Bolivian Utility Regulation: Lessons for a Water Sector Agency
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Abstract

In a polarized political setting, public policy towards the water sector evolves in response to pressures. The Bolivian experience provides lessons for other nations. First, technical skills are necessary, but not sufficient for regulatory sustainability. In addition, those implementing policy must think politically without being political. To establish incentives for good sector performance, public authorities must be able to measure performance. Furthermore, when price is initially far below cost, citizens will perceive private participation as the reason prices go up. Finally, benchmarking water utilities is perhaps the only tool regulators have when regulating municipal or state-owned utilities. The study sheds light on the evolution of regulatory institutions.

Introduction

Lessons are sometimes most vivid when the situation is extreme. The fragility of particular institutions and the lack of social cohesion complicate a society's willingness and ability to meet broad social objectives. Political leaders are unable to focus on long term investments and citizens become frustrated and/or despondent. When the social brew boils over in a state of crisis, institutions are altered and citizen expectations are raised—perhaps only to be frustrated again.

In Bolivia, public policies in infrastructure are now designed within a participatory democracy model, with the economy based on state intervention and/or socialization of the productive sectors. This process began with the Hydrocarbons nationalization according to the popular mandate of the 2004 referendum (National consulting process). These socio-economic measures are expected to be included in a new Constitution (Gutierrez and Mokrani, 2006).

However, the Constitution approval has lead to confrontations in the country. The tense relations between the central and regional governments led to four (geographic) departments declaring their autonomy from the central Government in the management of natural resources and services. Although proposed national reforms will be submitted to a public consultation process, the political environment is unstable. The Government called for a national dialogue to find a solution to the political crisis. The extent to which different stakeholder groups actually listen to one another will partly determine whether such discussions promote a better understanding among groups or further polarize a difficult situation.

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The current political crisis is also reflected in delays of investments in infrastructure. Bolivia still faces major challenges associated with water service coverage, production efficiency, and service quality; particularly in rural areas. The country is unlikely to meet international commitments like the MDG goals to halve the population without access to safe drinking water by 2015. The recently signed Declaration of Cali to include sanitation as a priority in the national plans has also created an explicit agreement that requires large future investments for network expansion. Of course, sources of funds can only come from three groups: water consumers, taxpayers, or international investors and donors. Since prices are politically sensitive, current customers are not likely to accept responsibility for network expansion. Furthermore, price increases are problematic without immediate water quality improvements (in terms of continuity, pressure, and treatment). Taxes and other government revenues (as from royalties for resource extraction) have many potential claimants, including schools, hospitals, transportation systems, and other social services—so subsidization of water systems could occur, but other social investments benefit citizens as well. International groups could prefer funding projects in nations with different policies than those now espoused in Bolivia. In general, those not currently served are the main losers when funds are unavailable for network expansion.

In reforms more than a decade ago, a regulatory system (Sistema de Regulacion Sectorial, SIRESE) and a water regulatory office (Superintendencia de Saneamiento Basico, SISAB) were set up with the main objective of promoting universal access to services for all the inhabitants in the country. Though in the second decade of the reform there were important improvements in the main cities, the rural area was not served in the same level with the network expansion.

In an inclusive and democratic nation, a primary goal should be universal access to water services because of its positive impact on human health and life. A contributor to this outcome, a well functioning regulatory system, is not part of the Constitution in Bolivia. Moreover, the National Development Plan 2006-2010 approved by the Evo Morales Government intends to transfer the functions of SIRESE to agencies within the Ministries of State.

These future institutional reforms are mainly politically driven but also a consequence of the low legitimacy of the regulatory system. In particular, as Albro (2005) emphasizes, the indigenous movement (headed by Morales) represents a backlash against decades of national neglect. The protests that brought his movement to power represented a reaction against historic disenfranchisement and public policies that had not given priority to poverty reduction through access to social services (including education, health, and infrastructure).[3] The institutional changes supported by Morales have not all been implemented, due to a combination of political instability and budget constraints. In such a fragile (and politically charged) atmosphere, some lessons can be drawn for water sector agencies in developing countries. First, unless agencies adopt policies that promote access to infrastructure services, they will lack credibility within the political arena. Second, unless citizens perceive improvements in sector performance, agencies will lose legitimacy: an agency needs the approval of those affected by its decisions.

