

BUILDING FINANCIAL RESILIENCE:

Lessons Learned from the Early Impact
of COVID-19 on Water and Sanitation
Service Providers in Latin America

Report of the Water Global
Practice, World Bank.

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Executive Summary

While the coronavirus disease (COVID-19) pandemic reinforced the critical role that water supply and sanitation (WSS) plays in preventing its spread, it affected the financial stability of service providers in the industry. Early in the COVID-19 pandemic, it became clear that handwashing and good hygiene practices were one of the key measures for preventing virus transmission. As a result, water service providers were pressed to ensure the continuity of WSS services. These unplanned demands presented a major challenge to WSS service providers in Latin America, who struggled to meet service needs as they witnessed changes in consumption and payment patterns. Despite government support, this challenge translated into financial deficits that caused utilities to postpone capital investments and maintenance to free up resources for meeting day-to-day operating expenses.

In response to demands from the client countries, the World Bank carried out an analytical service and advisory (ASA) activity to assess the financial impact of the COVID-19 pandemic on WSS service providers in Latin America and identify possible mechanisms to improve service providers' resilience to these external shocks. The objective of this activity was to develop the analytical basis to support policymakers and service providers in the Latin America region's water sector to contribute to post-crisis recovery for sustainable and resilient service delivery in the medium to longer term. This report summarizes government responses introduced in the WSS sector in Latin America, gathers early financial information from a sample of 25 water utilities, identifies common impacts and trends in the region, and discusses the tools that could be available in the WSS sector to improve its financial resilience.

To support WSS service provision, governments across the region introduced several measures at the beginning of the pandemic. Sector

responses introduced in Latin America during the first three months of the pandemic (March–May 2020) focused primarily on ensuring that customers had continued access to WSS services. Support measures included waived or deferred water bill payments, suspension of service disconnections, and freezes on tariff adjustments to ease the economic burden of the pandemic on households. Sometimes, these measures came with financial and operational support to water service providers to reduce their impact on collection rates and revenues.

Despite these efforts, WSS service providers in the region experienced financial difficulties primarily due to changes in consumption patterns that led to lower average tariffs. As consumption patterns shifted, residential consumption increased while non-residential consumption decreased. These changes in residential and non-residential water consumption affected the utilities' average water tariffs because utilities usually charge higher tariffs on non-residential customers. As a result, reductions in non-residential water consumption translated into lower average tariffs.

In addition, WSS service providers' bill collection rate decreased, resulting in a worsened cash position. On average, collections and cash flows are estimated to have fallen by between 11.6 percent and 49.1 percent, respectively, between March and December 2020. This effect can be attributed to the general economic downturn caused by the pandemic that limited the households' ability to pay for services and to the measures introduced to delay or waive WSS bills and the suspension of disconnections. Coupled with lower operating revenues, changes in collection rates had a severe impact on the service providers' liquidity as most service providers in the study reported reductions in their cash flows throughout 2020. However, the actual impact on their liquidity varied depending on their financial standing before the pandemic, particularly on their cash positions.

WSS service providers overcame COVID-19 impacts to secure continued service provision, but this may compromise their medium- and longer-term service sustainability, which would particularly affect the poor. The service providers prioritized using cash for day-to-day operations over maintenance and capital investments. Many service providers in the study have acknowledged deferring some of their planned capital investments. These emergency deferrals can lead to the deterioration of assets and delays in planned coverage expansions. These delays and the greatest impact on the poor because they are usually the utilities' unserved population. This is likely to further deepen inequalities, given that financially constrained service providers would take even longer to achieve universal coverage and Sustainable Development Goal (SDG) targets.

WSS service providers with sound financial planning weathered the financial shocks better. Sound financial planning, cash reserves, and the availability of contingency funding provided a safety net for service providers dealing with the short-term financial stress of the pandemic. In contrast, cash-strapped utilities saw unsustainable cash flows and needed direct government transfers to guarantee operations.

When the pandemic hit Latin America, none of the assessed WSS service providers had any financial mechanisms that would have allowed them to mitigate the impacts of unexpected shocks. The analysis revealed that service providers could not easily access any funds to cover for the financial impacts they felt, and no ex-ante mechanisms were used to cover the financial drawbacks. Emergency funds and liquidity facilities implemented by some of Latin America's governments as a response to the pandemic had only a limited impact as their uptake by the water utilities was low primarily due to design flaws and the limited capacity of the utilities to adequately submit the needed requests to access the funds.

The report identifies WSS service provider- and government-level actions for improving financial resilience in the sector, in addition to short- and long-term financial mechanisms. By assessing the level of COVID-19's financial impact on WSS service providers and the reasons behind the variations, the report identifies the importance of improving the financial viability of service providers as it would help them deal with future shocks and crises better. This would

include adopting and mainstreaming good practices in water utilities to build financial and operational resilience. With regards to possible financial mechanisms, for short-term liquidity needs, liquidity facilities and credit lines could be considered. For longer-term solutions, parametric insurance, proven to be effective in other sectors, could be considered for the water sector. Building the credit worthiness of service providers to enhance their opportunity to tap commercial financing would be another way to mitigate the competition for accessing public funding when a future disaster hits the sector.

At the WSS service provider level, good practices that build financial and operational resilience toward shocks and crises should be adopted.

This study found that most WSS service providers in Latin America are not prepared to systematically handle shocks or crises they may face, and that the following list of good practices would improve the financial and operational resilience of WSS service providers: (i) systematic tracking of utilities' operational and financial information; (ii) creation of internal emergency funds; (iii) adoption of digital monitoring and operational technologies; and (iv) design and implementation of risk management plans.

The adoption of good practices at the government-level would also be critical for ensuring the sector's financial resilience. Government-level good practice includes the creation of an adequate policy, institutions, and regulatory framework in the country to improve the governance and accountability of the WSS sector. In addition, it would be important to establish clear rules on whether and how regulation can be relaxed during emergency situations.

Mechanisms to facilitate a response to short-term liquidity needs could be a good way of addressing some of the financing problems.

Liquidity facilities can quickly provide resources to WSS service providers so they can face operational and financial challenges stemming from the COVID-19 crisis, and support the mitigation of future impacts in the face of other shocks in the WSS sector. Credit lines are loans that allow utilities to draw funds up to a limit, repay them at will, and redraw them if necessary. This type of loan can help utilities to quickly replenish working capital during liquidity shocks. These mechanisms should be tailored in each legal country so that they can be adjusted to local legal and regulatory frameworks, and to maximize their suitability for each utility.

Examples of financial mechanisms that can support long-term resilience building include parametric insurance and commercial financing. Parametric insurance is a financial mechanism that transfers risk and determines payouts objectively. Unlike traditional insurance where compensation depends on evaluating the damage suffered, parametric insurance provides a payout following a pre-defined event that is based on an independent parameter, metric, or index. Commercial financing options range from microfinance loans to bonds that can be offered to WSS service providers and local governments. Some options also can be accessed by individual users or user groups. Commercial financing would allow the WSS service providers to tap funds without having to wait for scarce public resources to be provided, and it can cover government budget shortfalls experienced from declining economic activity driven by shocks, as

felt with the COVID-19 pandemic. It is important, however, to note that the WSS service providers would first need to improve their creditworthiness before accessing commercial financing.

This financial impact assessment has revealed the need for the WSS service providers to strengthen their financial resilience and to operationalize the identified good practices and tools to mitigate the risks of future shocks or crises that can threaten WSS service provision. Regardless of the capacity or the financial position of WSS service providers, financial resilience-building practices and financial tools can help mitigate the impacts of shocks and crises. Despite the existence of such disaster risk financing tools and their use in other sectors, very few examples could be found in the water sector. There is a need to address this gap and continue working toward improving financial resilience in the WSS sector.



INTRODUCTION



The COVID-19 crisis has brought unexpected shocks to WSS service. These impacts include:

- shortfalls in revenue collections
- deferred investments for asset maintenance and the expansion of services
- need to adapt day-to-day operations, considering home-based work modalities, among others.

In 2020, the coronavirus disease (COVID-19) pandemic was a major global health and economic shock that underscored the importance of the water sector to public health and the need for institutional, business, and community resilience. When the COVID-19 pandemic emerged, it became clear that clean water, handwashing with soap, and good hygiene practices were needed to prevent further spread of disease, alongside proper sanitation and wastewater treatment. As a result, water supply and sanitation (WSS) services were demonstrated to be a critical line of defense against the virus.

In response to the pandemic, governments and decision-makers, regulators, and utilities implemented several measures, initiatives, and actions to secure the continuation of WSS services for the population and to support WSS service providers. These measures included: (i) approaches to ensure access to drinking water and basic sanitation, and increase awareness of good hygiene practices; (ii) bill payment assistance measures especially targeting the most vulnerable populations; (iii) direct support to WSS service providers to continue the provision of services while reducing the exposure of workers and customers to the virus; and (iv) financial support to WSS service providers to cover WSS service fees and increased costs.

Despite these measures, the COVID-19 crisis has brought unexpected shocks to WSS service providers that can jeopardize the progress that the region has made to improve WSS services over the past decades. These impacts include shortfalls in revenue collections, deferred investments for asset maintenance and the expansion of services, and the need to adapt day-to-day operations in response to the pandemic (for example, arrangements for staff to work from home and developing new digital means to interact with their customers and minimize person-to-person contact). The COVID-19 crisis has highlighted the need to directly help water utilities build their financial resilience in the medium and long term to better prepare for future shocks.

1.1. Objective

The objective of this study is to prepare the analytical basis for supporting policymakers and service providers in Latin America's water sector to contribute to recovering from the COVID-19 crisis with sustainable and resilient service delivery in the medium to longer run. This report presents the key findings from the financial impact assessment of the COVID-19 pandemic on WSS service providers in Latin America and draws cross-cutting lessons. The report also documents examples of good practices that can be implemented at the WSS service provider and government levels to build the financial resilience of the sector and lays out some financing mechanisms that can help service providers enhance their capacity to cope with future pandemics or other crises, including natural disasters. It is envisioned that the findings of this report will inform policymakers and WSS service providers in the World Bank's client countries in planning for financial resilience building in the WSS sector.

1.2. Approach and Data Limitations

This study builds on the financial impact assessments carried out by the World Bank on a sample of 25 WSS service providers in Bolivia, Brazil, Colombia, Costa Rica, Ecuador, Honduras, Mexico, Peru, and Uruguay¹. The selection of the utilities and the countries covered under this study was based primarily on client demand since the World Bank team contacted the client governments and utilities early during the pandemic to offer technical support. The methodology

used for the financial impact assessment is presented in Section 3.1 of the report. The financial impact projections were mostly based on the data obtained from the first few months of the pandemic, but the time periods of the collected data varied across utilities (only data for the full 2020 year could be collected for some utilities).

In many cases, financial projections are based on assumptions made early in the pandemic, varying circumstances, and local context. Since the assumptions used and the projected results were not comparable across all utilities, the report aims to find general trends, identify possible linkages between policy measures and financial outcomes, and draw cross-cutting lessons that could inform the utilities' resilience-building efforts rather than to present definitive recommendations for each utility or country². The results from financial assessments were also triangulated with findings from literature reviews and stakeholder interviews.

1.3. Report Outline

Section 2 of this report summarizes the measures introduced by Latin American countries in response to the pandemic. Section 3 presents the results of the pandemic's financial impact assessment on the WSS service providers studied and the cross-cutting findings from this assessment. Section 4 provides good practices that utility managers and policymakers could explore to improve their financial viability and mitigate the financial impact of future crises on water utilities. Section 5 lays out some examples of financial mechanisms that can help WSS service providers respond to short-term liquidity needs, drawing on a few select examples identified in the region. This section also proposes a set of tools that WSS service providers may employ to build resilience in the medium- to longer-term, based primarily on a literature review and through consultations with disaster risk financing experts. Section 6 presents conclusions and proposes next steps. This report builds on a series of in-country analyses that will be published as separate technical notes and on the development of a monitoring tool presented in Section 2.

¹ Appendix A provides summaries for each country. These summaries present a snapshot of the utilities assessed, the government measures taken in response to the pandemic and that had an effect on the WSS sector, and the key financial changes observed in the utilities selected in each country.

² Appendix B provides information on the availability of actual data versus projections in each utility included in the study.



