# Incentives for Improving Water Supply and Sanitation Service Delivery

## A South American Perspective

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This analysis is based on the premise that strengthening the water supply and sanitation (WSS) sector, its institutions and stakeholders, calls for the alignment of sector incentives. The objective of this Knowledge Brief is to introduce how integrated *policy, institutional*, and *regulatory* (PIR) interventions can help align incentives for more sustainable WSS service delivery. Ultimately, the objective for governments is to design incentives that motivate people (as individuals or as part of an institution)[1] to provide universal and sustainable services. This brief provides a snapshot of sector experiences gathered from five South American country case studies—*Argentina, Brazil, Chile, Colombia*, and *Peru*.

### I. South America in the World

South America represents a mosaic of diverse people shaped by different geographic, historical, societal, cultural, and political conditions. The continent witnessed a wave of democratization in the 1970s when countries—at varying paces—started to shift away from authoritarian systems towards democratic systems. Until the 1990s, South America lagged western countries due to its overreliance on primary commodities and weak institutions, oftentimes still a heritage of its colonial past. Following a series of foreign debt crises, countries started to transition towards a free-market economy in the 1990s—which proved a major trigger in pulling countries out of debt. The region is also economically diverse, encompassing developed markets (such as Chile), emerging markets

1. Sector stakeholders may range from the national government (ministries) and local governments, to the sector regulator and water supply and sanitation (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.

(such as Brazil, Colombia, and Peru), frontier markets[2] (such as Argentina), and developing markets (such as Bolivia and Paraguay). Today, the region is beginning to recover from a 2-year economic slowdown, with 0.9 percent gross domestic product (GDP) growth in 2017. Going forward, growth is expected to gain momentum, reaching an estimated 2.7 percent in 2020 as conditions in commodity exports continue to improve.[3]

## Water and Sanitation in South America

South America, home to only five percent of the world's population, has 30 percent of the world's freshwater resources. But water availability at the regional level does not ensure water security at the local level, as evidenced by cities, like Lima, located in areas under severe water stress. Despite facing challenges like climate change and rapid urbanization (box 1), South American countries, compared with other low- and middle-income countries, have achieved relatively high rates of coverage of WSS services. The region met the 2015 Millennium Development Goals (MDGs) to halve the proportion of people without access to improved WSS; today 95 percent of people in the region have access to improved (basic) water supply and 87 percent to basic sanitation (figure 1).[4]

### Inequality in Access

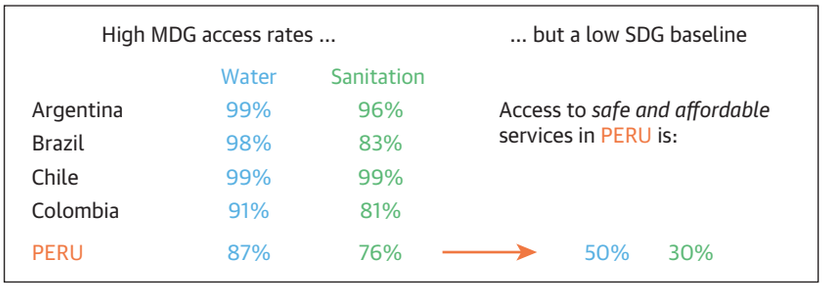
However, hidden behind these average statistics are marked differences within countries, reflecting drastic inequalities between income and ethnic groups, as well as primary language and education level.[5] For example, Argentina (along with Chile and Brazil) has

**BOX 1. Key Characteristics of Water Supply and Sanitation in South America**

- Nearly 75 percent urbanized; Argentina, Uruguay, and the Bolivarian Republic of Venezuela having the highest level of urbanization at 92, 95, and 89 percent, respectively.
- Governments opt for highly visible infrastructure projects with fewer resources for maintaining service quality.
- Service quality is low; many with formal water access continue to purchase bottled water.
- Public service providers dominate the sector, but many countries have had early adoption of private sector participation, with mixed results.
- Wide use of formal regulatory agencies.
- Increasingly vulnerable to the impacts of climate change, and water related natural disasters including floods and droughts.

2. "Frontier markets" refers to those countries which may also be considered "emerging markets" but are in an earlier stage of economic development. These countries may have experienced a recent economic crisis, making it a particularly challenging environment for investment as they have lower market capitalization and are generally very illiquid.
3. World Bank. 2018. *Global Economic Prospects, January 2018: Broad-Based Upturn, but for How Long?* Washington, DC: World Bank.
4. Basic, known as "improved" under the Millennium Development Goals (MDGs) is restricted to the following: flush toilet, sewer connection, septic system, flush to a pit latrine, pit latrine with slab, ventilated improved pit latrine, or composting toilet, and is also not a shared facility. Data for these five countries only.
5. According to the Joint Monitoring Programme, improved sanitation and improved drinking water coverage is lower among indigenous people in several countries with data; and, in Paraguay, speaking only

**FIGURE 1. Shifting the Baseline from Access (MDG) to Sustainability (SDG)**




*Sources:* 2017 SDG Index and Dashboards Report; 2017 Objetivos de Desarollo Sostenible, Pan American Health Organization.
*Note:* MDG = Millennium Development Goal; SDG = Sustainable Development Goal.

among the highest levels of coverage at the national level, but provinces report as low as 60 percent access to formal water networks. In general, the WSS deficit in South America mainly affects rural areas, dispersed communities, informal urban settlements, and indigenous populations, which are generally the poorest segments of the population. Thus, while countries invested large sums in infrastructure to expand access, the approach proved to be insufficient for reaching some population groups. Furthermore, MDG monitoring reports highlight that institutional, policy and financial factors remain a challenge, and international experience has suggested that governments need to better facilitate the role of structuring good policy and institutional support for improved WSS. These factors, which go far beyond investing in infrastructure, will be critical for South America to achieve universal access.

