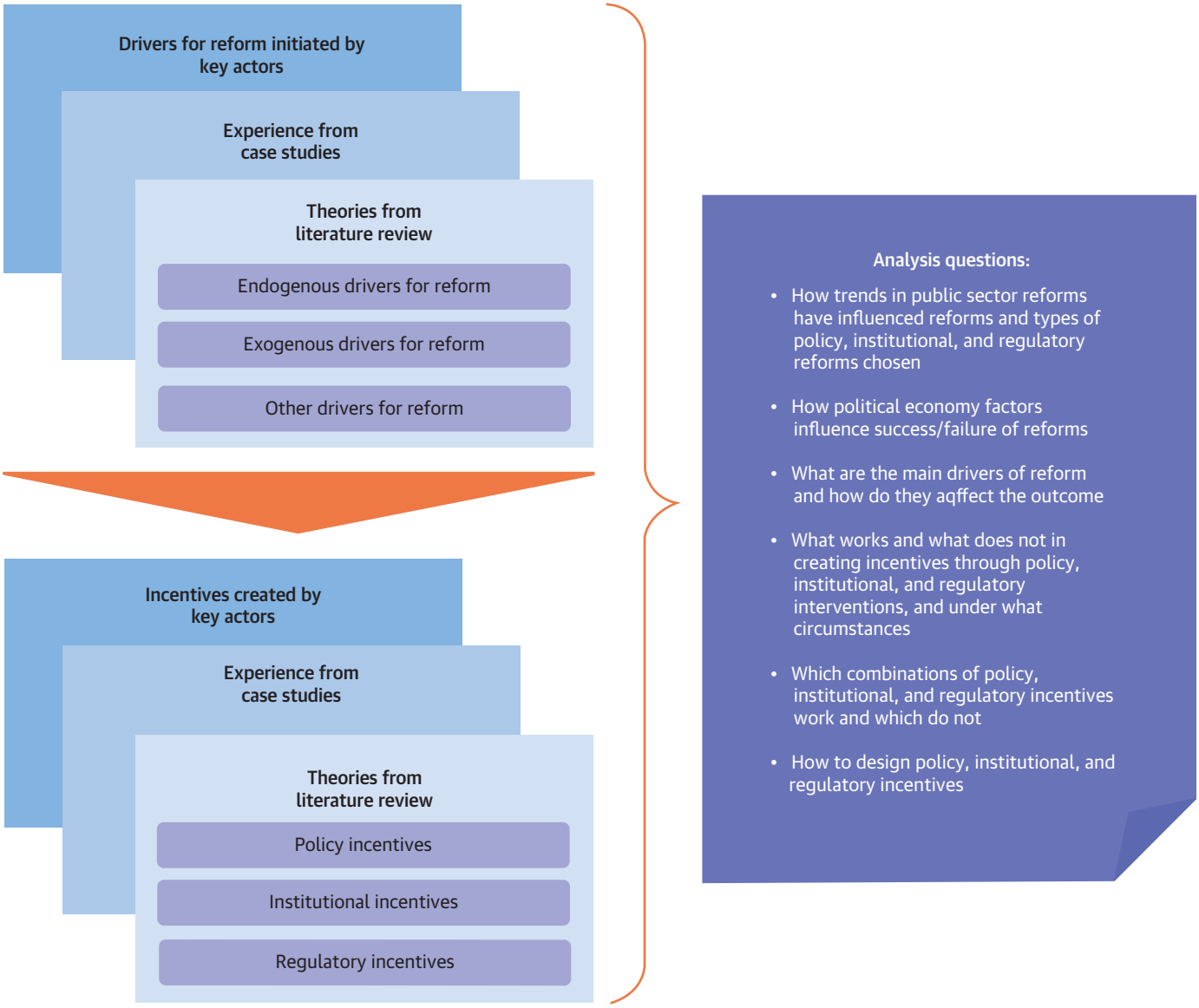
Incentives are the motivating influences or stimuli inciting people, and thereby inciting institutions, firms, and other actors involved in the WSS sector to pursue certain objectives or to behave in a certain way. Incentives arise from specific policy, institutional, and regulatory interventions (or mechanisms) or from the combined institutional framework that characterizes the WSS sector at any point in time.

Ultimately, the objective is to design incentives which motivate people (whether as individuals or as part of an organization/firm) in the sector to reach universal access and to provide sustainable high quality WSS services.[1]

An important point to stress at the outset is that reform processes are complex and are unlikely to take on a linear process. Instead, a reform process is a *learning process* which will involve reverses as well as gains. The sort of approach that is required is captured in the 2009 Nobel Prize acceptance speech of the distinguished institutional economist, Elinor Ostrom. Although her work focused on common pool resources, her core insights from a career spent analyzing complex motivational structures associated with public policy are very relevant to the WSS sector (Ostrom 2010).

> Designing institutions to force (or nudge) entirely self-interested individuals to achieve better outcomes has been the major goal posited by policy analysts for governments to accomplish for much of the past half century. … Extensive empirical research leads me to argue that… a core goal of public policy should be to facilitate the development of institutions that bring out the best in humans.

FIGURE 4.1. Framework for Analysis



Drawing on the literature review and the case studies, a further aspect of the complexity of the WSS sector is that sustainable outcomes need a *combination of incentives* to be embedded in the policy and regulatory framework as well as in the institutions. This is exemplified in the case studies, but as already alluded to, it is difficult to make the required holistic combination of policy, institutional, and regulatory incentives the sole focus of the analysis, but it is a theme throughout the report, as well as being the dedicated subject of chapter 9.

Who Should Be "Incentivized"?

As mentioned above, the goal is to incentivize the stakeholders and influential actors in the sector—either as individuals or as representatives of their organization/institution—to behave in a way that contributes to delivering sustainable WSS services. Sector stakeholders may range from the national government (ministries) and local governments (LGs), to the sector regulator and WSS utilities, and may also include (international) donor agencies and nongovernmental organizations (NGOs). Consumers, as the beneficiaries of the services, have a key role as well, not only regarding the financing of received services, but to ensure accountability among sector actors. Table 4.1 provides an overview of the most common relevant stakeholders in the WSS sector and their intended roles and responsibilities.

TABLE 4.1. Typical Stakeholders Involved in the Water Supply and Sanitation Sector

Type of institution	Common roles and responsibilities
National government—Ministry of Finance and/or Ministry or Agency responsible for national planning	• *Financing of WSS investments*—in many countries, central government provides a major share of the financing of WSS investment projects, either directly from the national budget or as a channel for grants or loans from development partners. • *Planning of WSS investments*—in some countries with strong centralized panning institutions, the planning of WSS investments is done at the national level. In other cases, it is only targets which are set (e.g., access targets), with second and third tier government structures formulating investment plans to meet those targets.
National government—Line Ministry or Department responsible for WSS—could be in Ministry of Water or in Ministries of Local Government (LG) or Urban/ Rural Development, etc.	• *Policy making*—develop policies related to WSS • *Technical support*—provide capacity building to LGs • *Financing capital investments*—provide capital investments through government budget allocation
LG as service provider	• *WSS service provision*—in many countries, LGs are responsible for providing WSS services. In some cases, LGs are allowed to choose how to provide WSS services: by directly providing WSS services through one of the local departments (usually public works or a dedicated WSS department), or by contracting a separate entity (can be private or state owned) to provide the WSS services. • *Mayors and councils*—water is often a high profile political issue at the local level, with mayors and elected councils having prominent roles in WSS decision-making. Unelected municipal officials may also be influential.
LG delegating WSS provision	• *Contracting agency*—if the LG chooses to contract out WSS services, they will be the contracting agency, which has the responsibility to monitor the performance of the operator and hold the WSP to account in meeting the contract conditions. • *Asset owners*—in many cases, the LG is the owner of the WSS assets. Depending on the contract provisions, the LG may or may not be responsible for investment and asset maintenance.

table continues next page

TABLE 4.1. continued

Types of institution	Common roles and responsibilities
Regulator—Regulatory functions can be performed by a national government agency or department, or by LGs or by an independent regulatory agency (WSS-only or a multisector regulator)	Regulatory functions usually include: • *Licencing*—issue licences that allow operators to provide WSS services in the designated areas • *Tariff regulation*—provide guidance on how to calculate appropriate WSS tariffs that ensure financial sustainability of the operator as well as being affordable to consumers. In some cases, the regulator also approves tariffs proposed by the operators, in other cases final approvals are given by the ministry • *Technical regulation*—provide guidance and technical standards to be followed by the operators • *Performance monitoring*—monitor technical, financing and operational performance of the operators; in some cases, the regulator also benchmarks the performance of the operators • *Customer protection*—provide customers with a forum or a means to be heard. Also provide information to customers about relevant WSS services and awareness-raising about their rights and responsibilities
WSS Utility or Operator	WSS can be provided by a department within the LG, a separate utility owned by the municipality or by government, or by a private operator. *WSS services* usually include: • Piped or non-piped water supply • Sewerage services, such as piped sewerage and septic tank emptying services • Sanitation services, such as community toilets Not many WSS utilities or private operators provide both sewerage and sanitation services.
Consumers	Consumers, as the recipients of WSS services, have the responsibility of: • *financing* the WSS services received (the service bills) on time • *reporting* unauthorized usage or interference with the water supply, and other suspicious activity around WSS infrastructures • *maintaining and conserving* WSS equipment in good condition, and covering expenses for repairs or maintenance resulting from negligence • *providing information and feedback* on the quality and quantity of services received as a means of ensuring accountability of the service providers It is vital that consumers are aware of their rights and responsibilities, so they can effectively optimize on the benefits under the regulatory framework. Consumers have the rights to: good quality WSS services; regular supply; official receipting; ethical and efficient service; professional debt collection; and a satisfactory response to enquiries and complaints (WSP 2010).

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TABLE 4.1. continued

Types of institution	Common roles and responsibilities
Donors and development partners	• *Introducing Institutional Reforms*—donors and development partners work with governments to develop programs to improve access to and quality of WSS. • *Financial support*—donors and development partners provide different forms of financial support, including soft loans or grants for the capital investments. There is increasing emphasis on performance-based financing and blended financing which incentivizes borrowing from local banks or capital markets. • *Technical support*—in most cases, donor and development partner support includes technical assistance programs.
Community-based organizations (CBOs) and nongovernmental organizations (NGOs)	• *Community mobilization*—CBOs are rooted in communities, but NGOs are also often close to communities and able to mobilize users, for example to maintain facilities. • *Provision of WSS services*—CBOs and NGOs are often directly involved in providing WSS services, acting in effect as micro-utilities. They often work with larger utilities, for example running kiosks which are owned and supplied with bulk water by a large city utility. • *Technical advice, training*—NGOs may provide technical advice and training to community members or to CBOs. • *Finance for investment projects*—NGOs, particularly foreign-based NGOs, may also raise finance for investment and assist in planning and implementing investment projects.

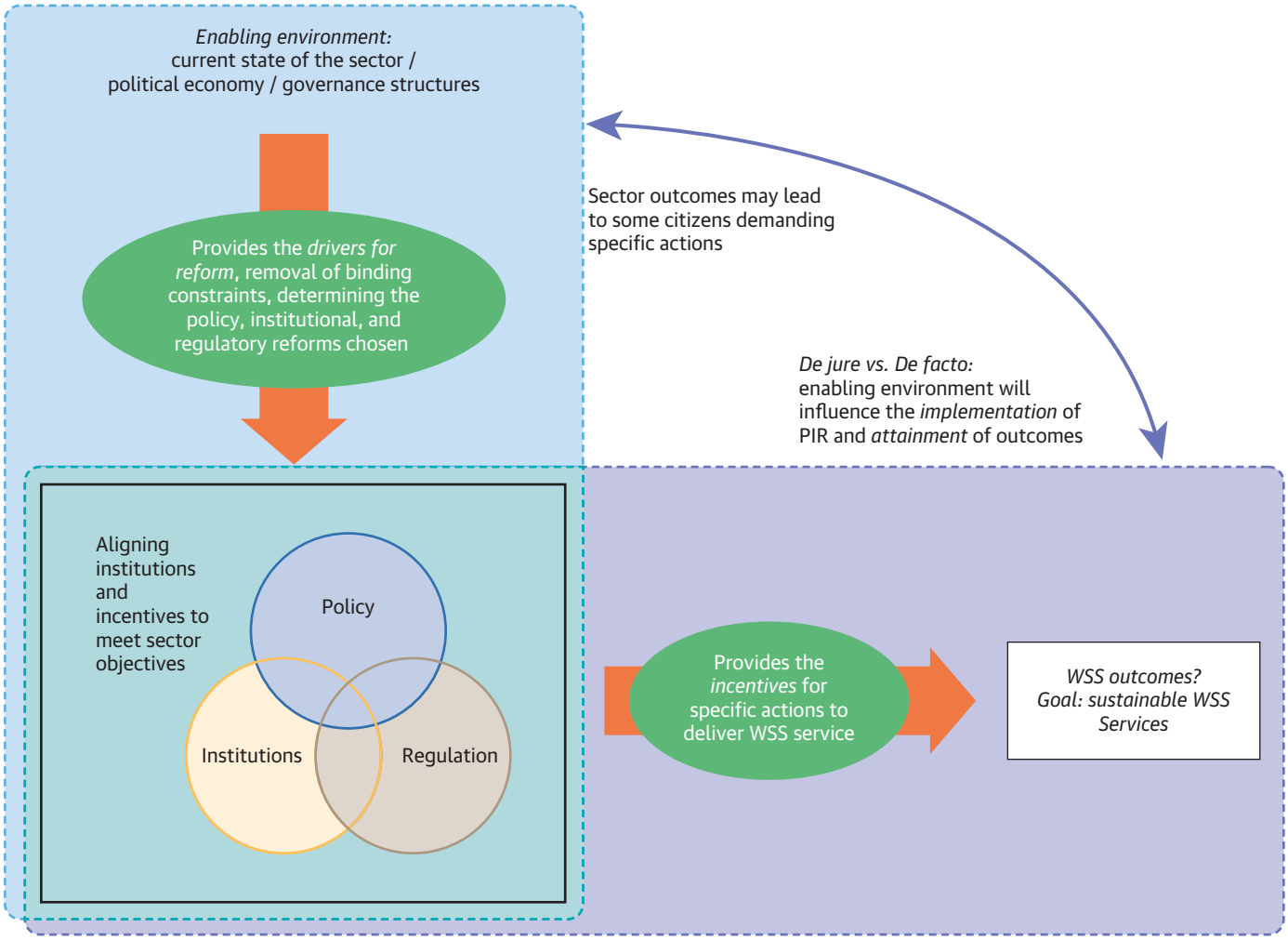
Note: CBO = community-based organization; LG = local government; NGO = nongovernmental organization; WSS = water supply and sanitation.

Ultimately, in view of ensuring universal access to quality and sustainable WSS services, it is important that the institution charged with the development of the WSS sector plan (usually within the national/central government) involve all stakeholders in the process. Equally important, is that there is consensus on each stakeholder's role within the sector, and that each actor's functions are clearly defined and understood. In practice, many of the defined roles and responsibilities of sector stakeholders, as presented below, may overlap—key agencies often having multiple, sometimes conflicting, roles and responsibilities. This presents an important challenge regarding the design of proper institutional interventions to maximize the positive incentives geared towards achieving sector objectives as described in chapter 6.

Categories of Incentives

In considering the different categories of WSS actors who are to be incentivized to reach the access and sustainable service quality goals, the analysis identifies two broad levels of incentives, illustrated in figure 4.2: (a) incentives that emanate from the enabling environment, more specifically known as the drivers for reform, and (b) incentives that emanate from policy, institutions, and regulation.

FIGURE 4.2. Schematic: Aligning Institutions and Incentives for Sustainable Water Supply and Sanitation



(i) Drivers for Reform Stemming from the Enabling Environment

The enabling environment comprises the broader national political economy and governance framework within which the sector sits, and it provides incentives to drive specific actions and to initiate (or not) reform. To address the problems and binding constraints in the sector and to undertake the actions and reform that the enabling environment encourages, key actors initiate specific policies, empower institutions and design regulations.

The actors that initiate the reforms include policy makers, politicians, senior government officials and donors. These actors will choose which types of policy, institutional, and regulatory interventions, and incentives created through these interventions, are to be implemented to address the problems and constraints faced by the sector to achieve sustainable WSS services.

The drivers for reform and the types of reforms that are chosen do not arise in a vacuum, but are influenced by prevailing thinking in public sector service provision and overall

government policies. For example, decentralization has typically been advocated in the WSS sector as an aspect of a national drive to decentralize government responsibilities, not as a unique WSS initiative. The case of Indonesia illustrates this point, where decentralization was not specifically aimed at WSS services, and its introduction resulted in some problems in WSS. It was a general government policy direction to deal with the diverse cultural environment and the unique geographical structure.

The drivers to initiate and carry out WSS reforms come from both internal and external sources:

- ***Endogenous drivers*** arise from political processes within the country in question. Decision makers come to recognize that conditions in the WSS are unsatisfactory and that radical change is needed to address the problems in a systematic and sustainable way. There may also be incentives to harmonize the WSS sector with broad national policies and strategies, such as decentralization, or changes in ideological positions, such as attitudes to private sector provision of social services. The endogenous drivers can also be influenced by international agreements and goals, such as the SDGs, and regional initiatives, such as European Union Directives.
- ***Exogenous drivers*** typically arise through the offer of external financing, which for the WSS sector is invariably highly concessional financing from development partners, but may include for example pressures from an external group, for example, when attempting to attain EU accession. Technical assistance and capacity building are also offered, providing additional incentives to national actors to cooperate with external agencies in designing and implementing the reforms. Another exogenous driver that was identified through the case studies (Burkina Faso) is that of the structural adjustment programs prescribed by the International Monetary Fund (IMF) as conditions to development assistance.

Chapter 5 delves into the endogenous and exogenous drivers for reform to understand how these drivers have influenced the design of institutional interventions.

(ii) Incentives that Emanate from Policy, Institutions, and Regulation

The policies developed, institutions created and empowered, and regulations designed and implemented in turn provide the incentives for the delivery of specific actions and resulting outcomes. The relative success of these policy, institutional, and regulatory interventions in achieving the desired outcomes of course depend on how the interventions are implemented.

The actors that are involved in and/or are affected by the implementation of the reforms include regulators, managers, and staff of service providers (public or private), and consumers.

It is important to note that sector policy, institutions, and regulation do not have wholly separate identities. As demonstrated through the interlinking circles in figure 4.2, there is overlap. For example, what may in some cases may be considered a matter of policy might also be an institutional design, or, what may be an institutional structure could also be considered an aspect of regulation.

Chapters 6, 7, and 8 draw on the case studies and other sources to further understand the incentives created through policy, institutional, and regulatory interventions.

Feedback-Loop

There are important links and feedback between the two levels of incentives, that is, between the drivers stemming from the enabling environment and between the outcomes related to the interventions. For example, the nature of the problems and constraints that emanate from the enabling environment regarding reform and actions will influence not only the type and extent of institutional interventions, but will provide the context for implementation and will determine the difference between de jure and de facto reforms. Further, the outcomes of sector interventions could influence certain stakeholder groups to react (e.g., due to poor or absent services) and these stakeholder groups could voice their concerns to the government to act. Thus, although the scope for intervention to influence the enabling environment is not always obvious, feedback loops may exist or be created between the drivers originating from the enabling environment and the incentives created. This is depicted by the arc-like arrow in figure 4.2.

Chapter 5 delves into understanding the drivers for reform, and chapters 6 through 8 focus on the policy, institutional, and regulatory interventions and the incentives these can create. Appendix A summarizes the result of the analysis using the above framework for each of the case study countries.

Note

1. "Sustainability" is a much-used term in current WSS sector discourse; its main defining elements include: (a) WSS services are sustainable when access and quality of service are maintained on a continuous basis, without any time limit; (b) a number of different aspects need to be sustainable for this overall goal to be achieved, including financial sustainability (sufficient financial resources available for service provision, including provision for capital investments when needed) and environmental sustainability (both upstream—sufficient water resource available, and downstream-sustainable disposal of wastewater); and (c) it is necessary for the stakeholders involved to have incentives to provide high quality WSS services, which do not diminish over time. How to establish policy, institutional, and regulatory structures which facilitate such continuous motivation is an important theme of this study (Mejía et al. 2012).

Chapter 5 Drivers for Reform and the Enabling Environment

This chapter investigates the endogenous and exogenous drivers for reform that stem from the enabling environment and its stakeholders, considering what shapes these drivers, and how these drivers have influenced the design of policy, institutional, and regulatory interventions and therefore the resulting outcomes.

The case studies show endogenous drivers for reform are more frequent in higher income countries, such as Australia, Portugal, Brazil, and Colombia, while countries that implemented reforms that were mostly driven by exogenous factors are lower income, such as Zambia, Mozambique, and Burkina Faso. Other case study countries (Albania, the Philippines, and Bangladesh) were driven by a combination of endogenous and exogenous drivers.

Endogenous and exogenous drivers are not mutually exclusive. There is considerable potential for external and internal originators of reform to interact and influence one another, to assess lessons from other countries in relation to their national situation and sector priorities, and to forge a consensus on the way forward. Exploiting this feedback loop offers the potential to avoid the old pattern of externally funded reform efforts being thwarted by a lack of buy-in from those who were supposed to carry them through in the recipient countries.

Endogenous Drivers Come from Understanding Water Supply and Sanitation Challenges

It is useful to start the discussion of endogenous drivers with clear examples of where these have been effective. The most obvious cases of endogenous drivers for successful reform processes are those of New South Wales (NSW) in Australia, and Portugal.

In NSW (Australia), a heavily subsidized and engineering-focused WSS industry subject to strong political intervention and control until the 1980s was seen to be dysfunctional. Key individuals within the NSW WSS sector saw it as necessary to pursue organizational and economic efficiency if levels of service were to be improved and the utilities made responsive to customer needs. These individuals successfully initiated the reform process, which was later supported by exogenous drivers coming from the Commonwealth Government.

It can be seen in this case, that because the driver for reform was endogenous and it was driven by the problems faced by the WSS sector, the policy, institutional, and regulatory interventions were designed specifically to address these problems and were implemented in line with other public sector reforms that were occurring in Australia at the time. These synergies, between the endogenous and exogenous drivers, resulted in a policy, institutional, and regulatory reform package that is suitable for the existing conditions and capacity and has resulted in successful outcomes (Salisbury, Head, and Groom 2017).

A similar case can be seen in Portugal, where aggregation of bulk water supply was driven by the lack of ability of local authorities to fund large-scale investments, which created the incentive for the government to aggregate the provision of bulk supply services into multi-municipal concessionaires, operated by a state controlled company (Águas de Portugal). Due to its size, its risk sharing mechanism and its extensive investment plan covering the entire duration of the concession contract (maximum of 50 years), the multimunicipal concessionaire had an incentive to increase the level of investment in the WSS sector, leading to significant improvements in the sector.

The examples of NSW and Portugal show that endogenous drivers are closely related to the level of understanding of the problems faced by the sector. Understanding the problems and constraints are a large element of what motivates key decision-makers (key actors of the broad enabling environment) to design and implement incentives that are tailored to address the specific problems and constraints they have identified.

The Brazil case study illustrates how endogenous drivers can change over a long historical period, and how these have shaped the WSS sector (as described in box 5.1). During military rule (1968–85), the incentives were to legitimize the government through providing for the essential needs of the population, while in subsequent epochs of democracy, the reform drivers were limited to meeting the expectations of the populace and demonstrating the national commitment to participation and accountability in public service provision.

In the case of Colombia, the 1991 constitutional reform following the period of civil war provided the endogenous drivers to reorganize and improve the WSS sector. The endogenous drivers to move toward a more market economy shaped the WSS sector: the water utilities were corporatized, and PSP allowed. However, it can be argued that exogenous drivers may also have influenced the WSS sector development, in that following international trends, an independent national regulator was established to perform economic regulation. The fact that the resulting institutional arrangement is unique to Colombia (having mixed public-private companies to provide WSS services) shows that strong endogenous drivers have pushed the actors to design a structure that will work within the country's specific conditions.

The examples of Brazil and Colombia show that endogenous drivers are highly influenced by historical, cultural, and political economy factors. Understanding how these factors influence incentives for reform is crucial to designing appropriate interventions that suit the countries' specific conditions.

In addition, it is also important to understand the power asymmetries in the country, as discussed in the 2017 WDR, to identify key enabling (or obstructing) actors that have the power to bring about (or block) change in the sector. Although not specific to the WSS sector, the Philippines provides a good example of how having key decision makers that have the power to create and implement change can be a crucial factor in achieving desired outcomes. The introduction of the concept of PPP and its uses in major

BOX 5.1. The Enabling Environment in Different Reform Episodes in Brazil

In Brazil, there have been a number of distinct phases of sectoral development, with the reforms introducing changes in the institutional framework being closely aligned with national political and ideological changes:

The period of military government (1964–85), during which a top-down national WSS plan was introduced (PLANASA) and state utilities formed, in part because this was a requirement to access the financing. The primary incentives for these reforms was to consolidate and legitimize the position of the government by providing for essential needs of the population.

The period from 1986 to 2002 was marked by the return to democracy with a strong orientation to participation, the introduction of a new "People's Constitution" in 1988, the curtailment of hyperinflation with the Plano Real in 1994 and the Fiscal Responsibility Law in 2000. The biggest change during this period in WSS was the introduction of PSP which has subsequently played an important albeit small role in aggregate terms. The main incentive for these reforms was to demonstrate tangible results from participatory democracy.

The period since 2003 during which the Federal government encouraged and promoted an intensification of public participation and introduced the Program for the Acceleration of Growth (PAC) which provided substantial financial resources to try to address national level inequities in access to public services (including WSS). In the WSS sector, the promulgation of the 2007 Water and Sanitation Law and the 2013 National Basic Water and Sanitation Plan (PLANSAB) were key landmarks. The incentives for these reforms were an intensification of those from the previous period, heightened by the fact that universal access and sustainable WSS services were still distant targets, and, in respect of wastewater treatment, the incentive to improve water quality in Brazil's rivers and waterways.

The different incentives for reform and resulting different policy, institutional, and regulatory frameworks had correspondingly different impacts. These are discussed in the Brazil case study.

Source: Brazil case study (World Bank 2016a).

government facilities was initiated during the time of President Corazon Aquino (1986-92), who saw the need for PPP to fill the gap in infrastructure investment and service provision. The next administration led by President Fidel Ramos (1992-98) continued and broadened the PPP program to include critical infrastructure and services such as WSS. This also shows that having consistent policy and political support for reform is important.

Endogenous Drivers Can Be Influenced by Exogenous Factors

Exogenous actors (such as donors) can influence endogenous actors is through assisting in the identification of the problems faced by the sector. This insight is supported by the findings from the Institutional Diagnostic Tool (IDT)[1] study undertaken by the World Bank's Global Water Practice, which shows that, notwithstanding complex political economy contexts, any assistance that improves the awareness, capacity and understanding of key decision-makers (main actors in the enabling environment) on the problems faced by the sector, can help create incentives within the actors to initiate and implement change. This approach further contributes to creating a sense of ownership of the reforms, which in turn improves sustainability.

The examples above show that both endogenous and exogenous drivers exist in most countries. The examples discussed in this subsection show that when endogenous and exogenous drivers are aligned, the outcomes are positive.

Albania provides an interesting case to support the above assertion. The changes in the institutional arrangement in the WSS sector were mainly driven by endogenous drivers following a series of political and administrative changes (from the decentralized "village" based service provision, to centralized provision influenced by the USSR period, to a return to decentralized provision followed by regionalization). However, the changes within the WSS sector and the aim to improve service quality and achieve universal access were also driven by the desire to join the European Union, which was conditional on achieving those improvements. In this case, the exogenous drivers complemented and added to the endogenous drivers, and have resulted in sector reform interventions that created positive outcomes. However, some of the interventions have only recently been implemented (such as the regionalization of WSS services) and may not be considered as immediately successful—it may take time for the approach to be refined and positive results and outcomes assured.

In Indonesia, endogenous drivers, shown by the government's 100-0-100 policy targets, provided a strong indication of the government's commitment to the development of the WSS sector, and have provided the momentum the sector needed to continue to improve access to WSS services. However, this endogenous drive for reform was sparked by exogenous factors, such as the SDGs. The endogenous drivers created a policy statement and implementing strategies, which include allocation of public sector resources, that are tailored to the existing WSS sector realities in Indonesia. Key actors in the WSS sector are incentivized to implement changes and programs that will contribute to achieving the policy target.

The Philippines also shows that endogenous drivers can create positive outcomes, which may not be in line with best practice formats. Many reports written about the Philippines WSS sector mentioned that there are a lot of small local private operators that were not selected through competitive procurement process and therefore do not comply with the PPP framework developed for the country. This is true—the WSS sector is fragmented with

many different types of service providers regulated by various central and local government institutions. However, it should not be overlooked that the small local private service providers do provide WSS services where the Local Government Units (LGUs) and/or large PPP operators failed to do so.

The endogenous drivers motivated LGUs to seek alternative investment and types of service provision when they do not have the human and/or financial resources to provide WSS services themselves, and this incentivized local private firms to seek opportunities to work with LGUs and provide the needed WSS services for a reasonable profit margin. The exogenous drivers from donors and development agencies have assisted the government in developing a PPP legal framework that created the enabling environment that allows the local private service providers to operate legally.

Exogenous Drivers Need to Be Internalized and Adapted to Local Conditions

In many cases, there is a congruence of drivers for reform which allows the reform process to proceed successfully, as shown in the previous discussion. Where there is incompatibility between the underlying endogenous and external drivers, the reform process may proceed, but without the firm foundations needed for its success. This is the type of situation described in the isomorphic mimicry literature, which is summarized in box 5.2.

Burkina Faso provided an example of this phenomena. After the 1987 coup d'état, the government was determined to obtain macroeconomic support from the IMF and the investment funds needed for large WSS projects. These factors became the main driver for reform in the WSS sector. WSS sector commitments were a feature of further IMF support programs, leading to the adoption of the new Water Law in 2001, the National Program of WSS in 2001 and the Integrated Water Resource Management Plan in 2003. This legal and policy framework resulted in the institutional arrangement of the WSS sector, including the first 3-year Contract Plan, which was entered between the government and ONEA (the national corporatized water utility).

Significant positive outcomes resulted from these reforms. However, they did bear the imprint of being primarily the result of exogenous drivers. To illustrate, a USAID article in 2008 argued that there had been a large discrepancy between the institutional roles of WSS agents prescribed in the legal framework and the actual role that each agent at the time was playing (USAID 2008).