2



MEASURES INTRODUCED IN
RESPONSE TO COVID-19 TO SECURE
CONTINUATION OF WATER AND
SANITATION SERVICE

Recognizing the importance of WSS in the prevention of further spread of COVID-19, governments and service providers in Latin America swiftly introduced several measures in the WSS sector early into the pandemic. The implemented measures would broadly fall under two categories. The first category included measures to ensure continued WSS services to the population, such as reconnecting users, bill deferrals, payment waivers, freezes in tariff increases, forbidding suspension of services, among others. The second category included measures aimed at safeguarding staff of WSS service providers. These measures included work from home arrangements, reduced maintenance crews, purchase of personal protective equipment (PPE) for employees, among others. The second category of measures were adopted differently by each service provider and generally not at a national level and had a smaller financial impact on the WSS service providers compared to the measures targeting the users. In addition, there were measures that benefited both the users and the water utility staff using digitalization and technology, including setting up or improving digital channels for payments.

From March 2020 through early 2021, the World Bank monitored and reported the introduction of measures in the WSS sector in the Latin America and the Caribbean (LAC) Region through the creation of the WSS Responses to COVID-19 Dashboard.³ The dashboard reported on COVID-19 response measures introduced in 19 countries in the region, and state level measures in all Brazilian states.⁴

The methodology used to collect the measures rests on online research and information provided by sector counterparts in the World Bank's client countries. All collected content, which included emergency decrees, new regulations, mandates by the regulators, and official government announcements, were primarily sourced from official government documentation and references, and, where relevant, were backed with news articles or social media announcements published by governments and water utilities (the latter being primarily relevant for collecting information on measures that safeguard water utility staff).

Sector support measures were monitored and reported based on five key themes, which were observed most consistently and had a larger financial impact on WSS service providers:⁵

- * **Deferring WSS bill payments.** Measures that allow the delay or postponement of WSS bill payments. The user may also be exempt from late payment fees or from having a negative payment record by making use of this measure. This measure is usually introduced for a pre-defined period and might target a specific population group.

³ The Dashboard includes national-level information on monitored country responses regarding WSS to COVID-19 for 19 countries across LAC from March 2020 to January 2021. Information includes key measures introduced by the main utility, regulator, or other key sector entity in the respective country. For Brazil, state-level information is also provided for all the countries' 27 federative units for the period between March 2020 and April 2021. The information source include online reviews referencing official sources or sector counterparts from World Bank client countries. The materials are reference materials, and users are advised to refer to the original source (linked in the dashboard) for detailed information. Limitations of the references include: i) list of measures may not be exhaustive or depict the full range of responses, and ii) through time, some measures have been replaced, overwritten, or updated, as a result of the dynamic and rapidly evolving situation. The scope of the monitoring exercise does not verify if published measures have been implemented nor by what extent they have been fulfilled on the ground, but rather provides a track record of publicly available measures issued throughout the pandemic.

⁴ The dashboard records LAC sector measures introduced between the February 01, 2020 to January 31, 2021 period.

⁵ Other measures that do not fall under the above listed categories but that do contribute towards ensuring secured access, continuity, and quality of WSS services amidst the pandemic, or that provide direct support to water utilities to continue the provision of services, are included under 'complementary measures'. These measures can range from include employee protection measures to ensure service continuity.

- * **Forbidding suspension of services.** Measures that prohibit water utilities from suspending household access to WSS services despite non- or delayed payment. This measure is usually introduced for a pre-defined period and might target a specific population group.
- * **Waiving payments for special groups.** Measures that dismiss the need for payment of one or several WSS bills for a specified target group to lighten the financial burden on vulnerable households.
- * **Freezing tariff adjustments.** Measures that prohibit water utilities from increasing tariffs on WSS service delivery. The measure is introduced for a pre-defined period.
- * **Promoting remote payment of bills and customer service.** Measures that introduce new or boost existing virtual and remote platforms that facilitate communication with customers and other sector agents remotely to comply with social-distancing rules. The remote communication platforms or channels may be used for commercial (customer support, payment of WSS bills, and so on) or administrative and operational (transactions with outsources providers, relations with regulators and other sector agencies, and so on) processes.⁶

2.1. Trends in the Key Measures Introduced in the Region

Despite the methodological limitations of the monitoring exercise, several key trends stand out. First, immediate sector responses at the start of the pandemic (March–May 2020) largely focused on providing direct support to cover service fees, either through waiving or allowing the deferral of water bill payments and freezing tariff adjustments to ease the economic burden of the pandemic (Figure 2.1). Most of the monitored countries in South America introduced such measures in contrast to those in Central America, which implemented them to a lesser extent. Second, most bill payment assistance measures implemented in the region targeted the most vulnerable population segments—defined either by the geographical location, income level, employment status, or sometimes by targeting beneficiaries of the national subsidy program. Some countries targeted specific non-residential water users, such as the entertainment and tourism industries, since these were heavily affected by the pandemic. Figure 2.1 presents a summary of the number of countries implementing each of the five main themes of measures, as reflected in the dashboard.

When comparing the financial impact of the pandemic on WSS service providers across the region, each government introduced different measures, which prompted different effects on the utilities' finances. These decisions were based on several factors such as the state of their finances, the institutional, legal, and regulatory framework of their water sector, and the extent and severity of the pandemic in each country. For example, Colombia deployed all five key themes as reflected in the dashboard, and additional measures (recorded under “complementary measures” in the dashboard), such as direct subsidies to households in rural areas to reduce their financial burden. In contrast, Mexico only promoted the remote payment of bills and customer service at the federal level. Table 2.1 summarizes the measures introduced by a sample of countries included in this study.



Figure 2.1. Sector Support Measures by Theme



Each government introduced different measures, which prompted different effects on the utilities' finances.

Source: World Bank. 2021. WSS Responses to COVID-19 Dashboard. Accessed on April 15, 2021.



Table 2.1. COVID-19 Response Measures Introduced in the WSS sector

	Deferral of WSS bills	Forbidding suspension of services	Waiving payments to special groups	Freezing tariff adjustments	Promoting re-remote payment of bills and customer services
Bolivia	X	X	X		X
Brazil	X	X	X	X	X
Colombia	X	X	X	X	X
Costa Rica	X	X		X	X
Ecuador	X	X	X	X	X
Honduras		X		X	X
Mexico					X
Peru	X	X	X	X	X
Uruguay	X	X	X		X

Source: World Bank. 2021. *WSS Responses to COVID-19 Dashboard*. Accessed on April 26, 2021, for COVID-19 responses introduced between March 2020 and April 2021 for Brazil and for all other countries, from March 2020 to January 2021.

2.2. Additional COVID-19 Pandemic Response Measures

Few governments provided additional solutions to help WSS service providers secure continuity of services. For instance, with a few exceptions, no significant measures were taken to ensure electricity access to utilities to perform their operations and little was done to ensure the continuity of supply chains for materials needed for these operations. Additionally, only a few countries, such as Peru, seem to have provided additional technical assistance programs through online capacity building programs to service providers within the context of the pandemic, although the effectiveness of this program has not yet been evaluated.

Attempts were made to identify government initiatives designed to provide direct financial support to cover the cash deficit experienced by WSS service providers in the region, but such measures were adopted less frequently, and even those that were implemented were found to have limited uptake or effects. As recorded in the dashboard, some countries allowed service providers to tap into contingency funds previously earmarked for other purposes, such as in Peru and Colombia. Other countries, such as Paraguay, allocated new funding to service providers to offer a financial cushion during the pandemic and to ensure service continuity. For instance, Colombia set up a credit line through a financial institution, FINDETER,⁷ to compensate for the effect of deferring the bills of some customers. WSS service providers accessed loans at a 0 percent nominal rate to cover for the shortfall from collections due to the deferred bills. The Government of Bolivia transferred funds to WSS service providers to compensate for subsidies offered for 50 percent of residential customers' water consumption.

There were also measures that provided specific support to rural and community service providers, such as in Chile and Colombia. Other measures to allow the softening of the financial burden on WSS service providers included tax breaks and cancelling loan install payments, as seen in Brazil and Costa Rica. However, a preliminary analysis of the countries studied in this report shows these funds could not meet the financial needs of WSS service providers. For example, the sample of studied utilities from Colombia showed an estimated financial deficit of \$50.58 million a year, despite the financial support provided. These and additional mechanisms to reduce future liquidity risks in water utilities will be elaborated in Section 4 of this report.

⁷ FINDETER is a development bank that offers integral solutions for the development of sustainable territories in Colombia by means of planning, structuring, financing and technically assisting infrastructure projects. FINDETER is linked to the Ministry of Finance and Public Credit and supervised by Colombia's Financial Superintendency.



Box 2.1. Financial Breaks for WSS Utilities

Costa Rica's Presidency Plan (announced September 2020) reduced the fiscal impact on the WSS service providers by reducing the rates of social security taxes (by at least 5 percentage points, for a four-year period) for those companies and sectors that have an active role in stimulating job creation, including WSS service providers. This reduction was covered by a tax on financial transactions and the collected funds were used to finance rural water infrastructure, among other investments.

In Brazil, the federal government temporarily suspended (May–October 2020) the payment of loan installments for both public or private water and sanitation service providers. Also, water utilities were not charged for the use of water resources.

In Uruguay, the government suspended part of the fixed charges that service providers had to pay in sectors affected by the COVID-19 pandemic, including the WSS sector.



3

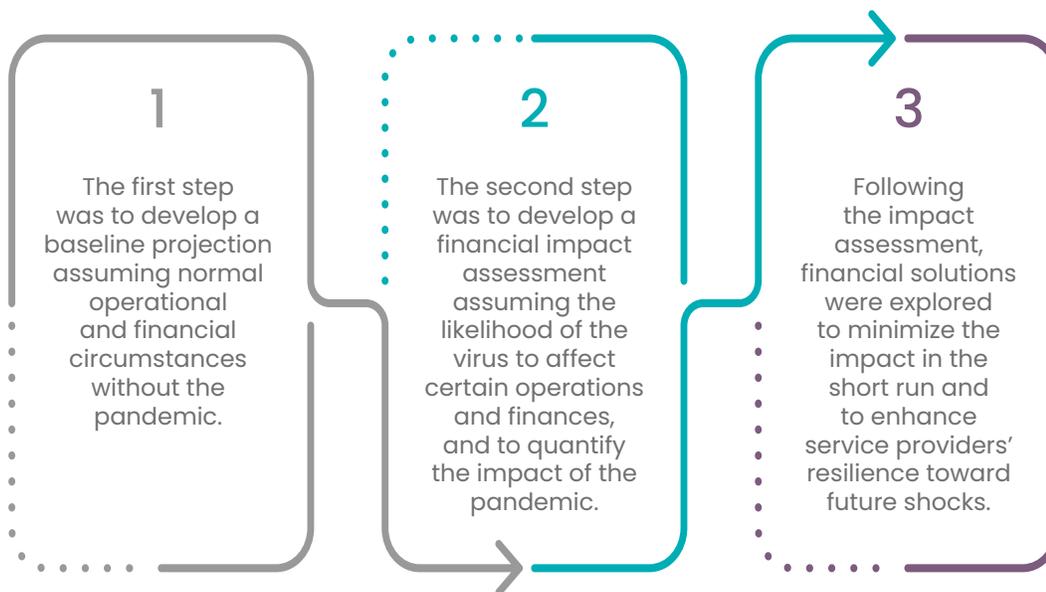


FINANCIAL IMPACT OF COVID-19 ON WATER UTILITIES

This section presents an overview of the financial impact resulting from consumer behavior changes seen during the pandemic and from the measures implemented in response to COVID-19. Based on the assessment results, cross-cutting findings and related lessons will be presented to inform policymakers and utility officials in planning for their financial resilience building toward future shocks.

3.1. Methodology

The methodology used for this financial impact assessment was constructed using an Excel-based tool, the “COVID-19 Financial Impact Assessment Tool for Water and Sanitation Service Providers,”⁸ developed by the World Bank’s Water Global Practice in response to demand from client countries. The intent of the tool was to use its results to help service providers articulate and demonstrate the short-term financing gap associated with the COVID-19 pandemic, and, where needed, to better justify claims for additional resources. The tool was designed to be user-friendly to enable use by all types of services providers, but in cases where service providers already had financial models that could capture COVID-19 impacts, those models were used to carry out the financial assessments. The exercise followed these three steps:



Financial assessments, at varying levels of detail, were carried out for 25 WSS service providers in nine countries: Bolivia,⁹ Brazil (BR), Colombia (CO), Costa Rica (CR), Ecuador (EC), Honduras (HO), Mexico, Peru (PE), and Uruguay (UR).¹⁰ Appendix B summarizes the WSS service providers in this analysis by country, clarifying the level of information available and distinguishing between actual and projected data. Although the timing of the assessments, availability and quality

⁸ The tool, available in English, Spanish, and Portuguese, as well as its [user guide](#) are available on the World Bank’s website.

