

Policy Nook

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Brazil's Water and Sanitation Reform Legislation

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Background

Thanks to a consistent Brazilian policy throughout the 1970's and 1980's, large public investments were made to provide potable water to most of the Brazilian population. As a result, presently 84% of the population has access to the piped water services, although not necessarily on a continuous base. However, the policy lost momentum and nowadays half of the households still are not connected to the wastewater system. Furthermore, roughly half of the collected sewage is dumped into the rivers and the ocean without any treatment². That is, less than 30% of the sewage goes through some sort of treatment. This explains the pollution of most urban rivers.

The evolution so far of the Brazilian Water and Sanitation Sector (BWSS) is consistent with what in general happened in the developed countries. Water was first piped to people's homes, which helped, together with antibiotics and vaccines, to decrease mortality. The availability of piped drinking water in homes ended up creating a new problem: wastewater flowing openly close to where people lived and worked. That led to the second stage of sanitation: collecting the sewage in piped wastewater networks and conveying it to rivers, lakes, and seas. This process created an additional problem: the pollution of water bodies. That gave rise to the third stage of sanitation: conveying the sewage to treatment plants before discharging into the receiving water body.

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² The data has been obtained from: <http://tratabrasil.org.br/saneamento/principais-estatisticas/no-brasil/esgoto>

These sequential stages are consistent with the higher willingness to pay of most people for private rather than public goods. Drinking water, like electricity or cable TV, is a private good - it serves the family nucleus – while wastewater collection and treatment is a public good - it serves the whole community.

Presently, less than 10% of Brazilians live in regions served by private water companies. The remaining population lives in areas served by state or municipally-owned companies, many of them financially dependent on taxpayer money. As Stephen Littlechild puts it, “where you have government grants, then you’ve got the government pulling the strings and dictating prices and employment policies and competition policies, for political reasons. That is not consistent with running an efficient business”³.

With a few exceptions⁴, in the past decades most of government-controlled companies spent scarce resources unwisely on unfinished or non-operational infrastructure and paid benefits to overstaffed service providers. Although there are a few well-run government-owned utilities, most are badly-run and face a financially infeasible future because there is no tax-payer money anymore to sustain their operations, much less to finance the investments needed to provide services to all (on the order of US\$100 billion).

The market share of private companies in the BWSS needs to increase not only to increase social equity, but also to modernize the sector with more technology and better governance. There are many low hanging fruits.

Law 14.026/2020

The Brazilian Congress passed Law 14.026/2020, published on July 15, 2020, setting a new legal and regulatory framework for the BWSS. It was crafted to create a business environment friendlier to the participation of private firms.

³ Invited Opinion Interview with Stephen Littlechild: Origins of UK Utility Regulation and Applications to Water - Part 2, Interview conducted by Dale Whittington, Policy Nook, Water Economics and Policy, Vol. 3, No. 4, 2017, 1771003 (17 pages) © World Scientific Publishing Company DOI: Vol. 3, No. 4 (2017) 1771003 (17 pages), DOI: 10.1142/S2382624X17710035.

⁴ For example, SABESP doesn’t depend on the State treasury. Quite the opposite: year after year the Company distributes dividends to its shareholders, scattered all over the world, including the State Government that owns 50.3% of the shares. Furthermore, it reinvests a larger portion of the profit into the infrastructure necessary to extend services to all. Nevertheless, SABESP could be even more efficient if it were not subject to the existing regulatory bureaucracy imposed on all governmental entities.

Private participation in sanitation is in general a politically sensitive issue because some NGO's argue that access to water is a basic human right to be fulfilled by Government, not by profit-seeking entrepreneurs. Nevertheless, approval of the new law stirred less than expected controversy because most people agreed that something needed to be done to provide water and sanitation services to all.

Nevertheless, understanding how the population values the services provided by water and sanitation companies is relevant when discussing any legal framework for the sector, particularly as in the Brazilian case, where the bulk of future investments is more related to sewage collection and treatment than to water supply. The implication is that private companies, before signing service contracts, should evaluate carefully how the investment cash flow impacts the tariffs and, if one foresees an abrupt increase, what is the ability and willingness of the affected population to pay.

Before the new Law, state-owned water companies could contract with the municipalities without public tender, but not anymore. This is a significant change because most of the existing contracts were signed without competition, in a business environment that favored state-owned companies. From now on, public and private water companies will compete under the same conditions to provide municipal water and sanitation services.

Obviously, this does not mean that the existing contracts will be cancelled. On the contrary, they will last until their end. However, the new Law requires that 99% of the urban population should be served with potable water and 90% with sewage collection-treatment not later than 2033. In some exceptional cases, this deadline can go up to 2040. This author believes that it would be preferable to tailor each deadline according to the reality of each specific case, and to include it as a clause in the concession contract, rather than imposing a "one deadline fits all" command in the Law.