The Bolivian Regulatory System

[3] In 1999, the richest ten percent received 43 % of Bolivia's income; the bottom ten percent had 0.3 % (Tuchschneider, 2006). Such major social and economic inequalities sowed the seeds for the political tensions facing the nation today.

Regulation is particularly challenging in developing countries where regulators have to deal not only with technical issues such as pricing and the quality of services but also with pressing social demands. This challenge has been particularly great in the Bolivian water sector with its variety of service providers and lack of regulatory traditions (Nickson and Vargas, 2001). Citizens had high expectations, but rapid progress was infeasible—given the availability of funds.

At the early stages of reform, stable institutional structures were seen as vital for future Bolivian infrastructure investment—whether by the state or through private participation. The National Regulatory System (SIRESE) set up in 1994, was created to regulate and provide oversight for the water, electricity, hydrocarbons, telecommunications and transport sectors. This system was designed to ensure that utilities would operate efficiently, contribute to economic development, and enable citizens to have access to these important services. Thus, in principle, the interests of users, companies and the State were to be protected. Of course, "seeing is believing," so without evidence of substantial improvements in infrastructure, citizens will not "see" progress. Similarly, "believing is seeing": groups ideologically opposed to neo-liberal approaches for promoting capital investments and operational efficiencies are predisposed to give the reforms low marks.

The Water Regulatory Office (SISAB) started to operate in 1997 as part of SIRESE; one can argue that it had an insufficient legal framework to obtain data and provide regulatory oversight. Besides city-owned systems and cooperatives, it faced one privately-owned regulated operator (Aguas del Illimani) which had been granted a concession to provide water services in the cities of La Paz and El Alto (SIRESE, 1998). This agency had regulatory functions like tariff approval and the promotion of improved water services. Within its tool-kit, it was able to apply sanctions to water providers and attempted to promote efficiency in water service provision. Of course, like any new agency, it had to recruit a professional staff and establish its roles relative to pre-existing organizations and ministries. Among its tools, SISAB was empowered to grant, extend or modify concessions and other water rights.

The Demise of SIRESE?

Since SIRESE was created to complete the Second Generation structural reforms like the state-owned enterprises (SOEs) capitalization process, the agency is viewed (politically) as an expression of the neo- liberal economic model. The Bolivian population tends to equate regulation with the private participation processes (PSP) in public services provision. The (proposed) future restructuring of the regulatory system will concentrate all the regulatory functions in the Ministries of State, currently in charge of the national and sectoral policies. The SISAB regulatory functions will be probably transferred to the recently created Ministry of Water. The likely transfer of functions (if not personnel) to other entities represents would conclude a significant chapter in the evolution of infrastructure policy in Bolivia.

Barja and Urquiola (2001) argued that the early impact of capitalization was positive, attracting some foreign investment and improving access in urban areas (including low income citizens). However, little progress was made on rural network expansion. Although this negative outcome for indigenous groups was not due to regulation but to national investment priorities, the reform

process did not meet citizen expectations. During ten years of regulation, SIRESE was unable to promote adequate coverage expansion, could not capture consumer's attention, and was unable to complete the development of regulatory frameworks that promoted public participation. In an attempt to overcome these problems, a New Regulation initiative was launched in 2004 promoting an active regulators role in universal service provision, designing new regulatory instruments, and establishing consumer-oriented policies (SIRESE, 2005).

However, this proactive regulatory role was "too little and too late" to give SIRESE legitimacy in the eyes of Bolivian citizens and opinion leaders. SIRESE could be characterized as having high technical skills (in terms of human resources) but did not seem to appreciate the impending national crisis—reflecting social conflicts in the country. The regulatory systems impact on universal service provision remained unknown to the majority of the population. The information was not easily accessible and was too technical to be appreciated by the indigenous population and the poorly educated public.