⁹ For Bolivia the financial information was estimated based on the information provided by the regulator from 2019 and the COVID-19 response measures taken by the government.

¹⁰ For the purpose of confidentiality, the financial information of individual utilities is not presented in this report. Likewise, the tables and figures included in this report refrain from specifying the utility name and, for analytical purposes, only indicate the country of the utility.

of data, and assumptions used varied across utilities and countries, the analysis identified some cross-cutting findings and lessons learned. To triangulate the key findings of the analysis, supplemental information was collected on the post-COVID-19 impact on WSS services providers through stakeholder interviews and surveys in multiple countries. In addition, a comparison of results from similar analyses was carried out through literature reviews and consultations with other multilateral organizations, such as CAF Development Bank of Latin America, to assess the validity of the study conclusions.

3.2. Key Cross-Cutting Findings

The following sections describe the following key findings of this financial impact assessment:

- * Residential consumption increased while non-residential consumption decreased, and because of these changes in consumer behavior, average water tariffs fell (Section 3.2.1).
- * Earnings before interest, taxes, depreciation, and amortization (EBITDA) margins and net income decreased (Section 3.2.2).
- * The effects on operating revenues and expenses were not consistent across the region (Section 3.2.3).
- * The bill collection rate from customers fell, tightening cash flows and delaying capital investments (Section 3.2.4).

3.2.1. Changes in water consumption patterns and average tariffs

Most utilities in this study reported increases in residential water consumption when compared to the consumption levels reported in 2019. However, non-residential water consumption decreased significantly during the strict lockdowns imposed in various South American countries because non-essential businesses such as offices, retail, and other commercial establishments were forced to close for extended periods of time or allowed staff to work from their homes. These changes in residential and non-residential water consumption generally offset each other, which resulted in only slight increases in total water consumption. [Figure 3.1](#) shows the changes in water billed from March to May 2020 as seen in 10 utilities.¹¹

When compared to pre-pandemic levels, residential consumption was up by 3.1 percent on average from March to May 2020, albeit a couple of utilities reported lower residential water consumption during some of these months. Most utilities saw decreases in water consumption by non-residential users, particularly during the strict lockdowns implemented in April and May. Non-residential consumption was down by 14.2 percent, on average, from March to May 2020,¹² while some service providers registered decreases of up to 73.8 percent.

¹¹ These utilities were selected from the study's utility pool based on their availability of data on water consumption for 2019 and 2020.

¹² This estimate was based on non-residential data for utilities in Ecuador and Uruguay and commercial consumption data for utilities in Colombia and Peru.



Figure 3.1. Changes in Water Billed (March – May 2020)



Residential consumption was up by 3.1% on average.

Non-residential consumption was down by 14.2%, while some service providers registered decreases of up to 73.8%.

Total water billed only saw small changes, increasing by 1.8 percent, on average.

Source: World Bank calculations based on data provided by utilities.

Notes: The graphs show the percentage difference between the monthly water billed of 2019 and the average monthly water billed for March to May 2020. In the non-residential graph, the bars for utilities in Ecuador and Uruguay show non-residential consumption data. However, due to data limitations, the bars for utilities in Colombia and Peru present data on commercial consumption. Residential, non-residential (or commercial), and total water billed are based on data from 10 utilities in Colombia, Ecuador, Peru, and Uruguay. These utilities were selected from the study's utility pool based on their data availability.

Although in percentage terms, non-residential consumption decreased much more than the increases in residential consumption, in absolute terms, these trends offset each other given the differences in the number of customers in each customer category. Usually most utilities' water consumption in the region is driven by residential consumption. Therefore, total water billed only saw small changes during the first three months of the pandemic, increasing by 1.8 percent, on average, from March to May 2020.



Box 3.2. Shifting Consumption Patterns in Uruguay

In Uruguay, many residents of Montevideo and other urban areas moved to beach houses to live transitorily during the early months of the pandemic. This generated higher than expected demand in the coastal areas (balnearios), which put pressure on the water service provider's capacity to meet demand in these areas. The total water consumption in balnearios increased by 9 percent between April and December 2020 compared to the same period in 2019. Consumption in the rest of the country increased by 3 percent.

Moreover, consumption patterns by customer type also changed in Uruguay similar to trends seen in other countries in the region. Data shows that residential consumption increased by 7 percent from April to December 2020 when compared to 2019. During the same period, non-residential consumption fell by 13 percent.

However, these changes cannot be attributed to the mandatory lockdown, as the Uruguayan government did not enforce one during the pandemic. Instead, most people in the country followed stay-at-home recommendations and many businesses closed, particularly early in the pandemic. A survey found that by late March 2020, 91 percent of respondents had stayed at home voluntarily, except for necessary trips. This suggests that water consumption patterns in the region may have changed during the pandemic regardless of whether mandatory lockdown measures were introduced or not.

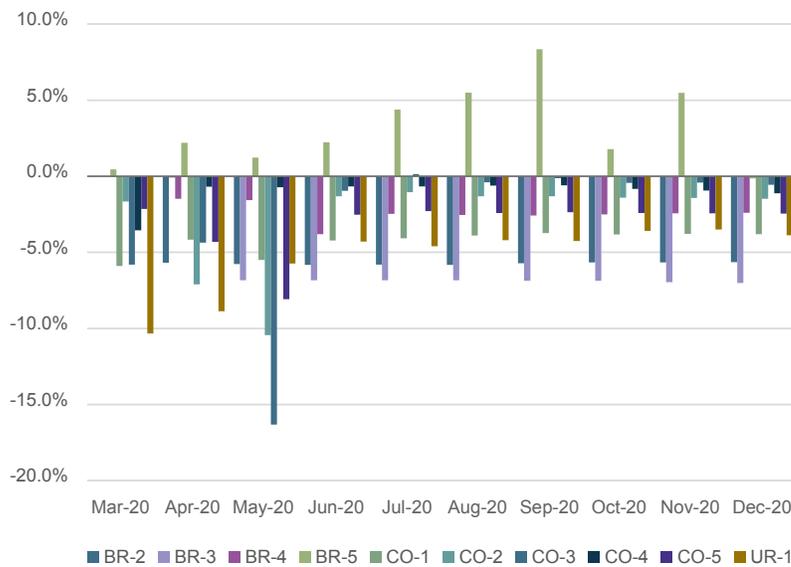
The changes in residential and non-residential water consumption described above clearly affected the utilities' average water tariffs because utilities usually charge higher tariffs to non-residential customers than to residential customers. Therefore, reductions in non-residential water consumption translate into lower average tariffs. This affects the utility's revenues given that average tariffs measure the average revenue billed per cubic meter of water sold. Assuming no changes in operating expenses, lower average tariffs mean lower operational income.

As shown in [Figure 3.2](#), reductions in average water tariffs grew larger as strict lockdowns were extended. Reductions in May were reported to be much larger than the reductions observed in March, likely due to the steeper decline

in non-residential consumption late into the lockdowns. Lower average water tariffs were projected to continue after June 2020 when compared to the expected average water tariffs projected in non-COVID-19 scenarios. As an exception to the overall trend, one utility in Brazil reported higher average tariffs during 2020.



Figure 3.2. Impact on Average Tariffs (March–December 2020)



Reductions in average water tariffs grew larger as strict lockdowns were extended.

Lower average water tariffs were projected to continue after June 2020.

Source: World Bank calculations based on data provided by utilities.

Notes: The graphs show the percentage difference between the monthly average tariff reported or projected for 2020 and the monthly average tariff expected for 2020 without the pandemic (non-COVID-19 scenarios).

Values in this graph for Colombia present data up to May 2020. Projections are presented from June 2020 onwards. Values shown for Brazil and Uruguay present data up to December 2020.

Average tariffs are based on data from 10 utilities in Brazil, Colombia, and Uruguay. These utilities were selected from the study’s utility pool based on their data availability.

3.2.2. Impact on EBITDA and net income

Data suggests that the COVID-19 pandemic had a significant impact on the operating and net profit of water utilities across the region. In all utilities assessed both EBITDA and the net result for 2020 were expected to take a hit. Reductions in EBITDA averaged 29.5 percent and peaked during the early months of the pandemic, particularly from April to May 2020. The average monthly contraction in net result was estimated at 39 percent, with April, May, and July accounting for the largest reductions. More troubling, some utilities in Brazil, Costa Rica, and Honduras reported monthly reductions in EBITDA and net result of more than 100 percent.

The total losses due to the COVID-19 pandemic in a sample of 21 utilities were estimated at \$128.7 million in 2020.¹³ This estimate is based on financial data and projections for six utilities in Brazil, five in Colombia, one in Costa Rica, four

¹³ These losses are the difference between net results in COVID-19 scenarios and net results in non-COVID-19 scenarios. Average exchange rates for 2020 were used to present total losses in US dollars.

in Ecuador, three in Honduras, one in Peru, and one in Uruguay. These losses represent 4.3 percent of the utilities' projected revenues for the same period. Figure 3.3 shows the ranges of impact COVID-19 had on average tariffs, operating revenues, operating expenses, EBITDA, and net result.



Figure 3.3. Impact on Average Tariffs, Operating Revenues, Operating Expenses, EBITDA, and Net Result (March–December 2020)



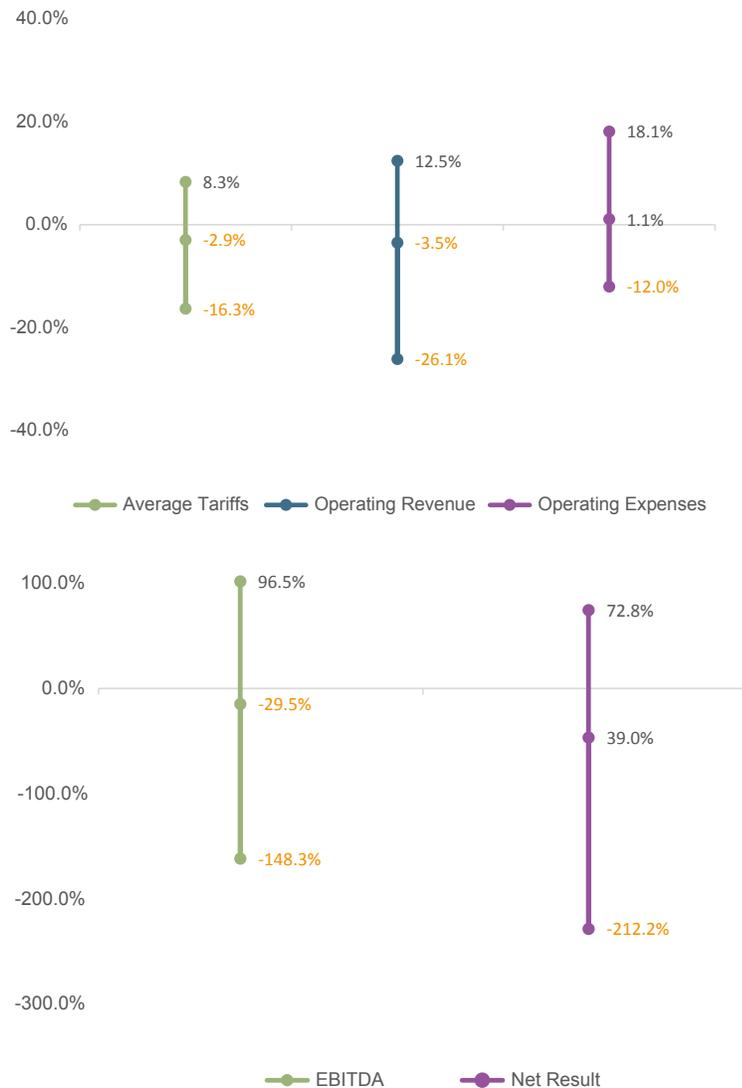
Reductions in EBITDA averaged 29.5% and peaked during the early months of the pandemic.

The total losses in a sample of 21 utilities were estimated at \$128.7 million in 2020.

These losses represent 4.3% of the utilities' projected revenues for the same period.

Average tariffs decreased by 2.9% and operating revenues fell by 3.5%.