### The Sustainability Challenge

In 2015, the MDGs were replaced by the Sustainable Development Goals (SDGs). SDG 6 calls for universal and equitable access to safe and affordable WSS services, which requires a re-set of the baseline (figure 1). Along with the rest of the world, South America needs a new approach to meet this new, more ambitious, goal. WSS services are considered sustainable when access and quality of service are provided on a continuous basis, without any time limit, and at affordable prices. To meet the scale of this challenge, governments will need to ensure that the right incentives are aligned to motivate stakeholders to provide high quality services that do not diminish over time.[6] This brief considers how sector incentives have or have not contributed toward South America's success in meeting the MDGs and draws pertinent lessons for meeting the SDG challenge.

## II. Aligning Incentives for Sustainable Water Supply and Sanitation Services

This Knowledge Brief considers sector reforms implemented in five South American country case studies—*Argentina, Brazil, Chile, Colombia,* and *Peru*—by analyzing the WSS interventions through a "policy, institutional, and regulatory incentives" (PIR) framework.

"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 may arise from specific policy, institutional, or regulatory interventions (or mechanisms) or from the combined PIR framework that characterises the WSS sector at any point in time.

### Understanding the Policy, Institutional, and Regulatory Incentive Framework

The policies developed, institutions created and empowered, and regulations designed and

Guarani (an indigenous language and one of the primary languages of Paraguay) is strongly associated with use of unimproved sanitation. WHO (World Health Organization) and UNICEF (United Nations Children's Fund). 2017. *Progress on Drinking Water, Sanitation and Hygiene: 2017 Update and SDG Baselines*. Geneva: WHO and UNICEF.

6. Mejía, Abel, Miguel Nucete Hubner, Enrique Ron Sánchez, and Miguel Doria. 2012. *Water and Sustainability*. Paris: UNESCO.

### BOX 2. Understanding Policy, Institutional, and Regulatory Incentives

**Public policy**—*the framework by which governments undertake decisions that guide specific actions with the objective of achieving specific public goals or addressing a perceived problem*. Policies can be implemented through laws, regulatory measures, courses of government action, and financing priorities. Policies provide guidance and improve accountability between government and citizenry by setting expectations.

**Institutions**—*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. Institutions shape service provision as they outline the roles and responsibilities of actors from national policymakers to frontline service providers, and they determine the costs and benefits associated with alternative choices available to institutional actors as well as the legitimacy of their actions. Vertical alignment of institutions (across several tiers of government) as well as horizontal alignment (across ministries, for example) is critical for implementing incentives.

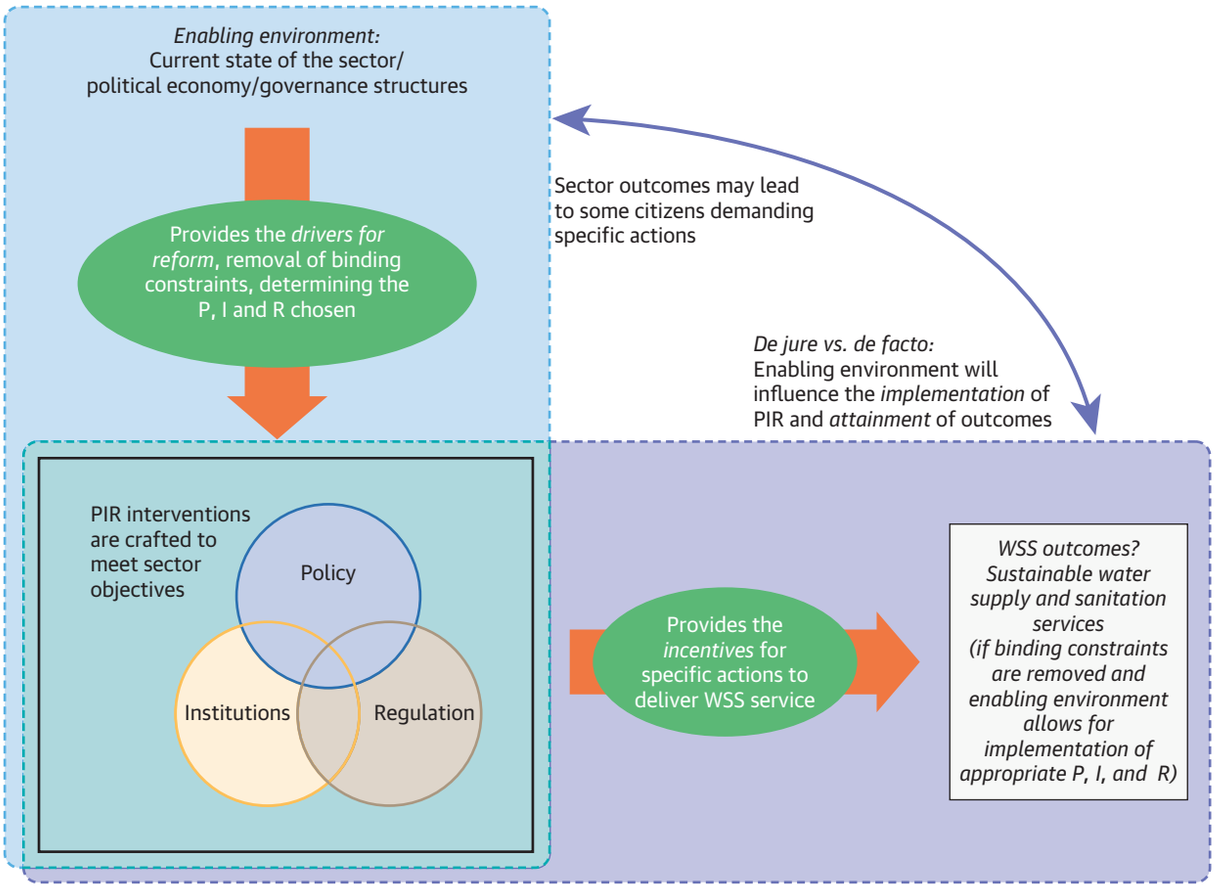
**Regulation**—"the sustained and focused control exercised usually by a public agency over activities that are valued by a community"[a] and involves the setting of rules and ensuring that those rules are enforced. Economic regulation usually refers to the "setting, monitoring, enforcement and change in the allowed tariffs and service standards for utilities."[b] In the context of emerging markets, this definition has often been broadened to encompass social or development goals of access and equity. In this vein, economic regulation can take a broad range of forms including regulation by agency or contract and; functions, such as performance management and enforcement of accountability and transparency mechanisms.