Lesson 1: Technical skills are necessary but not sufficient for regulatory sustainability. *Professionalism is a plus; but if the resulting policies do not address perceived social needs, the agency will have few allies. Communications with all the relevant stakeholders is crucial if they are to understand the steps required for improving sector performance. In the case of Bolivia, the rural poor and indigenous groups did not feel that their needs were being addressed. By not engaging all segments of civil society in a national dialogue regarding infrastructure priorities, the leaders of the regulatory system missed an opportunity to develop sustainable strategies for network expansion and gains in service quality.*

Thus, by being perceived as advocates of privatized concessions in Bolivia, SIRESE and SISAB became de facto allies of private sector companies. Citizens did not view the regulatory system as being responsive to consumer demands. Thus who remained unserved (or who experienced poor service) did not feel truly protected by SIRESE and SISAB. In the water sector, these perceptions were reinforced by the failure of the Cochabamba concession in 2000 and the ending of the Aguas del Illimani contract in 2007. In the first case, the weak regulatory capacity of the SISAB undermined the agency's credibility: approving a new tariff structure with a 40% rate increase reflected a lack of political awareness. The price increase served as a trigger for the riots that lead to the "Water War" and the expulsion of the private company which had been granted the water concession.

In the second case, to avoid monthly tariff increases that would have been required for new investments, 200,000 inhabitants in the city of the El Alto—the poorest in the country—were left out in the concession expansion goals when the SISAB increased the connection fee from US $190 to US $400 in the 2001 tariff review. These regulatory decisions led to the termination of the concession contract with Aguas del Illimani that had lasted for ten years and had contributed to meeting universal access objectives. Again, greater sensitivity to political realities might have led to better management of citizen expectations.[4]

[4] Casarin, Delfino and Delfino (2007) analyze the failure of the Buenos Aires's concession. They conclude that a number of the problems were attributable to a "weak and inexpert" regulator. So South America has other examples of citizen unrest, contract disputes and issues arising from lack of access, and affordability.

Both measures were based on technical analyses that met SISAB's objectives. Ultimately, the Central Government imposed decisions politically to avoid social conflicts triggered by the water tariffs. The period between 2001 and 2004 presented new challenges for infrastructure, as citizens (and opposition leaders) became increasingly critical of what was perceived to be "benign neglect" in the area of infrastructure expansion. The SISAB faced a period of great instability in 2005 when three regulators were dismissed in a four month period. Currently, the SISAB regulates twenty seven water providers through concession contracts and is trying to gain legitimacy with consumers by taking social circumstances into account in the development of tariffs. However, for the time being, the political damage may be irreversible.

Lesson 2: Regulators must think politically without being political. *"Independent" regulatory agencies are not fully autonomous: they are accountable to legislative, executive, and judicial authorities. They must fulfill the requirements of the law or the decree that established the agency, and decisions are subject to judicial appeals—ensuring that the agency follows due process. Being accountable to other institutions does not mean that regulatory agencies must support a particular political party. Nevertheless, being insulated from direct political pressure does not mean that regulatory leaders can ignore the political climate in a nation.*

Who Exercises Regulatory Functions?

The return of regulatory functions to ministries in the Central Government runs counter to international trends toward the creation of independent regulatory commissions for infrastructure sectors. Between 1990 and 2005, over 200 regulatory commissions were created around the world (Brown, Stern and Tenenbaum, 2006). The UK, Chile and Argentina were among the first nations to introduce such agencies as part of sector reform and privatization initiatives. Latin America as a region was very receptive to regulatory reforms in general and to the creation of autonomous regulatory agencies in particular (Jordana and Levi-Faur, 2005). The rationale behind the new organizations was straightforward: the concentration of regulatory and policy functions in the same institution could increase the risk of regulatory capture by operating companies. Furthermore, the concentration of decision-authority in government Ministries meant that those currently with political power were likely to use it to protect incumbents and provide benefits to those currently receiving infrastructure services. As Bartle and Vass (2007) note, while specialization and division of labor yields benefits, sector regulators still need to collaborate with social and environmental regulators to ensure that strategies are sustainable—from the standpoints of social acceptance and environmental stewardship. Of course, the creation of new agencies means that the legal framework has to be adjusted to facilitate institutional reforms.