Operating expenses increased by 1.1%.



Source: World Bank calculations based on data provided by utilities.

Notes: The graphs show the maximum and minimum percentage change between the monthly values reported or projected for 2020 and the monthly values expected for 2020 without the pandemic (non-COVID-19 scenarios). These changes are the top and bottom values in each bar. The average change in the utilities selected is shown in the middle value of each bar.

Ranges for average tariffs are based on data and projections from 10 utilities in Brazil, Colombia, and Uruguay for March to December 2020. Ranges for operating revenue are based on data and projections from 16 utilities in Brazil, Colombia, Costa Rica, Honduras, Peru, and Uruguay for March to December 2020. Ranges for operating expenses, EBITDA, and net results are based on data and projections from 16 utilities in Brazil, Colombia, Costa Rica, Honduras, and Peru for March to December 2020.

Extreme outliers were deleted from the data set before identifying the minimum and maximum changes, and calculating average changes.

As seen in [Figure 3.3](#), average tariffs decreased by 2.9 percent and operating revenues fell by 3.5 percent between March and December 2020. On the other hand, operating expenses increased by 1.1 percent on average during the same period. More worryingly, the utilities' EBITDA and net result decreased, on average, by 29.5 percent and 39 percent, respectively. Also telling of the extent of the impact of COVID-19 on the finances of the utilities studied, changes in EBITDA ranged from 96.5 percent to -148.3 percent, while changes in net result ranged from 72.8 percent to -212.2 percent.

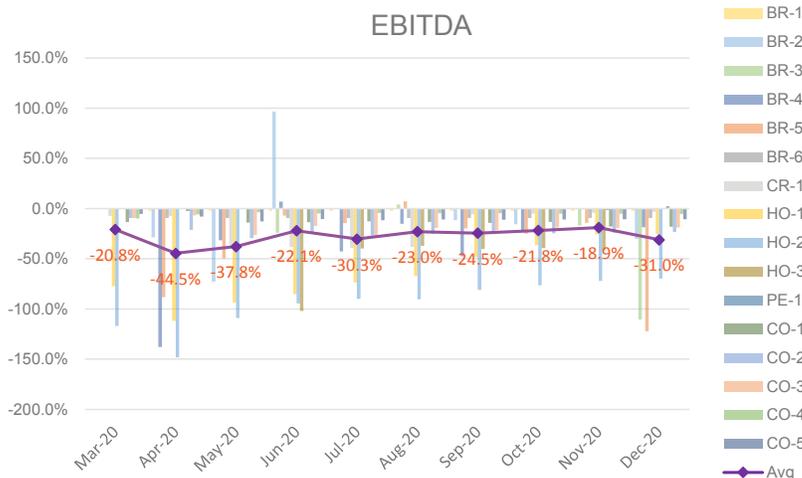
Of the utilities studied, the greatest impact on these financial indicators was reported by one utility in Honduras, which was already reporting losses even before the pandemic. In contrast, a utility from Brazil which had healthy finances before the pandemic, accounted for the smallest average changes in EBITDA (-2.1 percent) and net result (-8.3 percent). This suggests that the pandemic had a disproportionate effect on service providers that were already in financial distress before the pandemic.

In Uruguay, the utility assessed reported that its EBITDA margin decreased from 12.6 percent in 2019 to 11.1 in 2020. Although net results before taxes decreased by 99 percent in 2020, mainly because of large foreign exchange losses, net results increased substantially thanks to a positive income tax account.

[Figure 3.4](#) illustrates the impact on monthly EBITDA and monthly net results from March to December 2020 reported by 16 utilities in the region.¹⁴ The line graph presents the average impact, while the individual utility results are presented in the background bars.



Figure 3.4. Impact on EBITDA and Net Result (March–December 2020)



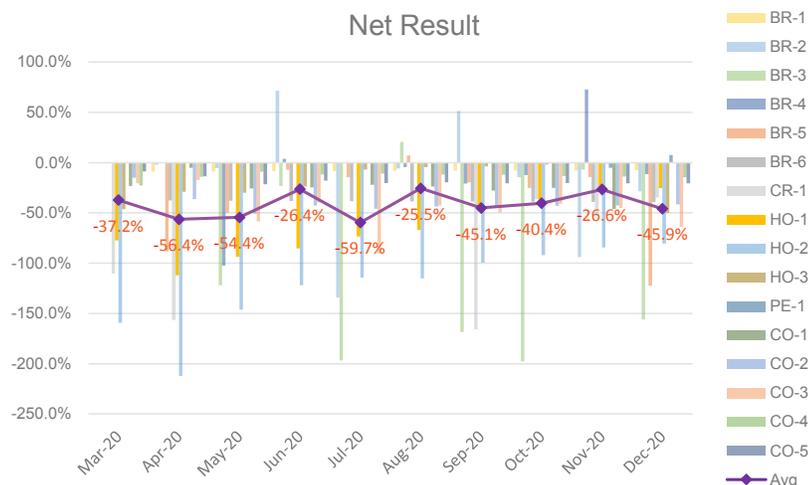
The utilities' EBITDA and net result decreased, on average, by 29.5 percent and 39 percent, respectively.

¹⁴ These utilities were selected from the study's utility pool based on the availability of data on operating revenue and operating expenses for 2020.



The impact observed on EBITDA and net result can be explained mainly by the revenue shortfalls seen in most WSS service providers.

On average, the reported costs ranged between 0.8% and 1.5% of the monthly operating expenses incurred by utilities in large and intermediate cities (in the January–May 2020 period).



Source: World Bank calculations based on data provided by utilities.

Notes: The bar graphs show the percentage difference between the monthly EBITDA and monthly net result reported or projected for 2020, and the monthly EBITDA and monthly net result expected for 2020 without the pandemic (non-COVID-19 scenarios). The line graphs show the average percentage difference.

Values in this figure present data and projections. See Appendix B for a description of the data and projections available for each country.

EBITDA and net result are based on data and projections from 16 utilities in Brazil, Colombia, Costa Rica, Honduras, and Peru. These utilities were selected from the study's utility pool based on their data availability.

Extreme outliers were deleted from the data set before identifying the minimum and maximum changes, and calculating average changes.

The impact observed on EBITDA and net result can be explained mainly by the revenue shortfalls seen in most WSS service providers. The revenue shortfalls included not only tariff revenues, but indirect revenues because of the prohibition on the suspension of services and not charging for reconnections, an effect experienced to a greater extent by the service providers in Brazil. Large increases in operating expenses in WSS service providers in Costa Rica and Honduras also drove severe cuts in profitability. In addition, some measures that were implemented by governments in response to the pandemic could have translated into additional expenses that may not have been captured in cost projections. Such measures include those associated with biosafety requirements, changes in staffing, reconnection, the reinstallation of services, and the provision and operation of trucks for water delivery (bottled, sachets) and water tankers to unconnected populations, among others. For instance, a survey of 16 WSS service providers in Colombia found extraordinary costs associated with biosafety measures. On average, the reported costs ranged between 0.8 percent and 1.5 percent of the monthly operating expenses incurred by utilities in large and intermediate cities (in the January–May 2020 period)^{15 16}

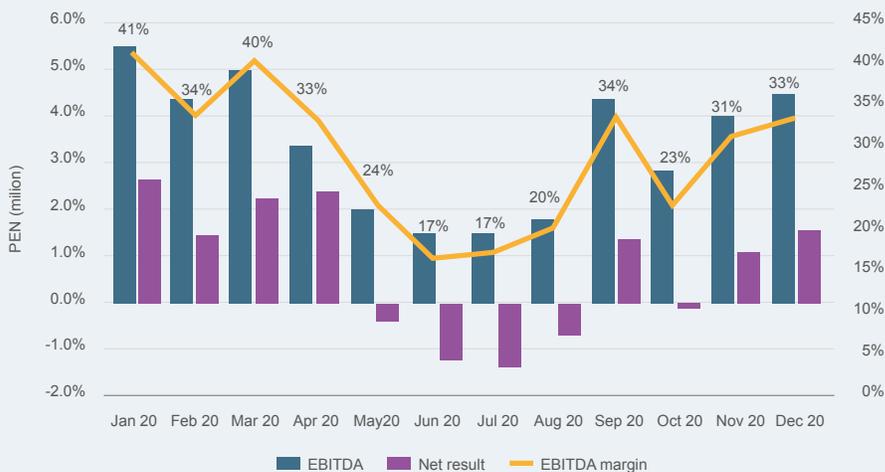
PE-1, the water utility assessed in Peru, provided actual data on operations and financial results until October 2020, while values for November and December were projected. Therefore, the actual impact of the measures implemented in response to the pandemic can be analyzed in more depth. Box 3.2 shows the actual changes in operating revenue, operating expenses, and profitability in this Peruvian utility.

¹⁵ ANDESCO, June 2020. "Impacto en Colombia de la pandemia por COVID-19 en la prestación de los servicios de acueducto, alcantarillado, aseo y gestión de residuos peligrosos."



Box 3.3. In Depth: Operating Revenue and Expenses and Profitability in PE-1 (January–December 2020)

Operating revenue in PE-1 decreased substantially from S/.13.3 million in January to S/.8.5 million in May. That is, the largest effect on revenues was observed during the strict lockdown imposed by the Government of Peru (from March to May 2020). Operating expenses also decreased during the same period, albeit not as much as the reduction seen in revenues. Both revenues and expenses increased progressively in the second semester of 2020 as seen in the left-hand graph below.



Note: Values shown in the graphs above present data from January to October. November and December show projections.

These trends were reflected in significant reductions in EBITDA and net result, particularly from May to August. The utility’s EBITDA margin decreased from 41 percent in January to 17 percent in May and June. PE-1 reported net losses from May to August, as well as in October. Although EBITDA and net result improved after September, they had not reached their pre-pandemic levels by December.

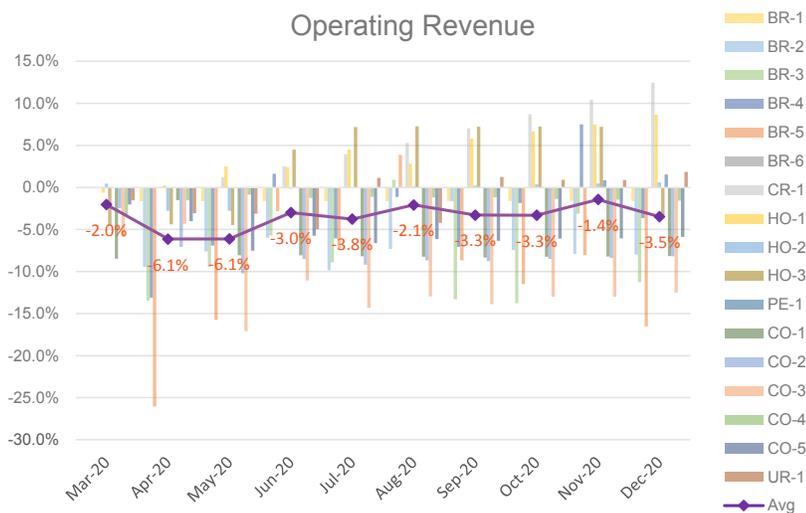
3.2.3. Effects on operating revenues and expenses across the region

The effects on operating revenues and expenses were not consistent across the region. WSS service providers in Costa Rica and Honduras projected higher operating revenues in 2020, whereas service providers in Brazil and Colombia projected revenue shortfalls when compared to expected revenues in non-COVID-19 scenarios for that year. Based on the analysis on average tariffs in Section 3.2.1, changes in the consumption of residential and non-residential users can account for lower revenue. When average tariffs fall due to diminished non-residential demand, operating revenue is also expected to decline. However, changes in customer consumption trends can also account for revenue increases if demand from non-residential customers does not represent a large percentage of total demand and residential demand increases. This could explain why some service providers in Costa Rica and Honduras projected additional revenue.