Another example is the Mozambique WSS sector. In this case, international donors and assistance has provided the exogenous drivers for reform in the WSS sector. However, the consistent commitment of the government to improving the sector, and the high degree of learning that occurred in Mozambique's case (described in box 9.5) has improved the design of the sector interventions and adapted it to suit conditions in Mozambique. This shows that

BOX 5.2. Isomorphic Mimicry: Explaining the Gaps between de Jure and de Facto

"Isomorphic mimicry" refers to the tendency of governments to pretend to reform by changing what policies or organizations look like, rather than what they do. Maintaining legitimacy by adopting the forms of successful organizations and states even without their functions is one of the ways in which governments and countries manage to maintain persistent failure to acquire the capability to implement, while at the same time engaging in domestic and international logic and rhetoric of progress and development.

This describes the historical situation in the WSS well, where the countries may pay "lip service" to global pressures to prioritize sustainable access to WSS services, while continuing with the policy, institutional, and regulatory structures which have failed to deliver adequate WSS services in the past. Isomorphic mimicry is thus one of the key elements in explaining the lack of sustainability of past global efforts to achieve universal WSS access.

Papers in this field (such as Pritchett, Woolcock, and Andrews 2010 and Krause 2013) suggest the solution lies in "endogenous learning and the indigenous debate necessary to create context-specific institutions and incremental reform processes." There are thus no "once size fits all" solutions, no "international best practice" which can be confidently rolled out in different countries. Instead a more nuanced approach to formulating strategies is needed, one that is rooted in local realities and ownership.

Notwithstanding, the isomorphic mimicry literature acknowledges that some learning from the experience of others is inevitable and can often be beneficial. However, Governments "should not be assumed to strive for development, but for their own survival." It will often be rational for them to indulge in "insincere" institutional mimicry, or worse still institutional ventriloquism, which afflicts governments that are so highly fragmented that purposeful action is not possible.

The above quotations are from the paper by Krause. His recommendations are:

- beware of international development efforts that incentivize ventriloquism instead of adaptation;
- allow governments the space to experiment, including turning something that worked well elsewhere into genuinely local innovation.

Source: World Bank 2017e.

exogenous drivers need to be supported by long-term support and commitment from the key actors of the enabling environment.

Zambia provides an example that the lack of endogenous drivers can impede the success of a seemingly well-designed and comprehensive WSS sector reform. The reforms were designed to address glaring institutional problems, such as inefficient legislation and unclear institutional responsibilities, lack of human and financial resources in the sector. The donor supported comprehensive WSS sector specific reform package sought to address these issues through the enactment of strong legislation that created clear functional separation within the sector, and the establishment of an autonomous regulator staffed with competent professionals.

The sector interventions implemented in Zambia clearly reflect the "best practice" thinking of the time, and have resulted in substantial improvement to the WSS by addressing the identified problems. However, the rate of improvement after the initial one was not as good as expected, and the WSS sector still suffers from lack of investment and various operational inefficiencies. The short-term improvements were clearly not matched by long-term and sustainable improvements. As discussed in the case study, part of this was attributed to political economy factors that were not considered in the design of policy, institutional, and regulatory reform. It is also clear that, without strong endogenous drivers to motivate the key actors to continuously improve the sector beyond the exogenous pressures, sustainable improvement is difficult to achieve.

Findings on Drivers for Reform and the Enabling Environment

The findings of interest are those which will assist in the design of future WSS reforms, particularly lessons on how external actors can ensure that the exogenous drivers they create are compatible with or contribute to endogenous drivers for reform.

The starting point is simply for the external actors to be sensitive to the national situation. In the old paradigm, the externals focused their attention almost solely on the WSS sector, without properly assessing the broader political economy environment. They were driven by the career-enhancing incentives in their own organizations, which typically required the elaboration of supposed "best practice" models and then incentivizing the national actors through ensuring that the concessional financing being offered was linked to acceptance of the reform model.

The new paradigm requires an approach whereby external actors reinforce endogenous drivers for reform and work with governments to design programs that are rooted in local political and administrative realities and capabilities. Such programs may well be less ambitious than the sponsoring organization would like if they are to meet their own internal targets, but it is nonetheless important for these considerations to be subordinated to the reform imperatives of the target country. This notion is further elaborated and discussed in

relation to creating sustainable improvement in the WSS sector in the subsequent chapters.

To illustrate the above key point, below are some other insights with regards to aligning exogenous with endogenous drivers, which may assist in the development of appropriate interventions to improve WSS services:

- **WSS sector reforms have traditionally taken place within the context of wider public sector management reforms.** Main public sector trends include Traditional Public Administration, in which the state expanded its role to meet public service obligations, to New Public Management which sought to reap efficiency gains through introducing markets, PSP, and decentralization. This in time has given way to New Public Governance which places emphasis on incentives, and tailored participatory approaches to reform.
- **When key decision makers understand the problems that the sector is facing, as well as the benefits of addressing these problems, the incentive to create change becomes stronger** (see examples from NSW and Portugal). Therefore, the first step in creating incentives for change is to assist key decision makers to identify and understand the problems faced by the sector as well as the potential benefits they may obtain from the reforms.
- **Having incentives for change is the first step, but having the power to create the change is as important** (this is consistent with the findings in the 2017 World Development Report (WDR), and shown in the example of the Philippines). The incentives for change are shaped by the political economy of the sector, and where in the development path the sector lies (as shown in the examples from Brazil and Columbia). Therefore, after identifying opportunities for change, the next step in implementing change is to identify the power asymmetries and political economy factors in the country, to work with the key decision makers to develop policy, institutional, and regulatory interventions suitable for the prevailing conditions.
- **Long-term commitment from both external and internal actors is needed for sustainable changes to occur**. This may seem obvious, but it is nonetheless important to emphasize. Interviews with several World Bank task team leaders (TTLs) confirm this point: TTLs stressed the importance of having long-term engagements and significant in-country presence to build effective relationships with key actors and decision makers in the sector.

One key example of long-term commitment is the experience in Mozambique (see box 5.3). Throughout the reform period, the World Bank has had a constant presence in Mozambique providing assistance and capacity building to the regulator, service providers and the government. The long-term approach, following two large WSS reform projects, ensured the sustainability of the institutional development through continuous capacity building assignments, technical assistance, and support.

BOX 5.3. Continuity of World Bank Involvement in Mozambique's WSS Sector Reforms

Mozambique's WSS infrastructure was decrepit after years of damage and neglect during the country's civil war. Following the first democratic elections in 1994 the government began a complete overhaul of the WSS sector. In 1995, it published the National Water Policy where it laid out the principles on which the sector reforms would be based. The Delegated Management Framework (DMF), implemented through two major World Bank projects, introduced drastic changes in WS service provision in the national capital, Maputo, and four regional capitals.

The DMF introduced an organizational structure where a public asset holding company (FIPAG) was to own WS assets in cities under the DMF mandate and delegate management and operation of the assets to the private sector under performance based contracts. An autonomous regulator (CRA) was also established under the WB projects to oversee and regulate WS service provision.

The World Bank was involved from the start of the reforms and was very influential in the design of the DMF and sector reforms. The Bank provided extensive infrastructure investment and technical assistance through the first major WS projects (NWDP I & II) while capacity and experience was built up at FIPAG and CRA. The Bank's first two projects were designed to be implemented in tandem and to complement each other.

After very unsatisfactory first years of the DMF, which saw the withdrawal of one of the private entities, services began improving rapidly and commercial performance began to strengthen. When the DMF and the public organizations had proved their worth, the World Bank began a new major institutional development project (WASIS I in 2007) which extended the DMF to secondary cities and sanitation, using the same organizational framework as primary cities, but with a newly established public entity (AIAS) to oversee all management contracts in secondary cities. All competent entities (public or private) can bid for the management contracts which are then overseen by an AIAS regional representative.

Two important lessons can be extracted from the World Bank's experience in the Mozambican WSS sector:

- The long-term approach to institutional development can be very successful in fragile countries with low existing capacity at time of entry; and
- Further institutional developments should not be encouraged until institutions have been stabilised and are working well. Allow governments the space to experiment, including turning something that worked well elsewhere into genuinely local innovation.

Finally, it is important to reiterate that having the correct mix and alignment of endogenous and exogenous drivers will not necessarily be sufficient to create sustainable improvement in the WSS sector. There are the incentives that emanate from the actual policy, institutional, and regulatory interventions that are crafted to attain certain outcomes. Chapters 6, 7, and 8 provide detailed analysis of how a holistic approach is needed to design sector interventions that will create sustainable outcomes.

Note

1. The development of the Institutional Diagnostic Tool is an initiative of the World Bank's Water, Poverty, and Economics Global Solutions Group (August 2017).

Chapter 6 Water Supply and Sanitation Service Policy and Incentives

In this chapter, we draw on the case studies, literature review, and other sources to consider policy interventions that would provide the incentives to implement specific actions that would achieve desired public policy goals and outcomes. The section highlights the role policies specifically can play in stimulating reform or delivering action. **However, looking separately at policy, institutions, and regulation should not be taken to imply that the inter relatedness of incentives has been overlooked.** The separate policy, institutional, and regulation analysis in this report is a preamble to the discussion in the final section of the fundamental issue of the inter-relatedness of interventions to create the incentives needed to ensure sustainable improvements in the WSS sector. Any assertions about their relative success or failure must be tempered by the overall national, enabling environment (including political economy and governance structure) and context in which they took place.

Further, as mentioned earlier, it is important to note that sector policy, institutions, and regulation do not have wholly separate identities. As demonstrated through the interlinking circles in figure 4.2, there is overlap. For example, what may in some cases may be considered a matter of policy might also be an institutional design, or, what may be an institutional structure could also be considered an aspect of regulation.

Policy and Incentives

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. Different policy processes and tools exist by which policies are created and implemented. For instance, policies can be implemented through laws, regulatory measures, courses of government action, and financing priorities. In addition to its role in providing guidance over specified actions, policies also serve as a tool that enhance accountability between government and citizenry. The process by which policies are designed comprises of several dimensions: (a) problem definition; (b) goal setting; and (c) choice of instruments to adopt (Cochran and Malone 2014). Effective policies are designed to best fit the local political economy and governance context in question.

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. Policy implementation seeks to create patterns of practices and interactions. This entails an alteration of behavior and interactions between or within individuals, groups or

institutions. Policy incentives aim to modify intrinsic incentives which can be defined as an actual or internal tendency to perform a specific action, and extrinsic incentives which is separate from the action itself (Ryan and Deci 2000).

Successful policy incentives require coherence and consistency of intended policy goals, objectives, targets and tools. Thus, the success of policy incentives is determined by their embedded relationship within the larger framework and local context of established political economy and governance structures. Failure to recognize the embedded nature of policies has led to the persistent failure of policy in delivering the intended incentives. Accordingly, the design of successful policy incentives incorporates the following: (a) an environment that both stimulates and is receptive to realized outcomes during implementation such that demands and resources carry stimuli from the implementing institutions to policymakers; (b) policies that represent the formal goals, intentions or statements of government; (c) the performance of the policy as it is delivered to clients; and (d) the feedback of policies and performances to the environment, which is transmitted back to the conversions process as demands and resources of a later point in time.

Policy Statements

Clarity and ambiguity of policy can determine the effectiveness of incentives in promoting actions towards sustainability. Ambiguity can arise in policy goals as well as the means by which policy is to be implemented. Top-down approaches to policy design emphasizes goal clarity as an important factor that determines policy success. Thus, ambiguity is seen to create misunderstanding and uncertainty which can undermine successful policy implementation. However, depending on the enabling environment and local sector context, goal clarity may prove to deliver dysfunctional incentives and ambiguity in policy design could lead to positive effects. Experience suggests that in some cases, setting clear, specific goals can lead to more conflict. As policies became more explicit, institutional actors were made aware of potential losses they would incur from reform, and were therefore disincentivized to act in line with the intended policy goals and to limit deviations from the existing power and governance structures.

Governments can articulate clear and comprehensive policies through strategies that promote sustainable management of WSS services. A broader articulation of the sector strategy serves to clarify the direction of change and plans to address existing policy, institutional, and market failures that constrain sustainability. Having strong policy direction, in the form of policy statements or embedded in national plans or strategies, indicates the government's commitment to the sector, and can generate incentives for key actors to mobilize and develop ways to improve the sector to meet the policy targets, as shown in the examples below.

Box 6.1 shows the Kyrgyz Republic example, where a lack of policy direction may have led to inaction from the sector's stakeholder.

BOX 6.1. The Kyrgyz Republic—Need for Policy Direction

The WSS sector in the Kyrgyz Republic is characterized by low access to WSS services. Improvement has been slow despite donor involvement and support for the sector. An Asian Development Bank report identified one of the main reasons for poor performance to be that there has never been any policy direction for the sector. The report stated that without any "document laying out a country's priorities (and all indicators suggest that the WSS is not a priority) without a vision of where it wants to go, and without an operational strategy for getting there, the government is virtually condemning the WSS sector to terminal decline, albeit a decline slowed down by donor support." (Junge and Syrdybaev 2012)

The lack of policy direction can reflect a lack of commitment from government and in turn create negative incentives for key actors within the sector. Government entities are not motivated to develop programs to improve WSS sector performance because without policy direction and commitment, the program may not receive funding.

Source: Junge and Syrdybaev 2012.

Comprehensive policy statements have been an important incentivizing influence on sector players in donor-influenced countries such as Burkina Faso, Mozambique, and Zambia. However, policy need not be a formal policy document, launched with fanfare at a national ceremony, and constantly referred to until it is next updated. Policy can also be implicit in government actions, and can still be highly effective.

For example, in the Brazil case study, it is argued that although there have not been such specific policy statements, yet the policy as articulated by politicians and embedded in major national WSS laws and strategies has had a very strong incentive effect on sector performance. This has even carried over to technical people being motivated to find low cost solutions so that sector targets can be met, leading to important innovations such as condominial sewerage. Having a strong policy commitment and direction can incentivize actors to find ways to contribute to the achievement of the target or objective, either due to the possibility of earning financial gains, or for more altruistic reasons.

Like Brazil, in some of the other countries examined as case studies, WSS sector reforms evolved and changed organically, without an over-arching policy being announced at the start. This was very clearly the case in NSW (Australia), but also in Colombia and Indonesia. Although not a stand-alone policy document but rather part of Indonesia's 2010-14 National Medium-Term Development Plan, the 2014 promulgation by the Government of Indonesia of the 100-0-100 targets (100 percent for safe WSS and 0 percent urban slums) has galvanized sector players, whose enhanced incentive to strive to achieve the ambitious targets is evident.

The bold and ambitious target set by the government indicates the strong commitment the government has for the sector, which in turn created the incentive for relevant ministries to develop implementing strategies and programs that can contribute to achieving the targets.

An important point to make here is that the policy target was accompanied by a government budget allocation and identification of complementary sources of finance. Central government ministries, through which the government budget will be channeled, are then motivated to develop programs that can turn the available funds into concrete improvements in the WSS sector.

Policies for Financing the WSS Sector

A crucial aspect of turning motivation into incentives for action are policies on financing (box 6.2). The policy-induced incentives in Brazil, for example, are strong because they are linked to accessing the financing that is associated with the national WSS programs.

In Portugal, there have been a series of comprehensive PENSAAR plans, backed by adequate financing, and this has similarly created incentives for utilities to meet the requirements to access the financing and improve services. In the case of Portugal, the plans have also provided greater security to potential investors, who were more inclined to fund a project that is part of the government's long-term strategy, thus allowing better access to financing for WSS sector projects.

In Colombia, an innovative financing structure was established (FINDETER) that helped not just to provide investment financing but also to incentivize water companies and banks to establish relationships which could lead to sustainable financing mechanisms in the sector. The piloting of a number of innovative blended finance schemes has a similar objective (Leigland, Trémolet, and Ikeda 2016).

Beyond the case study countries, there are good examples elsewhere of the need to make incentives to meet sector policy objectives effective through ensuring that adequate financing is available. The impetus for this can come from development partners, who might make their assistance conditional on matching government budget allocations, supplemented by resources from the community or civil society.

An example of having government policy and programs that allows development partners to contribute to the sector's development is the case of Lesotho. The Government of Lesotho (GoL) developed and issued a policy and program document to develop water supply services in the lowlands. As part of this program, the GoL has packaged the development plan into several zones that development partners can choose to finance. By developing the program, the GoL is incentivized to find alternative financial sources to fund the program. The program shows the commitment of the GoL to the sector, which in turn incentivized development partners to provide assistance, technical as well as financial, to the GoL.

BOX 6.2. Lessons from the Philippines Water Revolving Fund Experience

The Philippines has faced significant challenges in raising finances to meet MDGs in the WSS sector. In the early 2000s, the country's rapid population growth added pressure to public finances. Traditionally, funding for WSS utilities had been largely reliant on public funds, in addition to donor funds and revenues from customers. The pressure on public funds led to a funding gap in the WSS sector.

To close this gap, the country issued an executive order that mandated creditworthy WSS utilities to shift from government financing to market-based financing sources. This paved the way for the Philippines Water Revolving Fund (PWRF).

To attract private financing for the WSS sector, barriers that disincentivized private financial institutions (PFIs) from entering the sector were addressed. Firstly, PFIs were lending over 7–10 years, while utilities required 15- to 20-year repayment terms. Secondly, few utility managers had sound business plans that PFIs could analyze. A lack of market information also heightened the perceived risk of WSS utilities.

By addressing these barriers, PFIs had stronger incentives to enter the sector. Between 2007 and 2016, sixteen water supply projects achieved financial closure involving private-bank financing, ten of which were funded 90–100 percent by PFIs. The sixteen projects had a total loan value of US$94 million, of which US$57 million came from PFI funds.

Source: Paul 2011.

The case of Nepal (box 6.3) demonstrates the importance of budget advocacy by civil society in securing the required resources for investments in the WSS sector.

The basic assumption that has been made so far in this section is that making finance available always provides an incentive from sector actors to try to access that financing. It should be acknowledged, however, that this assumption may not always hold. In the Arab Republic of Egypt, for example, the central government was always financing an intermediate parastatal organization, rather than the WSS service companies, with the result that front-line entities capable of improving service levels have not been incentivized nor developed the capacity to make necessary investments. To counter this, the central government is currently piloting performance-based financing directly to local utilities, in a program supported by the World Bank.

Long-term sustainability ultimately depends on self-finance being achieved. This should not be taken to imply direct self-financing of investment projects, but rather the achievement of sufficient credit-worthiness to borrow and repay commercial finance from local banks or capital markets. Blended finance is a tool to promote the growth of local financing

BOX 6.3. Nepal—State Budget Advocacy

The 2009/10 budget of the government of Nepal promised a policy of "one toilet in one house" as part of the government's goal of universal access to water supply and sanitation by 2017.

However, there was a lot of uncertainty regarding the availability of financial resources to fund the required investments. The budget allocated to water supply and sanitation in that year was Rs. 7.9 crore, which according to WaterAid calculations corresponded to Rs 250 for each unserved person by 2017. The allocated funding was found to be inadequate to meet the promised interventions of hygiene education, provide support toward capital costs etc.

It was only after the media and various NGOs paid close attention to the discrepancies between the government's proclamations and the budget allocated for related investment that the government decided to increase the share of the budget allocated to sanitation.

Source: WaterAid 2010.

of the WSS sector. There are various on-going studies and a growing body of literature on blended finance case studies.[1]

Private Sector Participation in WSS

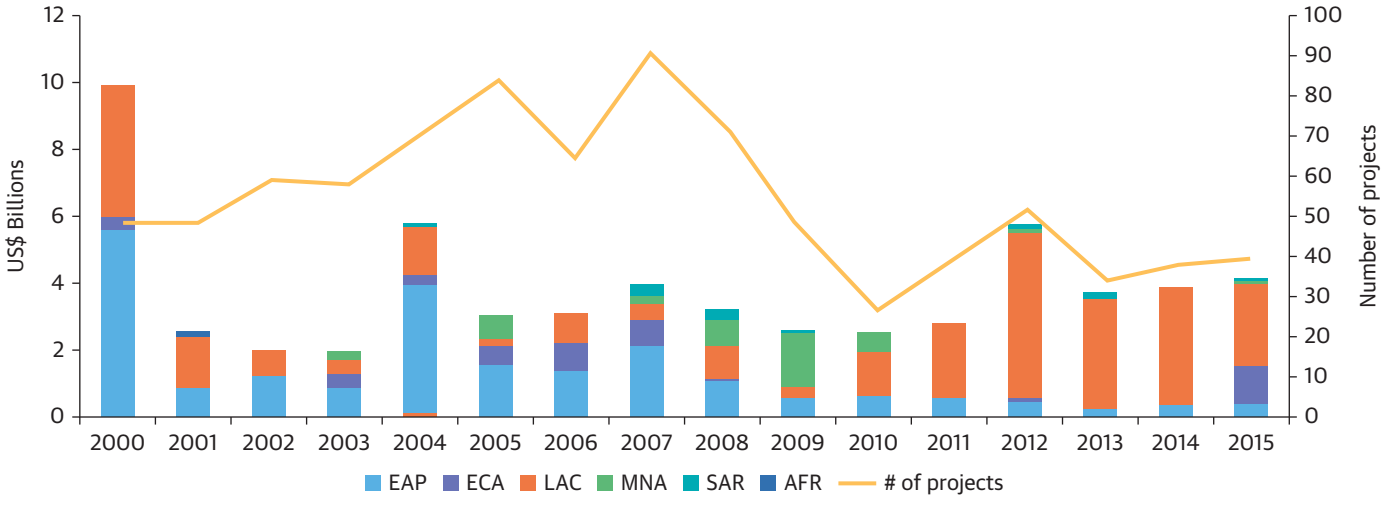
The policy of encouraging PSP has often been perceived as the solution to the pressing need for capital investment in the WSS sector, the inability of local government to provide WSS services and poor maintenance of community-managed systems, as well to free up government resources. The main argument put forward in the literature in favor of PSP interventions is that of efficiency improvements. A large study conducted by Gassner et al. (2007) aimed at evaluating the impact of PSP on the performance of electricity and WSS utilities by comparing data from 302 utilities with PSP and 928 utilities without PSP in 71 developing and transition countries. They found that "PSP is associated with output increases in electricity, and connection increases in water and sanitation, an improvement in bill collection ratios, and improvements in the quality of service in both sectors." However, other researchers found that PSP does not contribute to greater efficiency, concluding that "there is no statistically significant difference between the efficiency performance of public and private operators in this sector" (Estache et al. 2005, 12) and that there is no systematic increase in efficiency resulting from PSP in the WSS sector (Hall and Lobina 2005).

A large database compiled by the World Bank, on public private investments in infrastructure (World Bank and PPIAF 2009), shows that the involvement of the private sector in the

infrastructure sector can encourage the mobilization of new funding sources and lead to higher investments. According to that database, the 20-year average for WSS PPP in developing and transitional countries is US$4.4 billion per year. The trend has been towards fewer, larger projects. As Figure 6.1 below demonstrates, in 2015, the total investment was US$4.1 billion, concentrated in Latin America and the Caribbean (58 percent), Europe and Central Asia (29 percent), East Asia and Pacific (9 percent) and Middle East and North Africa (3 percent). It is notable that US$2.4 billion of the US$4.1 billion was for brownfield rehabilitate-operate-transfer projects. In the previous year, 80 percent of total investment was from build-operate-transfer greenfield projects.

In practice, the degree to which the introduction of PSP has had a positive contribution to the performance of the WSS sector has depended on the broader national environment for PSP and overall institutional context in the WSS sector. The Philippines provides a good example of PSP playing a significant WSS role, this being due more to the national than to the sector framework. PSP has also been successful in Bangladesh in respect of the rather specialized sub-sector niche of sanitation marketing. In Colombia, Brazil, Indonesia and Portugal, private operators play an important but restricted role in WSS, while in Burkina Faso and Mozambique, PSP has played a catalytic role in improvements in the sector which are currently being carried forward mainly by state entities for the larger systems, with emerging innovative PSP models for smaller systems. The incentives that seem to play a role in the successful implementation of PSP reforms are included in table 6.1.

FIGURE 6.1. **Water Supply and Sanitation Sector PPP Investments in 2015, by Region**



Source: Private Participation in Infrastructure database.
Note: AFR = Africa; EAP = East Asia and Pacific; ECA = Europe and Central Asia; LAC = Latin America and the Caribbean; PPP = public-private partnership; SAR = South Asia region.

TABLE 6.1. Incentives in Private Sector Participation

Incentive	Description	Example
Tariff regulation	A remuneration system that allows service operators to fully recover their costs, while also making a reasonable profit, incentivizes higher investment in the sector.	In the early 2010s, **Indonesia** permitted utilities to increase their tariffs to cover costs. Utilities used this revenue to invest in infrastructure, and they achieved long-term financial sustainability. Thus, while it is true that an unconstrained utility may have an incentive to divert revenue to corporate salaries rather than investment, it is also true that utilities have an incentive to invest a certain degree of this money to achieve long-term sustainability, greater profitability, and greater job security. A cap on tariffs should be high enough to permit sufficient revenues to cover such investment costs, but as low as possible to make services affordable.
Performance contracts	Careful design of concession contracts where the remuneration of the private entity is conditional upon satisfactory performance helps to ensure that the incentives provided to private entities are aligned with those of policy-makers in the sector.	The case of **Portugal** shows how incentives for private sector operators can be effectively embedded in the design of concession contracts. The long duration of Portuguese concession contracts (maximum 50 years for the multimunicipal and up to 30 years for private concessionaires) provides an incentive to the concessionaire to act in a responsible manner and consider not only the short-term implications of their actions, but also the long-term sustainability of the WSS sector as a whole. The regulator, ERSAR, monitors the concession contracts on an annual basis to ensure that all parties fulfill their obligations. This reinforces the positive incentives created by the aggregation and PSP model that was introduced in Portugal in 1993.
Duration of contracts	The longer the concession contracts, the stronger the incentive of private concessionaires to act in a responsible manner and consider the long-term sustainability of the sector, rather than focus on short-term financial gains.	
Regulatory monitoring	The presence of a regulator that actively monitors the performance of private operators, provides an incentive to these companies to ensure customer protection.	
Access to financing	When private entities can gain access to low interest financing which allows them to make a profit they have an incentive to access the market and compete with other players, leading to more efficient outcomes.	In **Bangladesh**, the availability of microcredit loans to local entrepreneurs involved in sanitation marketing led to the rapid development of the sector, successfully meeting the demand for improved sanitation products.

Performance-Based or Incentive Financing

Building on the general incentive-inducing effect of the availability of finance, there are various examples in the case studies of financing that are incentive related:

- In rural Mozambique, the PRONASAR program (Programa Nacional de Abastecimento de Água e Saneamento Rural) established incentives for the financing of demand-driven projects, thus changing the top-down practices of the past. The community involvement and ownership in the bottom-up approach is much more likely to create incentives for the maintenance of facilities and hence the sustainability of projects.
- In Brazil, there are in-built performance related incentives in the PRODES (Programa de Despoluição de Bacias Hidrográficas) program. The objective of the program is to depollute hydrological basins and the Federal Government pays utilities for treating wastewater based on certified outputs. The monetary incentives have prompted utilities to act in terms of wastewater treatment.

Performance-based financing (PBF), also referred to as results-based financing (RBF), is the subject of an extensive literature. A summary of key concepts is provided in box 6.4.

There is also a detailed PBF Toolkit that is available to assist in the design of appropriate PBF mechanisms (Fritsche, Soeters, and Meessen 2014).

BOX 6.4. Performance-Based (Results-Based) Financing

In the past, WSS sector institutional frameworks and financing policies have often resulted in ineffective and inefficient use of financial resources. In recent years, there has been an increasing focus on RBF or performance-based mechanisms which are intended to overcome these problems.

Funds are disbursed not against individual expenditures or contracts on the *input* side, but against demonstrated and independently verified *outputs* or *results* that are largely within the control of the recipient. The main problem for recipients is that pre-financing is required—to overcome this, some schemes have an advance payment, which is paid to a participating service provider before outputs are delivered.

Three main types of PBF (Castalia Strategic Advisors 2015) are:

Output-Based Aid (OBA)	In OBA projects, service delivery is contracted out to a third party—public or private—which receives a subsidy to complement or replace the required user contribution.
Conditional Cash Transfers (CCTs)	CCT projects provide cash payments to poor households that meet certain behavioral requirements.
Voucher Programs	In voucher programs, a consumer receives a redeemable voucher from a Government or donor agency which can be exchanged for a specified good or service.

While CCT and Voucher Programs are often aimed at changing the incentives and behavior of beneficiaries, OBA is the PBF most readily adapted to WSS investment projects. Mumssen, Johannes, and Kumar (2010) have provided evidence that OBA schemes have encouraged innovation and efficiency, and increased accountability of service providers.

Closely related to PBF are results-based mechanisms for making sector-wide transfers by external agencies to national governments. For example, the World Bank's *Payment for Results (PfR)* provides loan disbursements to governments upon verification of agreed outputs.

box continues next page

BOX 6.4. continued

The same approach can be used by national governments to make results-based transfers to local government entities or directly to service providers. These are usually on a grant basis and are referred to as Performance-Based Grant Systems (PBGS). An example of this is the newly developed National Urban Water Program (NUWAS) in Indonesia. The Government, with World Bank assistance, is in the process of developing an incentive based framework for development of urban water supply. The NUWAS framework requires local governments and their water utilities (PDAMs) to agree on a performance target to receive funding from central government. The framework is also designed to create incentives for local governments and PDAMs to continuously improve their performance to access further funding or technical assistance from the program. At the time of writing this report, the concept of the NUWAS framework has been accepted and approved by the government, and is in the process of being implemented.[a] A review of PBGS in 15 lower- and middle-income countries found largely positive results in terms of service delivery performance and accountability (UNCDF 2010).

Source: World Bank 2017e, sections 4.3.4 and 4.3.6.
a. ECA was engaged by the World Bank Office Jakarta to assist in the development of the NUWAS framework. Further information can be requested from the World Bank Office Jakarta.

Determinants of Effective Implementation of Policy

An implicit assumption exists which is that once a policy has been designed this policy will be implemented (Smith 1973). However, the efficiency, effectiveness and feasibility of different policy incentives is reliant on the financial, social and political costs associated with the designed policy. Thus, this assumption rests upon certain political and organizational conditions that are part of the broader governance and political economy structure of the sector. For example, although some measures may be effective and efficient, it may be difficult to garner the required political and public support for implementation (Bakker and Tripp 2013).

Numerous factors can inhibit implementation of government policy: lack of qualified personnel, insufficient leadership, opposition to the policy itself, corruption, etc. Each of these different factors interacts during the policy implementation phase and result in patterns which may or may not deliver the intended outcomes of the policy makers. However, if designed and implemented successfully, these interactions could eventually become institutionalized and signal the need for continuation, otherwise they could feedback the need for modification or rejection to policymakers. It is therefore crucial that the following factors are considered:

Financial Resources. Policy should make available resources to facilitate their implementation. These resources can include funds or other incentives in the program that could

encourage or facilitate effective implementation. Implementers of policy may also lack the resources that they need to adapt to a policy, even if they want to comply and recognize the advantages of doing so. Furthermore, the resources that facilitate compliance with public policy may be diverse; these resources not only include cash assets, but also things like good health, human capital, strong social networks, and the ability to draw easily on existing public infrastructure.