a. Ogus, A. 1994. *Regulation: Legal Form and Economic Theory*. Oxford, UK: Hart Publishing.
b. Groom, Halpern, and Ehrhardt. 2006. *Explanatory Notes on Key Topics in the Regulation of Water and Sanitation Services*. World Bank, Washington, DC.

implemented (box 2) in turn provide the incentives for the delivery of specific actions and resulting outcomes. Policies can create incentives, such as through signaling a change, or setting out the requirements for a regulatory and institutional framework, and influence actions and decisions of institutional stakeholders, including private investors and consumers. Actions by institutions are not only motivated by social goals, but also by the political and economic costs and benefits associated with them. Accordingly, institutions can create positive or perverse incentives depending on the type of relations and actions they promote. Regulation can create incentives through an established system of rewards and penalties that incentivize specific actions in line with the broader sector policies.

The relative success of these PIR interventions in achieving the desired outcomes of course depends on how the PIR are designed and implemented. The actors that are involved with, and/or are affected by, the implementation of the reforms include regulators, managers, staff of service providers (public or private), and consumers. External stakeholders such as contractors, consultant firms, and unions may also present new challenges to the design and implementation process if they perceive misalignment with their interests. It is important to note that P, I and R do not have wholly separate identities. As demonstrated through the interlinking circles that represent P, I and R in figure 2, there is overlap.

**FIGURE 2. Policy, Institutional, and Regulatory Schematic—Schematic: Aligning Institutions and Incentives for Sustainable Water Supply and Sanitation**




*Source:* World Bank. 2018. "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." World Bank, Washington, DC.
*Note:* PIR = policy, institutional, and regulatory; WSS = water supply and sanitation.

The PIR framework identifies two broad levels of incentives, as illustrated in figure 2: (a) drivers for reform, or incentives that emanate from the enabling environment, which can be either exogenous or endogenous drivers, and (b) incentives that emanate from policy, institutions, and regulation and that are used to ensure that expected reforms can be implemented.

**Drivers of Reform.** The drivers for reform and the types of reforms that are chosen do not arise in a vacuum, but are influenced by the local enabling environment, including prevailing policies, governance frameworks and broad political economy factors (see box 3). This environment can either prevent reforms by presenting binding constraints or encourage reforms by allowing key actors to design regulations, empower institutions, or initiate policies. The challenges and constraints that emanate from the enabling environment regarding reform and actions influence not only the type and extent of reform intervention, but also set the context for implementation—thereby determining the difference between *de-jure* and *de-facto* reforms. The actors that initiate the reforms include policy makers, politicians, senior government officials and donors. These actors will choose which types of reforms are to be implemented

to address the problems and constraints faced by the sector to achieve sustainable WSS services. The drivers to initiate and carry out WSS reforms come from both internal and external sources (box 3).

**Feedback-loops** (depicted by the arc-like arrow in figure 2) may exist or be created between the drivers originating from the enabling environment and the PIR incentives. The nature of the problems and constraints that emanate from the enabling environment regarding reform and actions may influence the type and extent of PIR interventions and provide the context for implementation. Also, outcomes of PIR interventions may influence certain stakeholder groups to react and voice their concerns to the government.

## III. South America through the Policy, Institutional, and Regulatory Lens

The objective of the global PIR initiative is to analyze how integrated *policy*, *institutional*, and *regulatory* interventions can help align incentives for more sustainable WSS service delivery. *Alignment* refers to harmonization between sector objectives, rules of the game, and the organizations and mechanisms that implement related actions. The rules of the game reflect agreed principles, established through political and/or social processes and can either be formal (e.g., law, decrees, and regulations) or informal (e.g., customs, social norms, and established relationships).