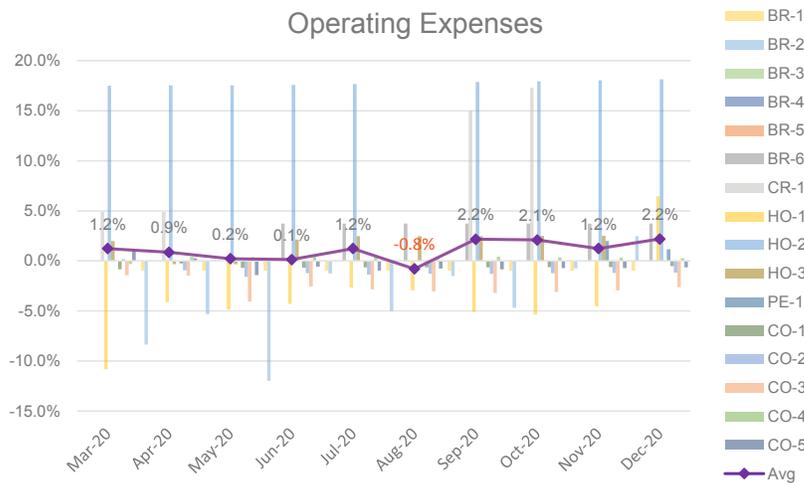
In terms of costs, most utilities projected small reductions in their operating expenses primarily because the total demand in terms of water volume was not affected, as described above since the increase in demand from residential users offset the demand from non-residential users, and therefore the operating costs associated with water production remained the same. However, two utilities in Costa Rica and Honduras projected large monthly increases in operating expenses of up to 18.1 percent. Differences in the set of measures introduced in each country in response to the pandemic can account for some differences across utilities. Figure 3.5 presents the impact on monthly operating revenues and monthly operating expenses seen in 16 utilities from March to December 2020.¹⁷ The figure presents the average impact in the line graph, while the individual utility results are shown in the bars in the background.



Figure 3.5. Impact on Operating Revenue and Operating Expenses (March–December 2020)



¹⁷ These utilities were selected from the study’s utility pool based on their availability of data on operating revenue and operating expenses for 2020.



Source: World Bank calculations based on data provided by utilities.

Notes: The bar graphs above show the percentage difference between the monthly operating revenue and monthly operating expenses reported or projected for 2020, and the monthly operating revenue and monthly operating expenses expected for 2020 without the pandemic (non-COVID-19 scenarios). The line graphs show the average percentage difference.

Values in this figure present data and projections. See Appendix B for a description of the data and projections available for each country. Operating revenue is based on data and projections from 16 utilities in Brazil, Colombia, Costa Rica, Honduras, Peru, and Uruguay. Operating expenses are based on data and projections from 16 utilities in Brazil, Colombia, Costa Rica, Honduras, and Peru. These utilities were selected from the study’s utility pool based on their data availability.

Extreme outliers were deleted from the data set before identifying the minimum and maximum changes, and calculating average changes.

There were WSS service providers that reported conflicting effects on reported or projected revenues and expenses. For instance, utilities in Mexico did not project revenue shortfalls in 2020, whereas utilities in Bolivia, Ecuador, and Uruguay expected to see lower revenues. An updated analysis conducted for the utilities in Ecuador, using the actual data from the financial statements for the fiscal year 2020 reported reductions in revenues of an average of 9 percent, and up to 12 percent compared to the results from 2019. The utility assessed in Uruguay reported a small reduction in revenue from April to December 2020 (-1 percent) compared to the same period in 2019.

In terms of operating expenses, WSS service providers in Bolivia, Mexico, and Uruguay were preparing for increments, while most utilities assessed in Ecuador did not project increases in these line items. However, some of these projections could have been run at a moment when utilities were not yet observing the full impact of the pandemic and the economic downturn on their revenues and expenses. More data is needed to confirm initial findings from these utilities.

3.2.4. Tightened cash flows and delays in capital investments

COVID-19 had a stark effect on the utilities’ bill collection rate and, therefore, on their cash flows. On average, collections and cash flows fell by 11.6 percent and 49.1 percent, respectively, between March and December 2020. Figure 3.6 presents the ranges of impact the pandemic had on collections and cash flows during this period.



Figure 3.6. Impact on Collections and Cash Flow (March–December 2020)



On average, collections and cash flows fell by 11.6% and 49.1%, respectively, between March and December 2020.

On average, cash flows decreased 49.1 percent during the period of analysis, with April being the worst month for the sample of utilities studied.



Source: World Bank calculations based on data provided by utilities.

Notes: The graph shows the maximum and minimum percentage change between the monthly values reported or projected for 2020 and the monthly values expected for 2020 without the pandemic. These changes are the top and bottom values in each bar. The average change in the utilities selected is shown in the middle value of each bar.

Ranges for collections are based on data and projections from 17 utilities in Brazil, Colombia, Costa Rica, Honduras, Peru, and Uruguay for March to December 2020. Ranges for cash flow are based on data and projections from 16 utilities in Brazil, Colombia, Costa Rica, Honduras, and Peru for March to December 2020. These utilities were selected from the study’s utility pool based on their data availability.

Extreme outliers were deleted from the data set before identifying the minimum and maximum changes, and calculating average changes.

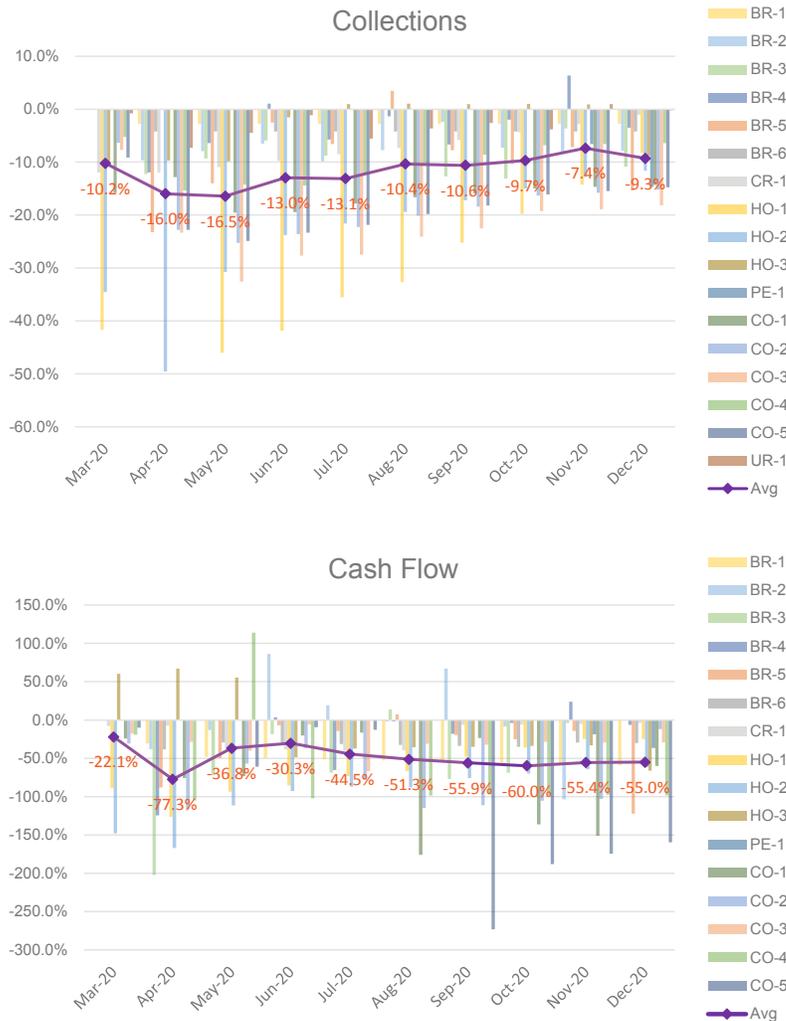
Collections from customers were projected to be lower in 2020 for all WSS service providers assessed when compared to non-COVID-19 scenarios or results from 2019. The impact on collections was projected to peak during the early months of the pandemic and then decrease progressively during the second half of 2020. [Figure 3.7](#) shows the impact on monthly collections and cash flows in the WSS service providers assessed.¹⁸ The figure uses bars to present the individual results, while the line graph shows the average impact. Although [Figure 3.7](#) shows cashflows that were projected during assessments soon after the pandemic outbreak, available actual data from selected service providers indicate that cashflows have picked up in more recent months, in accordance with the projections.

Coupled with lower operating revenues, changes in collection rates unequivocally affected the utilities’ liquidity as most service providers in the study reported reductions in their cash flows throughout 2020. However, the actual impact on their liquidity varied depending on their financial standing before the pandemic and, particularly, on their cash positions. On average, cash flows decreased 49.1 percent during the period of analysis, with April being the worst month for the sample of utilities studied.

¹⁸ These utilities were selected from the study’s utility pool based on their availability of data on number of customers for 2019 and 2020.



Figure 3.7. Impact on Collections and Cash Flow (March–December 2020)



Source: World Bank calculations based on data provided by utilities.

Notes: The bar graphs above show the percentage difference between monthly collections and monthly cash flow reported or projected for 2020, and the monthly collections and monthly cash flow expected for 2020 without the pandemic (non-COVID-19 scenarios). The line graphs show the average percentage difference.

Values in this figure present data and projections. See Appendix B for a description of the data and projections available for each country.

Collections are based on data and projections from 17 utilities in Brazil, Colombia, Costa Rica, Honduras, Peru, and Uruguay. Cash flows are based on data and projections from 16 utilities in Brazil, Colombia, Costa Rica, Honduras, and Peru. These utilities were selected from the study's utility pool based on their data availability.

Extreme outliers were deleted from the data set before identifying the minimum and maximum changes, and calculating average changes.

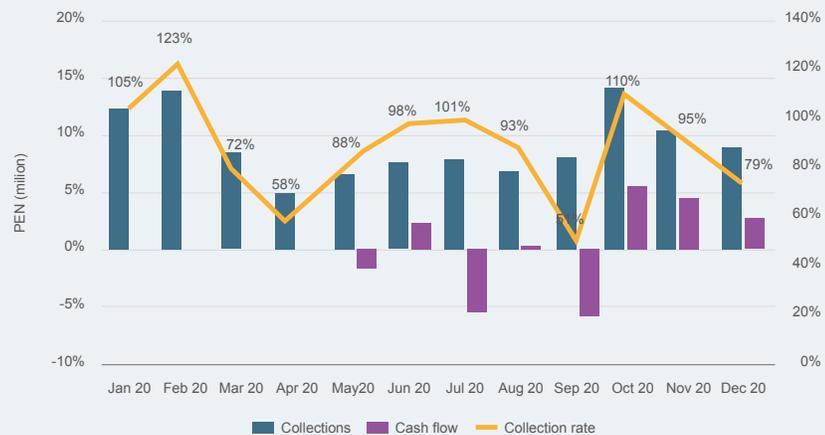


Box 3.4. In Depth: Collections and Cash Flow in PE-1 (January–December 2020)

As in all other utilities studied under this financial assessment, PE-1 also reported a sharp decrease in its collection rate, dropping from 123 percent in February to 58 percent in April, and again to 52 percent in September 2020. This translated in actual collections decreasing from S/.14.0 million to S/.5.1 million, a 63.5 percent reduction. These changes also match the national lockdown that took place from March to May 2020 and align with the second COVID-19 wave, which started in August to September 2020 and was paired with the extension of strict virus-containment measures imposed by the Government of Peru. The sharp decline in the collection rate in September is also attributable to a sharp increase in revenue (not depicted in this graph) potentially due to the collection of accumulated bills resulting from government measures introduced at the start of the COVID-19 pandemic that allowed households to delay payment. The graph below presents PE-1’s collections, the collection rate, and cash flow during the pandemic.



Many WSS service providers in this study have acknowledged that they are deferring some of their planned capital investments to ensure continuity of services.



Note: Values shown in the graphs above present data from January to October. November and December show projections.

Although the utility did not provide cash flow information from January to April, the effect of reduced collections on the utility’s cash flow can be observed starting in May. In fact, the utility’s cash flow was negative in May, July, and September despite improvements in the collection rate during the same period. Collections improved in October but were expected to decrease again in the last two months of 2020 due to the dire COVID-19 situation the country was continuing to experience.

These short-term liquidity issues may have a longer-term impact on the service providers’ financial sustainability because of resulting effects on maintenance and capital expenditures that needed to be deferred or postponed. Many WSS service providers in this study have acknowledged that they are deferring some of their planned capital investments to ensure continuity of services. For instance, all five utilities surveyed in 2020 in Colombia expected to delay

investments. These service providers reported plans to defer between 18 percent and 43 percent of the total capital investments scheduled for that year. Reports of delayed investments were also provided by sector authorities in Bolivia, Brazil, Ecuador, and Mexico.