Capacity. Whether policy effectively incentivizes improved practices and interactions is a function of the implementing organizations' capacity. Factors such as poorly trained staff; insufficient information; lack of financial resources; and unrealistic time constraints can all impact the capacity of an implementing agency to respond to policy incentives even when aligned with intrinsic incentives of the institutional actors.

Inertia and Goal Consensus. The amount of change involved and the extent to which there is goal consensus between the different implementation entities determines whether intended outcomes are realized. Whether incentives are realized from policy statements depends on the extent to which the policy deviates from previous policies. Furthermore, institutional actors would be incentivized to implement policy depending on the amount of organizational change that is required. Implementing agencies are more likely to be incentivized to implement policy when drastic reorganization is not required. Thus, suggesting that incremental changes are more likely to lead to incentivized policy implementation. This is because policies that require major changes are more likely to lead to goal conflict between different stakeholders, while goal consensus is usually highest where little change is required.

Program of Policy. The intensity of government support and commitment; the source of policy design (top-down vs. bottom-up); and policy scope all interact to determine whether it would effectively incentivize sector stakeholders to implement it.

Implementing Entities. The implementing sector stakeholders are expected to adapt to the newly introduced policy incentives and are most affected by the policy. Effectiveness of policy design hinges on consideration of the following factors: (a) the degree of organization or institutionalization of the entity; (b) the leadership of the institution and whether their intrinsic incentives are aligned for or against the policy; (c) prior experience of the institution and whether they have experience in implementing past government reforms; (d) behavioral norms of the implementing institution; and (e) general capacity to meet the objectives of program implementation. Providing incentives to stakeholders that are already more inclined to adopt the policy measures to be taken could be an approach to increase efficiency of policy implementation and to incentivize further implementation by wider sector stakeholders.

Political Economy and Governance Structure. These are the environmental factors which can influence or be influenced by policy implementation. For differing kinds of policy, differing cultural, social, political, and economic conditions will prevail and therefore policy incentives must be designed to best fit the existing local conditions.

Behavioral Factors. Cultural factors which include the attitudes and beliefs of sector stakeholders determine whether the perceived risk of current behavior is high, and the severity of the consequences associated with current behavioral norms are high, as well as if a new behavior is considered to reduce risks, then one is more likely to adopt the policy reform and respond to the intended incentives.

Data and Monitoring. Another possible barrier to compliance is that targets of a policy lack information that, if they did possess it, would make them more likely to comply. Furthermore, the lack of data and information in turn leads to increased costs of enforcement and implementation, thus disincentivizing policy implementation.

Note

1. See, for example, the blended finance case studies prepared in 2016 by Joel Kolker and Sophie Tremolet.

Chapter 7 Water Supply and Sanitation Institutions and Incentives

This chapter seeks to provide the reader with an overview of the main institutional interventions that can create incentives for sector stakeholders to take the required actions to deliver sustainable services for all.[1] The chapter begins by outlining the institutional arrangements and factors that can create either perverse or positive incentives to achieving sustainability. The chapter then describes specific case study examples of how institutions impact service delivery.

Institutions and Incentives

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 policymakers 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.

Formal institutions refer to written rules and norms such as policies, regulations, and laws, which are applied by organizations. Informal institutions are unwritten conventional social norms and traditions that shape thought and behavior of individuals (Leftwich and Sen 2010). The dynamics between formal and informal institutions are shaped by the political economy and governance structure of the country in question. The outputs of these interactions are specific distributions of opportunities, assets and resources that lead to outcomes which can either promote or inhibit sustainability of service delivery (DFID 2010). Different institutions will entail different levels of efficiency and potential to deliver sustainable outcomes. More importantly, different institutions lead to different gains across individuals and social groups, therefore not all individuals and groups will prefer the same set of institutions.

Depending on the local context, formal and informal institutions may complement each other; compete with each other or; one may even be stronger/weaker than the other. For example, there are cases where informal institutions can undermine formal ones or even substitute for them (Jütting et al. 2007). In India, for example, informal institutions influenced by cultural norms are believed to sometimes promote behavior and attitudes that may support unsustainable, unsafe and unhygienic sanitation practices. Thus, requiring behavioral institutional interventions to change community perceptions regarding safe sanitation practices.

Institutional arrangements can either encourage or impede sustainable management of WSS services depending on their associated relative costs and benefits. WSS service delivery requires dealing with many actors in the sector, none of which are responsible for the full costs of WSS infrastructure and service delivery and, at the same time, do not derive the full benefits of sustainable service delivery. Therefore, actualization of the potential gains from newly created institutions entails a different array costs and benefits for each sector stakeholder. Institutions can minimize the obstacles associated with sustainable management of WSS service delivery by altering the associated costs and benefits of the desired actions that promote sustainability.

Inclusive institutions can incentivize sustainable management of service delivery as they shape and enforce accountability mechanisms that create incentives for actors across the service delivery chain to accept and respond to their responsibilities and the desired actions to achieve sustainability. This entails incorporation of marginalized populations, addressing economic, social and political constraints, aligning new and existing institutions, understanding social norms and behavioral changes and promoting coordination amongst different realms of institutions (UN 2016).

Accountability generally requires that those who hold providers and policy makers responsible are informed about providers' and policy makers' roles and responsibilities as well as performance (transparency), and they are able to punish low performers (enforcement). Greater transparency of government performance across departments and service delivery systems and providers can nurture formal and informal accountability for performance. However, common institutional constraints such as weak coordinating mechanisms which result in the overlap of responsibilities for policy implementation and insufficient capacity for performance management, result in disincentives for sustainable performance and create implementation problems. Moreover, if monitoring, enforcement and support mechanisms from the top are not available to incentivize providers across the service delivery chain to engage effectively, the result is inadequate service delivery, deteriorated infrastructure, and weak service providers. One reason for the success of decentralization is the incentive to provide exceptional service to the public when in greater proximity to users, in the geographical sense, and because end-users are more likely to work for a local utility. The "proximity" to the beneficiary is purportedly better able to hold the service provider accountable.

Roles and responsibilities of each entity must be carefully prescribed for the sector to function adequately. A complex institutional structure with various entities is at greater risk of gaps and overlaps in responsibilities, weakening the incentives for each entity to perform their responsibilities properly. In the WSS sector, this can lead to environmental and health hazards, as the case of Jordan in box 7.1 demonstrates. A clear mapping of the sector can help identify existing intrinsic incentives and in turn design institutional interventions that adjust these incentives to align with reform objectives.

BOX 7.1. Jordan—Roles and Responsibilities

Interviews conducted with actors in the water supply and sanitation (WSS) sector of Jordan revealed a consensus that the sector suffered from poor coordination between entities. Combined with insufficient legislation outlining clearly the role of each entity in the sector, it was evident that definitions of roles and responsibilities in the sector are unclear, leading to gaps and overlaps in responsibilities.

This caused various environmental and health risks, including in the treatment of wastewater for irrigation. The quality of water after leaving treatment plants is monitored by the Jordan Valley Authority (JVA). The JVA also monitor water quality at various points en route to the farm, except on farmland, where water is stored in open ponds. At the time of the interviews, it was still unclear which entity is supposed to take responsibility for monitoring this water.

Source: Hübschen 2011.

Corporatization/Commercialization of Water Supply and Sanitation Services

"Corporatization" or "commercialization" refers to the conversion of a state department into a company that can outsource part of its operations to the private sector. In the literature, there is near-consensus that this process reduces the political pressure on employees and allows them to make decisions based on the principle of economic efficiency.

The theory underpinning this argument is that, following corporatization of WSS services, utility managers become business-minded. Faced with an incentive to demonstrate efficient use of resources and improved financial performance, which translates into higher salaries, managers are indirectly incentivized to make decisions that have a positive impact on overall performance of the sector. In contrast, a state department is incentivized by short-term political goals which may not necessarily translate to sectoral efficiency gains.

The case studies empirically confirm this hypothesis. NSW's "heavily subsidized and engineering-focused industry subject to strong political intervention and control" was transformed into a "competitive and financially secure industry." Zambia saw similar improvements following the conversion of municipalities' WSS departments into Commercialized Utilities (CUs).

An example from Swaziland is the Swaziland Water Services Corporation (SWSC), which is a corporatized government-owned water supply services company. Its corporatization was embedded in a legal framework that ensured SWSC's autonomy in the management of the corporation, including allowing cost-reflective tariffs (SWSC website). The autonomy of SWSC has incentivized it to operate efficiently. In its drive to achieve efficiency,

the management of the company has introduced its own incentive structures, such as bonuses for area managers who achieve their performance targets.

Conversely, Indonesia's de jure corporatization failed to transfer decision-making powers, including the freedom to charge cost-reflective tariffs, to the newly formed companies. In this case, incentives were not created for the company to improve efficiency.

The examples of Swaziland and Indonesia demonstrate that a prerequisite for corporatization to lead to higher efficiency is a legal framework that permits the corporatized utility to operate autonomously and to set cost-reflective tariffs that enable it to be less dependent on government finances.

In addition, a study on the effectiveness of economic policy instruments (EPIs) investigated the effects of corporatization of water utilities in Israel, and found that corporatization can be designed to de-politicize tariff setting, but it must consider political economy and local customs. Box 7.2 illustrates the example of corporatization in Israel's WSS sector.

BOX 7.2. Israel—Corporatization of Municipal WSS Services

In 2001, local WSS services formerly provided by municipal departments in Israel, were corporatized. There were three key justifications: to improve efficiency; to ensure that tariff revenues were not diverted outside the WSS sector; and to exploit economies of scale by merging WSS services of adjacent localities. Many municipalities had incentives to corporatize so that they were not held accountable for service provision decisions, such as tariff increases or quality of service (the de-politicizing effect of corporatization).

Within the first decade, significant improvements were achieved in the sector:

- ✓ workers could be hired outside the rigid employment constraints of the municipal sector;
- ✓ increased transparency regarding incomes and costs;
- ✓ independence from the municipality's financial situation; and
- ✓ new access to capital markets for finance, leading to markedly higher investments in infrastructures and advanced technologies for metering consumption and monitoring water and sewage flows.

However, several municipalities refused to carry out corporatization, because of the following distorted incentives:

- municipalities would lose the ability to block water supply as an enforcement tool for municipal tax collection;
- municipalities would lose power in allocating water resources among services;

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BOX 7.2. continued

- the perceived erosion of local democracy by outsourcing services; and
- potential disputes between corporations and the local authorities over domains of responsibility, because corporations would operate on public land.

Another disincentive to corporatize was the prospect of losing revenue raised by water customers to balance the overall public budget.

Source: Kan and Kislev 2011.

Roles of Informal Institutions

In WSS service delivery, informal institutions, including informal "rules of the game" such as cultural and social norms, as well as informal entities such as community or village groups, play a significant role in shaping the sector and its development. Therefore, in analyzing and designing institutional arrangements or institutional intervention in the WSS sector, these formal institutions need to be considered. Box 7.3 shows an example of how informal rules of the game can overturn and reverse formal rules of the game in Indonesia's WSS sector. This shows the importance of aligning incentives created through sector reform interventions with existing informal institutions.

Another example of the importance of considering users' views on WSS and how it should be provided is given in the box 7.4 below.

A final example of taking informal institutions into account in implementing institutional interventions is the *Metro Water and Sanitation Improvement Project* of Panama. In this project, metering was introduced to address service provider efficiency problems. Understanding of the way the community initially perceived metering, as a way of "profiteering" from vulnerable water users, led to the project including information campaigns targeted at raising community understanding of the benefits of metering, for example, to ensure that they only pay for what they use. The process of metering was eventually a success, in that it created the incentives within the community to save water and use only what they really required.

Decentralization and Aggregation[2]

As explained in the literature review, the main driver for decentralization was to improve efficiency while enhancing local participation. International financial institutions and donors have often been strong supporters of decentralization, in recognition of its presumed potential to address fundamental problems of the sector more effectively.

Most countries have in recent decades introduced some form of decentralization. Responsibility for WSS provision invariably rests with the local authorities, which facilitate through proximity more customer-oriented service delivery and provide incentives for

BOX 7.3. Indonesia—Water as an Economic Good as well as a Social Good

In many countries, water is perceived as a *social good* which shouldn't abide by the laws of markets. Arguments against viewing water purely as a social good emphasize the negative incentives it produces, encouraging (or at least not deterring) inefficient and wasteful use of water, and requiring unsustainable levels of external financing to cover all costs of service provision.

The Dublin convention in 1992 warned the global audience about the scarcity of water. Four principals were established, among which was the acknowledgement that water should be recognized also as an economic good:

> Principle No. 4—Water has an economic value in all its competing uses and should be recognized as an economic good

The economic or social nature of water does not depend on the intrinsic characteristic of the good, but is rooted in deep cultural beliefs and customs, to which we can refer as informal institutions. Despite the enforcement of the Dublin principles, some countries found it difficult to cope with the pervasiveness of these informal institutions in shaping the people's perception of water. For instance, in Indonesia, the Constitution of 1945 defined water as a social good and forged people's perception of water as a non-economic and publicly provided good:

> The land, the waters and the natural resources within shall be under the powers of the State and shall be used to the greatest benefit of the people.

Twelve years after the Dublin conference, Indonesia passed the 2004 Water Law that acknowledged the economic properties of water, including permitting PSP. However, in February 2015, Indonesia's Constitutional Court revoked the 2004 Water Law, *inter alia* deeming various forms of PSP unconstitutional as the right to water is a basic right and control of water resources is a government mandate. Limited private involvement may still be tolerated, but the judgment implies a legal system that still reflects an essentially culturally-derived image of water.

Sources: The Dublin Statement on Water and Sustainable Development, January 31, 1992: http://www.wmo.int/pages/prog/hwrp/documents/english/icwedece.html; The *1945 Constitution of the Republic of Indonesia:* http://www.ilo.org/wcmsp5/groups/public/---ed_protect/---protrav/---ilo_aids/documents/legaldocument/wcms_174556.pdf; http://www.loc.gov/law/foreign-news/article/indonesia-water-law-overturned-by-court/.

BOX 7.4. Taking Community Views into Account

In a World Bank project in Bangladesh, the *Water Management Improvement Project*, one objective was to decentralize part of the water supply and sanitation (WSS) services and allow local people to influence decisions that affect them through involvement in the management of national water resources. Evaluation of this project revealed that the local management units created through the project merely added an additional institutional layer on top of local government institutions; they remained dependent on centralized management and failed to fulfill the role of independent water managers. One of the reasons given was that decentralized units were not seen as legitimate. Community perception was that the WSS was the responsibility of central government.

In the above example, the community's perception of how the WSS sector should be organized partly explains failures in the project. A better understanding of this community perception could have improved the project design, which could have included components to challenge the institutional culture or raise community awareness of alternatives.

Source: World Bank Diagnostic Tool Review Report.

continuous service improvement through enhanced accountability to customers who are also neighbors in the local community.

In most cases, decentralization has been implemented as part of a major national government program, rather than being a strategy for the WSS sector alone. In such contexts, the incentive framework was shaped around the general decentralization objectives of making services more customer-responsive and making service providers more accountable to consumers, rather than being tailored to the needs of the WSS sector. In practice, local authorities often lacked the capacity to effectively respond to their newly assigned responsibilities. The ill-preparedness at the local level was evident in much of Indonesia, with a more mixed picture in countries like Colombia and the Philippines. In the case of Albania, the state of the assets to be transferred under decentralization was so poor that many municipalities refused to accept them. The failure of decentralization to result in any performance improvements in the above countries can be attributed to the lack of incentives provided to the local authorities.

On the other hand, the devolution of service provision to the most decentralized level, when coupled with a carefully designed policy and incentives framework has proven very effective in the case of Bangladesh. In this case, altering the social norms regarding sanitation, especially by linking improved sanitation practices with social identity has incentivized local community members to eliminate open defecation.

In addition to experience documented in the case studies, there are many other examples of how these incentives have played out in practice, two of which are provided in the boxes below.

In the case of the state of Kerala in India, factors which are deemed to have contributed to the (qualified) success of decentralization in improving the efficiency of service delivery, as described in box 7.5 include:

- strong involvement by the user committees (elected by consumers) in the tariff setting and management of the water supply and sanitation schemes;
- clear division of tasks and responsibilities between the state and the local authorities;
- administrative approval of projects by Gram Panchayats; and
- capacity building of local authorities.

However, the project might not have taken sufficient account of the institutional tradition of the country. Even if the short-term and medium-term indicators of the programs show an improvement in water supply and sanitation access, these achievements might

BOX 7.5. Kerala State, India—A Mixed Experience of Decentralization

Prior to decentralization, the Kerala Water Authority was responsible for urban and rural WSS provision. Investment in WSS projects targeted one or more Gram Panchayats (local self-government organization), however, many households within the local authority, usually from low income or tribal population, were not benefitting from the scheme. The water supply and sanitation schemes were of poor quality, while the public ownership of public stand posts led to inefficient usage and poor maintenance. The Public stand posts also faced a free riding issue in water supply. People often didn't pay the Gram Panchayat for using the stand posts and in turn the Gram Panchayat was defaulting on its financial obligations to the Kerala State Electricity Board.

To put a stop to this situation in 1999, the Government of Kerala implemented a decentralized scheme for water supply and sanitation service delivery, focusing on community-driven delivery and a shift away from top-down planning. In the initial stage of the project implementation, small schemes targeting around 50 households were constructed, the majority of which were based on groundwater sources. These schemes were planned and managed by communities with the help of the Gram Panchayat. The help included capacity building and training in technical and financial aspects of water and sanitation supply.

The decentralization of service delivery in Kerala has led to better health and sanitation outcomes in communities. Several factors can be highlighted as accounting

box continues next page

BOX 7.5. continued

for a better access to information regarding the needs of local citizens and subsequently to a better allocation of resources among citizens.

However, the project faced major difficulties which may jeopardize the relevance of the decentralization supply in the long term. A first difficulty arose from the difficulty to build a strong supportive network with rural local governments due to a lack of adequate staff. The inadequate staffing was compounded by the difficulty in finding and retaining NGOs able to work at community level.

Besides, this project showed that government line agencies that traditionally work with a centralized, government-led approach have difficulties in supporting decentralized, community-led rural water supply and sanitation (WSS) approaches. Creating new agencies with a narrower mandate focused on rural supply can facilitate partnership between local government and communities.

Sources: WSP 2008, World Bank 2013.

not be sustainable in the long-run. The 'Jalanidhi' project by the World Bank put forward an alternative model (through rural local governments) for the delivery of water supply services in rural areas. The success of switching from a centralized to a decentralized water supply system thus emerges as being dependent on how the program deals with the institutional tradition of the country to implement the relevant activities to undertake a sustainable change in the mandates of WSS sector institutions.

Bolivia is an example where decentralization led to an improvement in the efficiency of the water supply and sanitation sector by making government more responsive to the needs of low income households. A mechanism was created to direct funds more efficiently than before and allow more community participation. These two factors led to enhanced incentives for utility personnel, leading to better utilization of resources and thus improved efficiency of service delivery.

As shown in box 7.6 above, other institutional incentives, such as having good monitoring and evaluation mechanisms and improved accountability implemented at the same time had a synergistic effect on improving the performance of the water supply and sanitation sector.

Decentralization to a level where the resulting service size would be too small and the local authority did not anyway have the capacity to provide service (coupled also in several cases with inadequate decentralization of financing mechanisms), paved the way for the subsequent *aggregation* of WSS provision. Aggregation implies water supply service providers being amalgamated, so that a single entity serves a number of small markets, thereby being able to take advantage of economies of scale. Other drivers for aggregation are facilitating access to finance, improving access to PSP and making better use of scarce skills.

BOX 7.6. Bolivia's Decentralization Experience—Allocation of Funds and Community Participation

Until 1994, the management of water supply and sanitation services was done centrally and there was little incentive for officials to target services according to local demand. In the same year, the country introduced the Law of Popular Participation, transferring the responsibility of water supply and sanitation management, as well as other social services, such as education, to local authorities.

The main change brought about by decentralization was the way the money was distributed and spent. Resources were directed into the country's poorest municipalities, where water supply and sanitation services were most needed.

The following major changes were important determinants of the success of decentralization:

- The allocation of funds was done on a per capita basis instead of being based on political criteria, which resulted in a reduction of the share of the budget allocated to the three largest cities from 86 percent to 27 percent.
- Decentralization has allowed communities, local organizations and interest groups to be involved in the decision-making process. These groups were previously ignored.
- The new structure of the water supply and sanitation sector allowed local authorities to put more pressure on central government to implement much needed changes in areas that were previously ignored by the government.

The reform resulted in poverty alleviation, through increasing the number of investments in the water supply and sanitation infrastructure, especially in the most deprived areas, although sanitation improvements still today lag behind water.

Other positive changes that took place and which reinforced the positive impact of decentralization include a new monitoring and evaluation framework that produces more data regarding the sector's performance, and an increase in the level of finance from donors.

Source: Faguet 2004.

One example of how to organize and manage aggregation is provided in the Portugal case study, where the establishment of the state controlled company, Águas de Portugal (AdP), tasked with the formation and operation of multimunicipal systems for bulk water supply and wastewater disposal, achieved higher upstream investments in the sector. The factors that affected the success of the concessionaire in increasing the level of investments include its size, its risk sharing mechanism and its extensive investment plan covering the entire duration of the concession contract (maximum of 50 years). Moreover, the remuneration of

the concessionaire included a penalty for poor performance, which provided an incentive to the concessionaire to fulfill the requirements of the contract.

Brazil implicitly introduced aggregated WSS through creating incentives during the period of military government for the formation of state WSS utilities, which even after the introduction of PSP remain the dominant suppliers of WSS services. Albania is embarking on what looks to be a well-designed program of aggregation with incentives aligned to improved service delivery, but it is too early to assess whether it will succeed.

Notes

1. In this chapter, we refer to institutions not in the broad sense as short-hand for policies, institutions and regulations, but specifically the rules of the game and the organizations and mechanisms that are established to formulate policy and implement actions on the basis of such rules. The rules of the game, which can be formal or informal, reflect agreed principles, established through political and/or social processes. They assign roles (or functions) to either organizations (i.e., a group formed of people with a shared purpose) or institutional mechanisms (i.e., an institutional process for delivering a specific outcome because of the combined effect of different rules and organizations).

2. Separate World Bank Global Water Practice "deep dive" studies on decentralization and on aggregation have been carried out in parallel to this study.

Chapter 8 Water Supply and Sanitation Service Regulation and Incentives

Regulation can be a consequential factor in improving sector performance and promoting sustainability. This chapter discusses how regulation can influence incentives that are designed to motivate behavior that supports improvements in sector performance and sustainable management of WSS service delivery. This chapter begins by emphasizing the importance of ensuring regulatory interventions are strongly aligned with existing policy and institutional frameworks to deliver successful outcomes. It then provides an overview of the mechanisms through which regulation incentivizes practices that improve sustainability. The chapter then demonstrates how different regulatory forms and functions deliver incentives for improved services through case study examples.[1]

Regulation and Incentives

During the 80s, the United Kingdom[2] embarked on reforms to privatize WSS service delivery. The ultimate objectives of the reforms were to improve efficiency of service delivery and to attract private sources of finance. Regulators, including OFWAT of England and Wales were established to ensure utilities can adequately finance themselves and implement measures to improve sector performance. Although the OFWAT model has proven to be somewhat successful for the UK in terms of efficiency gains and meeting service delivery standards, exporting regulatory practices from developed to developing country contexts has failed to deliver similar results due to differing administrative, data, and capacity levels, among other factors. The danger of exporting regulatory practices from developed to developing countries as reflected in the so-called Washington Consensus, is that it is not preceded by any organic and endogenous social contracting process or the conditions, contexts, and capacity needed to make the model work. Nonetheless, regulation is increasingly being approached as a means to improve sector performance and sustainability of WSS services in developing countries. Regulatory mechanisms can play a significant role in incentivizing improved sustainability through established systems of rewards and penalties that incentivize utilities to implement specific actions in line with the broader sector policies.

Regulators in developing countries are faced with the challenge of improving sector performance and sustainability through approaches that are tailored to the local context and its challenges including: widespread poverty; service inefficiencies; poor financial sustainability; weak capacity; lack of regulatory autonomy; poor quality and availability of data, amongst other political and social constraints. However, regulation offers governments with tools to effectively support and institutionalize commitments to achieving sustainable management of WSS services, universality and consumer protection, while also promoting incentives for improved effectiveness and efficiency. Effectiveness of incentives designed

through regulatory interventions depends on the regulatory goals, institutional framework, availability of information and data, and institutional capacity.

The case study examples in this chapter demonstrate that there is a vast range of challenges and possible solutions, and therefore there is no one-size fits all solution to regulation in the WSS sector. Differing country contexts and challenges require regulatory interventions that take into account the existing political and institutional factors that could impact whether regulatory mechanisms are successfully able to introduce incentivize sector improvements. Accordingly, designed regulatory frameworks should be in sync with existing capacity of service providers to effectively implement the intended incentives. For instance, in contexts where service provider capacity is low regulatory interventions should focus on the provision of capacity building to improve data collection and management practices. Once a performance baseline is established regulators could adopt mechanisms by which comparative competition can incentivize improved performance such as benchmarking, whereby utilities would be required to submit information returns regularly.

Different regulatory regimes are designed to incentivize implementation of a multitude of sector policies including financial sustainability; universal access; sustainable practices and pro-poor policies. These include respective measures related to tariff methodologies; performance standards; and measures to improve creditworthiness could then be implemented depending on the progression of utility improvements. For instance, *incentive regulation* uses rewards and penalties to motivate behavior that improves utility performance and ultimately sustainable management of services. Mechanisms include price setting regimes with built-in incentives; efficiency reviews which evaluate controllable costs; benchmarking performance; and the setting of performance targets. Additionally, *command and control* regulation whereby the regulator provides detailed instructions of specified actions to be implemented by the utilities incentivizes specific actions through monitoring compliance with the set performance goals and to insure they have been achieved using the specified procedures (Berg 2013). Approaches to price-setting such as cost of *service regulation*, *rate on return regulation,* and *price-cap regulation* aim to create financial incentives by providing opportunities for utilities to cover costs. This also plays a role in remedying cost information asymmetries between the utilities and regulator. Additionally, *yardstick regulation* offers incentives to cut costs by rewarding well performing utilities and penalizing poor performance.

Performance-Based Regulation incentivizes improved performance through set standards and goals with associated rewards and penalties to motivate actions that would lead to enhanced sustainability of service delivery. Regulators can provide utilities with different performance regimes that require different productivity factors. Performance regimes that establish low performance targets are tied to lower rewards, whilst higher performance regimes with more stretching performance targets receive higher rewards in the form of increased potential to reap increased profits (Berg 2013).

Effectively implementing regulatory functions that can create incentives to deliver sustainable outcomes, requires that regulators enjoy a level of autonomy in order to adequately balance the efficiency-equity trade-offs associated with sustainable WSS service delivery and to be able to design appropriate incentive structures tailored to the socio-political context in question. For example, the Zambian regulator was successful in doubling some tariffs despite the propensity of political actors to interfere and to retain control over tariff setting. This is due to the fact that water pricing functions were entirely separated from the control of political entities (Gerlach and Franceys 2010).

In many of the case study countries, reforms have included the creation a centralized regulatory agency (Albania, Mozambique, Portugal, and Zambia). To conclude that this is essential "best practice" to follow would be facile and superficial. Colombia's national regulator has demonstrated various shortcomings (described in more detail below), while other countries that have never had a centralized regulator (Bangladesh, Brazil, Indonesia and the Philippines) have managed relative success in meeting access and service-level targets.

One explanation for the varying success of centralized regulators across countries could be the governance structure of the regulator. Where a separate regulatory agency is to be formed, it is vital that enabling legalization makes provisions for it to be autonomous and as independent as possible from immediate political pressures. Total removal from political processes is not feasible for a public agency, but carefully formulated governance structures for the regulator can insulate the agency from "capture" by political or industrial interests.

Box 8.1 outlines the governance structure of Zambia's WSS sector regulator. While this structure may not be perfect, the regulator has avoided political capture and has benefited from a degree of independence, which are arguably important factors in its relative success.

BOX 8.1. Zambia—Governance Structure of Zambia's National Water Regulator

The governance structure of Zambia's national water regulator (NWASCO) is outlined in the WSS Act. It has a Council with seven members appointed by the Minister. The WSS Act prescribes that members of the Council should consist of one representative from each of the following:

- The Consumer Protective Association of Zambia
- The Zambian Chambers of Commerce and Industry
- An association whose membership consists of water-sector professionals
- A private sector institution concerned with public health

box continues next page

BOX 8.1. continued

- The Ministry responsible for water resources
- The Ministry responsible for local government and housing
- The Attorney General

The Chairperson of the Council is elected by the members of the Council and must not be from a government institution. Each member can serve for three years, and may be re-appointed for another term.

In addition to the Council, NWASCO also has three Committees: the Administrative and Finance, the Technical Advisory, and the Devolution Trust Fund Committees. The Committees are composed of experts from various professions, such as accounting, engineering, and legal, who are appointed by the Council. Each Committee is chaired by a Council member. The purpose of the Committees is to allow experts to focus on specific aspects and make relevant clarifications with relevant stakeholders and ultimately make recommendations to the Council for specific actions.

Source: Government of Zambia documents.

Irrespective of institutional form, regulation has a potentially central role to play in creating incentives for improved performance, through requiring accountability, transparency and customer responsiveness from service providers and promoting competition within the sector.[3]

Independent/Autonomous Regulatory Entity

The regulator in Portugal (ERSAR) is an example of a single-sector national regulator (although incorporated solid waste). ERSAR has a role that is not just to police the sector, but to provide incentives and capacity building to the sector players so that the highest standards of service provision are attained. The staff of regulatory agencies in high income countries, such as in Portugal, are often better paid than their counterparts in the government or the main WSS utilities, so in a situation of constraints on human resources some of the best people are employed in the regulatory agency, and have the incentive to remain in their position. So, regulators in these cases become the primary centers of sector know-how. It is important and appropriate that they feed this knowledge back into the sector. ERSAR has an out-reach program to help regulatory agencies in low income countries to learn from the Portuguese experience.

Another example of a national regulatory agency is the example of IPART, the multisector regulator in the Australian state of NSW, which has a population of 7.7 million. There is no shortage of skilled personnel in NSW, yet the state has elected to have a multisector

regulator, achieving economies of scale and scope in the regulation of the water, public transport, local government, electricity and gas industries. Also notable is the fact that within the Federal Government structure of Australia, the chosen model is state-level multisector regulators, rather than single sector national regulator.