### BOX 3. Drivers of Reform—Endogenous and Exogenous Incentives

Incentives for change are shaped by the local enabling environment and political economy factors, which in turn have a significant impact on the success or failure of reforms. Incentives that emanate from the enabling environment, or drivers for reform, can be either exogenous or endogenous. Endogenous drivers for reform arise from local political processes, including citizen feedback, to change the status quo, and from incentives to harmonize policies and institutions in line with broad national policies, such as private-sector participation (PSP) or decentralization. Exogenous factors include the influence of donors and other external financiers. Endogenous and exogenous drivers for reform are not mutually exclusive, and some endogenous factors can be influenced by exogenous factors.

In Brazil, endogenous incentives spurred major sector reforms. The public water supply and sanitation (WSS) institutions born under Brazil's military rule (1968–86) became more fragile and less sustainable because of the country's macroeconomic crisis. Service providers became financially and technically weak as they became politicized (i.e., tariffs were kept low to combat hyperinflation). The crisis, however, also opened doors to PSP in WSS, and, along with more investment in some urban areas, came with increased transparency, financial controls, and better governance. In turn, these improvements have reduced political pressure on WSS institutions and enabled some efficiency gains. This PSP has been a welcome complement to (and with benefits that overflow to) public providers, which serve 95 percent of the population.

Exogenous incentives, such as the influence of an external financier, can be a driving force for reform but also carry the risk of generating misalignment. For example, Argentina as a signatory to UN Resolution 64/292, has declared water and sanitation a human right, but only three provincial constitutions have adopted the human right as law. Similarly, global pressure can cause many countries to declare certain goals (such as the MDGs or SDGs) as their own national goals, but then fail to define or support the policy, institutional, and regulatory (PIR) mechanisms needed to achieve them.

The global PIR initiative refrains from recommending a set of universal interventions to be applied in any country. It does, however, conclude some key messages for governments approaching the design of sector reforms. This Knowledge Brief provides examples from South America, focused on the urban WSS sector, in support of a select number of the global PIR initiative's key messages.[7] The brief focuses on formal PIR interventions, while also recognizing the critical importance of the informal rules of the game[8] that are a key factor in the success of any incentive regime.

**KEY MESSAGE 1**

**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.**

In South America, 68 percent of households are connected to a sewer. This rate, which is 18 percentage points above the global average, is due to recent investments in hard infrastructure. However, the wastewater treatment plants to which these sewers discharge are often inoperable or operating below design capacity. Due to a lack of PIR incentives for operators to meet discharge standards, only 30 percent of the collected wastewater is treated.[9] The challenge is to devise programs to channel investment subsidies in an efficient manner, while promoting efficiency and operational and environmental sustainability.

In 2001 Brazil introduced a program that meets these criteria. Under the basin restoration program (PRODES), the Federal Government essentially pays service providers for treating wastewater based on certified outputs, instead of financing inputs such as civil works. Up to half the investment costs for wastewater treatment plants are eligible to be reimbursed over 3-7 years, provided that the quality of the wastewater discharged meets the norms. If the norms are not met in one trimester, a warning is issued. If they are not met in the following trimester, the payment is suspended. If the norms are still not met in the next trimester, the service provider is excluded from the program. This provides strong incentives to properly operate and maintain plants. In short, the program does not fund promises, but results. The program enhances the financial viability of utilities, and thus increases their ability to access commercial credit, through development banks (such as the Caixa Economica Federal) and commercial banks. The operational risk is clearly assigned to the service provider, which is best able to manage that risk. To prevent overinvestment, the treatment plants have to be included in basin plans adopted by water basin agencies as a necessary condition to be eligible for financing under the program.

Colombia's experience with sector finance provides an example of how integrated solutions work best to tackle multifaceted challenges. After ***decentralization*** in Colombia during the 1980s, many municipalities faced challenges accessing finance for development projects. In response, an innovative financing institution was established (FINDETER). This specialized financial intermediary channels transfers from the central government to local governments through loans to first-tier financial institutions, primarily commercial banks. However, FINDETER is not solely a financial solution as it also offers technical assistance to local governments and domestic banks to bridge the knowledge gap between borrowers and lenders, thereby providing an incentive for them to establish new relationships. Thirty years since its founding, FINDETER now has 30 percent of its capital invested in the WSS sector and can offer borrowers competitive loans at 15-year maturity, compared with the average

7. For more information, refer to the blue box at the end of this Knowledge Brief.
8. In the water supply and sanitation (WSS) sector, 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 taken into consideration.
9. Those connected but without treatment are not considered to have safely managed sanitation. Data only for the 5 countries included in this study.

5-year loan available in the market. The institution has been critical to the country's achievement of high WSS coverage.