These emergency deferrals can lead to a deterioration in assets and delays in planned coverage expansions. The greatest impact of these delays in capital expenditures would be on the poorest and most vulnerable households because these population groups usually represent the unserved population. This would further deepen inequalities given that financially constrained service providers would take even longer to achieve universal coverage. In Brazil, for example, deferred capital expenditures experienced by WSS service providers risk delaying the national goal of achieving universal access to WSS by 2033, which is the central objective of the recently approved water and sanitation law.¹⁹ Moreover, achievement of Sustainable Development Goals (SDGs), particularly SDG 6, could also be compromised at a regional level because of the financial effects on service providers.



These emergency deferrals can lead to a deterioration in assets and delays in planned coverage expansions.

Achievement of Sustainable Development Goals (SDGs), particularly SDG 6, could also be compromised at a regional level because of the financial effects on service providers.

3.3. Key findings from the Pandemic's Impact on WSS Service Providers in Latin America

Two main findings can be drawn from the analysis described in the previous sections, supplemented by some insights provided by utility managers during the financial impact assessments carried out in 25 WSS service providers in the region:

- * **WSS service providers prioritized operations to secure service provision during the emergency, but often deferred their maintenance and capital investments.** The WSS service providers prioritized the use of cash for day-to-day operations over maintenance and capital investments. In fact, most of the sample utilities delayed maintenance and capital expenditures, allocating all the resources being collected from customers to pay for their operations. In short, service providers absorbed the operational shocks from the pandemic and adapted effectively to ensure service provision to their customers. However, these short-term decisions were made based on urgent priorities during the crisis and could cause the deterioration of assets if they are not reversed. Service providers may also fall behind coverage and other SDGs targets if sufficient funding is not secured.
- * **WSS service providers with solid financial health and sound financial planning weathered the financial shocks better.** As expected, service providers with healthier finances were better prepared to cope with the liquidity effects stemming from the pandemic and widespread economic contractions. Service providers with higher EBITDA margins and cash reserves were less affected by reductions in revenues and cash collections. Cash-strapped service providers saw unsustainable cash flows and needed direct government transfers to guarantee operations. The key lesson here is that sound financial planning, cash reserves, and the availability of contingency funding provided a safety net for service providers to fall back on when going through short-term financial stress and, therefore, made them more resilient. It is also important to note that these good practices on financial planning are consistently linked to effective governance.

¹⁹ Bill 4162/2019 approved by the Brazilian Federal Senate on June 24, 2020.

- * **These findings highlight the need for WSS service providers to build resilience and ensure they are better prepared to absorb future shocks and mitigate liquidity risks.** As mentioned above, good pre-pandemic financial health, sound financial planning, and good practices in governance helped service providers weather the shocks produced by COVID-19. Therefore, it is key that service providers that had sub-optimal financial viability or lacked good practices in financial planning improve them and for the governments to enhance the countries' policy and regulatory frameworks to enable good sector governance. In addition, service providers should have access to alternative financial mechanisms during emergencies to quickly absorb liquidity and profitability impacts. Examples of these mechanisms are presented in Section 5. Together with good financial practices, these financial tools will build much needed financial resilience in WSS service providers across the region.



4



GOOD PRACTICES TO SET THE
BASIS OF FINANCIAL RESILIENCE
FOR WATER AND SANITATION
SERVICE PROVIDERS



The World Bank has multiple initiatives that support governments and WSS service providers to improve their performance, including the Policy, Institutions, and Regulation, Utility of the Future, and Circular Economy programs.

In the previous section, the study revealed that WSS service providers with solid financial health and sound financial planning weathered the financial shocks better. This means that improving the financial viability of the WSS service providers would likely enhance the sector’s financial resilience toward future shocks and crises. However, many of the WSS service providers in the Latin America region are not financially viable due to their operational inefficiencies, or because the policy and regulatory frameworks are not conducive for creating adequate governance frameworks. In addition, the study found that the governments and the service providers have rarely been preparing to handle the shocks or crises they may face in a systematic manner.

WSS service providers require a strategic management approach to provide quality WSS services that ensure the continuity of operations, encourage continuous improvement, develop strategic capabilities, and create efficient and sustainable strategic business models. The World Bank has multiple initiatives that support governments and WSS service providers to improve their performance, including the Policy, Institutions, and Regulation, Utility of the Future, and Circular Economy programs.

For this report, examples of good practices particularly targeted for building financial resilience toward future shocks and crises have been identified and categorized below into utility- and government-level practices. The examples of the good practices and financial instruments laid out in the next two sections will allow service providers, governments, and other sector stakeholders to develop the shock-responsive systems needed to ensure operations during emergencies, and the efficient and rapid restoration efforts required right after. This list of options may also help service providers mitigate the lingering effects of the COVID-19 pandemic in the medium and long term.

4.1. Utility-Level Good Practices that Build Financial and Operational Resilience

According to a recent World Bank report on “Financial Protection in Critical Infrastructure Sectors, 2021,” building resilience in WSS service providers may follow a two-pronged approach—improving both operational and financial preparedness.²⁴ Operational preparedness refers to having the right plans, standard operating protocols, and capabilities (for example, people, equipment, and spare parts) in place to enable the quick restoration of critical services. Financial preparedness involves having access to the right mechanisms to provide and access effective, adequate, and timely financing to implement overall contingency plans.

4.1.1. Systematic tracking of service providers’ operational and financial information

One of the greatest challenges in carrying out this study was the lack of availability of reliable operational and financial information from WSS service

²⁰ World Bank, Policy, Institutions, and Regulation: <https://blogs.worldbank.org/water/avoiding-pitfalls-between-policy-and-pipes>

²¹ World Bank, Utility of the Future: <https://www.worldbank.org/en/topic/water/publication/utility-of-the-future>

²² World Bank, Circular Economy: <https://circularwaterforall.com/>

²³ Appendix D presents the characteristics of shock-responsive systems. This type of systems encapsulate both operational and financial preparedness.

²⁴ World Bank. 2021. Financial Protection of Critical Infrastructure Services. Washington DC.

providers. The ability to upload and update accurate information to calculate the funding gap is key to funding the sector on time. Before implementing the tools introduced in the Section 5, it is critical that service providers first work on improving their capacity to quantify their existing and projected funding gaps with reliable and accurate information. A desirable regulatory practice would be to have standard financial models to enable the utilities to make projections and monitor changes if crisis occurs in aspects such as debt capacity, operating expenses, and changes in revenue and cash collections.²⁵

4.1.2. Creation of internal emergency funds

Utilities with better cash positions before the pandemic weathered the crisis relatively unscathed. Thus, utilities would benefit from setting up emergency funds to cover for cash deficiencies. The establishment of these funds would depend chiefly on local and regulatory frameworks, as the tariff revenues are often the main source of funding.

4.1.3. Adoption of digital monitoring and operational technologies

The study found that service providers who had adopted technologies that facilitate remote operation and monitoring were more resilient to the crisis. Digital technologies such as smart meters, demand forecasting equipment, and sensors and probes to manage water quality parameters allow real-time management of water treatment, production, and commercial functions. These technologies also allow utilities to quickly access remote and isolated locations to ensure the continuous and safe operation of critical systems even with reduced personnel.²⁶ An example of a recent technology that emerged is wastewater epidemiology,²⁷ which was explored to use signals from wastewater for providing early warnings to public health systems about possible outbreaks and the spread of COVID-19. Among other countries, this has been applied in varying scopes in Brazil, Ecuador, Peru, and Uruguay.

4.1.4. Design and implementation of risk management plans

Utilities should design and institutionalize contingency plans to respond to emergencies and act quickly and effectively when unpredictable emergencies occur to help reduce the operational and financial impact on the utilities and guarantee the continuity of the service.²⁸ For example, principles of Disaster Risk Management (DRM)²⁹ can be adopted. While DRM typically refers to the application of disaster risk reduction policies and strategies for common natural disasters such as earthquakes, droughts, floods, and hurricanes, the COVID-19 pandemic evidenced the exposure utilities also have to other type of emergencies. Water utilities' risk management plans could therefore go beyond

²⁵ World Bank. 2020. Identification of mechanisms to improve the financial resilience of the water sector in Colombia. Washington DC.

²⁶ Ibid.

²⁷ A guidance note for wastewater epidemiology is under preparation as part of the World Bank's advisory services and analytical work.

²⁸ Ibid.

²⁹ According to the UN, DRM is the application of disaster risk reduction policies and strategies to prevent new disaster risk, reduce existing disaster risk and manage residual risk, contributing to the strengthening of resilience and reduction of disaster losses.

natural disasters and include other contingencies that could affect the utilities' commercial activities and finances. For example:

- * Reductions in billed revenue and cash collections.
- * Interruptions of supply chains that provide water treatment chemicals and spare parts, or hikes in their prices.
- * Increases in employee costs due to increased workloads when absenteeism rates among staff increase.
- * Increases in other costs due to contingency purchases such as protective equipment for utility staff.



A strong regulatory framework could be critical for monitoring the financial and economic viability and the performance standards for the water sector, but with emergencies, some relaxation of such regulation may be required.

4.2 Government-Level Good Practices

At the government level, it is important to create a proper policy and regulatory framework to promote good utility governance in the sector. Without good utility governance, any changes in the utilities' management and administration would be undermined, as any good practices that the utilities may introduce to build resilience may not be sustainable. Ultimately, achieving sustainable outcomes in WSS service delivery at the utility level in the long run requires policy, institutional, and regulatory interventions that set the enabling environment to achieve sustainability.³⁰

A strong regulatory framework could be critical for monitoring the financial and economic viability and the performance standards for the water sector, but with emergencies, some relaxation of such regulation may be required. Some measures implemented by national governments in Latin America involved changes in aspects of utility regulation, such as tariff setting, subsidies, and reconnection policies. However, some of these measures were not implemented effectively due to several reasons, including lack of clarity among utilities and regulators regarding the measures, legal challenges to the measures, poor coordination between ministries and regulators, and bureaucratic barriers to their implementation. For instance, Decree 580 of 2020 issued by the Government of Colombia allowed local governments to cover the costs of WSS services, which was effectively a direct subsidy to customers. Although this subsidy was applied in some municipalities for three months, the country's Constitutional Court appealed this decree.

In response to future shocks, the WSS sector would benefit from clear rules on whether and how regulations can be relaxed during certain emergencies. Utility regulations can be modified to include automatic changes in tariff increments, subsidy distribution, and reconnection policies once defined triggers take place as in parametric insurance. For instance, some regulations could be relaxed after economic emergency declarations, large decreases in cash collections, or interruptions in vital supply chains. This will help utilities have access to emergency response mechanisms in an agile and clear manner.

²⁸ Ibid.

²⁹ According to the UN, DRM is the application of disaster risk reduction policies and strategies to prevent new disaster risk, reduce existing disaster risk and manage residual risk, contributing to the strengthening of resilience and reduction of disaster losses.

³⁰ Mumssen, Yogita, Gustavo Saltiel, and Bill Kingdom. 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.



5

**MECHANISMS TO CONSIDER
FOR IMPROVING THE FINANCIAL
RESILIENCE BUILDING OF THE
WATER SECTOR**

5.1. Concept and Approach to Disaster Risk Finance

A growing number of governments are moving toward a proactive (and more cost-effective) approach to financial planning, one that protects national budgets and the lives and livelihoods of their residents from the impacts of disasters. This approach³¹ complements other elements of a comprehensive disaster risk management strategy, ranging from investments in risk reduction to improved preparedness and resilient recovery and reconstruction. Financial protection involves planning ahead to better manage the cost of disasters, ensure predictable and timely access to much needed resources, and ultimately mitigate long-term fiscal impacts. Disaster risk finance and insurance instruments aim to increase the resilience of vulnerable countries against the financial impact of disasters and to secure access to post-disaster financing before an event strikes, thus ensuring rapid, cost-effective resources to finance recovery and reconstruction efforts. The core principles are highlighted in Figure 5.1.