One of the key lessons here is that in both Portugal and Australia, the regulators were staffed by competent professionals. In both cases, the regulatory entities can offer competitive remuneration packages that incentivize WSS sector professionals to work for the regulatory entities. This may not be the case for regulatory agencies in low income countries. As discussed in more detail in chapter 6, aligning intrinsic incentives of key actors is important to achieve sustainable improvements. In the case of having an independent regulatory agency, it is then important that the staff of the regulatory agency be incentivized to create a better regulatory environment for other actors in the sector, either through capacity building, such as the case of Portugal, or through fair tariff methodology and approval processes, such as the case of Australia.

It is important to note that in large, diverse countries the number of utilities are too numerous to regulate in the same manner as is done in smaller countries or jurisdictions (such as NSW). In the other large case study country, Colombia, the national regulatory agency has attempted to regulate around 1,300 utilities in the same manner, irrespective of size. As stated in the case study, there is a lack of coherence in the Colombia model, reflecting the failure of the regulatory structure (a centralized regulatory agency relying on incentive-based regulatory instruments) to match the structure of the industry (highly decentralized, municipal based with a majority of service providers being publicly owned and the principle form of PSP adopted being variations of the concession contract). Once again, the conclusion is clear—institutions need to be tailored to countries, not based on some pre-ordained "best practice" model.

Regulation by Contract

One of the case study countries, Burkina Faso, provides an example of an alternative form of regulation, namely regulation by contract. This alternative approach to regulation reflects the country being in the French sphere of influence. For a long period (1940s to 1977s), before and after independence (which was in 1960), private operators were responsible for water supply service provision under a series of *affermage* type PPP contracts.

Under the reform process which started in the 1980s, a series of performance contracts between the Government of Burkina Faso (GoB) and ONEA (the national utility responsible for urban WSS) were executed. These set out performance targets for ONEA, together with GoB commitments. The inclusion of the GoB commitment, which minimizes its interference, has provided incentives for ONEA to meet its obligations, even without penalties being in place for nonperformance.

Although not included as a case study country, Senegal also provides a good example of regulation by contract, as described in box 8.2.

BOX 8.2. Regulation by Contract in Senegal's Urban Water Sector

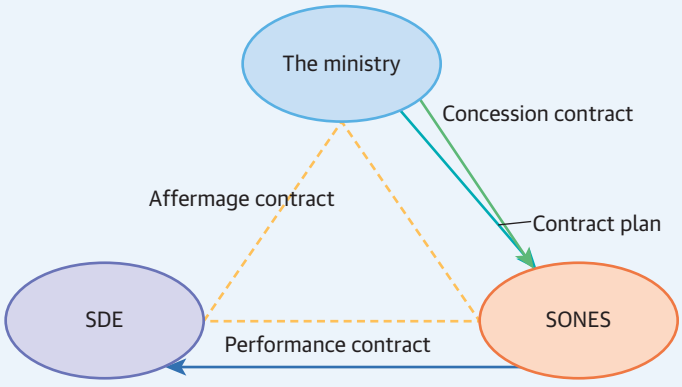
Senegal has promoted PPP in WSS sector since 1996, starting with the large PPP contract between Sénégalaise des Eaux (SDE) and Société Nationale des Eaux du Sénégal (SONES). One of the major aspects of these reforms was the contractual framework between the different stakeholders which established the principle of regulation by contract (see figure B8.2.1).

SONES, as the state asset-holding company, is authorized to manage the sector through a 30-year *concession contract* signed with the State, represented by the Ministry. SONES signs a sector planning contract (*Contract plan*) with the Ministry, which outlines its investment obligations (and was included in the Request for Proposals for the affermage contract). The 10-year *affermage contract* governing operation of the system is signed between three parties: The State, represented by the Ministry, SONES, and a private operating company, SDE. SDE signs a *performance contract* with SONES (including the affermage contract) for the same duration (10 years). The contract is renewable every 5 years after the first 10 years, and contains provision for review of the performance targets every 2 years.

Maintenance, renewals, rehabilitation and expansion are clearly distinguished in the contracts. SONES is responsible water supply investments and for monitoring the performance of the operator. In contrast, SDE focuses on improving technical and commercial efficiency. It produces and delivers water services in urban and peri-urban areas, maintains the network and collects fees.

The Contract Plan establishes SONES's investment obligations and informs bidders of future investments. In *affermage* the operator is a surrogate provider for the

FIGURE B8.2.1. Public-Private Partnerships in Urban Senegal: The Actors and Contract Types



Note: SDE = Senegalese Water Service Company (Sénégalaise des Eaux); SONES = National Water Company of Senegal (Société Nationale des Eaux du Sénégal).

box continues next page

BOX 8.2. continued

government, in charge of water supply and sanitation. The operator is usually paid for every cubic meter of water sold, and has thus little incentive to reduce leakage. In the case of Senegal, the design of the contract integrates incentives through the *remuneration formula.* The operator's remuneration is dependent on both leakage reduction (technical efficiency) and bill collection (collection efficiency) targets. The remuneration formula shares commercial risks and so generates positive incentives to the different stakeholders to make the system work. Remuneration of both SDE and SONES depends on technical and commercial efficiency targets being met, with penalties applied to SDE if they are not met.

In 2003, sector financial equilibrium was reached, a major achievement. Different factors have been identified to account for the success of the reforms:

- positive enabling environment, including strong political will and stability which created a climate of confidence between Government, SONES, and donors;
- external factors also played an important part in the success of the reform—massive donor support as well as the absence of external shocks (such as currency devaluation) provided impetus to the reforms;
- the design was culturally appropriate to the Senegalese context, with a sensible allocation of the risks between parties within a system of regulation by contract, instead of resorting to an independent regulator.

In 2008, the SPEPA law was established to reinforce the role of the private sector in the management of WSS services, in both the urban and rural sectors. Provision of water supply services in rural communities and small towns remains the responsibility of the Ministry in charge of water through a dedicated entity which supervises operation and maintenance activities conducted by the ASUFORs (water users' associations).

From 2006 to 2010, Senegal faced a number of internal and external shocks, including unfavorable rains, followed by the international food and oil price rises, the global financial crisis, and heavy flooding in the Dakar region. The aftermath of this national crisis weakened the enabling environment and exhibited some of the weaknesses of the Senegalese WSS sector (especially the financial vulnerability of SONES to economic shocks). These events strongly harmed confidence. Contracts between SDE and SONES were renegotiated to improve the exchange of information. In 2014, a new reform was launched to involve private operators in the management of rural water facilities. However, the regulation by contract structure has not been called into question, reinforcing the idea of an efficient regulatory setting for Senegal WSS sector.

Sources: Enjeux de la réforme de troisième génération de secteur de l'hydraulique urbaine et de l'assainissement après 2011 au Sénégal" 2009 by Programme d'eau potable et d'assainissement du Millénaire; Reforms and Public-Private Partnerships: in Sénégal, Jemima Sy, Sr Water & Sanitation Specialist Business Area Leader for Domestic Private Sector Development October 2014, World Bank presentation; and Commercializing Communities: Transitions in Water Management in Rural Sénégal, UNDP, February 2013.

The above example shows that contracts can be used to regulate the WSS sector as effectively as an independent regulatory agency. The key in regulation by contract is to design the contract (in whatever form or type) to explicitly set out the incentives for all contractual parties to achieve the objectives. The incentives can be in the form of positive incentives such as bonus payments or more subsidies, or in the form of sanctions or penalties for not meeting performance targets set out in the contract.

Other Regulatory Arrangements

Within the case study countries, Brazil is a federal country, with a much larger and more diverse population than Australia, and has sub-national regulatory arrangements. At the state level, some states established regulatory agencies, and different municipalities have different approaches. Water quality standards and wastewater discharge standards are specified through various legal frameworks, and tariff setting is the responsibility of municipalities, with guidance from federal laws (such as the Law on Fiscal Responsibility). Although the regulatory environment can be improved further, the lack of a single national regulatory agency in this case has not impeded improvements in the sector.

The other large and diverse countries (Indonesia, the Philippines) also do not have national regulators and instead have regulatory arrangements of variable effectiveness. In Indonesia, economic regulatory functions are set out in different government regulations, for example, tariff setting methodology and guidelines is set out in a Ministry of Home Affairs regulation, water quality standards are set out in a Ministry of Health regulation, and performance monitoring is performed on a project by project basis by different central government entities. It is currently acknowledged that the ad hoc nature of the evaluation of the sector's performance is becoming a constraint to further improvement, and a more comprehensive and incentive based framework is currently being developed by the government, supported by the World Bank.

In the Philippines, large private operators are regulated by contracts which are monitored by a specialized unit within the contracting agency, such as the case of Manila water concessions. Other types of service providers are regulated by different entities such as the National Water Regulatory Board (NWRB) or the Local Water Utilities Administration (LWUA), or by local government units (LGUs). The regulation by contract for the private operators sets out the incentives to achieve performance targets in the contract. However, it is unclear how other forms of regulation in the country create the incentives needed for sustainable improvement. This lack of regulation has been identified as one of the main constraints for the sector in many reports by various development agencies.

Mozambique has an interesting experience of establishing a regulatory institution for the urban WSS sector and adapting it over time to changing needs; the established Water Supply Regulatory Council is known as Conselho de Regulação de Águas (CRA). A brief description of its origins and evolving role is given in box 8.3.

BOX 8.3. The Role of Conselho de Regulação de Águas (CRA) in Mozambique's WSS Sector Reforms

Mozambique's WSS sector reforms are described in box 8.3, including mention of the establishment of an autonomous water sector regulator (Conselho de Regulação de Águas [CRA]).

CRA was also established to oversee and regulate WS service provision within the Delegated Management Framework. In 2009, the regulator's mandate was extended to include sanitation as well as water supply in secondary cities. At the same time, a public entity (AIAS) was created to be responsible for WSS service provision in secondary cities. AIAS was based on FIPAG's design and was to oversee WSS assets and delegate management to competent entities (private sector or local government) under management contracts.

CRA is required to approve tariffs, set service quality targets, monitor compliance with the targets, review investment programs and deal with complaints by users and municipalities. To be effective in regulating WSS services throughout the country, CRA elected to decentralize. Local agents of CRA are available in 8 centers (Pemba, Nampula, Quelimane, Beira, Maxixe, Inhambane, Xai-Xai and Chókwe). Their role is mainly to deal with customer complaints. There is also a system of indirect regulation through Local Regional Commissions, which are established by CRA but then operate large autonomously. Support is provided through regional offices in Xai-Xai, Beira and Nampula.

Source: CRA website http://www.cra.org.mz/quemsomos.html.

The urban WSS reforms in Mozambique initially involved performance based contracts with private entities, with CRA having only a limited role in this system of "regulation by contract." Subsequently, however, with the expansion of the DMF and the creation of Administration for Water Supply and Sanitation Infrastructure (AIAS), CRA's mandate was expanded and now includes both secondary systems and sanitation. This has increased demands on the regulator and led to the decision to decentralize CRA's operations.

Regulatory Functions that Create Incentives for Performance

Regardless of the type of regulation adopted in the country, it is clear from the case studies and shown by the vast literature on regulation in the WSS sector, that it is the regulatory functions that can generate incentives for actors in the sector to improve the performance of the sector—the separate discussion paper on WSS Regulation in Developing Countries (forthcoming) provides further examples and in greater detail:

- *Tariff regulation*—to ensure sustainability of service provision, service providers (public or private) need to be able to recover costs of operation, ideally through tariff revenues, or if

cost recovery tariffs are not possible, through forms of subsidy. One of the key functions of economic regulation is to provide guidance on how tariffs can be set to recover costs. Incentives can be designed into tariff methodology, such as incentives to lower costs of operation. As mentioned, there is already an extensive literature on different ways tariffs can be set to provide incentives to the utilities to improve performance.

- *Performance monitoring and benchmarking*—as discussed in the literature review, this can be used to generate competition between service providers and create the incentive to improve performance. For example, to a certain degree, performance benchmarking of service providers in Zambia has spurred some performance improvements in the sector. However, this framework needs to be strengthened to push forward further improvement, for example, by enforcing a stronger penalty for nonperformance.
- *Pro-poor regulation*—this can be in the form of an explicit subsidy program that creates incentives for service providers to provide WSS service to areas that are not economically or financially viable. NSW (Australia) provides a good example of an *explicit* subsidy program in the separation of economic and social responsibility of the service providers. In separating these functions, the service providers have the incentive to fulfill their social responsibilities without having to worry about losing financial gain.

In most other countries, low income consumers are cross-subsidized by other consumers, and this *implicit* subsidy can somewhat dilute the incentives for utilities to be commercial and strive for efficiency. The need for pro-poor regulation is greatest in low income countries. Box 8.4 elaborates on the pro-poor regulatory mechanisms that can be deployed and cites experience from Zambia.

BOX 8.4. Pro-Poor Regulation in Low Income Countries

Pro-poor regulation aims at developing regulatory instruments to provide or improve the access of the poorest to WSS services at affordable prices.

The development of pro-poor regulation is especially relevant to low income countries as a majority of citizens in these countries are not connected to the water networks of major public service companies because they live below the poverty line and cannot finance a connection, or they live too far from the networks (this is particularly the case in the peri-urban areas of major cities, small towns or rural areas).

box continues next page

BOX 8.4. continued

Regulatory mechanisms used to better serve the poor (specifically the urban poor) include:

- *Price and service/quality differentiation*: meaning relaxation in quality of services to ease access of the poorest, coverage targets tied to locations rather than statistics, and use of public information campaigns (Baker and Trémolet 2000; Stallard and Ehrhardt 2004).
- *Tariffs and subsidies*: tariff reform to remove disincentives to serving the poor, and better targeting of subsidies to reach the unconnected poor, including possible focus on connection subsidies and direct transfers to consumers (Franceys and Gerlach 2008; Trémolet and Browning 2002).
- *Incorporating alternative service providers*: through light-handed regulation that replaces price and quality regulation with public performance data (Trémolet and Browning 2002), relaxing exclusivity rights of utilities, assisting providers obtain legal rights and addressing land tenure issues.
- *Customer and civil society*: including the use of participatory and survey techniques to increase customer involvement, and accessible and inclusive regulatory processes. (Brocklehurst 2002; Stallard and Ehrhardt 2004).
- *Service obligations and universal service obligations*: the use of obligatory service (compulsory service to all wishing to connect under the current tariffs) and USOs which extends this to promotion of *socially* desirable consumption through tariff control. (Franceys and Gerlach 2008).

A good example of pro-poor regulation incorporating alternative service providers can be found in the institutional changes for pro-poor financing in Zambia. In 2003, Zambia established the Devolutionary Trust Fund (DTF) to improve WSS coverage in peri-urban and low-income areas, administered by the regulatory agency, NWASCO.

The DTF is a basket of three funds: the General Fund for Water, the General Fund for Sanitation and the Performance Enhancement Fund targeting WSS service. DTF's General Funds target low-cost, high-impact projects such as water kiosks, water meters, improvements on pipelines and sewerage pipes. Experience with DTF has been very positive. It has proven itself effective in distributing governmental and external funds to improve the WSS sector in peri-urban Zambia.

Source: World Bank 2017e, section 5. Baker and Trémolet 2000; Brocklehurst 2002; Franceys and Gerlach 2008; Stallard and Ehrhardt 2004; Trémolet and Browning 2002.

Notes

1. The World Bank's Water Global Practice has produced a separate deep-dive on WSS Regulation in Developing Countries. This will be forthcoming in Spring 2018, as a discussion paper.

2. Here, the UK is used as a shorthand to include England and Wales only; this is in accordance with the literature consulted for the Literature Review (World Bank 2017e).

3. The World Bank's Water Global Practice has produced a separate deep-dive on WSS Regulation in Developing Countries. This will be forthcoming in Spring 2018, as a discussion paper.

Chapter 9 The Need for a Holistic Approach

No one policy, or institutional, or regulatory intervention can ensure positive outcomes in the sector. What is needed rather is a coherent combination of the different institutional interventions.

Aligning Incentive Structures

This section brings together the discussions in the previous sections and emphasizes that a holistic approach is needed when designing policy, institutional, and regulatory interventions to align development objectives with incentives.

A holistic approach requires consideration of the drivers of reforms. Some reform programs are designed specifically for the WSS sector and have strong interlinkages between the different interventions, while others exhibit more ad hoc sector reform interventions, often without any specific focus for the WSS sector. Different combinations of design factors are illustrated for the case study countries in figure 9.1.

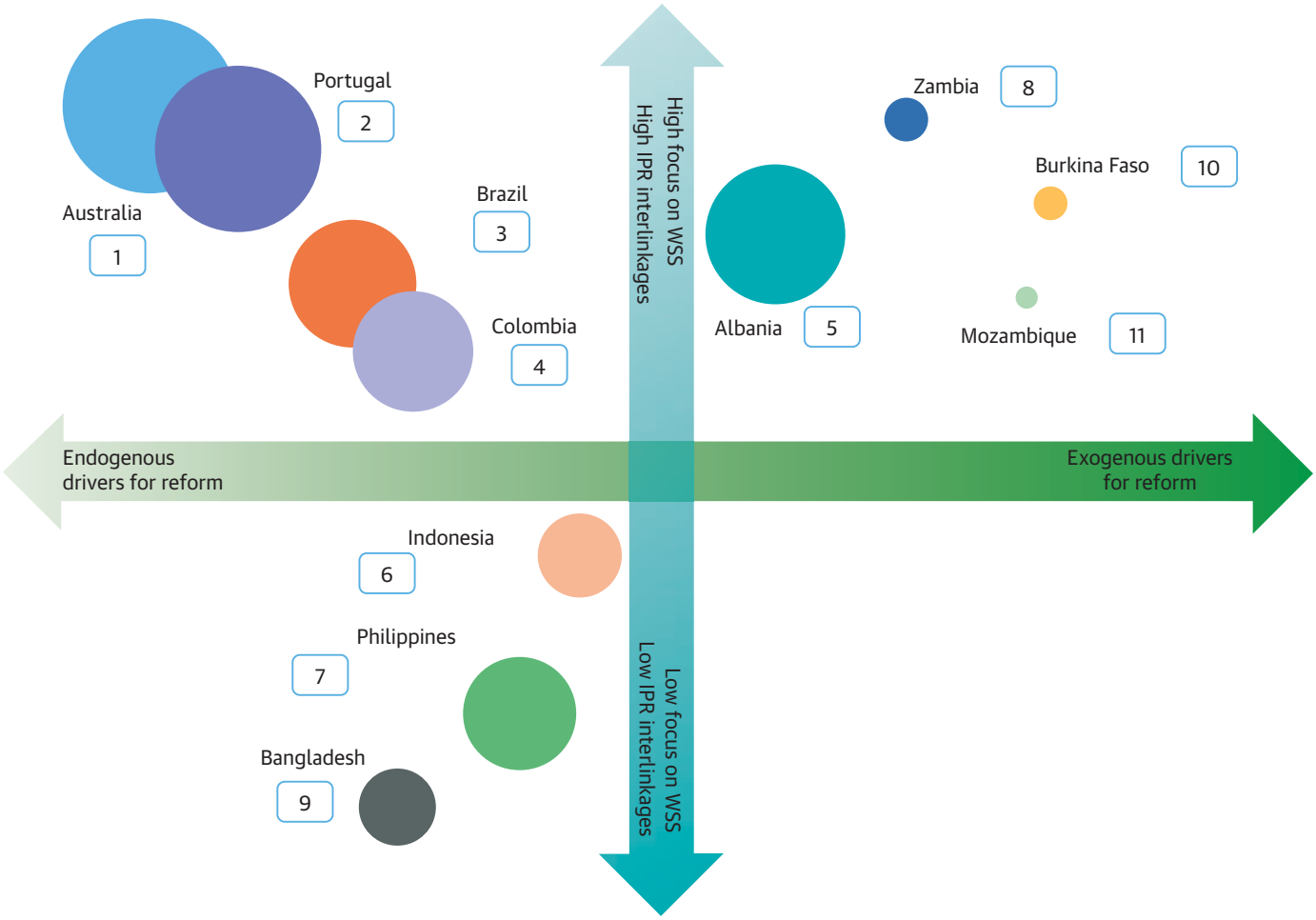
The horizontal axis in figure 9.1 shows the extent of drivers for reform emanating from the enabling environment, with the far left showing strong endogenous drivers for reform and far right indicating that reforms were mostly influenced by exogenous factors (as discussed in chapter 5). The vertical axis shows whether the reforms were specifically designed for the WSS sector and the level of interlinkage between policy, institutional, and regulatory interventions. The size of the bubble indicates the relative level of access to improved WSS services and the numbers in the boxes next to each country is their ranking in terms of gross domestic product (GDP) per capita (1 being the highest and 10 being the country with the lowest GDP per capita).

The case study analysis presented in figure 9.1 shows that countries with strong endogenous drivers for reform have in general better performance in terms of access to WSS services, such as is the case for Australia, Portugal, Brazil and Colombia. In countries where WSS sector interventions were mostly part of public sector reforms (not WSS specific) but are driven by endogenous drivers, such as Indonesia and the Philippines, positive outcomes can be seen. Countries driven by external financing, that is, exogenous drivers, seem to have more coordinated, WSS-specific reforms, with a high degree of interlinkages among interventions, but these are also countries with low levels of access and standards of WSS service delivery (such as Burkina Faso, Mozambique and Zambia).

The trend also suggests, not surprisingly, that high income countries (as shown by the GDP per capita rating) have better access to WSS services and WSS reforms were mostly driven by endogenous factors.

External actors and key decision makers can work together to identify problems and constraints in the WSS sector, and to forge a consensus around coordinated and interlinked sector reform interventions specifically designed for the WSS sector. Ultimately, as the case

FIGURE 9.1. Correlation between the Enabling Environment and Policy, Institutional, and Regulatory Interventions



Note: WSS = water supply and sanitation.

studies show, the success of the overall reform intervention will strongly be influenced by the political economy of the country.

Rather than trying to run counter to the political economy realities by insisting on an institutional intervention that looks coherent on paper, an approach that is more likely to work is to incorporate the political economy constraints directly from the start. This idea is central to Brian Levy's book *Working with the Grain* (2014), which concludes that there is no such thing as a one-size-fits-all and/or best practice solution to development, and that each country is unique in a way that is critical when considering institutional reforms (Levy 2014). In a review of Levy's book, Vivek Srivastava, a World Bank practitioner, added that

> success [of interventions and reforms] depended on identifying "best fit" options that were fit for context and consistent with the "grain" of the political economy associated with the change. Consistent with this line of thinking, effective interventions are more likely to be about "navigating within the operating environment" rather than attempting to change it. (Srivastava 2015)

The various factors that influence the improvement of the WSS sector, and that need to be considered in a holistic approach, are discussed in the following subsections, using examples from the case studies and/or other experiences, and including references, where appropriate, to supporting theories from the relevant literature.

Interlinkages of Institutional Interventions

In many institutional reform processes, explicit interlinkages are made between policy, institutional, and regulatory elements, but even when this is not done, the reality is that the interventions are interlinked, in that, for example, a policy reform and resulting changes in the legal framework would have implications for existing institutional arrangements and regulatory framework and *vice versa* for reforms that have a primary institutional or regulatory focus. All case studies show that interlinkages are important in one or more of the policy, institutional, and regulatory interventions implemented in the country, as summarized in the discussion of incentives emanating from interventions in appendix A. We focus in this section on the problems which arise when the interlinkages are not properly considered.

Lack of Interlinkages Leads to Distortion of Incentives

There are many examples of reforms where some of the individual institutional reform interventions are not coherently linked to the others. For example, in the case of Indonesia, the two main institutional reforms, namely corporatization and decentralization, were not interlinked with each other. Both reforms were supported by two sets of different legal framework (corporatization by the BUMD Law in 1962 and decentralization by Decentralization Law 1999).

The lack of interlinkages has resulted in distorted incentives for some of the key actors: the responsibility of providing WSS services was devolved to local governments (LGs) (decentralization), and LGs have the option to establish PDAMs (corporatized water utilities). But without guidance on how to choose the best form of WSS service delivery, LGs are incentivized to establish PDAMs regardless of whether that is the most suitable form for service delivery, because PDAMs can provide LGs with a source of revenue. This has resulted in small PDAMs with only a few thousand connections, which are not economically or financially viable, and led to inefficient operation and bad service quality.

Another example can be provided from Zimbabwe. There is the view that the WSS sector reforms process, which led to the formation of the Zimbabwe National Water Authority (ZINWA), was driven more by the desire of professional staff in the Department of Water Affairs to move into a parastatal, where pay levels would be considerably higher than civil service pay scales, than by well-articulated institutional considerations. As a result, ZINWA's mandate was a hodgepodge of regulatory and operational responsibilities in both water resources management (its intended primary function) and water supply service provision (intended to be a temporary intervention to provide treated water to smaller urban centers).

With the decline in revenues from its raw water business and the lack of compensatory resources from central government, ZINWA's incentive has been to focus on the clean water business. Customers, the majority of whom are domestic, need potable water and are willing to pay, creating a much more predictable revenue stream for ZINWA. Important functions such as dam safety inspections, dam maintenance and water resource planning have at times been neglected.

Comprehensive Institutional Interventions that Include Specific Country Factors Lead to Better Outcomes

By contrast, the case of Portugal shows that well designed sector reform interventions, which have close and coherent interlinkages, can create strong incentives to improve the WSS sector. The reform in 1993 was supported by a strong legal framework, that clearly separated the policy making (executive), regulatory, and service delivery functions within the sector, and allocated the roles and responsibilities of the institutions. The legal framework also provided guidance on the service provision model: direct public management, delegated public management with multi-municipal systems (aggregation of several municipalities to provide WSS services), or delegation to PSP. The regulatory framework, which included an independent regulator to perform the economic regulatory functions, was developed to suit the existing arrangements and to regulate all types of service provider.

The comprehensive WSS sector reform in Portugal has resulted in sustainable improvements in the sector: investment in the WSS sector increased significantly and can move the sector towards 100 percent access to WSS services. However, it is difficult to attribute Portugal's success in improving the WSS sector solely to the well-designed institutional interventions. As discussed in chapter 5, the WSS sector reform in Portugal was driven by endogenous as well as exogenous factors, in the form of EU regulations. In addition, Portugal is a high-income country, which is also a key facilitating factor for a reform process to be successful and sustainable.

Portugal thus exemplifies the finding that the success of interventions in creating incentives that result in the sustainable improvement of the WSS sector can be attributed to combinations of factors which have country-specific features. It is not possible to select just one or another success factor that can then be replicated in other countries, or to specify that the institutional interventions should be comprehensive.

The specific context of the country is also a major determinant of success and sustainability. This is well illustrated by the case of Zambia, which has well-designed and interlinked policy, institutional, and regulatory reforms. Zambia implemented a comprehensive WSS sector reform, which included a strong policy statement followed by a legal framework that clearly set out the new institutional arrangements. Functional separation of policy making, regulatory and service delivery functions were clearly laid out and consistent with decentralization of WSS services to local authorities (LAs) and corporatization of water utilities.

A regulatory framework was also set out including the establishment of an autonomous regulator (National Water Supply and Sanitation Council [NWASCO]) responsible for economic regulation of the sector. However, this comprehensive "textbook" reform did not result in the increase in performance expected of the sector. Many of the utilities still are not covering their operating costs, NRW is still high and many towns still do not have continuous 24-hour water supply. Thus there are other factors that need to be present to achieve continuous and sustainable improvements in the WSS sector. In the Zambia case study, behavioral economics factors are discussed, as well as the fact that the reforms failed to attract adequate levels of financing. The overall political economy context in Zambia is one of clientelism, or what Levy calls "personalized competition," (Levy 2014).

However, examples from other case studies suggest that having coherent interlinkages in the design of policy, institutional, and regulatory interventions can at least be said to raise the probability of creating appropriate incentives for the key actors. Examples of resultant improvements in the WSS sector include the following:

- Colombia: the move towards a more market-based economy was clearly stated in the 1991 Constitution, and this had implications for public service provision, encouraging competition (through corporatization) and PSP, and establishing the regulatory framework (including the regulatory entities). Although there was no specific WSS sector reform, the changes in the WSS sector followed the overall reforms in the public sector, and these created the incentives for key WSS actors to develop innovative solutions that were tailored to the country. A unique type of PSP (mixed public-private companies that provide WSS services) emerged and two regulatory entities were created, one responsible for economic regulation (tariff setting and ensuring competition in the sector), and one to oversee public sector reform in general and monitor the performance of all types of service providers.
- Albania: the development of the regulatory framework, including the establishment of the independent regulatory agency (WRA) was mostly influenced by the EU Directives for drinking water, and was linked to international best practice in WSS sector reform. This includes regulating water quality and price of service, corporatization of water utilities, and decentralization of services to local authorities (World Bank 2011). With the support of enabling legislation for the agency, WRA has the incentives to fulfil its mandate and supervise the sectors performance through the various changes. In the absence of an umbrella policy and legal framework specific to the WSS sector, the WRA provides some form of guidance to the reform process of WSS sector (including decentralization and corporatization processes).
- Burkina Faso: the delegation of service provision to public (corporatization of ONEA, the national urban WSS utility) and private entities was linked to the decentralization of WSS services to local communes. The regulatory framework (regulation by contract) was used to support the delegation of service provision and to monitor the performance of the service providers. The interlinkages of the policy, institutional, and regulatory interventions

show strong government commitment to improve the sector and to this end create positive incentives for each key actor to fulfil its mandate and functions.

Having well-designed and interlinked interventions are not the only factor that contributes to the sustainable improvement of WSS services. However, combined with other factors, such as having aligned endogenous and exogenous incentives, and by considering intrinsic incentives for each key actor, having well-designed and interlinked policy, institutional, and regulatory interventions will be conducive to achieving sustainable improvements.

Institutional Interventions Designed Specifically for the Water Supply and Sanitation Sector

Water supply and sanitation have unique characteristics (as described in box 9.1) that need to be considered when designing institutional reforms to create the correct incentives for the key actors. The case studies show that public sector reforms, which are not specifically designed for the WSS sector, can have significant impacts (be it positive or negative) on the way the WSS sector is organized and developed. For example, in almost all case studies, decentralization and PSP were not designed specifically for the WSS sector, but nevertheless had significant implications for the sector, not all of which were conducive to meeting sector goals. As will be discussed below, countries that have made the effort to support generic public sector reforms with a WSS sector-specific framework created better incentives for lasting sector improvements. Another interesting finding from the case studies is that countries with strong exogenous incentives for reform, have often implemented WSS sector-specific institutional reforms but the results have been mixed.[1]

BOX 9.1. Unique Characteristics of the Water Supply and Sanitation Sector

The unique characteristics of the water supply and sanitation (WSS) sector was considered in the design of a coordinating mechanism and regulatory framework in Zimbabwe, which include:

- Water is a fundamental component of the natural environment, therefore the role of water resource management (WRM) needs to be considered.
- Water is also a commodity that is needed for human survival and as a fundamental input for productive enterprises.
- Water has important links to sanitation and having satisfactory provision of WSS together with adequate hygiene education (WASH) is crucial for the health and well-being of communities and nations.

box continues next page

BOX 9.1. continued

"The WSS sector" embraces water in its many different roles, uses and aspects—as a natural resource, human need for survival and health, and as an input to almost all forms of production. This makes it inevitable, in all countries, that many different arms of government will have a role in the WSS sector:

- A range of central government ministries and entities;
- Local government entities and local institutions.