**KEY MESSAGE 2**

**Individual policy, institutional, and regulatory interventions must be aligned to ensure sustainability, as misalignment leads to distortion of incentives.**

Countries throughout South America have provided incentives for building, more than maintaining, infrastructure. This focus on access to services over quality of services has distorted the incentives needed to achieve today's national WSS goals. The 2010-15 period in Peru's WSS sector exemplifies this misalignment. The large amount of ***financial resources allocated to the sector***[10] addressed the infrastructure deficit toward achieving the MDGs. During this period, annual average sector investments in Peru reached US$1,450 million which is equivalent to 0.78 percent of GDP, for a total of US$7,410 million. These levels largely exceed investments made in previous periods—US$637 million in the period 2000-04 and US$2,325 in 2005-09.[11] While sector improvements were effectively made in the 2010-14 period (improving water coverage by 11 percentage points and sanitation coverage by 5 percentage points), these results are not relative to the investments made. Similar improvements were booked in the previous 2005-09 period requiring significantly lower investments. This points to the inefficiency of the investments made. There was a need to better evaluate the performance of existing infrastructure and the quality of services provided, prior to constructing new infrastructure; a need to link specific investments to previously defined service coverage targets at the national, regional, and municipal levels; and, a need to better revise the project cycle to redefine the pre-investment and investment processes. Ultimately, the targeting of investments has been poor. Above all, more infrastructure does not necessarily yield better services, which requires significantly more resources over time than an initial capital investment, for proper maintenance and operation.

***Regulation*** is a critical part of ensuring the de facto implementation of incentives and can vary in both form and function. Its functions can go beyond tariff setting to include the setting of standards for access to and quality of services, establishment of efficiency incentives, performance monitoring, and addressing user complaints.[12] Peru and Colombia are using regulation as part of the mix of policy instruments that seek to ensure that public utilities offer good value and quality services to the public, and ultimately in view of depoliticizing tariff setting and providing independent oversight. For example, in Peru, the National Water and Sanitation Regulatory Agency (SUNASS), mapped to the Prime Minister's office, is responsible for the economic regulation of WSS services, and for monitoring and following up on customer complaints. While the form of regulatory enforcement can include a national or local agency, which is prevalent across Latin America, regulation can also be undertaken by contract.

In contrast, the absence of adequate regulation can create perverse incentives. For example, the regulatory vacuum that persisted in Brazil from the 1990s to the early 2000s was a factor in the failure of some private concessions and the sustainability of public providers. The elimination of PLANASA in 1988—which had secured the country's commitment to financial sustainability of service providers through a central agency to approve tariffs—gave space to keep tariffs artificially low to control inflation. Not until the 2007 Law of Water and Sanitation were these policies

10. Financial resources allocated to the sector in the 2006-11 period (0.78 percent of gross domestic product [GDP]) were also significantly above the average annual sector investments made in the Latin American and Caribbean region (0.20 percent of GDP). World Bank. 2017. "Rethinking Infrastructure in Latin America and the Caribbean."
11. World Bank. 2017. "World Bank Investment and Financing Proposal, 2016." Internal document. World Bank, Washington, DC.
12. OECD (Organisation for Economic Co-operation and Development). 2015. "The Governance of Water Regulators." OECD, Paris. http://dx.doi.org/10.1787/9789264231092-en.

reinforced through adequate regulatory policies, institutions and mechanisms.

Peru's national tariff policy specifies that consumer tariffs for WSS services should support three key goals: (a) to guarantee the sustainability of services; (b) to create incentives for consumers and service providers to reduce costs; and (c) to help service providers meet consumer demand for quality services. However, there is misalignment between policy and practice. First, SUNASS only authorizes tariffs based on historical costs, and thus they often do not fully recover the cost of service. Consequently, tariffs send incorrect pricing signals to consumers, causing inefficiencies in consumption. In turn, subsidies are used to fill the gap between the cost of service and the tariff, which provides a perverse incentive to continue inefficiencies. For example, there is not an incentive to select least-cost projects or technologies.[13] Above all, service providers should be given incentives to maintain existing infrastructure, and they should have the right to charge tariffs that are in line with the future and incremental costs of additional supplies.[14]

**KEY MESSAGE 3**

**Specifically, changes in institutional arrangements and the regulatory framework need to be supported by the necessary laws and policies to be effective and sustainable.**

Peru's WSS decentralization process started in 1990 when the national government transferred WSS provision to municipalities, except for SEDAPAL, the main WSS utility providing services to half of the country's urban population. It was decentralized without a sectoral policy, which resulted in the deterioration of services. Peru's national political and fiscal decentralization process, initiated by the Decentralization Laws of 2002 and 2004, aimed to improve the efficiency and quality of public spending, and ensure that all levels of government met the specific needs of citizens. However, Peru failed to consider all political economy issues, resulting in an "incomplete" and asymmetrical[15] decentralization system undermining government accountability, and generating inequities and inefficiencies in public investment and service delivery.[16] Regarding the WSS sector, there was little consideration of the capacities and financial resources available at local government levels, and little understanding of the overlapping mandates created by the devolved structure. The lack of financial sustainability of providers has left them highly susceptible to political interference and control. Achieving the desired long-term outcomes of WSS service delivery in Peru requires understanding and addressing its challenges, including poor institutional coordination (horizontal and vertical), inefficient linkages between financing and results, poorly defined roles and responsibilities and poor governance at the service provider level, and lack of clarity on what the WSS tariffs should include, in addition to the lack of career lines within the water utilities.