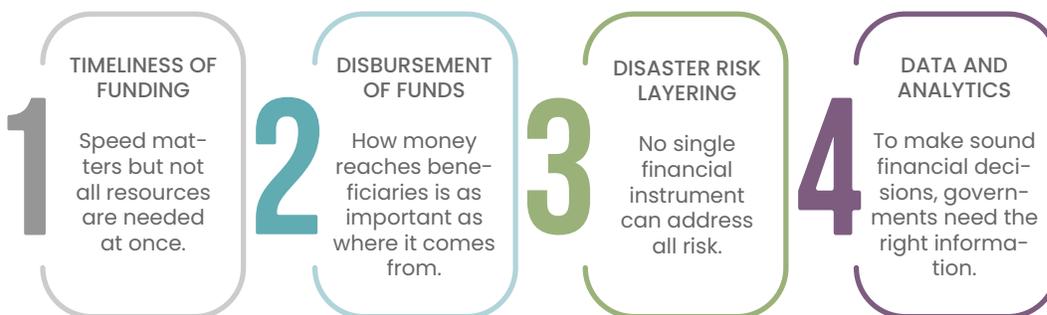
Financial protection involves planning ahead to better manage the cost of disasters, ensure predictable and timely access to much needed resources, and ultimately mitigate long-term fiscal impacts.



Figure 5.1. Core Principles of Disaster Risk Finance

Core Principles of Disaster Risk Finance

Governments seeking to evaluate and improve their financial resilience should be guided by four core principles. These principles do not tell decision and financial instruments.



Source: Disaster Risk Finance: A Primer Core Principles and Operational Framework, World Bank

5.2. Financial Mechanisms to Facilitate Response to Short-Term Liquidity Needs

As evidenced by the findings of this study, the COVID-19 pandemic throughout Latin America have generated liquidity shocks to many WSS service providers in the region. In response, service providers have had to tap into their cash reserves and contingency funds, and more frequently have had to defer their capital investment plans. This points to the need for service providers to gain

³¹ Source: Disaster Risk Finance: A Primer Core Principles and Operational Framework, World Bank (<https://www.financialprotectionforum.org/publication/disaster-risk-finance-a-primercore-principles-and-operational-framework>)

access to financial mechanisms to meet their short-term liquidity needs in when emergencies arise, thereby allowing them to guarantee day-to-day operations without compromising infrastructure maintenance and capital expenditures.

Based on a literature review and consultations with other sector stakeholders, this study has developed a preliminary list of options of financial mechanisms that governments, the private sector, and other stakeholders can mobilize to help utilities ensure service delivery, stabilize their operations, and catch up with capital investment plans. Some punctual examples where the governments in Latin America allocated funding to water service providers within the context of the pandemic have been identified and are included below, although examples are few.

The mechanisms presented below should be tailored to each country context and risk profiles should consider local legal and regulatory frameworks, and other sector and utility-specific characteristics. While the tools presented here are proposed for short-term liquidity needs, government and utility officials may consider institutionalizing them to enhance readiness for responding to future shocks in the longer-term.



Liquidity facility is defined as a financial mechanism that can provide liquidity to governments or service providers during specific emergencies or after certain conditions are met.

5.2.1. Liquidity facility

For this report, a liquidity facility is defined as a financial mechanism that can provide liquidity to governments or service providers during specific emergencies or after certain conditions are met. Liquidity facilities can quickly provide resources to utilities so they can face short-term operational and financial challenges stemming from crises and shocks. The funds from the facilities could also cover sector investment needs if they fund longer-term capital expenditures.

There are multiple design considerations to analyze when developing a local liquidity fund for the WSS sector. According to the 2020 World Bank working paper, “Factors to Consider in Setting Up a Financing Facility,” there are three factors to consider: (i) sources of financing for the facility; (ii) the facility manager; and (iii) the modalities and conditions of disbursement to utilities.

(i) Source of financing

Possible sources of financing for liquidity funds include public funds, commercial lending backed by sovereign guarantees, bonds, guarantees, and concessional financing from multilateral development banks or donors. The selection of the source of financing, or the eventual decision to combine various sources, will depend on several factors of the political economy and the legal and regulatory frameworks in each country.³²

(ii) Facility manager

The entity that will administer the liquidity fund and where it will be institutionally established may depend on several factors, particularly political economy, legal, and regulatory considerations. In practice, these funds can be administered by finance ministries, national development banks, commercial banks, public trusts, and public-private trusts. This decision should be based on several criteria, including efficiency (ease of decision-making, agility in transfers and disbursements, and financial costs), suitability (based on local legal and regulatory frameworks and entity capacity), and the level of transparency and accountability.³³ The fund can meet the needs of multiple sectors simultaneously or can service a single sector.³⁴

³² World Bank. 2021. Recomendaciones para el Diseño de un Fondo de Liquidez para Organismos Operadores frente al COVID-19 en México. Washington DC.

³³ Ibid.

³⁴ Ibid.

(iii) Modality and conditions for disbursement

The modality and conditions for disbursement depend on the objective, scale, eligibility, and operating rules. Modalities of disbursement are typically in grants or loans.

For example, if the objective is to offset the financial deficits that utilities may be experiencing due to COVID-19, the scale of the contribution may match the level of revenue reductions, or it could include the resources needed to maintain and expand WSS services to underserved areas. Here, the eligibility criteria may prioritize service providers facing the greatest financial impact or those incurring substantial extraordinary expenses to implement response measures. Likewise, the operating rules may dictate that the use of resources is limited to the categories of costs directly linked to the emergency measures.



Alternatively, the liquidity funds could be designed to meet medium-term objectives aimed at strengthening the capacity or improving the governance of the utilities.

Alternatively, the liquidity funds could be designed to meet medium-term objectives aimed at strengthening the capacity or improving the governance of the utilities. Here, the eligibility criteria and the operating rules would include incentives for the utilities to improve their performance or implement reform measures.³⁵

Whatever the objective of the fund may be, it is important to ensure extensive buy-in from key stakeholders, such as the finance ministries, WSS line ministries, commercial and development banks, and multilaterals. To illustrate the considerations above, Appendix C presents three examples of prospective institutional designs for liquidity funds in Mexico's WSS sector.

**Box 5.1. A Financing Facility for Water Utilities in Peru**

In April 2020, the Government of Peru introduced Emergency Decree No. 036-2020, which among others allowed the suspension for five months of transfers from WSS utilities to their investment funds and reserves, thereby freeing up resources to be used for operation and maintenance expenses of the services within the context of the pandemic. Utilities were also allowed to tap into their existing investment funds. To replenish these funds, through Emergency Decree 005-2021, the line ministry (Ministry of Housing, Construction and WSS – MVCS) transferred 198 million soles to the investment fund of the utility in Lima (SEDAPAL), and 102 million soles to the Technical Agency for the Administration of Sanitation Services (OTASS) between March and April 2021. OTASS was tasked with the responsibility of distributing the financial resources among the 49 municipal WSS utilities in the country. OTASS's criteria to allocate funding was based on the utility's use of its existing investment funds, the amount of money the utility's stopped contributing toward their funds, and the size of the utility. Future financing mechanisms targeting utilities may wish to incorporate forward-looking, performance-based criteria to promote enhanced utility performance (such as the adequate updating of financial reports and the availability of a contingency plan to respond to shocks).

5.2.2. Credit lines

Credit lines are loans that allow utilities to draw funds up to a limit, repay them at will, and redraw them if necessary.³⁶ This type of loan can help utilities quickly replenish working capital during liquidity shocks. The following considerations should be considered when designing a credit line for water utilities.

- * **Sources of financing.** Credit lines can be set up using funds from national governments at low or no interest. However, commercial and development banks can also finance these types of operations.
- * **Objectives and conditions.** Ideally, an emergency credit line should not be tied to specific conditions. It would be sufficient to establish a maximum amount per utility and allow utilities to use the resources according to their needs. These needs may depend on the context of the emergency, including covering deferred payments and investments, reductions in collections, and increased operating costs.³⁷
- * **Monitoring mechanisms.** Monitoring frameworks may ensure that the financial sustainability of the providers is guaranteed during the emergency and that full repayment of the debt is made once it becomes enforceable. Monitoring is facilitated when no specific conditions on the use of the resources are attached to the loans. Loan agreements that include specific terms on the use of financial resources require regulators to verify that utilities are effectively allocating funds as established, creating a burden on the institutional capacity of sector regulators and watchdogs.³⁸



Credit lines are loans that allow utilities to draw funds up to a limit, repay them at will, and redraw them if necessary. This type of loan can help utilities quickly replenish working capital during liquidity shocks.

Box 5.2 presents an example of a credit line for water utilities set up in Colombia in response to the effects of the COVID-19 pandemic in the sector.



Box 5.2. Credit Line for Water Utilities in Colombia

The Government of Colombia set up a credit line for water utilities during the emergency. The loans had a 0 percent nominal interest rate, 36-month term, and 3-month grace period. The credit ceiling for each utility was defined by the Ministry of Housing, City and Territory (Ministerio de Vivienda, Ciudad y Territorio—MVCT), which is the ministry in charge of the WSS sector. The credit line is administered by FINDETER and funded with resources from the State's Emergency Mitigation Fund (Fondo de Mitigación de Emergencias—FOME).

³⁶ World Bank. 2020. Considerations for Financial Facilities to Support Water Utilities in the COVID-19 Crisis. Washington DC.

³⁷ World Bank. 2020. Identification of mechanisms to improve the financial resilience of the water sector in Colombia. Washington DC.

³⁸ Ibid.

5.3. Financial Mechanisms That Can Contribute toward Long-Term Resilience Building



The financial mechanisms that can help WSS service providers build resilience in the longer-term include parametric insurance and commercial financing. These are described below.

Parametric insurance is a financial mechanism used for transferring risks triggered by losses due to the interruption of commercial activities.

This insurance is an instrument that can help increase the financial resilience of utilities during future emergencies where the continuity and sustainability of water services must be guaranteed.

5.3.1. Parametric insurance

Parametric insurance is a financial mechanism used for transferring risks triggered by losses due to the interruption of commercial activities. Unlike traditional insurance where compensation depends on evaluating the damage suffered, parametric insurance provides a payout immediately following a pre-defined event, based on an independent parameter, metric, or index. This insurance is an instrument that can help increase the financial resilience of utilities during future emergencies where the continuity and sustainability of water services must be guaranteed.³⁹

Although parametric insurance has been widely used in natural disasters or climatic phenomena from easily measurable triggers, performance variables could also be used. The indicator that determines the payment of compensation is known as the trigger. For instance, the wind speed with hurricanes, or the rain with droughts or floods. Since the payment is not tied to property damage, using triggers represents a useful approach to cover a wider range of disaster losses, such as business interruptions.⁴⁰ For example, a parametric insurance in the water sector can tie payouts to collection rates. That is, if the utility's collection rates fall below a certain percentage, the insurer must compensate the utility with the agreed amount.

As a novel financial mechanism, the largest drawbacks of parametric insurance are the complexities over the regulatory treatment. Thus, this type of insurance may not be available in many Latin American countries. However, if government officials gather sufficient willingness to make regulatory changes, certain insurance companies would likely be interested in providing these policies. Another drawback is that the trigger used may not be well correlated with the actual losses sustained, which increases the risk that the payouts will not cover the losses. But the benefits of using parametric insurance instead of traditional insurance are several, including:

- * Rapid, cheap, and independent verification of claim trigger.
- * High flexibility, each policy can be tailored based on utility needs.
- * Payouts could be made within days or even hours.
- * The risk owners remain incentivized to reduce risk.
- * Level of risk is unrelated to the quality of the insured party's risk management process.

³⁹ World Bank. 2021. Financial Protection of Critical Infrastructure Services. Washington DC.

⁴⁰ Ibid.



Box 5.3. Parametric Insurance for Fishing Communities in the Caribbean (COAST)

COAST (Caribbean Ocean and Aquaculture Sustainability Facility) is an example of a parametric insurance that seeks to compensate vulnerable Caribbean fishermen in the event of natural disasters. This insurance was developed within the framework of the Caribbean Catastrophe Risk Insurance Facility (CCRIF), a facility established by the World Bank for Caribbean countries.

COAST was designed to support the efforts of Caribbean country governments to distribute financial resources quickly to fishermen affected by extreme weather, providing them with immediate economic relief.

5.3.2. Commercial financing⁴¹

As discussed in Section 3.3, an emergency—where governments will likely be cash-strapped in the short and medium term—may require the mobilization of private or commercial financing. In general, public-sector funds have often proven to be insufficient to provide access to water for all in the Latin America region. Increasing the level of commercial finance for the sector would allow service providers to borrow and invest in expanding and improving the quality of WSS services, without having to wait for scarce public resources to be provided. The declining economic activity experienced with shocks, such as was felt with the COVID-19 pandemic, present an additional layer of fiscal policy challenges negatively affecting water sector financing. Commercial financing can help cover some of these budget shortfalls. The private sector can play an important role in supplying the finance needed in the WSS sector to recover from the crisis, and to build sector resilience. It is important to note, however, that for the WSS service providers to access commercial financing, they first need to enhance their operational efficiency and cost recovery (as described in Section 4.1 above), and improve their creditworthiness to attract investments from the private sector, as illustrated in Figure 5.2.