Because "water is life":

- the pricing of water is exceptionally socially and politically sensitive;
- access to water ranks above access to say, modern forms of energy, in political discourse;
- donors, nongovernmental organizations (NGOs), and community-based organizations (CBOs) are heavily involved in the WSS sectors of countries where there is less than universal access and where WSS deficiencies are a major cause of health problems.

Source: ECA 2014.

Generic Public Sector Reform Needs to Be Supported by a Specific Water Supply and Sanitation Focus

An example of institutional reform interventions that were not designed for the WSS sector is from the Philippines case study. The institutional changes in the WSS sector were mostly driven by political changes, without any specific focus on the characteristics of the WSS sector, which resulted in an uncoordinated and fragmented WSS sector. Although there are several central government institutions involved in the WSS sector, none of these provided the leadership the sector needed in terms of setting national targets, monitoring the progress and developing the incentives structure necessary to mobilize other actors in the sector. The overlapping roles and responsibilities in the central government institutions (several entities are performing policy making functions, and another set of entities performing regulatory functions) seem to have created a negative incentive to taking the lead, as that could be perceived as overstepping its mandate and crossing into other institutions' fields of competence and/or responsibility. Without strong policy direction, the actors in the WSS sectors have incentives to look after their own interests, and only narrowly to fulfil their mandate.

Similarly, as discussed in the previous section, Indonesia's decentralization and corporatization reforms were not specifically designed for the WSS sector, and this created distorted WSS incentives. However, the enactment of the Water Law in 2004, accompanied by

implementing regulations specifically for the WSS sector, has improved the situation and provided much needed WSS sector-specific policy direction, as well as the institutional arrangements to implement it. In addition, the 2014 strong and ambitious 100-0-100 policy (the government's target to achieve 100 percent access to water supply, zero urban slums, and 100 percent access to sanitation by 2019), which was accompanied by a public sector budget allocation (as described in box 9.2), shows the government's commitment to the WSS sector, and has created the incentive for other key actors (local governments and the water utilities or PDAMs, as well as donors and development partners) to develop strategies and programs that will assist in achieving these ambitious targets.

The development in the WSS sector of Albania also suggests that specific WSS sector focus is needed to ensure that the sector improves within the larger public sector reform. Decentralization, corporatization and PSP in Albania is a general shift in how the public sector is organized. However, these are supported by the establishment of an independent WSS sector regulatory agency, which has helped monitor the sector's performance and assisted in the implementation of the other public sector reform specifically in the WSS sector. More recently, to support the administrative territorial reform and the aggregation of local government units (LGUs) in 2014, the Government issued a WSS-specific implementation guideline in 2016. It is notable that the sector-specific implementation guidelines include financial incentives for LGUs to establish joint water utility companies.

Water Supply and Sanitation Reforms Addressing Specific Constraints Are More Likely to Be Successful

Designing WSS reforms that target specific constraints tend to produce better results, at least in the short run. However, it is not guaranteed to produce positive outcomes on a sustainable basis if it is not accompanied by generating incentives within the key actors. In this section, three examples are described where satisfactory outcomes were achieved and appear to be sustainable. In the next sub-section, examples of short-term improvements are given.

The case of Brazil shows that *strong WSS sector specific policy direction can overcome the lack of interlinkages in the individual* policy, institutional, and regulatory intervention. The Brazil case study documents a situation where the WSS sector did not have a formal reform process with the specific elements that are typical in the experience of other countries, but reforms at different times were conveyed through national WSS strategies backed by the requisite financial support to implement them. The national policy and strategy that was consistently articulated by successive Federal Governments, along with the financial incentives, shows the Federal Government's commitment to the sector, which in turn created the incentives for different key actors, especially local and provincial governments, to improve WSS service provision, including developing innovative technologies.

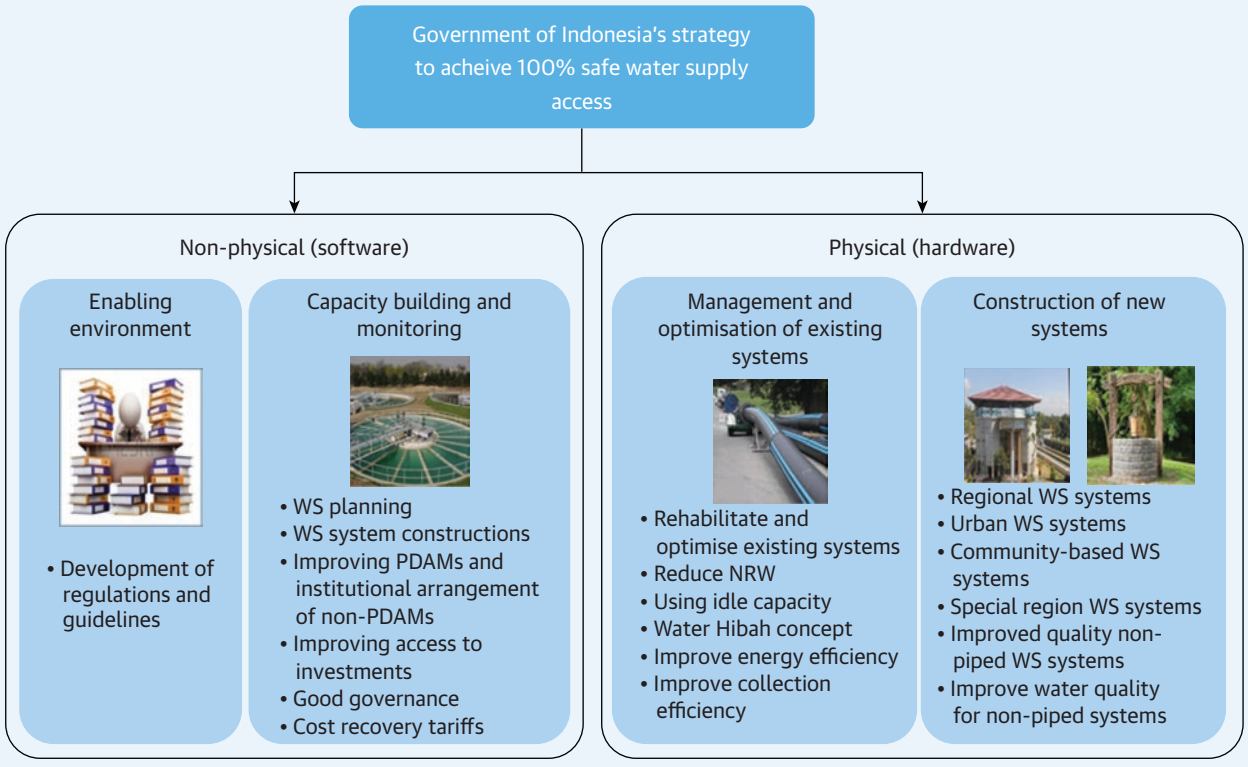
A similar case can be made for Portugal. As discussed in chapter 5, the WSS sector reform in Portugal was driven by the inefficient services provided by small decentralized utilities.

BOX 9.2. Indonesia—State Budget Allocation in the Water Supply and Sanitation Sector

One of the Government of Indonesia's (GoI's) targets for the water supply and sanitation (WSS) sector is the 100-0-100 platform, which states that by 2019, Indonesia wants to achieve 100 percent access to safe water supply, 0 percent urban slums, and 100 percent access to safe sanitation facilities. This was tabled in 2014 and has been adopted. It is set out in the Medium Term National Development Plan (RPJMN) 2015–19. To achieve the 2019 target, 27.4 million new household connections need to be installed, and non-piped water supply systems need to be installed to serve close to 2 million households.

The GoI has developed a strategy to try to achieve the above targets, through both non-physical and physical plans. The diagram below shows this strategy for the water supply subsector.

The above strategy has been accompanied by calculations on the budget and investment needed to implement the strategy. The total financing requirements to implement the strategy to achieve 100 percent access to safe water supply by 2019 is IDR 254 trillion. Out of the total financing requirements, it is estimated that the GoI can allocate around IDR 6.8 trillion annually up to 2019 through national budget allocation, which gives a total of IDR 34 trillion. This leaves a large investment gap of IDR 220 trillion. The GoI expects that this gap can be met mostly through local government budget allocation (IDR 119 trillion), water utilities' internal resources (IDR 18 trillion), loans from commercial banks (IDR 11.5 trillion) and private investments (IDR 38 trillion).



Source: Government of Indonesia Ministry of Public Works and Housing.
Note: WS = water supply.

The aggregation of services, along with the creation of new entities, such as the regulator, were then implemented to address this specific problem, and were articulated through policy statements and strategies, with finance available to realize investment targets.

Another important success case is that of New South Wales (NSW) (Australia), where a comprehensive and specific WSS sector reform was implemented and resulted in significant and sustainable improvement in the sector. The reform package was designed to address inherent problems in the WSS sector, such as operational and institutional inefficiencies and political interference, and included commercialization and corporatization of public service providers, a stronger role and a level playing field for the private sector, establishment of an independent regulatory agency, and clear separation of service providers' roles as business entities and as public service providers. The reform package was designed to align the incentives of key actors with the objective of the reform. However, it is imperative to note that the reform process to achieve the current level of access and quality of service has taken over 30 years (Salisbury, Head, and Groom 2017).

As discussed in chapter 5, the WSS sector reforms in Australia, Portugal and Brazil were mainly driven by endogenous incentives aimed to address specific problems and constraints the sector was facing. Also, it is worth noting that Australia and Portugal are high-income countries and Brazil is an upper-middle income country. This will have influenced the intrinsic incentives in the key actors in each country.

Incentives and Sustainability

The principal aim of adopting a holistic approach to incentives is to achieve sustainable improvements in access and service levels for the population. It is more likely that improvements in the WSS sector will be sustainable and continuous if the intrinsic incentives of the key actors are aligned with development and reform objectives and the associated embedded incentives within the WSS sector:

- ***sustainability*** of reform measures is associated with ***positive incentives being embedded in*** policy, institutional, and regulatory ***structures***; and that
- the holistic package has to also be aligned with the ***intrinsic incentives*** of actors in the sector.

The idea of embedded incentives is to establish structures into which different cohorts of people making their careers in the WSS sector can be recruited and who will all, albeit to a greater or lesser extent, be motivated by the incentives which have been embedded. This is, however, much easier to achieve in a high-income country setting where there is a big pool of qualified people to draw on and where there are high salaries and attractive working conditions.

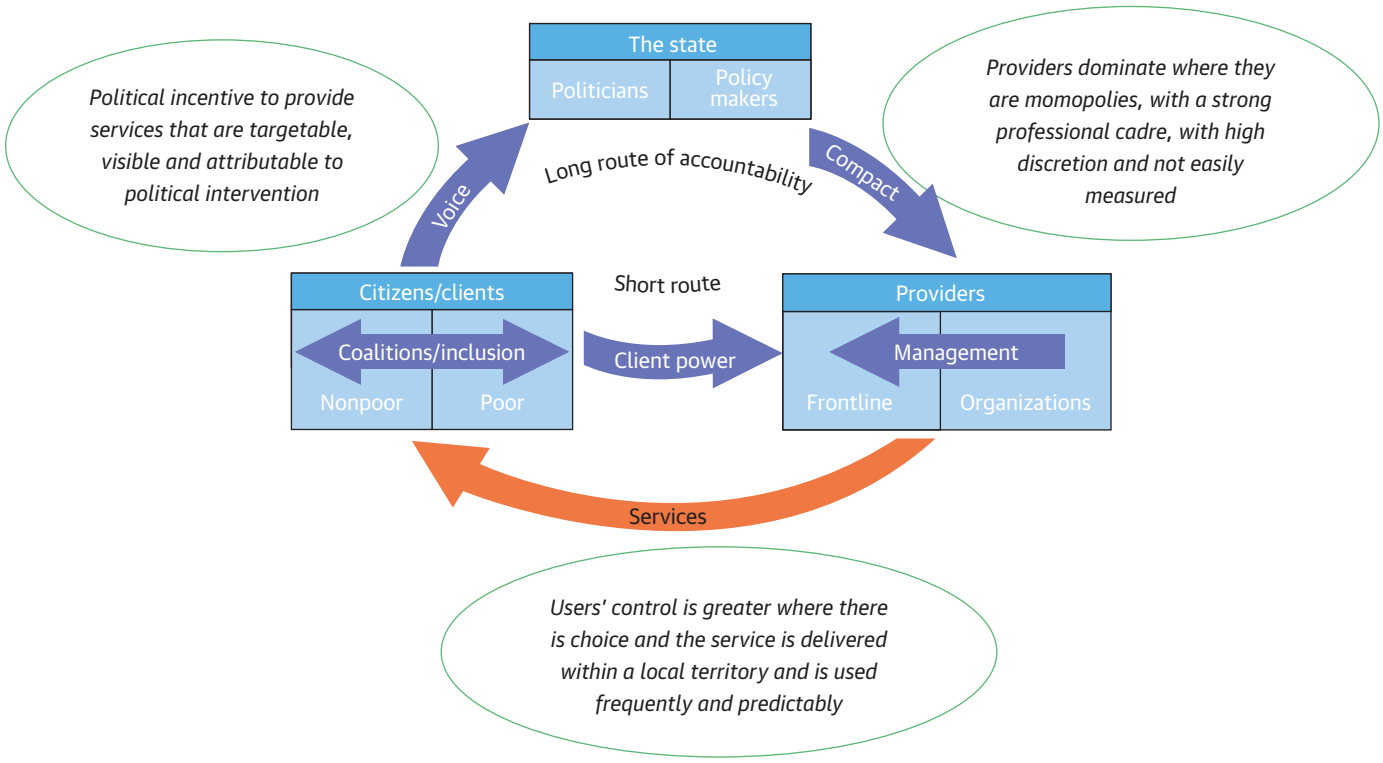
In low-income countries, different conditions prevail—as will be discussed in some detail below, the intrinsic incentives will often be at variance with reform objectives. This is not always the case, however, as the analysis of the importance of personalities and intrinsic

incentives in the 2016 Heymans et al. study of African water utilities bears out (Heymans et al. 2016):

> The successful reform cases... suggest that both institutions and personalities are important. It has been the personalities that have driven institutional reform to improve service delivery... but to become sustainable, institutional systems had to be transformed so that they would work differently even after the reformer has set in motion and consolidated change.
>
> Those policy makers, development agencies or others who want to promote turnaround, need to be skilled at identifying and backing the right type of people, but also need to understand that they need support in their respective political economy environments [such as levels of economic development and therefore availability of human and financial resources, as well as the different intrinsic incentives of various key actors]—none of which would ever be exactly the same and replicable elsewhere.

The incentives that generally motivate three main categories of actors in WSS sector were discussed in the literature review, and are summarized in figure 9.2. The diagram shows the "headline" incentives for the key actors, which are not necessarily in line with the intrinsic incentives of some specific actors, for example, there may be different entities providing

FIGURE 9.2. Incentives of Key Actors in the Water Supply and Sanitation Sector



Source: Wild et al. 2012.

policy making functions, and there may be different types of providers, each with different intrinsic incentives. The level of development and economic condition, plus cultural background and history, have roles in shaping intrinsic incentives of key players and these will typically have an important influence in the development of the WSS sector. Therefore, although the level of economic development is not a factor that can be influenced by external actors, how it affects the intrinsic incentives within the key players needs to be considered in the design of sector interventions.

Intrinsic Incentives in High- and Upper Middle-Income Countries

Upper middle and high-income countries have on average good economic conditions and relatively low levels of inequality of access, which implies that a large part of the population is economically stable and able to meet their basic needs. As WSS actors are less financially constrained, they have less of an incentive to pursue individualistic and/or opportunistic behavior in the short-term, and are more inclined to fulfil their designated roles in the WSS (improving service and access).

The above can be seen in the trend shown by the case studies (see appendix A): upper-middle to high income countries such as Australia, Portugal, Brazil and Colombia show strong endogenous incentives for reform. There are embedded incentives in the WSS sector, in that the intrinsic incentives of the key actors are aligned with the WSS sector objective (improved WSS service quality and universal access). For example, in the case of Portugal, the independent regulator is staffed with competent professionals who have the incentives to strengthen and improve the sector rather than police it, and therefore fulfil this by not only performing the regulatory functions mandated to them, but also by providing advice and training to the WSS utilities.

Another example is from the WSS sector reform in NSW (Australia): "The early reforms in the 1980s were driven by individuals dedicated to pursuing organizational and economic efficiency despite policies, regulations, and institutions that provided weak incentives for such goals. The success of these individual-driven reforms supported subsequent policy and institutional reforms initiated at the state level, that were primarily driven by external events (i.e., perceived financial crises) and reform-focused Governments" (Salisbury, Head, and Groom 2017).

In Colombia, the WSS sector improvements were driven by strong national level commitment to the sector. Looking at this from a WSS sector perspective, policy making decisions are in general the responsibility of the central or national governments in the form of ministries or other central government entities. Individuals who work within these entities had the intrinsic incentives to drive the WSS sector forward and therefore were able to provide the leadership the sector needed through the development and implementation of WSS sector policies and legal framework. This drive and leadership helped shape the WSS sector institutional arrangements.

It is also important to note that high income countries, in almost all cases, have the human and financial resources to support the reform process. The population is in

general well educated, and access to information is higher than in lower-income countries, which may lead to citizens more willing and able to afford cost recovery tariffs, as well as having higher expectations and demanding accountability from their service providers. For instance, if consumers can "voice" their dissatisfaction through legal or regulatory means or can "exit" (Hirschman 1970) the service by moving to another provider (which may only be periodically possible in a network industry), then the WSS has a strong incentive to meet consumers' expectations, and thus to maintain or improve water quality and access.

Intrinsic Incentives in Low-Income Countries

Low- to middle-income countries, on the other hand, have less favorable economic conditions and less legal structure through which dissatisfaction can be voiced. WSS employees, like most of the population, may still struggle to meet basic needs. They might be more inclined to improve their personal economic conditions in pursing opportunistic behaviors. In the absence of a strong regulatory body monitoring WSS activities and a fair remuneration for their work, individuals may have less of an incentive to put the optimal level of effort in their task.

Behavior by key actors that is not conducive to further sector performance for the population can arise from incompetence (not having the capacity to carry out responsibilities effectively), indifference (lack of motivation to improve the WSS sector) or self-interest (diverting resources intended for WSS to own use). The shorthand term for the latter category of opportunistic behavior is corruption. However, no causality has ever been shown between level of GDP per capita and corruption.

The point is that when there are budgetary constraints (such as low pay and lack of opportunity to improve personal economic conditions), the main incentive for protagonists in the WSS sector may be to increase personal gain, even though the individual may recognize that improved water quality and access is a service of greater social value. In a context where opportunistic behavior is available, individuals face a trade-off between increasing their personal gain in the short-term or increasing social well-being in a longer run. As the benefit of safe access to water might be difficult to individualize or measure, individuals have a stronger incentive to pursue short-term personal gain.

The situation can be understood through the prism of the microeconomic theory of the principal-agent model. In WSS sector reforms, the principal (in this case it could be the politicians when there are endogenous incentives for reform, and donors or development partners when reforms are driven by exogenous incentives) sets reform objectives and delegates tasks to the agents, who are key actors in the WSS sector (implementing ministries, regulators, public or private service providers). The objectives of the principals (reform objectives such as improving WSS service quality and universal access) may not match those of the agents (maximizing personal utility through monetary reward or recognition). As the principal doesn't have perfect information on agent behavior, the organization is subject to moral hazard. Without going into further

depth in principal-agent theory and hidden actions, understanding, or at least acknowledging, the intrinsic incentives of the key actors in WSS is important to better align reform objectives and thereby ensure sustainability of reforms. Examples from the case studies supports this notion.

In the Philippines, the central government institutions have little incentive to take the leading role in the WSS sector, and are even driven by negative incentives to invest, such as "loss aversion" (Kahneman and Tversky 1979), in that by assuming the leading role they may step on the toes of other institutions and therefore be reprimanded and/or removed from their position. (Another example of how "loss aversion" can influence the outcome of reform or project is discussed in the literature review, with a summary example reproduced in box 9.4 on Cameroon.) However, the incentive to improve one's economic conditions has also resulted in the development of entrepreneurial activities, such as seeking business opportunities in various sectors, including in WSS infrastructure and service provision. The local private sector has become proactive in seeking opportunities and working together with LGUs to provide WSS services.

A different story has emerged from Bangladesh, as summarized in box 9.3. In this case, strong intrinsic incentives drove community members to demand improved sanitation facilities, which

BOX 9.3. Community Led Total Sanitation in Bangladesh

Before the community-led total sanitation (CLTS) program, sanitation initiatives in Bangladesh mostly consisted of subsidies and hygiene education. This was expensive and failed to reach all members of communities, and the lack of financial contribution to latrines was evidence of people having little incentive to take good care of them.

The CLTS approach was based on appealing to people's sense of identity. There were both negative and positive elements: for example, the "walk of shame," in which community members were required to visit areas of open defecation (Kar 2005), accompanied by development of an understanding of the implications of open defecation for health. This included an analysis of disease pathways from faeces, which triggered communities into action (Fawzi and Jones 2010).

A household having a toilet became a symbol of dignity, to the extent that marriage arrangements began to include latrine inspections in the homes of prospective spouses (Clark 2014). The participatory nature of the program instilled in community members a greater sense of identity and aligned their own individual utility with the success of the program, especially when it came to the ranking of their own village relative to others in obtaining open defecation free (ODF) status.

The program has had a tremendous impact, resulting in a decline in open defecation from 42 percent in 2003 to 1 percent in 2016.

Source: Bangladesh case study (World Bank 2016b).

in turn drove the incentives to supply the sanitation facilities. The incentive to improve one's social identity and economic condition generates entrepreneurial and business opportunities, in that local community members seek to provide improved sanitation facilities for themselves and this generates income for suppliers of latrine components and installation services.

Many countries are trying to emulate the Bangladesh community-led total sanitation (CLTS) model, but this is invariably confined to sanitation. The appeal to community image that is the essential driver of demand for improved sanitation, is bound up with human dignity. No formula has been found to appeal to a community's self-image with similar force in respect of improved water supplies.

As with the discussion on high income countries in the previous subsection, it is important to note that low income countries in general have less human and financial resources to support reforms. The case of Zambia illustrates this point, in that a well-designed and comprehensive sector specific intervention did not result in the level of improvement expected due in part to the lack on investment made in the sector. This lack of investment can be attributed to various factors, such as non-cost recovery tariffs due to low ability to pay, lack of available public funds to be allocated to the sector (given other competing sectors for the budget such as education and health), and very little, if any, private investment.

The Mozambique case study shows that investing in human capital can create a positive outcome. The case study shows very different capacity-building outcomes from the two different experiences of PSP. The differences can in part be explained by the different personal incentives created for the expatriate employees of the two companies:

- *Águas de Moçambique*—the incentive structure was to make the venture profitable. Although capacity building was part of the Águas de Moçambique contract with the government, there were no rewards for training Mozambican staff and no penalties for not doing so.
- The basis of the *Vitens* arrangement was quite different. Paid for by the Dutch Government, capacity-building was the main focus. "The Dutch employees viewed the experience very positively and saw it as a chance to try something new and advance their careers. The contract and the opportunities that followed therefore created job satisfaction and career advancement incentives for Vitens and its employees." This was possible as it was supported by Dutch (and EU) funding, which is not necessarily replicable in most instances, and of questionable sustainability.

Intrinsic Incentives in International Development Institutions

As shown in many of the case studies and other experiences, international development institutions and NGOs are included as key actors in the development of the WSS sector in many countries. It is therefore important to include an analysis of the intrinsic incentives that drive these actors in providing assistance to improve WSS sector performance around the world.

Development banks, whether they be multinational, national or regional, are "financial institutions designed to provide medium and long-term capital for productive investment, often accompanied by technical assistance, in poor countries."[2] Although the (principal) objective for providing the financial products is to reduce poverty and to encourage sustainable economic development (specifically for this study: to improve WSS service provision and access), the incentives within the organization are influenced by the way the organization is run (how incentives are created within the organization to motivate its staff to achieve the organization's objectives). Actors in donor institutions typically have high leverage in the design of reforms. There may be an incentive to design a sophisticated reform package with a large budget, while what may be appropriate would be a less ambitious program of reforms in which the actors in the client country have a sense of ownership and have the capability to implement the reforms. This is well illustrated by the "accidental experiment" in Cameroon which is summarized in the box 9.4 below.

BOX 9.4. Lessons from Two Institutional Reform Projects in Cameroon

In a World Bank report, Raballand and Rajaram (2013) describe an "accidental experiment" that occurred in Cameroon. Two World Bank projects were implemented simultaneously in the country: despite one receiving US$ 15 million and the other only US$ 300,000, the second project is deemed to have had greater impact. The explanation offered for this revolves around the way the incentives for those charged with implementing the projects were shaped by loss aversion and other behavioral factors.

The large project sought to support the Government of Cameroon to improve transparency, efficiency, and accountability of public finance management though support to a number of ministries to strengthen a broad range of management systems and capacities. Reforms in this project were highly risky for the people responsible for carrying them out, as mistakes were likely to lead to their dismissal. The authors argue that loss aversion is key to explaining the resistance to reform encountered during the implementation of the project and hence the limited outcomes.

The second project was a low-profile, technical assistance project to improve performance in Cameroon's Customs. Pecuniary incentives were not utilized due to a problem of corruption. Instead, agents who met their performance goals received congratulatory letters that were put in their permanent file and disseminated to the workforce to give them recognition. There were other non-monetary incentives, including the option to take part in training courses and the provision of technical assistance.

box continues next page

BOX 9.4. continued

The main sanction in the customs project was the removal of the person from their post, or being sent to an office with lower earning potential as a financial disincentive. The authors again align this with the concept of loss aversion: in contrast to the large project, however, loss aversion led to the individuals in the Customs department changing their behavior in a positive way.

Source: Raballand and Rajaram 2013.

Aligning the intrinsic incentives with the development (or more specifically, project or program) goals and objectives may produce better results.

Intrinsic Incentives in Nongovernmental Institutions

Another type of development agency is the NGOs, which is defined as an entity "that operates independently of any government, typically one whose purpose is to address a social or political issue."[3] There are many types of NGOs that promote different values and operate in different sectors. The main characteristic of an NGO however, is that it is not operating to generate profit and most of its funding comes from donors (individuals or organizations who support the values promoted by the NGO). This means that in some way the NGO must be accountable to and can be influenced by its donors, as the following article asserts:

> Funding is the heart of NGO activity and its main problem. Obviously, the first duty of any group is to know the identity and the reputation of the funders... External funding is the critical common component... This, of course, means that none of the groups is a truly independent entity.

This implies that there are intrinsic incentives of the staff of NGOs to please their donors (as the donors fund the operation and pay the salaries). Therefore, there could be incentives to bring short term improvements, such as using donor funds to build wells for rural communities that is not supported by long-term objectives, such as providing capacity building to the community on how to maintain the wells. Although most NGO investments are provided as grants rather than loans, there are some incentives to also provide ongoing maintenance. Without getting too far into this the topic of aid effectiveness and incentives, for the purpose of this study it is sufficient to quote Owen Barder's contention that "aid [can be] made [more or] less effective by the incentives which aid agencies face, which they in turn transmit to their staff."

The Importance of Learning

The previous section asserts that to create sustainable improvements in the WSS sector, the intrinsic incentives of key actors in the sector need to be considered and if possible aligned

with the sector objectives. This section adds that the attainment of the long-term goals of universal access and high quality WSS services needs to also acknowledge that reform is not an event or a linear process. The approach then is to anticipate a series of reform initiatives, interspersed by reversals as well as forward movements, but crucially incorporating a high degree of learning. The drive for sustainability implies building on past successes and failures at each renewal point, these providing opportunities to re-align incentives between policies, institutions and regulations as well as renewing and/or enhancing intrinsic incentives for key actors.

The development of the urban WSS sector in **Mozambique** over the last couple of decades provides a good example of such a reform process that shows promising signs of being sustainable, as described in box 9.5.

BOX 9.5. Learning Process Supported Reforms in Mozambique

The WSS sector reforms in Mozambique were made necessary by the dire state of water assets at the end of the civil war, coupled with a lack of financial viability and weak institutional capacity in the WSS sector. The reforms involved the creation of new institutions and incentives to increase access and improve performance. At a high level, it can be said that the reform program, particularly the Delegated Management Framework, has been successful. WSS services today are a vast improvement on the mid-1990s, but at the same time access to improved water supply and sanitation is still at an unacceptably low level (50 percent and 20 percent respectively) and there is still much that needs to be done to ensure sufficient capacity in water supply and sanitation (WSS) institutions.

A significant conclusion of the Mozambique case study was provided by the reviewer of the first draft: "A great deal of progress has been made and it has been sustained, with some setbacks, over 18 years. In the end, the fact that it was messy, that mistakes were made and lessons learned has made the process more sustainable. The public operators have performed as well as and, in some cases, better than the private operator. [Considerable] credit is due to the government's commitment to institutional reform."

The wording of these remarks by Thelma Triche exemplifies the recommendations on sector reforms which are documented under "isomorphic mimicry" in the literature review (World Bank 2017e, section 6.3), namely that "the solution lies in endogenous learning and the indigenous debate necessary to create context-specific institutions and incremental reform processes."

Source: Mozambique case study (World Bank 2016e).

Lessons can also be learned from the successful reform in NSW, Australia, which emphasizes that a two-way learning process between the NSW State Government and the Commonwealth Government was a crucial success factor: "... the national reform agenda had a very important role in the [NSW] urban WSS reforms. However, the influences went both ways—from utilities/States to the national reform agenda, and from the national agenda to the utilities/States" (Salisbury, Head, and Groom 2017).

This two-way learning process is also important in the case of development agency and client country/governments. As much as low-income countries can learn from experiences in high income countries, development agencies need to learn from the client country's experience with reform in order to understand intrinsic incentives in the sector and design the institutional intervention that will align WSS sector objectives with the intrinsic incentives.

Notes

1. It is important to bear in mind that the analysis in this report is based on the 11 case studies and the literature review, not on the analysis of large statistical data sets. Such an analysis could conceivably reveal that generic public sector reforms have been more successful than WSS specific reforms, but the case-study based evidence would strongly suggest otherwise.
2. Encyclopedia Britannica.
3. English Oxford Dictionary.

Part III Main Take-Aways

Chapter 10 Key Messages, Guidance, and Next Steps

This chapter presents the key messages deduced from the findings of this analysis and described throughout the report narrative, which are envisioned to assist Bank staff, client countries, and other WSS practitioners in the design of future WSS reforms.