Single suppliers who face no competitive pressures are likely to set relatively high prices and/or provide poor service. Under state-ownership, the tendency has been to under-price water services, partly to provide universal access. There is also evidence that in developing countries, municipally-owned water utilities are not efficient—so resources are mismanaged, operations are over-staffed, and unaccounted for water is excessive. Furthermore, without investment funds from the state, network expansion is often slow and service quality has tended to be poor. Thus, the goal of providing service at "affordable prices" presents political leaders with a challenge. A ministry or regulatory agency will ultimately be responsible for a number of tasks: establishing

incentives for cost-containment, promoting network expansion, determining prices that make utilities financially sustainable, and enforcing service quality standards. Even if the new institutional reform proposed in Bolivia reduces the current independence and autonomy of SIRESE, the regulatory functions will need to be performed by professionals in some agency if infrastructure performance is to improve. So the issue is really one of developing a regulatory "system" that addresses issues in a transparent manner, solicits citizen input, and makes decisions based on reality rather than rhetoric.

Institutional reforms in infrastructure affect a diverse set of stakeholders: the companies and suppliers of services, the regulators that monitor and incentivize service provision and network expansion, and the Ministries that develop infrastructure policies. A vertically integrated organization (like a government ministry) could theoretically perform all these tasks, but experience suggests that an appropriate division of labor leads to a system where the strengths of different institutions can be mobilized and the limitations of those institutions are compensated for by giving particular responsibilities to other institutions.

Some functions, like human resource development and data analysis, are common and necessary for all the infrastructure actors. But the regulatory functions are mainly targeted to monitor utilities (data collection and analysis) and provide incentives to service providers. Technical staff develops uniform systems of accounts, produce benchmarking studies, and generate regulatory audits. The task is to promote efficiency and increase access to services at prices that ensure the financial sustainability of service providers. To reach very poor consumers, it may be necessary to obtain funds from national budgets, development banks, and donor groups. If the regulatory agency can document that service providers are efficiently using the funds they have, the likelihood increases for obtaining support from outside funding sources.

Lesson 3: The functions of regulation include establishing incentives for good sector performance and communicating developments to all stakeholders. *The functions cannot be wished away: they must be performed by a Ministry or by a regulatory agency—otherwise, sector performance will suffer. A separate agency promotes continuity and professionalism in the implementation of public policies. The separation of policy-making from policy implementation insulates technical staff from undue political pressures—promoting consistency and predictability in regulatory rulings.*

The Universal Access Challenge

The disadvantaged and powerless are generally the last ones to be served by infrastructure. When large groups in a society are left behind, they find ways to express their dissatisfaction. The current Bolivian government is attempting to address the legitimate concerns of the poor—expressed through a variety of organizations. Of course, moving beyond protest to performance presents a challenge. It requires those responsible to "listen" to those who have not been heard. A parallel obligation rests with citizens: they need to understand past trends and current performance in order to have a realistic view of prospects in the near future. Citizens need to be able to evaluate current utility services and to participate in the development of programs for funding and expanding water networks.