Contracts without the deadline clause need to be amended to include it. Furthermore, all service companies, public or private, need to prove financial and technical capability to deliver whatever is contractually promised.

Before the new Law, privatization of state-owned companies would imply cancelation of the contracts with the municipalities. In practice, this meant that privatization was impossible, but not anymore. The new Law says that in case the State decides to sell the controlling power of a state-owned company, the special contracts under execution with the municipalities may be replaced by concession contracts, provided the affected municipalities consent⁵.

In case a municipality opposes the privatization of the state-owned company, it may assume the provision of services or concede it to another company, public or private, through a competitive process. However, this is only possible after payment to the leaving service provider for its investments that have not yet been amortized. In other words, the change of concessionaire is always possible, provided the entering one pays the value of assets in service not yet depreciated to the exiting one. This rule protects private investors against expropriations because it demands that the compensation for investments be settled prior to any take over. To be effective, it requires the existence of an undisputable accounting of assets. According to the new Law, this will be one of ANA's (Brazilian Water Regulator) responsibilities.

In fact, the new Law attributes to ANA a set of responsibilities aimed to provide stability and uniformity of rules, to the degree that it is desirable and achievable. Among them, preparing general guidelines for the local regulators, which will have the responsibility for carrying out tariff calculations. Essentially, ANA will certify that local regulators are properly staffed and able to perform tariff revisions based on sound methodology and reliable bookkeeping of the assets under service. Local regulators that fail to get ANA's "certification" will presumably scare away private companies, that will seek engagement in concession contracts for well-regulated concession areas.

ANA will have to decide which regulatory methodologies would be acceptable for tariff calculation in the range defined by the two extremes: (a) relying on the regulator capability and neutrality; (b) setting parametric formulas in the concession contract. For the power sector, ANEEL (Brazilian

⁵ As a rule, concession contracts are granted through a competitive process. In this case, the public tender for the selling of the state-controlled company is accepted as a surrogate for the public tender organized by the municipality or cluster of municipalities to find a suitable service provider.

Electricity Agency) adopts the first alternative, implementing regular tariff revisions in periodic cycles, typically four-year, in which forward-looking tariffs are defined. For the water sector organized in regional operating environments by state-owned companies, the first alternative has also been the rule. Before the new Law, typical contracts between private companies and municipalities were often based on the second alternative, which could be called “contractual regulation”, due to lack of trust of local regulators. Because it is difficult to capture in parametric formulas all that can happen along decades of service, it is up to ANA to create the conditions for investors to trust that local regulators will be neutral and will have the skills and independence to perform their duties properly.

ANA will have to provide guidance to local regulators considering not only worldwide experience but also the peculiarities of Brazilian society. For example, regulatory agencies in some developed countries use price-cap regulation to incentivize productivity, allowing the corresponding benefits to be allocated for some time to the benefit of shareholders. However, after a few years, this benefit is passed on to consumers through the tariff reducer known as “X factor”⁶.

When the infrastructure needed to provide the full service to the entire population already exists, as was the case in the English electricity sector in the 80s, or in the Brazilian electricity sector today, it makes sense to seek continuous tariff reduction. In this way, one avoids two political risks: consumers’ aversion to the privatization process and tariff freezing during an inflationary period ⁷. However, this regulatory view sees only two groups with contradictory interests. On the one hand, consumers are interested in receiving high-quality services at the lowest possible cost. On the other, the

⁶ A price cap regulation designed in the 1980s by Stephen Littlechild subtracts expected efficiency savings X from the rate of inflation (Stephen Littlechild, RPI-X, competition as a rivalrous discovery process, and customer engagement, paper presented at the Conference The British Utility Regulation Model: Beyond Competition and Incentive Regulation?, LSE 31 March 2014).

⁷ In Stephen Littlechild own words: “A regulator is not going to suddenly freeze your prices. You are allowed to increase your prices at the rate of inflation (the Retail Price Index RPI) minus X%.” That was important because the rate of inflation just a year or two earlier had got up to 27% in one year. And the price cap would reassure customers that things aren’t going to get worse under privatization, they’re going to get better. Prices will go down in real terms (i.e., net of inflation) by X% — say, 2% or 3% — every year. And because this was independent of the company’s costs and revenue, it would provide an important incentive for the company to increase efficiency, innovation, and sales” (Invited Opinion Interview with Stephen Littlechild: Origins of UK Utility Regulation and Applications to Water - Part 1, Interview conducted by Dale Whittington, Policy Nook, Water Economics and Policy, Vol. 3, No. 4, 2017, 1771002 (16 pages) © World Scientific Publishing Company DOI: 10.1142/S2382624X17710023).

shareholders of the concessionaires are interested on getting a fair return for their investments.