One of the main themes of this report, and as was recently highlighted in the 2017 World Development Report (WDR), is that for reforms to be effective, development **practitioners need to be careful not to over emphasize "best practices" as there are no one-size-fits-all solutions.** It is important to move away from what were previously thought to be universal "best practice" solutions, in favor of new approaches which reinforce endogenous drivers for reform (incentives arising from the internal political processes in the country) and working with governments to design programs that are rooted in local political and administrative realities and capabilities. The design of formal institutional interventions should either complement pre-existing informal institutions in the case there are compatible goals, or should create an environment which accommodates informal institutions should there be conflicting goals.

Ultimately, many different factors, linked in complex ways, influence the outcome of policy, institutional, and regulatory interventions: some are outside the control of any reformers (such as the current level of economic development in the country), while some can be influenced to ensure positive outcomes, or at least raise the probability of positive outcomes. This is emphasized by the findings from analyzing policy, institutional, and regulatory interventions, incentives, and resulting outcomes as presented in chapters 6 through 9 which looked at *what works and what does not* in creating incentives through institutional interventions.

With this in mind, a series of key foundation messages have emerged on how to develop sustainable reforms, which are presented below:

- **Technical solutions alone are unsustainable. For reform measures to persist through time, it is essential for positive incentives to be embedded in policy, institutional, and regulatory structures.** Although addressing technical constraints is necessary and can achieve improvements in sector performance in the short to medium term, achieving sustainable outcomes of WSS service delivery in the long run requires policy, institutional, and regulatory interventions that set the enabling environment to achieve sustainability.
- **Individual policy, institutional, and regulatory interventions must be aligned to ensure sustainability, as misalignment leads to distortion of incentives.** Consider Zimbabwe's water sector reforms process, which led to the formation of the Zimbabwe National Water Authority (ZINWA), was in part fostered by the desire of professional staff in the Department of Water Affairs to move into a parastatal. As a result, ZINWA ended up taking on multiple,

sometimes conflicting, roles, encompassing regulatory and operational responsibilities in both water resources management and water supply service provision.

- **Specifically, changes in institutional arrangements and the regulatory framework need to be supported by the necessary laws and policies to be effective and sustainable.** Portugal's reform of 1993 was supported by a strong legal framework, that clearly separated the policy making (executive), regulatory and service delivery functions within the sector, and allocated the roles and responsibilities of the institutions. The legal framework also provided guidance on the service provision model: direct public management, delegated public management with multi-municipal systems (aggregation of several municipalities to provide WSS services), or delegation to private sector operators (PSP). The regulatory framework, which included an independent regulator to perform the economic regulatory functions, was developed to suit the existing arrangements and to regulate all types of service provider.
- **And vice versa: policy direction and commitment need to be supported by institutional arrangements that are conducive to implementing the policy and achieving the targets**. For example, Indonesia's de jure corporatization failed to transfer decision-making powers, including the freedom to charge cost-reflective tariffs, to the newly formed companies. In this case, incentives were not created for the companies to improve efficiency. Regarding corporatization, the Indonesia case shows that a prerequisite for corporatization to lead to higher efficiency is a legal framework that permits the corporatized utility to operate autonomously and to set cost-reflective tariffs that enable it to be less dependent on government finances.
- **Design and implementation of sustainable institutional reforms requires a nuanced understanding of the local institutional context.** Context affects institutional reform in many ways. Contextual factors including lack of political will and low capacity have often been cited as determinants of poor reform outcomes. Therefore, achieving sustainable outcomes of reform hinges on a deeper understanding of the total institutional logic of the sector including the societal rules and organizations that are defined by the local country context and political economy realities. Institutional reform has often been in the form of externally designed interventions targeted at changing local formal institutions, which has a bias towards the use of formal institutions. Interventions include laws, procedures and systems. Countries adopt ambitious reform programs to win outsiders' support in the short term, but these reforms prove to be difficult to fully implement later because of lacking capacity, or contradiction with informal institutions. The result is that of *isomorphic mimicry,* with policy, institutional, and regulatory arrangements that de jure are well designed, but de facto do not function.
- Relatedly, **appropriate local capacity (human and financial resources) to undertake reforms is required to avoid development of gaps between de jure and de facto reforms.** Without a sustainable form of human and financial resources to undertake the reforms, gaps between de jure and de facto reforms become more likely.

- **Building inclusive institutions requires an inclusive reform process.** An institutional context comprises multiple institutional structures, which exist across many domains such as marketplace, state, corporation, and civil society, thus continually face multiple institutional logics. This interinstitutional nature of institutions implies that a coordinated interaction of all relevant institutional players is key to achieve sustainability of policy, institutional, and regulatory reforms. Institutional change requires broad engagement. Multiple leaders are required to facilitate reforms and distributed agents beyond these leaders are also needed to implement change on the ground. The exclusion of the agents responsible for implementation of reforms is often the reason why many externally influenced reforms are poorly implemented and ultimately fail to change behavior. Distributed agents responsible for implementation should be engaged early on in finding solutions to challenges to ensure that viable solutions are considered. Central agents like government ministers, and their policy departments are regarded as the key reformers. By contrast, broader constituencies needed to implement reforms are seldom mentioned. Gaining the buy-in of implementing institutions is therefore critical to the success and sustainability of reforms.
- **Recognizing that there is some misalignment of incentives, actors in donor institutions typically have high leverage in the design of reforms.** As described in the expressively titled book *Working with the Grain*, Brian Levy argues the importance of working within the political economy environment in an incremental manner, rather than attempting to fundamentally change it through the reform process. This entails adopting multi-stakeholder, complimentary and participatory approaches to reform. Box 9.5 describes an interesting case of two reform World Bank projects in Cameroon which illustrates this message. When donors or development partners invest a significant amount of effort and time in understanding political economy factors, the informal institutions of the country and the intrinsic incentives of key stakeholders involved in the sector, there are greater chances of incorporating political economy considerations in projects designed, with key stakeholders taking ownership of the project and achieving sustainable outcomes. Similarly, interventions that can adapt to the evolving situation on the ground are more likely to create sustainable changes in the sector.
- **Reform is not an event or a linear process, and that its success relies on incorporating a high degree of learning.** A reform requires time and planning and implementers must anticipate a series of reform initiatives, interspersed by reversals as well as forward movements, but crucially taking the time to incorporate learning drawing from both success as well as less successful experiences, within and beyond the country's region.

Drivers and Incentives for Reform

Although there are no predetermined best practices, as there are no one-size-fits-all solutions, the study does identify some lessons from what has worked better and what has not worked so well, both in terms of the role of the enabling environment/political economy,

and in terms of specific types of policies, institutions and regulation and their impact on incentives for sustainable service delivery. The section below highlights some of the main take-away that can inform the design and implementation of such reform.

- **WSS sector reforms have traditionally taken place within the context of wider public sector management reforms;** main public sector trends include Traditional Public Administration, to New Public Management, which in turn gave way to New Public Governance which places emphasis on incentives, and tailored participatory approaches to reform.
- When key decision makers **understand the problems** that the sector is facing, as well as the benefits of addressing these problems, the incentive to create change becomes stronger.
- Having incentives for change is the first step, but **having the power to create the change is as important** if not more so. It is therefore key to identify the power asymmetries and political economy factors in the country, to work with the key decision makers to develop institutional interventions suitable for the prevailing conditions.
- **Long-term commitment from both external and internal actors is needed** for sustainable changes to occur.
- **There is an important feedback-loop** between the drive for reform set by the political actors in the enabling environment and the actual success of specific policies, institutions, and regulations.

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 (e.g., Brazil). Of course, 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).

A central incentivizing element is policy on the *financing of the WSS sector*, such as through the *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 that the government is seeking. 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 is being used to good effect in various countries (as described in the Brazil and Mozambique case studies) and new PBF instruments are being tried out (e.g., the World Bank's Program for Results). It regards the use of performance-based contracts (through, for instance, design-build-operate contracts, build-operate-transfer contracts, etc.) with private sector, which involves the payment to contractors being directly linked to the timely and quality delivery of results.

Incentives created through institutional arrangements. Examples here would 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); these incentive effects can also be enhanced through *PSP* (the Philippines, Colombia, Brazil etc.) if structured properly.

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 created 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—the regulator works 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, as seen in the cases of ONEA in Burkina Faso and SONES in Senegal, which regulate by contract. Also, for example, establishing a reliable benchmarking mechanism allows highlighting the better and worse performing service providers, thereby creating incentives on organization performance, and providing visibility on the processes and mechanisms that work and that do not.

Guiding Principles to Generating Positive Incentives

The analysis leads to the conclusion that **it is difficult, or even mistakenly counterproductive, to attempt to develop a template that can provide a set of policy, institutional, and regulatory interventions that can be used in practice and will produce good results.** Instead, what can practically and usefully be done is to suggest a set of guidelines that identify key factors that can generate

positive incentives through the policy, institutional, and regulatory interventions, and outline how these can be coherently combined to create an appropriate set of incentives for sector actors delivering sustainable WSS improvements for the populations they serve.

Based on the analysis herein, and building on the lessons learned listed above, the following are some guiding principles that can help practitioners better understand how incentives can be more effectively created through appropriate policy, institutional, and regulatory mechanisms:

- **Identify key reform drivers**—these are the main motivation to reform and improve the WSS sector, which stem from the problems and constraints the sector is facing, coming from endogenous factors (politicians and/or government officials), or influenced by exogenous factors (donors and development agencies).
- **Understand the existing institutional environment in the sector**—who are the key actors in the sector, who provides leadership within the sector, is there any national policy or strategy for the sector, is there a legal framework that provides the basic set up of the sector, what is the regulatory framework, etc.
- **Understand the political economy of the country and the sector**—where in the reform process does the country currently lie, how did the public sector develop through time, is there any cultural influence in the design of the public sector, how are cultural attitudes to WSS to be accommodated, etc.
- **Identify intrinsic incentives of key actors**—analysis of the intrinsic incentives of the people who will implement the policy, institutional, and regulatory measures, to help embed effective incentives for sustainable access and service delivery.
- **Design institutional interventions that align exogenous with endogenous incentives**, considering WSS sector specific characteristics, and aiming also to align WSS sector objectives and the institutional intervention with the intrinsic incentives of the key actors.
- **Consider interventions that are fit for purpose,** and not overly complex for the given context and capacities.
- **Provide sufficient capacity support** so that the chosen reforms to meet the desired objectives can be realized. Capacity-building should be grounded in the realities on the ground, including human resources and ownership, to lead to sustainable results.
- **Relatedly, ensure there is sufficient financial capacity** to sustain the results and the required human resources needs to undertake the desired reforms.

To emphasize the earlier point, this set of guidelines is not a prescription that can be applied in any country with an assurance of good results. Thinking of the Institutional framework as a reference book, the following observation of Vivek Srivastava is apposite:

> This is not a recipe book. It is a book about cooking that categorizes types of foods and types of spices and a rough guide on how these might be combined. One would still need an expert chef to produce an edible mix. (Srivastava 2015)

Some First Steps to Exploring Policy, Institutions, and Regulation in a Specific Context

Key to the successful planning, design, and implementation of any institutional country-level reform is the close engagement between all sector actors involved supported by strong government leadership and ownership. The creation of working groups (including client representatives, including both technical as well as senior sector officials) may help to jointly explore the policy, institutional, and regulatory factors in a specific context, and will help ensure client ownership and engagement throughout the reform process.

Taking the learning from this report, development practitioners, in particular project/task teams interested in exploring and understanding the current policy, institutional, and regulatory situation in a specific client country, may start by employing the Institutional Diagnostic Tool (IDT) (developed by the World Bank Water, Poverty, and Economics Global Solutions Group). IDT may serve as a first step to understand the WSS sector of a specific country, its enabling environment to further understand the institutional dimensions. This tool has been specifically designed to help World Bank task teams map and evaluate institutions in the WSS sector in client countries, isolate problems (to the extent they can be isolated), determine "entry points" (points in the system where sustainable changes can be made), and design appropriate project activities to address the identified challenges. The tool may be shared with counterparts in the client country, or within working groups, to foment discussion among the involved practitioners and sector representatives, and the outputs can then be compared to initiate or facilitate discussion on areas which to be prioritized in projects.

This report is therefore a first step in collecting early lessons while helping development practitioners in the WSS sector to think through ways to design institutional interventions that will incentivize key stakeholders to deliver sustainable water supply and sanitation services.

Part IV Appendixes

Appendix A Incentive Structures in Case Study Countries

TABLE A.1. Incentives from the Enabling Environment

Country	Endogenous incentives	Exogenous incentives	Other incentive factors
Australia NSW	Heavily subsidized and engineering-focused industry subject to strong political intervention and control was seen to be dysfunctional. Key individuals within the NSW water sector saw it as necessary to pursue organizational and economic efficiency if levels of service were to be improved and the utilities made responsive to customer needs. The reform process was subsequently mainly driven by external factors (as described in the next column). The specific issues relating to tariffs which incentivized a drive for reform were: • "[I]nefficient politicized price structures based on a property tax, and usage charges that were too low. As a result, small businesses were subsiding households and large businesses. • Low levels of cost recovery and inefficiency. Sydney Water Company (SWC) covered its operating costs but its profits were small. But SWC's costs were suspected to be higher than necessary. • No signals of the regional differences in costs, resulting in cross-subsidies between regions and cross-subsidies from existing customers to new customers." (Salisbury, Head, and Groom 2017)	In the federal system of Australia, the Commonwealth Government is a key external driver for the State and local governments, who are responsible for the delivery of urban water supply services. The reform driver was poor productivity growth and lackluster national economic performance. The Commonwealth Government responded to the 1993 Hilmer Report documenting this by introducing a National Competition Policy that impacted on all state-owned enterprises. The objective was to improve the efficiency of use of infrastructure and thereby improve national productivity and growth. The federal government also introduced various reforms that were specific to the water sector, but this was not a one-way process: "the influences went both ways—from utilities/States to the national reform agenda, and from the national agenda to the utilities/States, with the importance of each varying across States and over time" (Salisbury, Head, and Groom 2017). [Note that "exogenous" is being used above to mean interventions from outside New South Wales, that is by the federal government of Australia. In the other case studies, "exogenous" generally refers to interventions by donors and other international players outside of the country in question.]	Initially, reforms were started by individuals with strong intrinsic incentives to pursue "organizational and economic efficiency despite policies, regulations, and institutions that provided weak incentives for such goals" (Salisbury, Head, and Groom 2017). The case study emphasizes that specific events and individuals are important "throughout the reform process." Reform takes time and patience and is an inherent complex process, due to the interplay between: 1. "[T]he institutions, policies and regulations that create the *(incentive)* environment within which managers and organizations operate. 2. The decisions of managers, policy-makers, ministers, and regulators given the framework *(responses to the incentives).* 3. [T]he specific events and challenges (e.g., financial constraints, improving service quality) or specific crises (e.g., water shortages or water quality alerts), that influence the development of the institutions, policies, and regulations, and the decisions made within this framework (*breaking down vested interests and regenerating incentives*)." (Quote from Salisbury, Head, and Groom 2017, with incentive emphasis added in parentheses.)
Albania	The changes in the WSS sector in Albania is mostly driven by endogenous incentives to improve the WSS sector, which was dilapidated and in need of rehabilitation (MPWT 2011): Decentralization was part of the general public sector reform but was supported by specific WSS sector implementation framework.	The main exogenous incentives for Albania is the desire to join the EU, which implies that Albania need to improve many of its public services to meet EU standards. This has influenced the institutional arrangement of the WSS sector (MPWT 2011):	As a country formerly under the USSR influence, the population of Albania is used to rely on government to provide public services. This could partially explain the slow uptake of PSP, especially for social infrastructure and services such as WSS.

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TABLE A.1. continued

Country	Endogenous incentives	Exogenous incentives	Other incentive factors
	Due to the changes within the country, such as high urbanization rate, inefficiencies and fragmentation of public service provisions and slow economic development, the government implemented the administrative territorial reform, which has impacts on WSS services (MPWT 2011). Similarly, WSS sector specific implementing framework was developed and is currently in use to create incentives for LGUs to establish regional WSS service entities (MPWT 2011).	PSP was encouraged as it was acknowledged to be one of the international best practice implemented in various EU countries. The several PSP projects that was implemented in Albania was through donor assisted projects (Tuhani 2013). PSP led to the need for and establishment of an independent regulator, which in this case has helped stabilize and improve the WSS sector performance (World Bank 2011).	
Bangladesh	**Demand driven reform**: Even though the initial step towards the implementation of sanitation marketing was taken by an NGO, the catalytic factor in turning the CLTS program into success has been the change in perceptions regarding sanitation among community members. Changing social norms regarding sanitation, especially by linking improved sanitation practices with "dignity" has stimulated the demand for sanitation products (Leigland, Trémolet, and Ikeda, 2016). **PSP-aligned incentives**: Recognizing the increased demand for improved sanitation facilities, local entrepreneurs (LEs) tapped into the opportunity to market and supply these products. Even though their main motive was to make a profit, LEs, being community members themselves, they were also motivated by their eagerness to assist their communities to move up the sanitation ladder. The alignment of demand and supply incentives towards the provision of improved sanitation facilities has been one of the main success factors of the program (Leigland, Trémolet, and Ikeda 2016; WSP 2016).	**Initial decision**: Although the success of the CLTS reform can be attributed primarily to endogenous incentives, the initial decision regarding the introduction of the program to a village, in the north-west part of the country, was made by an NGO. The interest shown by NGOs for the improvement of the sanitation sector in Bangladesh has its roots in the worldwide recognition of the life-threatening implications of poor hygiene and of open- defecation, in particular (SAIS perspectives 2015). The LEs' incentives were not only aligned to the those of sanitation product consumers, but also with those of **Micro Finance Institutions (MFIs)**. The latter had an incentive to provide small loans to LEs to market sanitation products, as they were making a profit out of these transactions. This has contributed to the sustainability of the sanitation marketing approach (Sanitation Updates 2009).	Other factors that created incentives in the sanitation sector development includes: • The CLTS program was designed specifically for the sanitation sector and was **tailored to the needs of local communities**. The marketing campaigns that were implemented by local governments and NGOs to raise awareness regarding the importance of improved sanitation took into consideration the social norms prevalent in the communities and focused on altering them, rather than trying to create a uniform program for all communities (Kar and Pasteur 2005). • The fact that the suppliers of sanitation products were local community members allowed them to make a better assessment of the needs of communities and, thus, target the marketing of the products more effectively (Sanitation Marketing 2013). • Related to the above point, community members had a greater incentive to invest in improved sanitation facilities that were sourced from fellow community members, both because they trusted them more and because the money given to LEs were circulated in the local economy, contributing to the economic development of the area (WSP 2013).

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TABLE A.1. continued

Country	Endogenous incentives	Exogenous incentives	Other incentive factors
	Establishment of MRA: The important role that MFIs and NGOs play in Bangladesh, incentivized the government to establish an organization that regulates the conduct of these institutions to ensure consumers' protection. This has led to the establishment of MRA, which was a major step towards ensuring the sustainability of the sanitation sector.		
Brazil	The Brazil case illustrates how endogenous incentives can change over a long historical period, and how these have shaped the WSS sector. During military rule (1968–86), the incentives were to legitimize the government through providing for the essential needs of the population, while in subsequent epochs of democracy, the reform incentives were bound up with meeting the expectations of the populace and demonstrating the national commitment to participation and accountability in public service provision (Drouard 2016; Min Cidades 2008).	Exogenous incentives did not play a big role in Brazil. After the opening of the economy to the private sector when democracy was restored, the donors supported PPPs in the WSS sector. The assistance of the World Bank in setting up the National Information System for WSS, SNIS, was a useful, targeted intervention that has facilitated benchmarking and planning in the sector (Montenegro 2005).	With the responsibility for WSS residing with the municipalities, there is a wide divergence of experience in the sector, and factors that are not easy to identify or quantify (political economy, cultural, behavioral) have shaped actual outcomes across a vast country. Enormous differences in access and quality of service persist across Brazil. Part of the reason for this is that to access Federal financing, municipalities have to make well formulated submissions. The weakest municipalities thus tend to fall ever further behind, thereby maintain or exacerbating the inequities (Mehta and Mehta 2008).
Burkina Faso	The early post-independence history of the WSS sector reflected internal political changes. A semiprivate National Water Company was formed in 1970, nationalized in 1976 and expanded to include sanitation in 1985 (ONEA). After the coup d'état in 1987, President Campaoré re-engaged with the Bretton Woods institutions, which were highly influential in subsequent WSS sector developments (as described in the next column) (Baeitti, Kingdom, and van Ginneken 2006).	The Campaoré government's determination to obtain macroeconomic support from the IMF and the World Bank incentivized reform of the WSS sector. Investment funds for large water projects (Ziga Dam) were also sought. At the start of the IMF Structural Adjustment Program, the first 3-year Contract Plan was entered between GoB and ONEA. Several other institutional and policy reform measures followed.	For a long period (1940s to 1977), before and after independence (which was in 1960), private operators were responsible for water supply service provision under a series of *affermage* type PPP contracts. The people of Burkina Faso thus had experience of PSP of water. This facilitated the implementation of commercialization reforms and later PSP (Fall et al. 2009).

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TABLE A.1. continued

Country	Endogenous incentives	Exogenous incentives	Other incentive factors
	Conditions in the water supply and sanitation sector in the late 1980s that provided strong incentives for reform were: • Lack of clear policies and targets • Fragmented institutional and financing framework for sanitation (World Bank 2012) • Poorly functioning urban water supply service delivery institutions (ODI 2011) • Lack of effective regulation for urban water supply (World Bank 2001) • Weak institutional arrangements for rural water and sanitation (WSP 2010)	WSS sector commitments were a feature of further IMF support programs, leading to the adoption of the new Water Law in 2001, the National Program of WSS in 2001 and the Integrated Water Resource Management Plan in 2003 (Mback 2003). In 2006, ONEA entered into a 5-year performance management service contract with the French company Veolia (Fall et al. 2009). Parallel development of the rural WSS institutional framework, again heavily influenced by development partners. The National Program for Water Supply and Sanitation, embodying a Sector-Wide Approach and MDG targeting, was implemented with donor support over the period 2006–09 (European Commission 2013).	
Colombia	Changes in Colombia's public sector is mainly driven by endogenous incentives that resulted from political changes in the country. The latest shift was enshrined in the 1991 Constitution, confirming the government's commitment to moving towards market based economy. This became the main endogenous incentives that shaped the WSS sector: Decentralization of public services to local governments or municipalities has started prior to the Constitution, but was strengthened by the Constitution and its subsequent legal changes affecting the WSS sector. The public sector reform instigated by the Constitution requires public companies to become limited liability companies (corporatization), and introduces competition in public infrastructure and service provision. PSP is then allowed and encouraged to help the country fill the infrastructure gap. The regulatory framework to suit the changes in the institutional arrangement is then developed, and regulating entities were established (Andres, Sislen, and Marin 2010).	It can be said that the introduction of PSP and the establishment of regulatory entities were in part influenced by exogenous incentives. However, in this case, the main incentive for reform was endogenous.	The violent history of Colombia may have driven endogenous incentives to want to have a more stable political condition, with the population demanding economic growth and public services. This may have contributed to intrinsic incentives of the key actors to work out a way to improve WSS service provision, for example by creating the mixed public-private companies to provide WSS services to meet communities' demand for good public service (Andres, Sislen, and Marin 2010).

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TABLE A.1. continued

Country	Endogenous incentives	Exogenous incentives	Other incentive factors
Indonesia	Indonesia's public sector reform is mainly driven by endogenous incentives: • ***Corporatization***: the move to allow local governments to establish limited liability companies to provide public service was driven by the need to improve economic growth in the regions (not only in the capital), and to give more authority to local governments (Hadipuro 2010); • ***Decentralization***: Indonesia's spread out geographical condition and diversity was the main reason for decentralization, to allow local communities to choose their own representatives and to bring public service provision closer to the communities (Cahyat 2011); • ***WSS specific legal framework***: the enactment of the Water Law 2004 was mainly driven by the need to improve management of water resources, and followed by the need to improve WSS services (Horn 2016); • ***Strong policy direction (100-0-100 target):*** this was mainly driven by the need to accelerate improvements in WSS service delivery. The sector was experiencing slow progress and the GoI saw the need to provide strong policy direction to incentivize actors in the sector to make changes and improve the sector performance (Horn 2016).	Exogenous incentives mostly came from influence from development partners that brought international trends and best practices: • ***Water as economic goods as well as social goods***: the Dublin convention in 1992 influence the Water Law 2004, in that the Water Law acknowledged the economic properties of water, compared to Indonesia's original Constitution in 1945, which implies that water is a human right and that the government is responsible to ensure that this right is met (Horn 2016); • ***Sanitation development***: international pressures highlights the importance of sanitation and that raising the awareness about and providing services and facilities for sanitation is partially public responsibilities, when originally, sanitation was considered a taboo subject and private matter that each household should be responsible for. The drive to improve sanitation services was then internalized and included in the GoI's national policy and strategy for the sector (University of Technology Sydney 2008); • ***PSP***: development partners and other external influences such as international best practices, demanded a more transparent and competitive selection of private partner. This has impeded and slows down the rate of PSP in the WSS sector. Before there was external pressure to conform to international best practice, most PSP in WSS was unsolicited and focused on large and commercial urban areas, but nevertheless existed (Jensen 2016).	Other factors that has featured and created incentives in the WSS sector development includes: • The general public sector reforms, such as corporatization and decentralization, although has a large impact on the WSS sector was **not designed specifically for the WSS sector**, and therefore do not include specific incentives to develop and improve the WSS sector. Thus, application of these reforms in the WSS sector created **distorted incentives** for the key actors in the WSS sector (incentives for LGs to use PDAMs for revenue generation rather, no incentives for PDAMs to improve services) (World Bank 2003); • When the reform was **designed specifically for the sector**, such as the enactment of Water Law and its implementing regulations, and the 100-0-100 policy target, the **results are more positive**. The Water Law established an institutional arrangement for the sector, albeit not perfect but it has clarified some of the functions within the sector. The 100-0-100 shows the GoI's commitment to the sector, and thus provides the incentives for key actors to work together and try to achieve the targets (Horn 2016); • External influences can provide the incentives needed for the GoI to act and improve WSS services, such as shown by the sanitation development. However, it can also become a constraint if not internalized and adapted to local conditions or culture, as shown by the reversal of the Water Law and of the slow progress on PSP in the WSS sector.

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TABLE A.1. continued

Country	Endogenous incentives	Exogenous incentives	Other incentive factors
			• Indonesia is a low-middle income country with a GDP per capita of US$ 11,035 and a relatively high unemployment rate of around 6% (WDI 2016). This implies that the population in general is still motivated to improve their individual economic condition. This drive to improve individual (and/or family) economic condition may result in a narrow or short-sighted incentive, for example, the incentive to gain recognition and/or financial reward for oneself or one's family is most likely still above incentives to improve conditions for others (such as WSS services). An example of this is the appointment of PDAM managers by LGs, or in the existence of corruption (not only in WSS sector but in general), and in unsolicited proposals for PSP (LGs signing a contract with a company that it has shares of). These are real and existing problems in Indonesia.
Mozambique	The main endogenous incentive in Mozambique was the chronic state of the WSS sector. The main challenges facing the sector were (WSP 2011): • **Inadequate infrastructure**—The sector required substantial investment to be able to improve the water supply services. • **The sector lacked financial sustainability—** Tariffs were set well below cost-recovery levels which meant that the public sector service providers were losing money on every unit of water supplied. With the poor financial state of public finances, government could not continue to provide sub-economic water supply services while at the same time investing in the sector.	International donors, led by the World Bank, took a leading role in helping the GoM to formulate a comprehensive set of urban WSS reforms. Through providing financing (on grant or highly concessionary terms) and advice and technical assistance, donors remained highly influential throughout each phase of the reform process.	The case study describes very different capacity-building outcomes from the two different experiences of PSP. The differences can in part be explained by the different personal incentives created for the expatriate employees of the two companies (AguaGlobal 2014; World Bank 2009): • **Águas de Moçambique**—the incentive structure was to make the venture profitable. Although capacity building was part of the AdM contract with the government, there were no rewards for training Mozambican staff and no penalties for not doing so.

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TABLE A.1. continued

Country	Endogenous incentives	Exogenous incentives	Other incentive factors
	• **Weak Institutional capacity—**Institutional capacity at all levels of central and local government was inadequate, resulting in poor service delivery, inefficient execution of investment projects and poor management of assets.		• The basis of the **Vitens** arrangement was quite different. Paid for by the Dutch Government, capacity-building was the main focus. "The Dutch employees viewed the experience very positively and saw it as a chance to try something new and advance their careers. The contract and the opportunities that followed therefore created job satisfaction and career advancement incentives for Vitens and its employees."
Philippines	In Philippines, public sector reforms were highly driven by political changes (WSP 2015, ADB 2013, Fernandez-Millan 2014, and NEDA 2010): • A more centralized public service provision during President Marcos Administration (1965–86), to **decentralization** of public service provision during Aquino Administration (1986–92), and more pronouncedly, **PSP** in public service provisions, which gain support since Ramos Administration (1992–98) and received continuous support since. • **PSP**: strong political support, started with President Ramos' decision to allow PSP in infrastructure was translated into comprehensive legal framework for PSP, which provides incentives for private sector to get involved in infrastructure and public service provision, as well as incentives for the public sector (policy makers in central government and LGUs, which are responsible for service provisions) to seek opportunities in PSP. The private sector saw opportunities to provide infrastructure and/or public services where the LGUs are not able to, and therefore seek to fill in this gap by proposing a business model to the LGUs.	Some exogenous incentives also influenced the development of the WSS sector: • **PSP**: although the initial decision to allow PSP was endogenous, international donor community has a role in shaping the PPP framework, in terms of legal framework, and especially on procurement methods and processes. There are only a handful of large PPPs in the WSS sector that gained international recognition, such as the Manila concessions. However, there are many small PPP contracts, that may lay outside of international PPP definition, and therefore not included in Philippines PPP framework. These contracts are mostly unsolicited (proposed by the private sector who saw the opportunity to provide WSS services or infrastructure) and negotiated with the LGUs (Rivera 2014).	Other incentives and factors that shaped Philippines WSS sector include: • The political changes and the changes in institutional arrangements resulted in the lack of leadership and direction for the WSS sector. No institutions had the incentive to take the lead to provide this policy direction, and there is even a negative incentive to not take the lead, as that could be perceived as overstepping its mandate and crossing into other institutions field of competence and/or responsibility. Without the strong policy direction, the actor in the WSS sectors has the incentives to look after their interests, and only to narrowly fulfil their mandate (PIDS 2016). • The opposite was observed for PSP, where there was strong and continuous support for PPP, starting from strong political support for the concept, back up with international support on the development of the PPP framework. The result is a strong and robust PPP framework for all infrastructure sectors (Rivera 2014).