Therefore, universal access to water services should be a topic of primary attention for the State and also for all the other actors involved in infrastructure. The social objective is making water services available to all citizens at an affordable price through piped connections or alternative systems in areas where networks are not feasible. These outcomes are very difficult to achieve in a country with high levels of poverty and population migration. Nevertheless, the universal access principle is recognized in the Bolivian legal system. The 1994 SIRESE Law states that universal access should be promoted by the regulators. The universal access to water services is mandatory in the 2000 Water and Sanitation Law. Consumers have to be served with household connections where water networks are available. The new Constitution goes further with a constitutional mandate for the universal and equitable access to water services for all people. The provision of basic services is the responsibility of the State through public entities, autonomous entities, public-private companies, cooperatives and community-based initiatives. However, private investment is not viewed as an option in water services provision. The new constitutional norm forbids privatization and concessions of the water resources. Of course, bonds issued by municipal utilities could be used as a source of funds—but that would require that utilities demonstrate that they are credit-worthy.

Universal access is not only a legal mandate, but also a continuous planning process requiring the development of programs and funding of projects. Universal access to water services involves investments to improve coverage (water production, transportation, treatment, distribution and connections), outlays for macro and micro metering, maintenance and repair of distribution networks, and replacement of worn-out assets. One way to promote universal access is for public institutions, operators, regulators and the targeted beneficiary population to form strategic alliances to ensure that water infrastructure investments move forward. Coalitions for performance improvement will require that the various stakeholders recognize the legitimacy of each group—respecting their views. Stakeholders must realize that compromise is often the shortest route to achieving multiple goals.

Bolivia is still far of the universal access in water services. The latest Regulation Report showed that in 2005, 86.4 % of the population had access to a water connection in urban areas, whereas in rural areas these number drops to 33.6 %. The sanitation situation is even worse, with national coverage of 39% (SIRESE, 2005). However, this is not far off the coverage for other South American nations.

Only SAGUAPAC, the water cooperative in Santa Cruz, has met the universal access goal: 99% water coverage; the water is of high quality and available on a continuous basis. In 2004, SAGUAPAC had 812,816 consumers in the city. However, the concession area where SAGUAPAC operates is limited to the relatively well-off population, while the peri-urban areas are covered by nine other cooperatives that struggle to provide services to their low income consumers.

The universal access in water services has become an issue of political leadership, along with associated technical or economic problems. The problems include poor planning of distribution networks, water resource limitations, and unaccounted for water (UFW). After Aguas del Ilimani (AISA), a temporary administration has taken over the obligation of service delivery for La Paz and El Alto. Although the new management model is not yet finalized, from 2006 to

2011, 33,000 new water connections are projected in isolated areas in El Alto (which has over 750,000 inhabitants). According to a former SAMAPA manager (municipal water company owner of the system assets), these projections did not take into account the fact that El Alto doubles its water demand every 12 years. Given the low capacity of the water sources, limited treatment facilities, and quality and pressure standards, meeting those targets will be difficult. Today, due to the new expansions without accurate technical justification, many neighborhoods in El Alto receive piped water only few days a week. (Arroyo, Guillermo, 2008)

Water scarcity due to the Global Warming or poor water resources management is a limitation to the universal access provision as well. For example, mountain glaciers play a vital role as water banks, storing water as ice during wet seasons and doling it out in dry months as melt. The Tuni reservoir in the city of El Alto was built 30 years ago: its water capacity is nearly exhausted and close to its projected engineering life. Year-round, glacier runoff supplies about a third of the water in Tuni; in the dry season the figure rises to 60 percent. The 18,000-foot Condoriri, the glacier that supplies the largest reservoir in the Bolivian highlands, is shrinking so rapidly that scientists fear a scarcity of drinking water in the decades to come.

Water losses in the system (UFW) and poor management conspire against universal access too. For example, the city of Cochabamba, the third largest in the country, remains with a 45.8 % water service coverage and a 52% of unaccounted for water (according to SISAB, 2005). Progress since the year of the water wars has not been significant. There appears to be some disarray in organizational responsibilities and legal boundaries. Inter-organizational disputes characterize water, given the complexity of the issues facing managers and the tendency to leave tough decisions to others. Intra-organizational disputes arise from the same human tendency to impose costs on others and to take credit for positive developments. The resulting turf-wars have delayed investments in water networks— given the pivotal role played by stakeholders seeking performance improvements in this city. Unhappy, unserved citizens see a number of factors as contributing to the lack of progress: nepotism, corruption, poor internal incentives, and lack of management skills.