When the service is not universal, as is the case in the BWSS, there is a third group: those that do not yet have access to services. They are families who do not regularly receive drinking water in their homes or who are forced to live with stinky ditches in their neighborhoods, due to the lack of sewage collection. They are also those who suffer from the state of pollution of rivers and beaches in the main cities, due, at least partially, to the discharge of untreated sewage.

Regulators in developing countries where not all people have access to services should consider not using the Factor X and, instead, directing the extra revenues to investments aimed to speed up the transition to universal coverage. Obviously, the assets acquired with this extra money are not shareholders' investments. Therefore, in case the rate of return methodology is used to calculate tariffs, these assets cannot be incorporated in the Remuneration Asset Base - RAB. The purpose of this example is to emphasize that economic signals built in the tariff setting methodology should be tailored to the goals of the society. In the Brazilian case, they should incentivize the service provider to enlarge the system to serve most of the population.

Law 14.026/2020 requires that concession contracts contain essential clauses, such as, for example, the goals of expanding services, reducing losses and quality in the provision of services, possible alternative sources of revenue and the allocation of risks between the parties. The contractor may subcontract other firms to meet its obligations up to the limit of 25% of the contract value, enabling the use of market expertise to improve the provision of services.

Who contracts?

The sector reform of the electricity sector which occurred a few years ago offers a good example of what the current water reform can deliver. The main difference between the two sectors is that the 1988 Constitution was clear when it defined that electricity provision is a public service under the responsibility of the Federal Government. Thanks to this legal command, Brazil has a single regulatory agency, ANEEL, which sets rules, particularly related to tariff calculation, that are valid for the entire country. This legal

and regulatory framework has encouraged private companies to invest heavily in the sector. The result is that all Brazilian households have access to electricity.

On the other hand, the Brazilian Constitution was silent about who is responsible for providing the sanitation service. It only says that public service of a local nature is a city government responsibility, leaving the clarification of what this means for ordinary legislation. After more than 30 years since the Constitution promulgation, Law 14.026/2020 finally clarifies that when two or more municipalities share the same infrastructure, the responsibility to organize the service and its regulation must be shared between local administrations and the State Government. This is an advance because the interpretation so far prevalent was that the public sanitation service would always be a local business, subjected to local regulation and quality of service rules rarely valid elsewhere. This was an obstacle to regionalization and scared away private companies that feared the challenge of dealing with a myriad of different rules and controls.

Due to similar reasons, the contractual relationships between state-owned companies and municipalities have often been punctuated by conflicts. To avoid repetition of this pattern with private companies, Law 14.026/2020 encourages, and in some cases obliges, the provision of the service and the corresponding regulation-inspection at the regional scale. The objective is to take advantage of economies of scale and to create concession areas that blend attractive communities – those with high willingness to pay for sanitation - with not so attractive ones. State legislation will define the regional clusters, which will become entitled to receive Federal Government grants, depending on budget availability.

As this paper is being written (October 2020), Bahia State has already passed a bill defining the regions and Alagoas State launched a bidding process to choose the service provider of the Metropolitan Region of Maceio (capital city), population of 1.4 million. The winner, a private company, accepted the challenge to connect 90% of the households to the piped sewage network in the time horizon of 16 years (nowadays only 1/3 are connected!). In exchange for this 35-year contract, the winner agreed to pay US\$360 million to the State Government.

The competitive process was organized before the approval of Law 14.026/2020 with the technical support of the Brazilian Development Bank

(BNDES). Other auctions still to come, also organized by BNDES, follow a better criterion: the winner will be the one that offers the lowest tariff, rather than the largest payment for the contract.

Sanitation and the environment

As the Brazilian society is very unequal, cross subsidies among water-bill-payers are inevitable. From the point of view of a wealthy citizen, there is little benefit if only "his" sewage is correctly collected and treated, while that of most of the population is not. The stench and disease would continue to plague the city and the urban rivers would remain with a terrible aspect and unsuitable for water supply or leisure.

In the mid-twentieth century, developed countries were grappling with the problem of how to reduce river pollution. At that time, France implemented a new, successful legal, tariff and institutional framework that inspired the Brazilian Water Act of 1997. In a simplified way, the "French model" was designed to solve, primarily, the problem of river pollution due to the untreated discharge of urban sewage⁸. The diffusion and acceptance of the "polluter-pays" principle was central to ensuring that French rivers, which were hitherto heavily polluted, became reasonably clean.

The recipe was to charge the polluters and convey the corresponding revenues to a fund devoted to the financing of the corrective actions, mainly related to the construction and operation of sewage treatment plants. With this policy, companies received a clear economic signal to stop or reduce pollution. By aiming to maximize their own interests, they served the interests of society.