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TABLE A.1. continued

Country	Endogenous incentives	Exogenous incentives	Other incentive factors
			• Philippines is a low-middle income country with GDP per capita of US$ 7,337 and unemployment rate of around 7% (WDI 2016). This suggests that a large part of the population is under tight financial constraints, and will seek to improve their economic conditions. This resulted strong incentives for key actors/agents working in WSS sector to prioritize short-term personal gain over long-term benefit for the community. For example, the incentive to be promoted by just fulfilling ones' mandate and not to step on other's shoes by taking the lead for the WSS sector development is stronger than the incentive to provide leadership for the sector. • The incentive to improve one's economic conditions has also resulted in the development of entrepreneurial activities, such seeking business opportunities in various sectors, including in WSS infrastructure and service provision. The private sector has become proactive in seeking opportunities and work together with LGUs to provide WSS services. In this case, the lack of regulation in the sector increase the incentives for private sector to seek opportunity, as the terms of contracts can be negotiated with the LGUs. By contrast, large PPP projects that requires conformity with the PPP framework has not been favored in the WSS sector, as the PPP processes are considered to be lengthy and created extra risks for the private sector (Rivera 2014).

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TABLE A.1. continued

Country	Endogenous incentives	Exogenous incentives	Other incentive factors
Portugal	Even though Portugal's membership in the EU provided a general direction towards the improvement of the WSS sector, most reforms in the sector were driven by endogenous factors: • **Aggregation of bulk supply services**: Local authorities were unable to fund large-scale investments in water and wastewater systems that were urgently needed to ensure the effective provision of services. This provided a motive to the government to aggregate the provision of bulk supply services into multimunicipal concessionaires, operated by a state controlled company (AdP). Due to its size, its risk sharing mechanism and its extensive investment plan covering the entire duration of the concession contract (maximum of 50 years), the multimunicipal concessionaire had an incentive to increase the level of investments in the WSS sector, leading to significant improvements in the sector (AdP 2015). • **Establishment of a regulator**: The transformation introduced in the WSS sector and especially the introduction of private concessions created the need for a regulatory agency to monitor the operation of services. The endogenous incentive of the need to regulate concessions, led to the establishment of (first IRAR and eventually) ERSAR, which then provided various other endogenous incentives to the WSS service providers. The benchmarking of operators provided an important incentive for them to improve their performance, while the tariff guidelines issued by ERSAR provide an incentive to utilities to adopt more affordable tariffs (Baptiste 2014). • **PSP**: The introduction of PSP in the Portugal WSS sector was influenced by both endogenous and exogenous incentives. The main endogenous factor that incentivized the implementation of PSP was the lack of capacity of municipalities to provide sustainable WSS services (Teles 2015).	• **PSP**: Two exogenous incentives that led to the introduction of private participation in the WSS sector were (1) the prospect of accessing EU funds that became available during that period, targeting infrastructure investments and (2) international best practice showing the merits of PSP in the operation of services, including efficiency gains (Teles 2015). • **Comprehensive sector planning**: Influenced by interventions in the WSS of other high-income countries, especially in the EU, the government decided to develop a strategic plan for the sector, spanning over a six-year period. The exogenous incentives that led to the development of Water Supply and Sanitation Sector (PENSAAR) plans were later translated into endogenous incentives to the various actors in the sector. Lenders were more prone to approve funding for a project that aligned with the government's objectives as outlined in PENSAAR. The plans also motivated the various providers to play their part in meeting plan targets, also enhancing the coordination of actions (PENSAAR 2015).	Other incentives that influenced the performance of the Portugal WSS sector include: • The **strong political will** to make significant WSS sector improvements as demonstrated by the various well-coordinated reforms that were implemented within a short period provided greater motivation to the various actors to improve their performance and actively contribute to the improvement of the sector as a whole. The active role that ERSAR played in the sector, not only in monitoring the performance of operators, but also in providing capacity building support to service operators, inspired them to work harder to achieve sustainable improvements, as opposed to short-term personal goals. • All the reforms that took place in the WSS sector over 1993–2016 were supported by a **clear legal framework** that provided a clear allocation of roles and responsibilities to the actors involved in the provision of services. The thorough legal framework guided the actions of all players in the sector and provided them with an incentive to effectively respond to their roles and responsibilities, thus enhancing the coordination of actions towards the achievement of the government's targets (Marquez et al. 2010).

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TABLE A.1. continued

Country	Endogenous incentives	Exogenous incentives	Other incentive factors
Zambia	The main endogenous incentive for WSS reforms in Zambia was the chronic state of the WSS sector. There were inadequate levels of service in many towns, water was only available for 6–8 hours a day, there was low service coverage and poor quality of water that caused serious health risks. Some of the main challenges facing the sector were (Mbilima 2008): • Unclear institutional responsibilities • Lack of investment • Inefficient legislation • Lack of skills in WSS service	Donors played a central role in helping formulate the nature and design of the WSS reforms. Chitonge (2011) writes "In this regard, Cocq (2005) has argued that from the 1990s, the commercialization of water supply services was inevitable if Zambia was to retain any hope of further assistance from the main donors' (cited in Cocq 2005). In other words, this was largely a donor-chosen policy option, with no consultation of the Zambian public (customers)." As in other sub-Saharan African countries, through providing financing (on grant or highly concessionary terms) and also advice and technical assistance, donors remained highly influential throughout each phase of the reform process.	Zambia has executed a set of 'textbook' reforms and yet performance in the WSS sector has been unsatisfactory. The explanation for this lies in socio-cultural, political economy and behavioral factors. The case study discusses the willingness of consumers to accept any level of service without complaint as one of the underlying factors. The corporate culture in the commercial utilities and governance are evidently not what was expected of the reforms. The overall political economy context in Zambia is one of clientelism, or what Brian Levy (2014) calls "personalized competition," and it appears from his book that failure to effectively carry through institutional reforms is a general Zambian malaise, not just one in the WSS sector.

Note: CLTS = community-led total sanitation; EU = European Union; GDP = gross domestic product; GoI = Government of Indonesia; LE = local entrepreneurs; LGU = local government unit; MDG = Millennium Development Goal; MFI = microfinance institution; NGO = nongovernmental organization; NSW = New South Wales; PPP = public-private partnership; PSP = private sector participation; SWC = Sydney Water Company; WSS = water supply and sanitation.

TABLE A.2. Incentives from Institutional Interventions

Country	Institutional reforms and incentives created	Policy reforms and incentives created	Regulatory reform and incentives created	Interlinkages of institutional incentives and results
Australia NSW	**Commercialization and corporatization** of public enterprises in NSW (not just water) was based on 5 key principles: • Clear objectives • Managerial authority • Performance monitoring • Rewards and sanctions • Competitive neutrality (explained in the policy column)	**Clarified policy and operating framework for the sector**—emphasizing commercial operation, promotion of competition and independent price regulation (Salisbury, Head, and Groom 2017).	**Creation of a regulatory agency**—Independent Pricing and Regulatory Tribunal (IPART) is a highly professional, autonomous multisector regulator formed (originally under a different name) in 1992 (Salisbury, Head, and Groom 2017).	policy, institutional, and regulatory factors considered together in the NSW WSS sector reforms constitutes a **"coherent package"** that strengthens the incentives of service providers and aligns these to the objectives for the sector (Salisbury, Head, and Groom 2017).

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TABLE A.2. continued

Country	Institutional reforms and incentives created	Policy reforms and incentives created	Regulatory reform and incentives created	Interlinkages of institutional incentives and results
	Incentives were provided explicitly through a system of performance related rewards (Salisbury, Head, and Groom 2017). **Stronger role for the private sector—**role increased after incentives were provided through a clear licensing framework (under the Water Industry Competition Act) and third-party access to transportation infrastructure was allowed, with negotiated prices. To date, 22 private service providers have been licensed (Salisbury, Head, and Groom 2017).	**Level playing field for state owned and private utilities**—"competitive neutrality" is achieved through removal of special advantages and disadvantages of government ownership, including government guarantee fund to equalize the cost of debt and equal treatment on tax. Such a levelized playing field creates incentives for PSP (Salisbury, Head, and Groom 2017). **Transparent budget-funded subsidies**—subsidies for vulnerable households are determined and paid by the government. This ensures total separation of social goals and allows the utility to focus on its commercial role. In systems where social objectives are pursued through cross-subsidies, commercial incentives often get diluted (Salisbury, Head, and Groom 2017).	**De-politicization and reform of pricing—**is one of the main reform objectives, carried out through IPART. Incentive-based tariff setting has been fundamental. Initial price review (1993) was based on a simple price cap model, but over the years the tariff-setting approach has become more sophisticated. SWC has made proposals to IPART for changes which would strengthen incentives for continuously increasing operational efficiency (Salisbury, Head, and Groom 2017).	However, it has evolved non-linearly over a period of 30+ years, rather than as a planned straightforward process (Salisbury, Head, and Groom 2017). Results are unambiguously positive: "The urban WSS sector was transformed from a heavily subsidized and engineering-focused industry subject to strong political intervention and control, into a competitive and financially secure industry, under the management of skilled boards providing services focused on customer needs at prices that allow it to recover its costs and achieve a commercial return on investment" (Salisbury, Head, and Groom 2017).
Albania	**Corporatization—**water utilities transformed into joint stock companies with government owning 100% of the shares. This provides the ability for the utility to operate as a business, similar to private companies (World Bank 2005). **PSP**—as part of general public sector reform. Following international best practice. However, PSP implemented only with the support and encouragement from development partners (Tuhani 2013).	No umbrella policy or legal framework that governs and provide policy direction specifically for the WSS sector. Various legal framework exists for the general public sector reforms with changes in institutional arrangements as a result (World Bank 2011).	**Regulatory framework—** independent regulatory agency established to perform economic regulatory functions. In addition, a unit within the ministry perform additional performance monitoring function (World Bank 2011).	Some interlinkages for policy, institutional, and regulatory reforms, in that the development of regulatory framework and establishment of independent regulatory agency was to support PSP, corporatization and decentralization, and that each reform was accompanied by supporting legal framework.

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TABLE A.2. continued

Country	Institutional reforms and incentives created	Policy reforms and incentives created	Regulatory reform and incentives created	Interlinkages of institutional incentives and results
	Decentralization—as part of general administrative reform, was accompanied by some specific WSS sector decentralization framework, allocating WSS service provision responsibility to LGs and give LGs the options of how to provide WSS services (through joint stock companies, PSP or municipal service department) (World Bank 2011). **Aggregation/regionalization**—due to poor WSS asset conditions, lack of economies of scale and lack of incentives for regional cooperation, government decided to aggregate its administrative regions, which led to aggregation of some of the WSS service provisions. Legal framework provides incentives for LGs to coordinate and aggregate WSS services (Gjebrea and Zoto 2013).			
Bangladesh	**Decentralization**—the development of the water supply and sanitation system in rural areas is part of the responsibilities of the local authorities (Union Parishads), even though this is not explicitly stated in their legal mandate. Despite the lack of formal institutions to monitor the performance of the sub-sector and the various challenges that the rural sanitation sector faced, the involvement of communities in the decision making proved to be a successful strategy that led to the eradication of open defecation (WSP 2016).	**Community-led total sanitation and Sanitation marketing**—after the failure of previous efforts that relied mostly on providing subsidies for sanitation infrastructure investments, the implementation of sanitation marketing, which focused on altering people's perceptions about personal hygiene and the spread of diseases, provided powerful incentives to community members to change their sanitation practices.	**Establishment of Microcredit Regulatory Authority (MRA)**—Even though there is no sector wide regulator in Bangladesh, the important role that MFIs and NGOs played in the WSS sector, especially in terms of PSP, created the need for an independent regulatory authority to monitor the performance of these institutions. MRA played an active role in monitoring the performance of MFIs and NGOs and ensuring they are acting responsibly (Sanitation Updates 2009; WSP 2014, 2016).	The policy, institutional, and regulatory interlinkages in this case was developed naturally and was not necessarily part of the initial design of the reform.

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TABLE A.2. continued

Country	Institutional reforms and incentives created	Policy reforms and incentives created	Regulatory reform and incentives created	Interlinkages of institutional incentives and results
	PSP—the change in individuals' attitudes and perceptions towards the importance of improved sanitation led to the creation of a market where local entrepreneurs were trained, to promote and supply sanitation products to communities. A catalyst to the successful implementation of the private market has been the provision of financing to the local entrepreneurs by microfinance institutions (MFIs). (Leigland, Trémolet, and Ikeda 2016; WSP 2016).	This has led to a radical change in social norms to the point that families would not accept marriages with people that come from villages that practice open defecation. This has led to a remarkable improvement in the sub-sector (Kar 2003; Kar and Pasteur 2005).		The CLTS initiative, although initiated by an NGO, was internalized and became part of the GoB policy for the sanitation subsector, which, combined with the Sanitation Marketing program has raised communities' awareness of the importance of sanitation, which created a demand for sanitation facilities and services. This demand was met through local PSP, with entrepreneurs seeing the opportunity to provide supply to meet the demand. The MFIs and MRA further supports the system.
Brazil	**Changes in range of service providers**—during the PLANASA period federal water companies were formed. These CESBs are still the dominant suppliers. Post the Concession Law of 1995, PSP has been allowed. Responsibility for WSS service provision lies with the municipalities, which can provide services themselves or contract a private operator or a CESB (Kingdom, Liemberger, and Marin 2006; Ministério das Cidades 2008). As of 2014, shares of services to municipalities were CESBs 70%, local public suppliers 25% and private sector 5% (including some of the most populous municipalities) (ABCOM and SINDCON 2016).	**Policy** is implied in key legislation, notably the 2007 Water Supply and Sanitation Law, and the **National plans/ strategies**—In different epochs, Brazil has had ambitious WSS plans which have had national reach, such as PLANASA under the military government, the Program for the Acceleration of Growth (PAC) and the National WSS Plan (PLANSAB) which is currently being implemented.	No regulatory reform as such has been implemented. There is a national water resources regulator (ANA), but no corresponding national WSS regulator, although there are some WSS regulatory agencies at the state level. Regulation is carried out in different ways at provincial and municipal level, guided by key legislation such as the Law of Fiscal Responsibility (2000) and the Basic Sanitation Law (2007).	

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TABLE A.2. continued

Country	Institutional reforms and incentives created	Policy reforms and incentives created	Regulatory reform and incentives created	Interlinkages of institutional incentives and results
	Municipal responsibility implies a high degree of **decentralization**, but there is also the scale economy benefits of **aggregation** through the dominant role of the CESBs. **Public participation and accountability** has been institutionalized, for example, through the Council of Cities (IPEA 2012).	These have created overall impetus at provincial and local government levels to improve WSS services, with specific incentives associated with accessing the associated financing (e.g., under PLANASA, the incentive was to form provincial water utilities, under PLANSAB municipalities need coherent plans to access financing) (Filho 2016). The current wastewater treatment program (PRODES) has in-built results based financing incentives (Fanner 2008; Kingdom, Liemberger, and Marin 2006).	At the Federal level, a **National Information System for WSS** was created in 1996. This is not *per se* a regulatory instrument, but amongst other uses, SNIS has performed a benchmark regulatory role, in that there is some competition between WSS providers to improve their annual SNIS rankings (Montenegro 2005).	Unlike some other case study countries, Brazil has not had comprehensive reforms with distinct I, P and R elements. It is a Federal country with different models at state and municipal levels. The unifying national element has been through the national strategies, such as PLANASA, PAC and PLANSAB, for which federal-level financing was provided. Although there has not been written policy statements, the water supply and sanitation policies articulated by successive governments have been forceful enough to motivate players in the sector to access the funding on offer and make significant improvements in access and the quality of service delivery. Such policy-induced incentives are evident from the high level of commitment to the current strategy, PLANSAB.
Burkina Faso	**Corporatization**—ONEA was converted into limited liability company with legal autonomy, and can have independent investment and staffing decision and involved in tariff setting, although could not take on commercial loan. Internal reform includes staff promotion by merit and achievement of discussed targets, creating incentive to perform, also includes changes in financial management and use of long and short term strategic plans, and new customer department that strengthen accountability (Baietti, Kingdom, and Ginneken 2006).	**Specific WSS policy and legal framework**—comprehensive policy and legal framework that sets targets (aligned with MDGs), establishes monitoring and coordination systems and decentralize WSS services to communes. Clarifies institutional arrangement within the sector and creates incentives for all actors to fulfil mandate and together to achieve targets (African Development Bank 2007).	**Regulation by contract**—series of performance contracts between GoB and ONEA (national utility responsible for urban WSS), setting out performance targets for ONEA and GoB commitments. The inclusion of the GoB commitment, which minimize its interference has provided incentives for ONEA to meet its obligations even without penalties in place for nonperformance (Baietti, Kingdom, and Ginneken 2006). **Financial model**—as part one of the regulatory tool used to calculate appropriate tariffs. Provides incentives for ONEA to manage its costs and improve performance (Heymans et al. 2016).	There are some interlinkages in the policy, institutional, and regulatory reforms, in that decentralization was combined with a delegated service provision to both public and private entities, and that these arrangements are regulated by contracts. The institutional arrangement is supported by comprehensive policy and legal framework. Internal reform within ONEA includes incentives (financial and social standing, in terms of promotion) to achieve targeted performance.

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TABLE A.2. continued

Country	Institutional reforms and incentives created	Policy reforms and incentives created	Regulatory reform and incentives created	Interlinkages of institutional incentives and results
	Decentralization—as part of general public sector reform but eventually accompanied by sector specific implementation decree. WSS responsibility devolved to local communes, who are to delegate to public or private service providers (Dafflon and Madiès 2013). **PSP**—mainly driven by donor community, but ONEA developed own type of management contract and enter it to improve performance (funded by IDA). Contract provides incentives for operational improvements. PSP also promoted for rural water, ONEA contracts local private sector to extend services to peri-urban (Fall et al. 2009; Foster 2012).			
Colombia	**Decentralization**—WSS services delivery responsibility of municipalities, but was centralized following constitutional reform after civil war. This was reversed again by democratic decentralization aimed for administrative and fiscal decentralization but also resulted in municipalities being responsible for planning, financing and provision of WSS decentralized to municipalities. Decentralization created negative incentives, in that citizen voice was used to impede development due to short term protests (Bird 2012; Granados and Sanchez 2013). **Corporatization**—as part of general public sector reform, municipal utilities mandated to become limited liability companies and allow private sector to hold shares (Mayaux 2008).	**General policy reform**—general shift to move towards more market base economy following the enactment of the 1991 Constitution, which removed state monopoly for public service provision, provides general rule for PSP, allows for tariffs to cover costs, and provides mechanism for public participation. Implementing legal framework governs public services (including WSS) encourages competition, allows private capital, establishes regulating entities (CRA and SSPD) (Andres, Sislen, and Marin 2010; World Bank 2009).	**Regulatory framework**—as a result of the general policy reform, CRA was established to ensure competition in the WSS sector, as well as provide tariff methodology guidelines and approval, while SSPD was established to implement and supervise the public services reforms (corporatization of municipal utilities and PSP amongst others), and monitor performance of all types of service providers (Andres, Sislen, and Marin 2010).	There are interlinkages between the policy, institutional, and regulatory reform, which was driven by NPM values to move towards market based economy. The 1991 Constitution is the foundation of the changes in the institutional arrangement and initiate the creation of regulatory framework. The strong policy and legal framework provided the enabling environment for local innovation in terms of PSP models by encouraging PSP but allow flexibility in the detailed contract models. There were no specific WSS reform, all as part of general public sector reform.

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TABLE A.2. continued

Country	Institutional reforms and incentives created	Policy reforms and incentives created	Regulatory reform and incentives created	Interlinkages of institutional incentives and results
	Functional separation—the 1991 Constitution became the basis for public service reform and separated the executive, regulatory and service delivery functions in public service provision (Andres, Sislen, and Marin 2010). **PSP**—legal framework for public services encourages PSP, which developed organically in the form of mixed public-private companies, where private sector has minority of shares but in charge of operation, investment is co-financed. Other innovative PPP structure follows (Andres et al. 2010).			
Indonesia	**Corporatization of water utility**—part of general public sector reform, LG given the options to establish water utility as LG owned limited liability companies (PDAMs) (Hadipuro 2010). **Decentralization**—part of general public sector reform, LGs responsible to provide WSS services. Corporatization plus decentralization created the incentives for LGs to establish PDAMs, even when it is not the best economic option, because PDAMs can provide revenues to LGs through dividends. PDAMs have no incentive to improve as not completely financially independent (tariffs approved by LGs) (World Bank 2003).	**Enactment of Water Law**—provides policy direction and set out the institutional arrangement of the WSS sector. Clarified roles of different levels of governments, central government to provide policy direction, LG to provide WSS services and provincial government to have coordinating functions. Clear allocation of roles provides the incentives for each key actor to fulfil their functions as prescribed by the law (The Water Dialogue 2008).	No regulatory reform was implemented.	The various **institutional** reforms were not designed specifically for the WSS sector, and have in most cases resulted in distorted incentives for key actors. The **policy** reforms on the other hand, were specifically designed for the WSS sector and have created better incentives for the key actors.

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TABLE A.2. continued

Country	Institutional reforms and incentives created	Policy reforms and incentives created	Regulatory reform and incentives created	Interlinkages of institutional incentives and results
	PSP—started before the water law, but was not regulated and was mostly through unsolicited process. After the Water Law, and followed by the PPP legal framework, PSP in WSS sector was further encouraged but has to conform to the processes prescribed in the legal framework, which are viewed to be more cumbersome and lengthy. Although the legal framework intended to create incentives for PSP, the lengthy process disincentivized private sector involvement (Jensen 2016).	**Strong policy direction**—central government taking the lead to issue ambitious target for the WSS sector, along with investment plans that includes requirements for LGs to contribute to the required investment, as well as the use of PSP. The policy direction shows the government's commitment to the sector, especially through the allocation of central government budget. This provides the incentives to other key actors (LGs, PDAMs, and private sector) to make the effort to meet the ambitious targets and improve the sector performance in general.		However, there are no clear interlinkages between the I and P reforms, which can explain the slow progress of the sector. Although the Water Law considers the previous institutional reforms (decentralization, corporatization, and PSP), it does not fully interlink the incentives. For example, the Water Law does not provide guidance on how LGs should decide whether they should establish a PDAM, or if PSP is a good solution for the local conditions. The Water Law also does not set out the regulatory framework adequately, which resulted in unclear allocation of regulatory functions (who should perform the regulatory functions).
Mozambique	**Private sector operation and management—**the WSS sector reform introduced the operation and management of water supply assets by a private operator. This provides a clear financial incentive to operate the assets efficiently. However, the assets were operated and managed under contracts which did not provide a strong enough incentive to improve services (Chaponniere and Collignon 2011; DFID 2015; Leigland, Trémolet, and Ikeda, 2016; WSP 2011). **Institutional reform**—an asset holding company was established to manage assets in certain cities. This allowed the focusing of efforts and incentives to a single institution. The institution was funded through external funding and income from its assets (who were operated and managed by a private entity). This provides a financial incentive to the asset holding institution to improve billing and service provision (World Bank 2009; WSP 2011).	**Delegated Management Framework**—the delegated management was introduced at the start of the reforms and has been used, in one way or another, since its introduction. This has created stability within the sector and instils confidence of stability in interested market players (World Bank 2009). **Strong governmental support**—the government and the international donor community has shown their support to the reforms ever since first introduced. This creates an incentive for the market players to improve services, knowing they have the support of the government and donors, and can operate without the fear of a sudden drastic shift in public policy.	**Regulator established**—a regulator for the sector was established as a part of the WSS reforms. The regulator's objectives for the sector are published in policy documents from the government, providing the incentive to reach a predefined set of targets (CRA 2016; ESAWAS 2016).	The sector specific reforms affected the entire country (mostly urban areas but created incentives for villages and secondary cities to demand improved services) and as such provided heavy interlinkages of policy, institutional, and regulatory incentives. Governmental policy and support provided an incentive for service operators to keep improving their service levels. The Delegated Management Framework created a transparent framework for ownership, operation and management of water supply assets (beginning in major cities but has been expanded to secondary cities). The long-term vision of continuing implementing a framework which provides stability for the sector and further enforces the institutional incentives created.

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TABLE A.2. continued

Country	Institutional reforms and incentives created	Policy reforms and incentives created	Regulatory reform and incentives created	Interlinkages of institutional incentives and results
	Devolution of responsibilities—The overall direction of the WSS sector reforms was towards devolution of responsibilities. Responsibilities of water supply provision transferred from central government to the asset holding company which, in turn, delegated operation and management to a private entity. This simplified service provision and provided a contractual incentive for operators (World Bank 2009).	**Local knowledge sharing (or lack thereof)**—since WSS sector reform, two private entities have managed water supply assets. Both entities were supposed to transfer knowledge over to local workers but the incentives created by each private entity varies greatly. While one entity hired external experts for all senior positions, the other private entity funded university programs for local workers and made a point to include locals in senior positions.		Despite a well-constructed framework, sector performance suffered during the first years of implementation. The reason for the slow progress was mostly down to the performance of the original private entity operating under a management/operating contract. Due to alterations in senior management and the lack of capacity among local workers.
Philippines	**Decentralization**—part of general public sector reform, LGUs responsible for WSS services. LGUs can choose type of service providers, with some incentives (able to tap into more financial sources) to create WDs. No specific implementing regulation for the WSS sector (WSP 2015). **PSP**—as part of general public sector reform with strong and continuous political support. Comprehensive legal framework and institutional arrangement to support PSP in all sectors. Some large PPP contracts signed and regulated by contract, various small and local PPP contracts exist, mostly through unsolicited proposal. LGUs and local private sector prefer unsolicited route, as it is quicker and perceived to be beneficial for both parties. LGUs and private sector not incentivized to use formal PPP route as too lengthy (WSP 2015; ADB 2013; NEDA 2010).	**Water code**—mostly to govern WRM, but has institutional arrangement relevant to WSS, through creation of NWRB, a regulatory body created mostly for WRM but also has some WSS and economic regulatory functions (Water Code available online at: http://www.lawphil.net/).	No specific regulatory reform for WSS yet, but currently being considered. Most large PPPs are regulated through contract, with the public executing agency performing regulatory functions (more of a contract monitoring agency) such as tariff approvals and performance monitoring. Other regulatory functions performed by different institutions based on different types of service providers (WSP 2015; NEDA 2010; Fernandez-Millan 2014). Until recently (2014) there was no database that records all types and number of service providers and their performance. The new database is managed by NWRB and requires willingness of service providers to voluntarily register and submit performance reports.	Changes in institutional arrangement is mostly driven by political and public sector reforms rather than specifically designed for the WSS sector. Without any national direction and with lack of leadership in the WSS sector, it is currently very fragmented. The policy, institutional, and regulatory reforms were not linked, although decentralization and PSP are both supported by good legal framework.

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TABLE A.2. continued

Country	Institutional reforms and incentives created	Policy reforms and incentives created	Regulatory reform and incentives created	Interlinkages of institutional incentives and results
Portugal	**Aggregation**—multimunicipal systems for bulk water supply and wastewater services were formed by merging at least two municipalities and creating a state controlled company (AdP) that operates upstream services. AdP due to its size and technical capacity was better placed to secure funds, both from the EU and from the commercial sector, which led to an increase in the level of investments in in bulk water supply and wastewater treatment services. Also, the remuneration of the multimunicipal concessionaire, controlled by AdP, was such that provided an incentive to the company to increase the level of investments (AdP 2015). **PSP**—Government's expectation that private management in the operation of WSS services would improve the sector's efficiency led to the introduction of PSP, as part of the sector wide reform that started in 1993. PSP in the WSS sector was mainly in the form of concessions with a municipality to manage the operation of retail services. After the introduction of PSP, there was a notable improvement in the quality of service provision as well as in the level of transparency (Teles 2015).	**Comprehensive sector planning**—as part of the sector wide reforms, the government set out a Strategy for Water Supply and Sanitation Sector (PENSAAR) spanning a period of six years, with the last of these plans covering the years 2014–20. PENSAAR allowed all those involved in the WSS sector to have a clear idea about the government's objectives and priorities, which allowed for greater coordination among the various institutions. The plans have also provided greater security to potential investors, who were more likely to fund a project that was in line with the sector's long-term strategy (Government of Portugal 2015). **Strong legal framework**—all the reforms that were implemented since 1993 were supported by a thorough legal framework that provided clear and workable guidelines setting out the rights, powers, and responsibilities of the institutions, regulator and service providers involved in the WSS sector.	**Regulation**—the establishment of the regulatory authority for the WSS sector (ERSAR) played a catalytic role in ensuring the successful implementation of the reforms and in incentivizing better performance in the sector. ERSAR assesses the performance of each operator on an annual basis and performs a benchmarking of utilities. This, together with the technical capacity provided by ERSAR, has given an incentive to the operators to make significant performance improvements (ERSAR 2014).	The institutional, policy and regulatory reforms in specifically designed for the WSS were coordinated and supported by a strong legal framework. The unbundling of WSS service delivery into bulk ("upstream") and retail supply ("downstream") and combining the establishment of multimunicipal systems for the upstream services and the introduction of PSP mainly for the operation of retail services has proven successful in Portugal. The establishment of the regulator, which resulted from the need to monitor the conduct of private firms in the WSS sector, provided incentives to both private operators, as well as municipalities, to improve their performance.

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TABLE A.2. continued

Country	Institutional reforms and incentives created	Policy reforms and incentives created	Regulatory reform and incentives created	Interlinkages of institutional incentives and results
Zambia	**Functional separation**—The new policy provides clear allocation of responsibilities (Ministry for executive functions, regulator for regulatory functions, and CUs for service provision) (Zambia National Water Policy 2014). **Commercialization of urban utilities**—urban water sector reform allowed for the establishment of Commercial Utilities (CUs) owned by Local Authorities and operated on a commercial basis. Tariff approvals are subject to the regulator which creates an incentive to improve service level to gain flexibility from regulator (Dagdeviren 2008). **Decentralization of responsibilities**—Water supply became the responsibility of Local Authorities which were encouraged to form CUs to provide the WSS services. Responsibility for WSS services were transferred from various Ministries and Departments down to each Local Authority. However, this only applies to urban WSS service provision as rural WSS service responsibilities were allocated to a governmental department (Mbilima 2008).	**National water policy**—new water policy presented and supported through various legislation. Introduces clear responsibilities for service provision and separates service delivery, policy making and regulatory powers (Zambia National Water Policy 1994). **Pro-poor financing**—The reforms established a basket fund for pro-poor financing, allowing for a centralized disbursement. Disbursement follows the demand-driven approach incentivizing CUs and recipients to apply for funding (Devolution Trust Fund:http://www.dtfwater.org.zm/).	**Regulator established—**a regulator was established and given flexibility to enforce regulation. Through the regulator, a number of innovative incentives where implemented such as: performance ranking of utilities; institutionalization of customer representation through Water Watch Groups; and a pro-poor basket fund investing in high-impact projects (Mbilima 2008). **Licensing of operations**—The regulator offers licenses to CUs and private WSS operators. Attached to the licenses is a minimum service level to be reached. Should CUs not be able to provide that minimum service level the regulator can enforce "Special Regulatory Supervision." This gives the CUs an incentive to provide good service, as the label came with some stigma (Mbilima 2008).	The comprehensive and specific water sector reform was directed by a National Water Policy and the principles laid out in the policy. The incentives created were very much interlinked and rising out from the stable policy environment created by a government supporting the reforms and a capable regulator. The water sector reform affected the entire urban water supply sector. The reforms introduced a commercial incentive by encouraging the formation of commercial utilities and established a regulator responsible for regulating the sector and approving tariffs. The regulator was given flexible authority on how to enforce the regulation. The outcome was a series of innovative incentives for most players in the water supply sector. Despite a stable and well formulated institutional framework and incentives, the sector eventually suffered due to lack of funding.