Lesson 4: Administrators can only manage what they measure; holding managers accountable for weak performance is only possible if data on trends and best practice are widely available for analysis. *The volatile political situation in Bolivia has not been conducive to performance-enhancing strategies. Long term investments will not be made if there are no payoffs to those taking on the risks and responsibilities for new programs. Outlays for short term maintenance and quality improvements will not be made if citizens are unable to perceive clear performance enhancements. Without benchmarking, neither managers nor citizens have a basis for changing behavior or developing realistic expectations.*

Financial Policies for Universal Access

An over-arching goal of any national government is to improve infrastructure performance—so that access to water services is not only for those who are well-off, but also for those members of society who have lived on the margin. Most would agree that all citizens deserve access to electricity, telecommunications, water, and transportation services. Reaching a consensus on how to pay for that access is another matter altogether.

The funds to cover the operating costs and the huge investment requirements can only come from three sources: government (national, regional, or municipal), current customers, international banks and investors, or donor organizations. The government obtains funds from taxpayers or donor organizations so the financial sustainability of water utilities depends on matching resources with public commitments. Political leaders must make difficult choices—not an activity elected officials have proven to be good at in developed countries, let along developing nations. Government also needs funds for education, health, road construction and other activities. Thus, the efficiency of infrastructure suppliers is essential if funds are to be used wisely. Managers need to be good stewards of the resources they have available.[5]

Despite of the international agreements and the urgent population needs, the total investment in water and sanitation in Bolivia dropped in the last decade, to an average of US$ 80 million per year, with priority given to urban areas. It is important to note that approximately 65% of the total investment comes from international cooperation through soft credits and donations. It is estimated that Bolivia requires a total investment of US$ 1.165 million to achieve the Millennium Development Goals. (Superintendencia General, 2005).

Under the 2649 Law, the EPSAS (water operators) could get resources from international donors to make investments in infrastructure. Nevertheless, system operators need to compete for the international funding by demonstrating efficient management, including actions that promote financial sustainability. But only a few EPSAS in Bolivia actually meet high standards of utility operations. High water losses (UFW) in water systems and low billing collections characterize Bolivian water utilities. The cost recovery problems are a byproduct of political pressures and civil society's poor understanding of the costs involved in providing water services. Thus, regulators need to reconcile fundamental economic sustainability with the social objectives (low prices and network expansion). At the same time, regulators need to ensure that incentives reduce the likelihood that existent inefficiencies are reduced (limiting the need for tariff increases).

In 2004, a new financial policy was implemented in the water sector. The main objectives are to increase coverage, ensure financial sustainability, and promote better water service delivery. The associated financial policies, altogether with technical assistance to the EPSAS through the FUNDASAB (non-profit organization in charge or technical assistance and institutional strengthening), are expected to help the EPSAS overcome patterns of inefficient operation. If successful, the outcome involves institutional transformation of the EPSAS, leading to greater economic efficiency, more efficient management, and improvements in cash-flows.

Of course, the new initiatives might be viewed as too little, too late. After all, during the last decade, SISAB had identified significant limitations in the EPSAS. The cost recovery principle was not applied and the tariff structures kept operators in financial trouble. For instance, in intermediate-sized cities like Tupiza (28,000 inhabitants) there were few industrial consumers. Applying a cross subsidy from industrial categories to the domestic consumers was not feasible

[5] Wehinger and Rojas (2005) argue that small scale utilities often lack the financial and human resources for the cost-effective delivery of services, citizens do not understand the cost of access and politicians interfere in both tariff structures and investment decisions.

because of these socio-economic conditions. In Bolivia, like in other Latin American countries, politicians had promised to expand access to water services, yet for the sake of affordability, had fixed prices lower than the real costs. This had implications for the national budget, reducing resources available for other important sectors like health and education.