Despite the inclusion of economic concepts in the Brazilian Water Act of 1997, unfortunately pollution control has been more exercised by command-and-control mechanisms - mainly by issuing and monitoring environmental licenses - than by applying the polluter-pays principle. Over time, environmental licensing for water and sanitation companies has been done as if these companies were of the same nature as, for example, a chemical plant.

Because the sewage collected and treated is produced by the population itself, not by the company that provides the service, Law 14.026/2020

⁸ Institutions for Water Resources Management in Europe, France Country Report, B. Barraque, J. M. Berland and S. Cambon; edited by Francisco Nunes Correia, Eurowater, 1998.

allows drainage pipes to be temporarily used to convey sewage to treatment plants, when the sewage pipes are not yet installed, and simplifies the environmental licensing of the infrastructure needed to deliver the service.

Favelas

Seventy years ago, the urban population of Brazil was about 18 million (36% of 50 million). Today it is about 180 million (86% of 208 million). That is, within one lifespan, the total population of the country was multiplied by 4 and the urban population by 10. No wonder that the Brazilian population born in the second half of the 20th century failed to build houses and urban infrastructure for a population equivalent to more than 18 times that of London. The challenge was simply too great.

The consequences of this failure are well known. Those who walk through the favelas realize the precariousness of everything. Although repairing what was built in disorder is much more expensive and difficult than if the urbanization had occurred in a planned way, now in most cases there is no way back. There are communities where one can find two or three generations living in the same illegal settlement. This is the Brazilian reality which cannot be ignored any longer, despite the opinion of those that oppose providing public services in favelas on the grounds that this would incentivize the creation of new illegal settlements.

The reality is that if the utilities do not provide services in favelas, the service will be provided anyway by an illegal local “utility”. There is almost always a local entrepreneur in every needy community who finds a way to steal water from the utility pipeline to distribute it through a “spaghetti” of small diameter pipes for the underserved population. It is in general a profitable business because the population pays the entrepreneur for the use of the “spaghetti” network, but he pays nothing to the utility.

Per capita water supply in favelas is roughly 100 liters/day higher than in the formal city because there are many leaks and, as there are no water meters, few people are concerned with conserving water. In addition, the precariousness of the “service” imposes an unacceptable risk to people's health.

There are successful experiments to regularize services in favelas that could be replicated and expanded in the coming years. For example, SABESP, a state-controlled company, has adopted an innovative bidding approach based on performance contracts. The contractor installs the pipes, connections, and water meters, but only gets the initial payment after the households are connected to the network. Subsequent payments come in the form of a success fee, which depends on the decrease of water losses and on the increase of revenues originating from the water bills paid by the residents.

The contractor is also responsible for hiring local people and training them to conduct socio-educational activities and partnerships with schools to raise the issue of sustainable water use. It has been observed that many residents were proud to receive a water bill with their name and address stamped on because it worked as a symbolic “proof” of citizenship⁹.

The Agua Legal program emerged from a pilot experiment by SABESP based on three concepts: (i) accept non-standard construction methods, as for example the hanging of pipelines on the external wall of the houses (there are no regular streets or sidewalks in favelas); (ii) employ in the construction works as many local people as possible; (iii) share the results (less water losses and higher revenues) with the private partner.

Conclusion

Law 14.026/2020 creates a friendly environment for private companies in the water and sanitation industry. This means stability of rules, transparent and independent decision-making by regulatory agencies, long term contracts and moderate risks, compatible with the remuneration of the invested capital. In a world hungry for ESG business opportunities, this may be a win-win situation for Brazilians and investors.

However, providing decent services to all requires in most cases construction of new facilities, that need to be paid for. In most cases, privatization leads to productivity gains that ignite decreases in OPEX cash flow and increases in revenue. In general, these performance

⁹ When the former Sao Paulo Governor, Geraldo Alckmin and I visited one of these communities, an old lady invited us for coffee at her house. Immensely proud, she showed us the water bill, containing her name and address, in the amount of about US\$5 per month. With a mischievous smile she told us: “before I used to pay US\$15 per month to the local ‘utility manager’ and sometimes there was no water”.

improvements are sufficient to balance the CAPEX cash flow increase. Whenever this is not the case, it would be advisable to recognize this situation (e.g., in public hearings) and negotiate the relationship between tariffs and contractual targets prior to contract signing.

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1. Introduction

Thanks to a consistent Brazilian policy throughout the 1970s and 1980s, large public investments were made to provide potable water to most of the Brazilian population. As a result, presently 84% of the population has access to piped water services, although not necessarily on a continuous basis. However, the policy lost momentum and nowadays half of the households still are not connected to the wastewater system. Furthermore, roughly half of the collected sewage is dumped into the rivers and ocean without any treatment.¹ That is, less than 30% of the sewage goes through some sort of treatment. This explains the pollution of most urban rivers.

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