Colombia's WSS sector made the policy decision to attract ***private-sector participation*** (PSP) through its

13. In Peru, the capital expenditure per incremental person served varies from S/. 740 (US$215) in Lima to S/. 24,000 (US$7,000) in Cajamarca, with a national average of S/. 3,050 (US$900). It would be more rational to oblige service providers to reduce such high incremental costs through a combination of demand management measures; accurate and universal metering; and offering safe but lower-cost technologies to consumers who are not being served, or who are being poorly served.
14. World Bank. 2017. "Peru: Support to the Water Sector Modernization Program." Internal document, Water Global Practice. World Bank, Washington, DC.
15. Peru's fiscal decentralization trends highlight the profound asymmetry between revenue and expenditure decentralization. In Peru, spending is far more decentralized than taxation. As a result, intergovernmental transfers are the dominant financing source for regional and local governments. Due to their reduced access to credit markets and the tight borrowing restrictions imposed on them, regional and local governments have limited recourse to borrowing to finance their expenditure responsibilities, leaving them heavily dependent on intergovernmental transfers (World Bank 2017).
16. World Bank. 2017. *Peru—Systematic Country Diagnostic*. World Bank, Washington DC. http://documents.worldbank.org/curated/en/919181490109288624/pdf/Peru-SCD-final-3-16-17-03162017.pdf.

regulatory framework. A key element of the central government public utility reform agenda was the promotion of private sector management, including the principle of maximizing competitive forces through transparent bidding and award processes. It establishes minimum requirements for contracts and provides a coherent set of performance indicators that serve as the basis for contract supervision and control and tariff setting. The framework is also intended to provide for consistency between the private sector contracts, municipal development plans, and sector policy. The framework established for public-private partnerships (PPP) in WSS was broad enough to permit and support a variety of PSP modalities.

**KEY MESSAGE 4**

**Policy direction and commitment need to be supported by institutional arrangements that are conducive to implementing the policy and achieving the targets.**

For instance, ***decentralization policy*** is intended to create incentives for improved service delivery in a more responsive, inclusive and accountable manner, as local government has a direct line to citizens. However, as witnessed in Colombia, reform can present secondary challenges (box 4). Despite the national government's strong policy direction and commitment to decentralization, the decentralization process shed light on the weaknesses of the regulatory institutions that lacked the resources to effectively regulate the 1,300 service providers over which they were mandated oversight. Furthermore, the regulatory structure now required a high degree of inter-institutional coordination, which was lacking.

The lesson is also relevant when considering ***public participation, inclusion and accountability*** in Brazil, where there is great disparity in WSS access rates among regions of the country, as well as between urban, peri-urban and rural areas. PLANASA, Brazil's formal sector framework, brought services to mostly middle and high-income households. To fill gaps in underserved, poor areas, the government financed the Water and Sanitation Program for Low-Income Urban Population (PROSANEAR) project, implemented through a World Bank loan during the 1980s and 90s. Taking a demand-driven approach, the project provided incentives for neighborhoods to work together to select an affordable and alternative technology, finance the construction, and operate and maintain the system. Many groups selected simple, condominial sewerage systems which uniquely fit the needs of unplanned settlements at a cost that is around 20 percent less than traditional water and sewer systems. More than 1 million people in 60 communities have a new water or sanitation connection to their residence, and what were informal private providers are now serving customers with formal addresses. The Water and Sanitation Law of 2007 and the 2013 PLANSAB encapsulate Brazil's commitment to reduce inequalities and ensure access to WSS services for low income households. Some municipal governments have moved toward an Integrated Urban Water Management approach to slum upgrading which includes solid waste and other services, which has worked well to manage pollution and improve a range of services. The challenge now is to scale up these approaches and embed them in formal institutional arrangements to ensure the poor have incentives to participate in formal planning.

**KEY MESSAGE 5**

**Design and implementation of sustainable institutional reforms requires a nuanced understanding of the local institutional context.**

Numerous countries in South America rely on specific ***regulatory frameworks*** for the WSS sector. Some of these frameworks have a national scope, such as Chile, Colombia, and Peru, while other countries have state, provincial or even municipal jurisdiction, as in the cases of Argentina and Brazil (although Brazil has established guidelines for the national application of the regulatory framework).

Although regulators are most often not financially or managerially independent from the public institutions under which they sit, they can still be effective at

**BOX 4. Coupling National Regulation with Decentralization in Colombia**

Colombia's regulatory framework is complex and is further complicated by the decentralized nature of the water supply and sanitation (WSS) sector, as well as the existence of a wide variety of public, private, and mixed service providers. Nevertheless, Colombia implements a centralized methodology for ***tariff and service standard setting*** that is enforced by multiple public bodies across all public and private service providers. This separation of regulatory powers is deliberate, as Colombian administrative tradition requires that a single body should not be responsible for both making and enforcing rules: a) the Regulatory Commission for Water and Sanitation Services (CRA) establishes the tariff-setting methodology. Providers set their own tariffs in accordance with this methodology (or apply to the CRA to set the tariffs a different way); and b) service standards are set by the Ministry of Economic Development. The Public Services Superintendence (SSPD) monitors the providers to verify that they are following the tariff-setting rules and complying with the service standards.

*Source:* Water Regulation: Regulation by Contract with a Separate Regulator; PPP IRC; World Bank.

enforcing standards. A national regulator, for example, has been cost-effective in smaller countries like Chile, especially given that regulating private providers is relatively easier than regulating pubic providers due to the lack of political interference and thus, the greater effectiveness of incentives. Brazil, by contrast, with its 5,570 municipalities, relies mostly on sub-national regulators (with less success relative to other countries) and an informal national benchmarking system that enhances competition through "sunshine regulation," and can help providers gain access to federal funding. Colombia has been successful designing a regulatory system that works within the complexity of its WSS sector (box 1). What works for each country is highly context specific.