Another problem in developing affordable (and fair) prices structures involves impacts on demographic groups; even where distribution networks are already built, potential customers have difficulties paying connection fees and usage tariffs. The high poverty levels in peri-urban and rural areas required the regulator to develop innovative approaches to affordable prices and equitable tariffs. An advantage of having concession contracts with a private service provider (PSP) was the capacity to replicate technologies and organizational incentives that had been successfully applied in other countries or regions. However, political pressures limited the impact of technical solutions.

Lesson 5: When price is initially far below cost, citizens will perceive private participation as the reason prices go up. *The resulting citizen unrest reflects several failures. First, the concessionaires may have unrealistic expectations regarding cash flows. Second, the government tends to do a poor job of educating citizens regarding the implications of the status quo. Prices that are below cost and national budget constraints would have led to slow growth in coverage and continued low quality service. Political promises often establish unrealistic citizen expectations: the result is disappointment for all stakeholders, including elected officials. Regulators can contribute to universal access by promoting more efficient arrangements for water service delivery and by grounding citizen expectations in reality.*

Regulatory Instruments

Information is central to regulation. One problem with burying regulatory functions deep within a Ministry is that data never seem to see the light of day. Current political leaders are not in favor of releasing information that might be used against them. Their appointed bureaucrats maintain their status and power by protecting turf, limiting access to information. Citizens deserve better: democracy requires stakeholder participation in setting public priorities, information transparency, and accountability for all decision-makers—public or private. Benchmarking results have to be public to promote managerial accountability and citizen confidence in infrastructure services. When there are poor internal incentives, the performance of an entity is likely to be sub-standard. If customers (and un-served citizens) do not have data on comparable utilities, the citizens are in no position to put pressure on managers to improve performance. There is evidence that even rough comparisons can put pressure on political leaders to fulfill promises to provide funds for network expansion and on managers to deliver services at least-cost (Rossi and Ruzzier, 2000).

SISAB developed a benchmarking system for the regulated water companies with the technical support of ADERASA (Latin American Association of Water Regulators). The regional collaboration helped to publish a benchmarking of eight water utilities in the country. This benchmarking initiative was published until 2005. EPSAs faced good incentives when performance information was available: managers tried to improve their indicators every year. However, the benchmarking results were only made available to the general public via web

pages. This benchmarking initiative fell apart the last two years because of instability in the regulator's office, which lead to the removal of data managers. This casualty of political disruptions has a high cost: citizens, managers, and political leaders all lack information for making comparisons and learning what performance targets are reasonable. Accountability suffers.

A properly designed benchmarking system should prevent poorly performing companies from increasing prices as much as the "average" water utility to which they have been compared—so long as prices, do indeed, cover costs. If companies operate more efficiently, customers will benefit from lower prices and should continue to expect and receive high quality service. The resulting system is likely to be sustainable—promoting further network expansion and the adoption of best practice by most water utilities. Corton (2003) has identified features of Peru's water utility benchmarking system that promote transparency and improved performance.

Lesson 6: Benchmarking water utilities is perhaps the only tool regulators have when regulating municipal or state-owned utilities. *Without benchmarking, cost of service regulation would only enshrine high costs in high prices. Price caps that reduced prices for inefficient firms punishes customers who will now receive poor service; in addition, they punish unserved citizens, since less funding is now available for network expansion. Thus, identifying high performance water utilities singles them out as ones that will not waste donor funds. Identifying utilities with weak performance provides citizens with a basis for pressuring local politicians to replace poor managers. In addition, the regulatory system can support institutional innovations in water delivery.*

Concluding Observations

This paper has drawn six lessons from the Bolivian experience.

Lesson 1: Technical skills are necessary but not sufficient for regulatory sustainability.

Lesson 2: Regulators must think politically without being political.

Lesson 3: The functions of regulation include establishing incentives for good sector performance and communicating developments to all stakeholders.

Lesson 4: Administrators can only manage what they measure; holding managers accountable for weak performance is only possible if data on trends and best practice are widely available for analysis.