Note: CESB = state-level state-owned water and sanitation company; CLTS = community-led total sanitation; CRA = National Water Regulatory Commission (Colombia); CRA = Water Regulatory Council (Conselho de Regulação de Águas) (Mozambique); CU = commercialized utilities; IPART = Independent Pricing and Regulatory Tribunal; LG = local government; MDG = Millennium Development Goal; MFI = microfinance institution; MRA = Microcredit Regulatory Authority; NGO = nongovernmental organization; NSW = New South Wales; NWRB = National Water Regulatory Board; PAC = Program for the Acceleration of Growth; PSP = private sector participation; SSPD = Superintendence of Public Services; SWC = Sydney Water Company; WSS = water supply and sanitation.

Appendix B Incentives Created through Institutional Interventions—Summary of Case Study Findings

TABLE B.1. Incentives Created through Institutional Interventions—Summary of Case Study Findings

Country	Policy, institutional, and/or regulatory incentives	Summary of intervention	Incentives created
Albania	Regulatory	Clear regulatory functions: 1. licensing 2. tariff setting and approvals 3. monitoring and benchmarking	1. Water utilities are incentivized initially to meet licensing requirements, and later to meet performance targets as part of the license conditions. The regulator has the incentive to encourage water utilities to obtain licenses, partly because it is part of its mandate, but also because of the regulatory fee that the WRA can collect. 2. Water utility can set tariffs based on their real costs, with regulator's approval. This gives the water utilities an incentive to scrutinize their costs, which should lead them to identify inefficiencies that can be addressed to reduce costs. 3. Benchmarking of KPIs provides the incentives for water utility companies to improve performance in order to move up the ranking. Knowing the sector's performance gives incentives for policy makers to develop realistic sector targets.
Albania	Institutional	Decentralization process did not fully consider specific sectoral issues, such as the state of water assets and the size of the resulting LGUs, which led to LGUs having to take on dilapidated assets and/or having to operate a system that would never be economically efficient, given the size of the population served.	LGUs are disincentivized to take full responsibility for WSS services. LGUs and water utility companies do not have strong incentives to improve WSS services, apart from having to meet license conditions.
Albania	Institutional	Regionalization or aggregation of WSS services to address the economies of scale problem, accompanied by financial incentives for the LGUs and/or water utility companies to aggregate and merge.	LGUs have the incentives to merge small water utilities, as this will mean receiving financial support from the national government.
Albania	Institutional	Legal framework to allow PSP, but this was not supported by a stable enabling environment.	Private firms are disincentivized by the changes in institutional arrangements (decentralization then aggregation). Negative experience where private firms not meeting performance targets creates disincentives for LGUs to pursue PSP.

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TABLE B.1. continued

Country	Policy, institutional, and/or regulatory incentives	Summary of intervention	Incentives created
Bangladesh	Institutional	Decentralization The absence of any institutions responsible in the development of the sanitation sub-sector prompted the communities to take control	Bangladesh's decentralization experience suggests that devolving the provision of sanitation services to the lowest level, that is, the communities, can succeed even if there are no formal institutions or regulations to monitor the market. The emergence of locally adapted solutions, as in the case of Bangladesh, can prove effective in bridging the service provision gap.
Bangladesh	Policy	The CLTS approach, backed later by local sanitation marketing, focused on changing the incentives of communities and created a collective view against the shameful practice of open defecation	The training and education provided by donors to rural communities as part of the sanitation marketing, allowed them to understand the negative implications of open defecation and how poor personal hygiene may affect the whole community. This provided an incentive to individuals to put pressure on other community members to practice good hygiene. Also, the sanitation marketing campaign that was later implemented with support from donors, promoted locally sourced, low-cost toilets. This gave an incentive to local residents to invest in sanitation facilities. The increase in demand for improved sanitation facilities provided an incentive to local entrepreneurs to enter the market of supplying these products. Apart from being driven by potential profits, local sanitation entrepreneurs had an incentive to participate in the market to contribute in the development of the communities that they were members of. The initial success of the CLTS program in changing people's perception about open defecation, gave an incentive to the Government to actively support the sanitation marketing campaign. It was recognized as a relatively low-cost and effective means for the Government to achieve its target of 100% access to improved sanitation facilities.
Brazil	Policy, Institutional, and Regulatory	In a large, diverse country such as Brazil, there are no one-size-fits-all policy, institutional, and regulatory solutions for water supply and sanitation services.	Stronger subnational institutions (states, municipalities) are better placed to react to incentives, this tends to increase WSS inequalities.
Brazil	Institutional	Strong public participation and accountability mechanisms (after the end of the epoch of military rule). Channels for participation include Council of Cities.	Requirement to be accountable provides incentives to service providers and other key actors to improve performance.
Brazil	Institutional	SISAR program—specific example of participatory approach contributing to good outcomes.	Successful management model for integrated rural water supply and sanitation, encouraging local user groups to collaborate in units large enough to achieve economies of scale, and providing a structure through which investment financing and capacity building can be channeled.

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TABLE B.1. continued

Country	Policy, institutional, and/or regulatory incentives	Summary of intervention	Incentives created
Brazil	Policy	No standalone policy statements but strong political commitment, through forcefully articulated national policy positions, well formulated WSS plans and the backing of adequate allocations of financing for WSS investments	Clear incentives for improved WSS performance, as was the case in the early periods of PLANASA and PAC. Imperative to find cost-effective solutions to meet national targets has incentivized innovative approaches, such as condominial water and sewerage.
Brazil	Institutional	Form of financing offered in national programs has influenced institutional incentives and structures	PLANASA provided strong incentives for states to form state water and sanitation companies as these were the only entities eligible to receive funding in that program. Under PAC and PLANSAB, funds can be accessed by a variety of different entities. The main pre-requisite is for the municipalities to submit coherent WSS development plans. This provides a strong incentive for municipalities and WSS providers to build their capacity to plan.
Brazil	Policy	Performance based contracting results based financing	These forms of financing have been shown to provide strong incentives for improvements in specific key performance indicators such as NRW (PBC in the São Paulo state water utility SABESP) and wastewater treatment improvements (through the national RBF program called PRODES).
Brazil	Regulatory	No national regulatory institution, but the National Information System for WSS SNIS is an invaluable source of sector information for monitoring and planning.	SNIS provide incentives for competitive improvement by utilities wanting to move up the annual rankings.
Burkina Faso	Policy	The Letter of [Water] Sector Policy, adopted in 1998 and updated in 2001 reflected the principle that water is a social and an economic good. The most important policy is the PN-AEPA, adopted in 2006, which is integrated with the decentralization policy. The PN-AEPA clarifies the sectors overall institutional arrangement and provides a focus for continued improvements by setting targets and institutionalizing monitoring, coordination and stakeholder consultation processes.	Clear allocation of roles and responsibilities with strong focus on monitoring and coordination that are embedded in legal framework create incentives for the key actors to perform their mandated functions and roles, which in turn helped incentivize and maintain improvements in the urban water sector in particular. Clear improvements in sanitation and rural water after 2005, with the adoption of clear policies and targets for these sub-sectors, and their mainstreaming into the PN-AEPA, incentivized improved performance. Key actors are incentivized to ensure that performance targets are met, and service providers and regulators are incentivized to meet performance targets (see below on incentives created through regulation). However, political economy factors led to investments and public expenditure favoring capital investment over operational expenditures, and urban water subsector over rural sanitation. The policy did not include incentives to rebalance this tendency.

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TABLE B.1. continued

Country	Policy, institutional, and/or regulatory incentives	Summary of intervention	Incentives created
Burkina Faso	Institutional	Corporatization of, and reforms to, operating environment of national utility, ONEA.	Corporatization and internal reforms carried out in relation to ONEA have been successful in increasing utility autonomy and accountability and creating a strong performance culture. Having operational and financial autonomy created incentives for ONEA to improve operational performance, which in turn improve their cost structures and increase revenues. Internal reforms introduced performance based staff structure and promotions, which in turn created incentives for staff to meet their performance targets, and the use of short and long-term strategies that sets business targets (see regulation by contract for more details) that led to incentives to meet this target.
Burkina Faso	Regulatory	Mechanisms to establish transparent and predictable regulation of urban water supply: 1. Performance contract (the *Contrat Plan* in French or Contract Plan in English). This was sanction free, but overtime moved to a system of monitoring by multistakeholder committee and independent external auditing. 2. Financial equilibrium model for setting of tariffs.	The Contract Plan and the financial equilibrium model appear to have incentivized ONEA's improved commercial and financial performance. They provided a level of predictability in the setting of tariffs and fiscal transfers to ONEA. The main regulatory incentive flowing from the financial model is perceived to be the consensus arrived at in its design between all relevant stakeholders including consumers and civil society. The contract plan gave rise to incentives for parties to focus on results and strengthen relationships between parties. The specific design of the monitoring and supervision structure and external auditing are important in ensuring performance by both parties notwithstanding the lack of sanctions. Likely pre-requisites for success in Burkina Faso include the fact that the utility had the discretion to improve efficiency and effectiveness of operations, and the internal reforms to improve utility management (as well as the strong existing utility leadership and utility and government sponsors). A lack of specific targets for expanding equitable access made it difficult to effectively incentivize equitable access.
Burkina Faso	Institutional	Administrative decentralization coupled with promotion of PSP in maintenance and delegated management models for rural/small town water supply services—to overcome perceived incentive constraints in the community management model for water supply services and to support a degree of aggregation through grouping of PSP contracts.	Decentralization and allocating the responsibility for water supply and sanitation services to local governments has improved the effectiveness and the alignment of interventions in rural and semi-urban areas, by increasing incentives for local authorities to deliver good services to their communities. Through GoB's strongly supportive policy, model contracts and some technical support for PSP, local governments are incentivized to work with private firms to provide access to services in areas that were not served, and to improve services in areas served. Private firms can also provide necessary sources of finance. Stable policy and good contractual framework incentivized private firms to be involved in WSS service provision, as the perceived risks are reduced and with a good contract, there is potential for earning profits.

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TABLE B.1. continued

Country	Policy, institutional, and/or regulatory incentives	Summary of intervention	Incentives created
Colombia	Institutional	Decentralization in the form of full devolution of responsibility for WSS to municipalities, along with fiscal decentralization (occurring in the context of broad political decentralization).	In at least some municipalities and in some areas, decentralization contributed to incentives for effective and responsive local political leadership and public administrative capacity, increases in service coverage, citizen satisfaction (and willingness to pay), attention to rural areas and resource mobilization efforts. In many cases there was increased spending on social services and human capital rather than infrastructure. Some municipalities were incentivized to create alternative and innovative approaches. However, in many it did not change dependency on the center, and high level of both perceived and documented waste, inefficiency, clientelist practices, rent seeking, and corruption, particularly in most acute in smaller and medium-size towns The limited positive impact of decentralization on incentives for improved service delivery may be due in part to absence of perceived pre-requisites to decentralization improving service delivery, including absence of sufficient population size to produce economies of scale, low levels of corruption, and high level of local administrative capacity Decentralization resulted in sub-optimal economic structures that worked to undermine the incentives intended to be created by WSS public utility reforms (below).
Colombia	Policy	1. Establishment of specialist municipal financing instrument (FINDETER); and 2. Fiscal reforms to support decentralization of services. (substantial decentralization of expenditure responsibility and resources). Automatic transfers linked with the variations of the central government revenues (equal to around 40% of those revenues) Initially not linked to any input or output targets. Overtime, system evolved: first reforms provided for allocation of public-budget resources to be conditional on commitments from municipal government to comply with certain input (investment) requirements. In more recent years, the emphasis has been on "results-based" (output) conditionality	1. Appears to have been successful in incentivizing municipalities to take on WSS sector financing commitments and for domestic commercial banks to increase their participation in municipal WSS financing. 2. The fiscal transfer structure may have undermined the positive incentives that may be expected to flow from decentralization of WSS service responsibility. Structure contained built-in perverse incentives to develop local fiscal sustainability (by creating a dependency on and accountability to the central government and rent seeking at both levels of government). Reforms in 2001, 2007 and 2008 were intended in part to address perceived problems in initial transfer of substantial spending power without incentives to build local capacity or revenues. Linking of transfers to input targets was relatively more successful in creating incentives for performance in the transfer-dependent poorer and smaller municipalities than in larger cities with their own revenue sources. Limited evidence to date of the impact of linking payments to output targets.

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TABLE B.1. continued

Country	Policy, institutional, and/or regulatory incentives	Summary of intervention	Incentives created
Colombia	Institutional, Regulatory	The establishment of a strong national regulatory framework, and institutions for implementing the framework; including: - The National Water Regulatory Commission (CRA): oversees monopolies, promotes competition, defines tariff methodologies, and approves tariff increments for all private and public utilities. - The Superintendence of Public Services (SSPD) supervises the performance of water companies, public as well as private sector, and enforces regulations.	The system provided sufficient independence to dilute the political impact of significant tariff increases between 1996 and 2005, which incentivized improved financial performance of companies. Framework appears to have enabled the generation of sufficient reliable information for the sector and by defining tariffs based on production costs to provide adequate incentives for rationalizing consumption, with a positive impact on the environment. However, some of potential positive impacts of regulation undermined by structure of the WSS service industry in Colombia and decentralization, with CRA and SSPD responsible for over 1,300 service providers. Result is regulation (which until recently failed to distinguish in approach to large and smaller utilities) is costly, extremely demanding and inefficient both for the regulator and those regulated. System largely failing to capture or engage with the majority of smaller utilities.
Colombia	Institutional	Policies and legal requirement for delegation by municipalities of services to specialized public service providers (ESPs) established on corporate and commercial basis as legally autonomous entities (public or private).	Mixed incentives to adopt delegation and corporatization, with weaker municipalities often not adopting reform. In some cases of corporatization without PSP there were improvements in performance and outcomes—a number of large and reasonably well performing publicly owned corporatized WSS utilities. Evidence on service delivery ambiguous, largely due to the large number and variation of cases. Appears to be some positive impacts but not substantial impacts on water quality or coverage. Possibly due to insulating the service provider from local political structure made it less responsive to or incentivized to meet socially desired outcomes. Conversely, decentralization may have undermined corporatization efforts, by increasing the political salience of water at the local level. In many cases increased citizen voice focused on immediate problems rather than to encourage policy makers to prioritize policies that would potentially yield longer term benefits, including frequent pressure by politicians for tariff freezes.

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TABLE B.1. continued

Country	Policy, institutional, and/or regulatory incentives	Summary of intervention	Incentives created
Colombia	Institutional	Policies to encourage increased PSP, particularly in poorly performing utilities, and experimentation with a range of PSP structures (*empresas mixtas*, Operating agreements (no investment), concession agreements (investment and management) plus Colombia specific model, the Operator-Contractor model for small towns (construction contract followed by operation). Specific supportive legal framework (Law 142 of 1994 and supplementary laws and decrees): define rules for PSP in the WSS sector, transparent bidding and an award process; minimum requirements for contracts; coherent set of performance indicators; provide for the consistency between the private sector contracts, municipal development plans, and sector policy. Establishment of dedicated unit at national level to support corporatization and PSP at national level.	The new legal and policy framework and the issue of a tariff methodology incentivized relatively extensive adoption of PSP in the sector, but not to the level hoped. Other factors that incentivized wide uptake in PSP included the establishment of the national supporting unit, and the subsidy scheme used in Colombia to reduce the financial burden of utility bills on poor households. Impact of PSP on incentives for improved delivery unclear, in part due to the broad range and nature of PSP examples in the country, difficult to generalize. PSP appears to have increased autonomy and insulated service providers from political interference in utility finances and management, helping incentivize improved utility performance in terms of efficiency at least. Evidence of impact on incentives to expand access or improve service quality is ambiguous—some studies show significant improvements while others show little, and no better than corporatized public utilities.
Indonesia	Institutional	General public administration reforms: 1. Corporatization 2. Decentralization	1. Local governments (LGs) were incentivized to create PDAMs to generate revenues, no incentives for LGs to invest in PDAMs. PDAMs are disincentives to improve performance, as tariffs are kept low by LGs and can barely cover costs. 2. As above, LGs are incentivized to create PDAMs but not to invest in them. Central government entities disincentivized to channel budget allocations for investments as this is LG's responsibility under decentralization.
Indonesia	Policy	Strong policy direction with concrete targets and accompanied by estimated investment requirements and expected sources of finance.	Line ministries in central governments are incentivized to develop WSS programs to achieve policy targets and to receive budget allocations. Local governments and PDAMs are incentivized to apply for and participate in government programs to improve WSS services as there is possibility to receive funding. Donors are incentivized to assist GoI to achieve targets and allocate funds for programs as GoI shows commitment to improve WSS.

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TABLE B.1. continued

Country	Policy, institutional, and/or regulatory incentives	Summary of intervention	Incentives created
Mozambique	Policy	Comprehensive reform started with the enactment of National Water Policy in 1995 and updated in 2007, which set out institutional structure of the sector and encourage commercial operation of water utilities.	Clear direction of the sector created incentives for key actors to perform their functions as mandated in the policy and legal framework. Policy consistency has incentivized the donor community to provide the financial support needed over an extended period to attain the country's long-term vision for the sector.
Mozambique	Institutional	Delegated Management Framework (DMF)—Responsibility for water supply provision under the DMF moves from the government to FIPAG, as the asset holding company, and from FIPAG to an operator (could be private or public entity) (World Bank 2009).	As an asset holding and management company financed through concessionary loans, FIPAG's role is to establish an asset base and make revenue from the assets by delegating the management to an operator. There is an incentive to make sufficient returns to repay the loans used for establishing a sustainable asset base. FIPAG's revenue from tariffs are regulated by the regulatory agency CRA, they are incentivized to improve service levels (through expanding coverage or increased supply). FIPAG then passes the incentive on to the asset operator (when the operator is not FIPAG) through lease or management contracts, where the performance of the operator is tied with payments. Through the legal framework, CRA is incentivized to monitor performance of both FIPAG and operator, and to approve cost reflective tariffs.
Philippines	Institutional	Institutional reforms in Philippines' WSS sector were not designed specifically for the sector, and were mostly the result of changes in the political arena. The resulting institutions evolved through time on an ad hoc basis, without a strong policy direction. The same can be said about decentralization. Although WSS services were specifically stated as services that should be provided by LGUs, there is no guidance on how LGUs should decide on the most appropriate types of service providers.	Overlapping of roles and responsibilities leads to a lack of direction and leadership in the WSS sector, and therefore a lack of incentives to invest and hence slow progress in improving the WSS sector. There is little incentive for central government entities to take the lead to set targets, to develop and implement programs to achieve the targets, or to invest in and improve WSS services. There may even be a negative incentive regarding leadership in the sector: by doing so, the institution may be seen as overstepping its mandate and crossing into another institution's field of competence and responsibility. Different service providers have different incentives: LGUs have incentives to create Water Districts to delegate responsibilities and therefore costs to WDs, or to provide WSS services themselves to gain revenues. WDs have some incentives to invest and be more efficient as they can obtain loans from LWUA if they meet performance targets. Private firms have incentives to provide WSS services where there is a gap and where they can earn revenues and profits. Community-based service providers are incentivized to participate in ad hoc government or donor projects to receive funds.

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TABLE B.1. continued

Country	Policy, institutional, and/or regulatory incentives	Summary of intervention	Incentives created
		The WSS sector has become fragmented, with many institutions sharing executive functions, WSS services being provided by different types of service providers, and regulatory functions being performed by different institutions at various levels of government.	
Philippines	Institutional	Continued political support for PPP has allowed the development of the necessary enabling environment for PPP, notably the enactment of a PPP legal framework and institutional support, which overall has created a stable and predictable environment for PSP in infrastructure.	Private firms have the incentives to fill the gap and provide WSS services as the legal framework gives them certainty and stability, which in turn lowers the risks. Line ministries have the incentives to promote and encourage PPP as they have the guidance and support from the legal framework and PPP center. LGUs have the incentives to contract with private firms as they will be able to increase investment and provide better WSS services and access to unserved areas.
Portugal	Institutional	The aggregation of municipalities for bulk water supply and wastewater services supported by a strong legal framework that clearly defines the roles and responsibilities of each institution involved in the WSS sector.	Following the reforms, there was less financial pressure on municipalities as they were no longer responsible for upstream investments and they therefore had an incentive to focus on improving the retail service provision. The way the remuneration of the multimunicipal concessionaires operates (cost-plus model) allows them to fully recover their investment cost, while also making a reasonable profit. This, together with the fact that due to their size and risk sharing mechanism they have better access to financial markets than individual municipalities, allows them to implement investments of greater scale. Moreover, the contractual arrangements of the concessionaires are such that they have an incentive to fulfil their investment plan to avoid any penalties. The obligation to fund investments in the sector gave an incentive to the Government to allocate a higher share of funding into the WSS sector.
Portugal	Policy	PSP for the provision of retail supply services.	Municipalities have an incentive to delegate the provision of retail supply services to private firms, since the latter are contractually obliged to increase the performance of services, including bringing more revenues to local authorities as a result of higher collection rates. The fact that local authorities are ultimately responsible for the performance of the private operators gives them an incentive to carefully select the private entity that will operate the services and to design the concession contract with the private operator in a way that community benefits are maximized. The performance of the private sector entity is subject to the concession contract with the municipality.

table continues next page

TABLE B.1. continued

Country	Policy, institutional, and/or regulatory incentives	Summary of intervention	Incentives created
Portugal	Policy	Comprehensive sector planning to promote universal access to WSS.	For lenders in the WSS sector, the comprehensive plan that the government developed provides additional security, as it allows them to assess the extent to which the investment they are being approached to fund matches the Government's priorities and objectives. Service providers were motivated to play their part in meeting the targets outlined in the policy documents. The comprehensive WSS sector strategy provided guidance to the regulator (ERSAR) which has an incentive to formulate regulations that are consistent with the Government's overall policy direction.
Portugal	Regulatory	Establishment of a skillful regulator with a clear mandate.	The annual public benchmarking of service operators provides an important incentive to providers to improve their services. The ERSAR tariff guidelines provides an incentive to utilities to adopt tariffs that meet the requirements of the regulator, leading, inter alia, to more affordable tariffs. The monitoring of concession contracts provides an incentive to both private entities and municipalities to ensure that they fulfil their contractual obligations.
Zambia	Policy, Institutional, and Regulatory	Comprehensive reform that encompasses and includes all aspects of policy, institutions, and regulation (see below for individual interventions).	The lessons from the analysis of the reasons for Zambia's lacklustre WSS performance is that having a good policy, institutional, and regulatory framework is not sufficient. Governments also need to ensure that adequate investment resources flow to the sector, that projects to expand access are implemented and that the incentives for sector players are framed in a way that takes account of behavioral norms and cultural factors.
Zambia	Policy	The National Water Policy (NWP) of 1994 and the 1997 WSS Act introduced the separation of regulatory and service delivery functions in the WSS sector, along with separation of WRM from WSS. NWP and WSS Act decentralized service provisions and encourage local authorities (LAs) to set up commercial utilities (CUs) to provide WSS services.	Clear and comprehensive policy, supported by the legal framework create the incentives for all key actors to perform their functions as mandated by the legal framework.
Zambia	Institutional	The NWP and WSS Act set out clear institutional arrangement, LAs are essential owners of CUs, CUs are to operate WSS assets in a commercial basis, and NWASCO is established as the autonomous regulator.	Clear policy direction creates incentives for LAs to establish CUs to delegate WSS service provision to CUs. CUs are incentivized to provide WSS services as per their mandate and as per required by the licenses and performance agreement with the regulator (see below).

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TABLE B.1. continued

Country	Policy, institutional, and/or regulatory incentives	Summary of intervention	Incentives created
Zambia	Regulatory	Clear regulatory framework, led by competent regulator (NWASCO), with clear regulatory functions: 1. Licensing 2. Minimum service levels and service agreements 3. Tariff setting and approvals 4. Monitoring and benchmarking	NWASCO is incentivized to perform its functions as per its legal mandate. Each function creates the following incentives: 1. NWASCO is financially independent, and relies on license fees to cover its operational costs, therefore, NWASCO is incentivized to ensure that all CUs meet their license conditions and to monitor their licenses. By law CUs require a license to operate, therefore, CUs are incentivized to meet license conditions. 2. CUs are required to sign service agreement with LAs, which include minimum service levels, which are monitored by NWASCO. There are penalties if minimum service levels are not met, giving the incentives for CUs to meet these requirements. 3. NWASCO provides guidelines to calculate cost reflective tariffs and approves tariffs, which gives the incentives for the CUs to calculate cost reflective tariffs as per guidelines, so they can meet costs. 4. NWASCO monitors and benchmarks CU performance and publishes results, which creates incentives for CUs to improve performance to move up the rankings in published benchmarking reports.

Note: CU = commercialized utilities; DMF = Delegated Management Framework; KPI = key performance indicator; LA = local authority; LG = local government; LGU = local government unit; NRW = non-revenue water; ONEA = Office National de L'Eau et de L'Assainissement; PBC = performance-based contracting; PLANSAB = National Basic Water and Sanitation Plan; PSP = private sector participation; SABESP = Companhia de Saneamento Básico do Estado de São Paulo (São Paulo State Water Utility); SNIS = National Information System for WSS; SSPD = Superintendencia de Servicios Públicos Domiciliarios (Superintendence of Public Services); WRA = Water Regulatory Authority; WSS = water supply and sanitation.

Appendix C Characteristics of Countries Selected for Case Studies

TABLE C.1. Economic Indicators, 1980–2010

Country	Area km²	Population (millions)				Population density (per km²)				GDP per capita (US$)			
		'80	'90	'00	'10	'80	'90	'00	'10	'80	'90	'00	'10
Albania	29	2.7	3.3	3.1	2.9	98	120	113	106	2,037	1,880	2,256	4,094
Bangladesh	148	81	106	131	152	625	814	1,009	1,165	352	400	510	760
Brazil	8,516	122	150	176	199	15	18	21	24	8,268	7,931	8,753	11,121
Burkina Faso	274	6.8	8.8	11.6	15.6	25	32	42	57	312	342	435	575
Colombia	1,142	28	34	40	46	25	31	36	41	3,753	4,320	4,764	6,251
Indonesia	1,911	148	181	212	242	81	100	117	133	1,231	1,708	2,143	3,125
Mozambique	799	12	13	18	24	15	17	23	31	189	171	254	418
Philippines	300	47	62	78	93	159	208	261	312	1,687	1,526	1,608	2,145
Portugal	92	9.8	10	10.3	10.6	107	109	112	115	12,388	16,688	21,515	22,540
Zambia	753	5.9	8.1	10.6	13.9	8	11	14	19	1,276	1,030	934	1,456

Source: World Development Indicators 2015.
Note: GDP = gross domestic product.

TABLE C.2. Access to Water Supply and Sanitation and Infant Mortality, 1980–2010

Percent

Country	Access to improved water source				Access to improved sanitation				Mortality rate under 5 (per 1,000 live births)			
	'80	'90	'00	'10	'80	'90	'00	'10	'80	'90	'00	'10
Albania	–	–	96	96	–	78	83	91	78.6	40.6	26.2	16.6
Bangladesh	–	68	76	84	–	34	45	56	198.9	143.7	88	49.6
Brazil	–	89	94	97	–	67	75	81	95.3	60.8	32	16.6
Burkina Faso	–	44	60	78	–	8	12	17	241.2	202.2	185.7	113.5
Colombia	–	88	90	91	–	69	75	79	57.4	35.1	25.1	18.5
Indonesia	–	70	78	85	–	35	47	57	121.1	84.7	52.3	33.1
Mozambique	–	35	41	49	–	10	14	19	261.8	239.7	171.1	102.8
Philippines	–	84	87	90	–	57	64	71	80.1	58.2	39.7	31.9
Portugal	–	96	98	100	–	93	96	99	27.6	14.7	7.2	3.9
Zambia	–	49	53	61	–	41	41	43	156.8	190.6	163.1	82.1

Source: World Development Indicators 2015.
Note: – = not available.

TABLE C.3. Access to Water Supply and Sanitation in Rural Areas, 1980–2010

Percent

Country	Rural population (% of total population)				Access to improved sanitation				Access to improved water source			
	'80	'90	'00	'10	'80	'90	'00	'10	'80	'90	'00	'10
Albania	66	64	58	48	–	–	93	95	–	69	75	86
Bangladesh	85	80	76	70	–	65	74	83	–	31	44	56
Brazil	35	26	19	16	–	68	76	84	–	31	40	48
Burkina Faso	91	86	82	74	–	39	55	72	–	2	4	6
Colombia	38	32	28	25	–	69	71	73	–	41	52	63
Indonesia	78	69	58	50	–	61	68	76	–	24	34	44
Mozambique	87	75	71	69	–	23	27	35	–	2	5	9
Philippines	63	51	52	55	–	77	83	88	–	46	56	66
Portugal	57	52	46	39	–	95	97	100	–	89	94	99
Zambia	60	61	65	61	–	24	35	46	–	29	32	34

Source: World Development Indicators 2015.

Note: – = not available.

TABLE C.4. Access to Water Supply and Sanitation in Urban Areas, 1980–2010

Percent

Country	Urban population (% of total population)				Access to improved sanitation				Access to improved water source			
	'80	'90	'00	'10	'80	'90	'00	'10	'80	'90	'00	'10
Albania	34	36	42	52	–	100	100	97	–	95	95	95
Bangladesh	15	20	24	30	–	81	83	85	–	47	51	56
Brazil	65	74	81	84	–	96	98	99	–	79	83	87
Burkina Faso	9	14	18	26	–	75	85	95	–	44	47	50
Colombia	62	68	72	75	–	98	97	97	–	82	83	85
Indonesia	22	31	42	50	–	89	91	93	–	61	66	70
Mozambique	13	25	29	31	–	72	75	79	–	34	37	41
Philippines	37	49	48	45	–	91	92	93	–	69	73	76
Portugal	43	48	54	61	–	98	99	100	–	97	98	99
Zambia	40	39	35	39	–	88	87	86	–	59	58	56

Source: World Development Indicators 2015.

Note: – = not available.

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