In the case of Peru, the 2007 Law to Optimize the Management of WSS utilities was approved to improve ***utility performance***—by addressing financial and technical challenges faced by utilities—in view of improving their management indicators and restructuring their debts. The law also included a package of supreme decrees to expedite the approval of projects submitted by utilities within the framework of the National System of Public Investment (SNIP). However, this law failed to consider the financial challenges the utilities were facing, and therefore excluded taking up the interest, arrears, and administrative expenses that had been generated, leaving the utilities largely indebted. The 2013 Modernization Law allowed for the creation of the Technical Organization for Water Supply and Sanitation Services Management (OTASS) tasked to enhance the financial sustainability and professionalize the service providers, with the right to intervene in underperforming utilities to induce a turnaround.

The region has also had mixed results in the use of **PPPs** in the WSS sector. Gradual introduction of PPPs to Chile's already well-functioning public sector helped finance much of the country's wastewater treatment infrastructure. In contrast, some international PPPs in Argentina failed due to poor designs that did not account for local circumstances. The Buenos Aires concession in the 1990s, for example, was signed despite a weak regulator and high foreign exchange risk. The peso devaluation in 2001 then led to a cancelled contract. External actors can bring

much-needed expertise and financing to the sector, but their ability to influence must be shaped and limited by local realities.

**KEY MESSAGE 6**

**Appropriate local capacity (human and financial resources) to undertake reforms is required to avoid the development of gaps between *de-jure* and *de-facto* reforms.**

A lack of integration between expected reforms and the human and financial resources needed to implement them can create a gap between *de-jure* and *de-facto* policies. In large countries, like Brazil, a range of capacities exist in municipal and state level institutions. Brazil's National Sanitation Plan (PLANSAB), requires that all municipalities complete a water and sanitation master plan to access funding. The plan is also used to define goals which the WSS sector should pursue and regulators then use to monitor progress. The pre-requisite, while a good incentive for attaining sector targets, is not in line with local capacity constraints across the country, and many municipalities do not have the initial funds or the skills needed to complete the planning. Policies should work toward creating a level playing field across institutional actors, with the overall aim of ensuring equity in service provision. In contrast, Chile has been able to enact a consumer subsidy program to ensure the bottom 15 percent of customers can afford a basic amount of water, and has done so by using the Chilean WSS regulator, SISS, to identify the qualified areas and process payments to the designated utilities.

**KEY MESSAGE 7**

**Reform is not an event or a linear process, and its success relies on incorporating a high degree of learning.**

Argentina has learned the need for a broader, national approach to meeting WSS goals. The country has a significant backlog in terms of service coverage and quality, requiring large investments to close the gaps. Economic instability over the past decades has resulted in limited capital investments in WSS, and perhaps most notably the failure of large-scale PPP schemes. Moreover, in contrast to countries like Peru, Brazil, and Chile, Argentina does not have a national sector law, but rather each province has its own WSS regulatory framework. While this does permit the use of "fit-for-purpose" approaches, it also means that sector institutions, which rely heavily on federal subsidies, are poorly coordinated both vertically and horizontally. The 2016 National Water Plan addresses these deficiencies through a new National Water and Sanitation Plan (PNAyS), which aims for universal coverage and improvements in efficiency and quality over 4 years. To guide, plan, and monitor actions and government targets at the national level, the Directorate of Drinking Water and Sanitation was created as part of the Water Resources Sub-Secretary, SSRH. It is tasked with the formulation of sector policies and investment planning. It will develop a national data system, carry out specialized studies, promote good practices, and assist providers in programming the maintenance and management of infrastructure, toward strengthening provincial and municipal services. The de facto way in which these new institutions will operate and coordinate remains to be seen.

Peru has taken a more step-wise approach to reform. National political and fiscal decentralization, which began in the early 2000s, was first only partially implemented in WSS, which did not have a sector policy in place at the time. Moreover, most local governments did not have the financial resources, human resources, or sufficient incentives to effectively exercise their responsibility in the sector,[17] reinforcing urban-rural inequities in WSS access and quality. Peru's experience showcases that of a learning process. Some years later, the National Sanitation Plan 2006–15 was formulated to establish sectoral policies and targets in each area of intervention: urban, small towns, and rural areas, with a view to complying with the national objectives of the

17. WSP (Water and Sanitation Program, World Bank). 2007. "Evaluation of Small-scale Providers of Water Supply and Sanitation Services in Peru." World Bank, Lima, Peru. http://www.wsp.org/sites/wsp.org/files/publications/wsplibroing.pdf.

**BOX 5. Chile's Holistic Approach to Sector Reform**

Public reforms in Chile's water supply and sanitation (WSS) sector were driven by a commitment to eliminate state subsidies for public services and were sustained by a long-held view that WSS services should provide social and economic benefits for all. Chile recognized early on the importance of universal access at affordable rates, as well as the economic benefits associated with developing wastewater for reuse in agriculture, and the positive impact on tourism, both major contributors to economic growth. The country benefited from its strong enabling environment whereby democratic rule presented a low political risk to potential private investors. This was complemented using regulation first and foremost to protect customers, the environment, and the quality of service. Moreover, the law establishes a tariff system based on the principles of equity, efficiency and transparency. It mandates universal access while also requiring that operators become self-sufficient. Tariff increases are only approved in line with the marginal cost of service as applied to a model company. This forces operators to make efficiency improvements, which are translated into lower costs for consumers.

sector and aiming to achieve MDG 7, a target which Peru did successfully achieve. It is important to note that the plan went hand in hand with increased expenditures in the sector which grew considerably since 2004 (see key message 2) thanks to the country's economic growth and the policies implemented to finance the expansion of access. However, the efficient allocation of public investment in the WSS sector remains a challenge to be addressed especially in view of achieving the SDGs by 2030.