Lesson 5: When price is initially far below cost, citizens will perceive private participation as the reason prices go up.

Lesson 6: Benchmarking water utilities is perhaps the only tool regulators have when regulating municipal or state-owned utilities.

These lessons all have implications for achieving universal access to water services for the populations, with legitimacy among the consumers. The water sector agency has an essential role in promoting universal access, though it lacks the funds for necessary investment. Service expansion is not a typical regulatory function, but when regulators establish prices, they are also "signing off" new investments plans. Well-organized regulators have information about the markets (in terms of demographics, geography, water resources and cost patterns), consumer demands, and relative performance across operators. A rate review can (and should) involve targets for new connections through a regulatory contract with the agency. The water agency should promote dialogue and cooperation among the infrastructure actors and civil society to promote universal access as a national objective.

Another set of lessons emerges from the Bolivian experience. These observations are supported by developments in many other developing countries. Sustainable sector outcomes reflect the "Five C's" of a sound regulatory system. These are strategies for engaging the public and policy-makers in ways that reflect best practice:

***C**oherence*: Establish the tariffs according to the required levels of service, with quality, continuity and accessibility for the low-income consumers.

***C**reativity*: Support new technologies, initiatives and incentives for water sector providers. The design of social tariffs and subsidies are required to facilitate universal access to low-income consumers. The non- served groups also need to be reached with innovative solutions as operators expand access to services.

***C**ommunication*: Serve as a catalyst for bringing together different water sector stakeholders. Proactive regulators can reduce social conflicts in the water services provision. The water sector agency has to consider all stakeholders and their key concerns when making decisions. Consumers are the first (not the last) to be consulted in network expansion decisions.

***C**ollaboration*: Promote interactions with related agencies and organizations, including water resource managers, social service organizations, public health agencies, and environmental groups. Regulatory commissions can serve as fact-finding agencies that help resolve difficult public policy issues (Berg and Horrall, 2008). Furthermore, collaborations with agencies in other countries can strengthen regulatory capacity, as lessons and data are shared. In the case of Bolivia, SISAB (or the future water agency) can benefit from regional groups like ADERASA.

***C**redibility* needs to be promoted by the water sector agency. The water operators seek transparency and consistency in the regulatory process since cash flow will be driven by future decisions. The new agency's credibility depends heavily on data collection and analysis. Regulators need to document past trends, define baselines, and identify reasonable targets—based on current best practice.

These principles are not new, but when they are ignored, the results can be damaging. For example, predictability and transparency are two elements lacking in many regulatory jurisdictions. The water agency needs to be consistent in both its process and in the substance of its decisions. Transparency implies clear rules and functions that give operators confidence in

the professionalism of those providing oversight. The public is seldom fully aware of current water policies and rules. Best practice regulatory institutions need to take a more active role in educating the public and in communicating sector developments to all stakeholders. It is said that "the fewer the facts, the stronger the opinion." One way to reduce the divisive role of rhetoric is to introduce information about the costs and benefits of different policy options. If the regulatory process is transparent, stakeholders (including political leaders) will understand the decisions of the water sector agencies.

Ultimately, the legitimacy of the water sector agency depends on the acceptance and understanding of the regulatory process by the consumers and other stakeholders. The population that is expecting to receive water services is directly affected or benefited with the tariffs and quality of service parameters. The impact of infrastructure reform depends on national circumstances, income distribution and growth, and the legal system. Legitimacy and some degree of social acceptance will only be achieved on a record of accomplishments. Staff expertise, learning from regulatory experiences elsewhere, and the use of regulatory instruments like benchmarking are the basis for the future infrastructure improvements and poverty reduction in the country.

Bolivians deserve a serious national discussion of how access to water services can be increased. That discussion can build upon new initiatives being undertaken by the national government and by municipalities across the nation. Latin American policy analysts can benefit from watching the evolution of institutions in nations like Bolivia—torn by political conflict, yet united in a desire to improve access to water and sanitation.

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