## IV. Conclusion

South America has relatively high rates of access to basic WSS, including high rates of formal sewerage coverage, but achieving sustainable universal access (including better quality and efficiency) in WSS services will require stronger institutional arrangements, with increased coordination and planning and greater accountability. The traditional approach taken throughout South America, to invest in large-scale infrastructure, is insufficient for achieving the SDGs because it doesn't address sustainability.

The 5 case studies in South America support the main findings of the global PIR report, namely, that when interventions are integrated, incentives for improving WSS services are aligned. A holistic and comprehensive approach is the best way to engage in sector reform (box 5) but a more piece-meal process can also be successful if it leverages a high degree of learning. The individual experiences of each country are diverse and cannot be fully appreciated here,[18] however, a few major conclusions based on these 5 case studies can be drawn.

First, countries that make progress toward their WSS goals are those where sector objectives (often aligned with global goals like the MDGs or SDGs) are in harmony with the rules of the game and have adequate mechanisms for implementation. Therefore, a holistic approach is needed when designing PIR interventions to align incentives created through different reform efforts. Changes in institutional arrangements and regulatory frameworks prove more effective if supported by laws, policies, policy direction, and commitment. Colombia's FINDETER institution,

18. Countries not included in this study (Bolivia, Ecuador, Guyana, Paraguay, Suriname, Uruguay, and Venezuela) would bring an additional range of PIR approaches and WSS sector outcomes to be considered. For example, Uruguay having universal access to both safe water and sanitation services, and Paraguay and Bolivia experiencing more challenges in the sector particularly concerning access to sanitation in rural areas and water quality in (peri-) urban areas.

Brazil's PROSANEAR program, and Chile's pro-poor subsidy policies show how technical solutions must be supported with advocacy, capacity building, and a high level of resource coordination to achieve the intended results. Second, because context matters, there are no one-size-fits-all solutions. "Best practices" should not be emphasized over new approaches that reinforce the endogenous drivers for reform. Local administrative realities and capacity are critical inputs in the design of successful reform. Regulation, for example, must be "fit-for-purpose." Private providers in Chile react well to regulatory incentives, and other countries have also been successful with enforcement of public providers, especially when they have the mandate to both measure performance and provide technical assistance.

Brazil shows how increasing data transparency can be as or more effective at improving performance than formal institutions. Similarly, decentralization can take many forms, and success depends on PIR incentives being embedded in the local institutional context. For example, while fiscal transfers can be a positive incentive for promoting better decentralized service provision, their efficacy requires targeting, local capacity, and a continued commitment to support local financial and managerial autonomy.

Third, it is critical to take a long-term process approach that incorporates learning. The range of delivery modalities used in South America—public to private and in between—provide similar lessons. Privatization was highly successful in Chile at the end of its reform process, and three corporatized public utilities in Brazil can leverage private finance through stock exchanges. But behind these successes lay a long history of public sector support[19] and significant improvements or reversals in institutions and regulation. It is also important to note that the use of PSP itself has promoted better governance, efficiency, and transparency in these countries. The reversal in Buenos Aires, from privatization to re-nationalization, is another learning experience which is currently being formalized through a new national sector plan and new institutions. What matters is that these countries not only scaled up what worked, but they went back to the drawing board when strategies failed or were incompletely implemented.

Achieving sustainable service delivery requires a comprehensive approach that integrates PIR incentive structures. The lack of a holistic approach interlinking these structures may produce perverse incentives that will not bring countries any closer to achieving their sector goals. Ensuring availability and sustainable management of WSS for all will also require moving beyond the technical solutions that enabled many countries in South America to achieve the MDGs. Reforms should be designed through an inclusive process with careful consideration of the drivers for reform, local capacity, and the best fit for the prevailing institutional context.

19. Before private-sector participation (PSP) was aggressively promoted through legal reforms in 1990 in Chile, coverage rates in urban areas were already very high (97% for water; 84% for sanitation) and all customers had a micrometer at the household level, which enabled the companies to set a baseline for improving performance. Moreover, a strong regulatory framework and institution were continually strengthened alongside greater use of PSP.

This Knowledge Brief is an output of the World Bank Water Global Practice's initiative on Policy, Institutions, and Regulatory (PIR) Incentives, developed by the Water Supply and Sanitation Global Solutions Group. The content presented in this brief is based on a series of internal case studies developed under the PIR framework on Argentina, Brazil, Chile, Colombia, and Peru. For more information, please refer to the global study "Aligning Institutions and Incentives for Sustainable Water and Sanitation Services" (World Bank 2018), which will be available online via the World Bank Open Knowledge Repository.

Those 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's Water Global Practice.[a] The IDT may serve as a first step to understanding the water supply and sanitation (WSS) sector enabling environment and institutional dimensions. 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 tool will be tested in several countries, and lessons learned will be incorporated into future updates of the tool.

For more information please contact Gustavo Saltiel (Lead Water and Sanitation Specialist, Water Global Practice).

a. 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.





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