⁴¹ World Bank, 2017. Guidance Note: Introducing Commercial Finance into the Water Sector in Developing Countries.



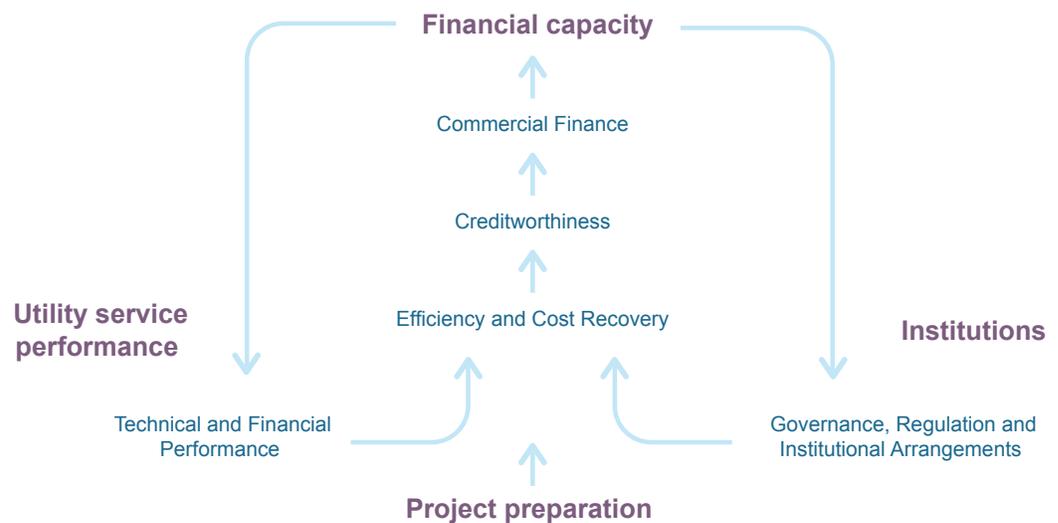
Figure 5.2. Foundation to Commercial Finance



The declining economic activity experienced with shocks, present an additional layer of fiscal policy challenges negatively affecting water sector financing. Commercial financing can help cover some of these budget shortfalls.

For the WSS service providers to access commercial financing, they first need to enhance their operational efficiency and cost recovery and improve their creditworthiness to attract investments from the private sector.

Cycle of utility performance and sustainability to accelerate access to commercial finance



Source: Disaster Risk Finance: A Primer Core Principles and Operational Framework, World Bank

Commercial finance refers to a wide range of funding solutions provided on market terms that impose the commercial discipline of capital markets, in contrast to concessional finance or official development finance, which may be provided on favorable terms. Providers of commercial finance may include domestic commercial banks, microfinance institutions, or capital market investors (via bonds or equity).

The commercial financial sector offers multiple avenues for financing water sector projects, which can range from microfinance loans to bonds and can be offered to water utilities, and to local governments, individual users, or user groups. Water utilities often operate under business structures similar to those of typical small and medium enterprises (SMEs), making commercial finance a viable option for the sector. However, several aspects of the sector make water service providers different from typical SMEs, particularly when viewed by a commercial bank. The primary risk in any project is generally the credit risk and whether the investor will be repaid within the establish timeframe; this is a valid risk among service providers in Latin America where low performance and high operational inefficiencies remain a challenge. Therefore, to attract commercial financial institutions to the water sector, there is a need to improve the financial performance of water service providers by improving operational and commercial efficiencies, and through governance and regulatory reforms. This involves reducing the credit risk of service providers by showing that the service provider is willing and able to repay its debt obligations, that is, to demonstrate that the service provider is creditworthy. Similarly, there is a need to ensure that the project design is self-sufficient and that it can generate the needed cash flow to repay the loan, that is, to design a “bankable” project. Commercial finance can therefore incentivize improvements in the governance and accountability of service providers, and a gradual move to mobilizing more

commercial finance in the sector may contribute toward building the resilience of the sector.

An overview of the main benefits of commercial finance for water service providers is as follows:

- * **Increased sector funding.** If used strategically, public funds can leverage or crowd-in commercial financing to increase the funding available in the sector.
- * **Quicker access to finance and shortened time to construction.** Once commercial financing is established in the sector, creditworthy service providers should be able to achieve financing relatively quickly for commercially viable projects and not depend on slow public finance approval.
- * **Matched financing to asset life.** This entails spreading out the repayment of up-front capital investments with business cash flows, allowing future beneficiaries to help pay for the initial costs of infrastructure.
- * **Increased sector management capacity.** Commercial finance requires a certain level of operational and financial management in line with private companies and should incentivize the sector to increase the sophistication of service provider management.



The commercial financial sector offers multiple avenues for financing water sector projects, which can range from microfinance loans to bonds and can be offered to water utilities, and to local governments, individual users, or user groups.

Blended finance, can be an option to mobilize commercial finance, strengthening the financing systems upon which water-sector investments rely, and making sector projects more viable.

Furthermore, blended finance, which refers to the complementary use of public funds (grants or concessional funds) with private investment resources, can be an option to mobilize commercial finance, strengthening the financing systems upon which water-sector investments rely, and making sector projects more viable.

6



CONCLUSIONS

The COVID-19 pandemic negatively affected WSS service providers' financial health in Latin America. Notwithstanding government efforts in the region to secure water service provision, support customer payment ability, and directly help WSS service providers, the global pandemic had multiple effects on service providers. Results from this report show that the water utilities experienced a fall in average water tariffs, EBITDA margins, and net income. In addition, bill collection rates from customers fell on average 11.6 percent from March to December 2020. Coupled with lower operating revenues, changes in collection rates unequivocally affected the utilities' short- and longer-term liquidity as most utilities in the study reported reductions in their cash flows throughout 2020.

WSS service providers overcame these impacts to secure service provision by using the funding allocated for maintenance and investments, but this may compromise their medium- and longer-term service sustainability. Short-term liquidity constraints in cash-strapped utilities were condensed through the deferral of maintenance and capital expenditures. Postponing these investments can translate into the deterioration of assets and falling behind planned coverage expansions and service improvements. The greatest impact of these delays could fall on the poorest and most vulnerable populations, further deepening inequalities in access to quality WSS services, and widening the gap to achieve universal coverage.

WSS service providers with weak capacities, low performance, and poor financial health suffered more from the negative financial impact caused by the pandemic. Not surprisingly, water utilities with healthier finances, better financial planning, and higher EBDITA margins were better prepared to cope with these liquidity constraints. In contrast, weaker utilities saw wider impacts on cash flows and needed direct government transfers or assistance to guarantee operations. Modernizing the WSS service providers to enhance their financial viability and establishing the adequate policy and regulatory framework are important for building financial resilience in the sector. In this context, the World Bank has several initiatives that support governments and WSS service providers to improve their performance, including the Policy, Institutions, and Regulation, Utility of the Future, and Circular Economy programs. In this report, good practices particularly targeted for building financial resilience toward future shocks and crises have been identified and categorized into utility- and government-level practices.

Modernizing the WSS service providers to enhance their financial viability and establishing the adequate policy and regulatory framework are important for building financial resilience in the sector. In this context, the World Bank has several initiatives that support governments and WSS service providers to improve their performance, including the Policy, Institutions, and Regulation, Utility of the Future, and Circular Economy programs. In this report, good practices particularly targeted for building financial resilience toward future shocks and crises have been identified and categorized into utility- and government-level practices.

When the pandemic hit Latin America, very few water utilities had financial mechanisms that would have allowed them to mitigate the impacts of unexpected shocks. The analysis performed revealed that service providers could not easily access funds to cover for the financial impacts felt, and no ex-ante mechanisms were used to cover the financial drawbacks. Emergency funds and liquidity facilities implemented by some of LAC's governments as a response to the pandemic had only a limited impact as their uptake by water utilities was low due to design flaws and the limited capacity of the utilities to adequately submit the needed requests to access the funds, among other reasons.

Failing to improve the water utilities' financial resilience could jeopardize the attainment of SDG 6. Thinking beyond COVID-19, water utilities could face additional external shocks, such as droughts and floods exacerbated by climate change. As demonstrated by this study on COVID-19, the risks related to potential disasters in the future could easily materialize in higher operational costs, impacts on revenues, and, ultimately, additional financial pressures on water utilities. It would therefore be critical that good practices are applied at the utility and government levels, and that financial resilience tools are used to avoid putting at risk the progress the region has made in terms of water and sanitation service provision.

There is potential for increasing the use of financial resilience tools in the water sector. Although financial resilience tools are still not widely used the water sector, some examples could be found in the disaster risk management, energy, agriculture, and transport sectors. This report showcased general examples that could be tailored to the characteristics of the water sector.

There is a need to capture and consolidate learning from other sectors, from both within and beyond the Latin America region. In doing so, a catalogue of financial tools for utilities and governments in the region could be developed, considering varying sector- and country-specific regulations and characteristics. Different characteristics of the financing mechanism and criteria for disbursement may also be explored, such as the possibility of linking financing mechanisms to performance-based improvements to foster resilience building at the utility level (for example, consider linking disbursement to the development of a disaster-risk management contingency plan, adequate information management, or green/climate-smart improvements).

Going forward, there is room for governments and the private sector to play a bigger role in helping utilities build back better. The study found that many of the water utilities in the region cannot access, design, or implement the financial mechanisms needed to build resilience toward future shocks in the WSS sector. Governments and the private sector can play an active role in assisting utilities in this endeavor. Implementing these mechanisms will require political buy-in from a range of government authorities, such as finance ministries, line ministries related to the sector, and regulators. Moreover, since governments will likely be cash-strapped in the short and medium term due to the increased expenditure needed to offset the economic effects of pandemic, natural disasters or other shocks, government priorities may be redirected to other sectors such as health care, and to repay debt incurred during the emergency. Because of this, the possibility of mobilizing private finance should be explored, but by first improving the creditworthiness of the utilities to enable access to commercial financing. The private sector could mobilize financing to the WSS sector to recover from the crisis, and build sector resilience.

Appendix A – Country Summaries

The following provides a snapshot overview of each of country in this financial assessment, specifying the utilities assessed, the key measures introduced in the country, the variations seen in the water consumption, and a summary of the impact on revenues, operating expenses, total losses.



BOLIVIA



Utilities assessed 

This study used information published in 2018 by Bolivia's water regulator (AAPS) for all the water utilities under its mandate.

AAPs oversees 70 utilities, which provide water and sanitation services to 64 percent of the population in Bolivia.



Key measures with an impact on the country's WSS sector



- **21 March 2020.** The National Government imposes a national lockdown starting on 22 March. Although lockdown measures started to be relaxed progressively from 11 May, they continued being implemented to some extent until 1 September.
- **1 April 2020.** The National Government decrees that users may pay for drinking water services within three months after the end of the lockdown. Municipal water utilities are prohibited from disconnecting users or imposing sanctions for non-payment in January, February, and March 2020, and may offer alternative payment plans for its users. The State will cover 50 percent of the residential consumption costs for April, May, and June 2020. AAPS is responsible for the design and implementation of this procedure.
- **3 April 2020.** AAPS mandates that during the period of state of emergency, water utilities cannot suspend or disconnect water supply services due to non-payment. It also announces that customers in the social category will have a 50 percent discount on water bills during the months of April, May, and June.
- **7 April 2020.** AAPS instructs utilities to request the National Government a refund of 50 percent of the tariff waived.
- **9 July 2020.** AAPS continues to receive and validate reports from urban and rural service providers to allow for the provision of a 50 percent discount on tariffs, applicable for households and for the months of April to June, as indicated and approved by the National Government.

Changes in water consumption



- * Projections on residential water consumption ranged from a 10 percent increase in a low-impact scenario to -25 percent in a high-impact scenario.
- * Non-residential water consumption was expected to increase by 25 percent in the low-impact scenario but would decrease by 40 percent in the high-impact scenario.

Impact on revenues, operating expenses, total losses



- * Revenue losses from April to June 2020 were projected to range from \$4.8 million in the low-impact scenario to \$6.3 million in the high-impact scenario.
- * During the same period, operational expenses were projected to increase by \$1.1 million in both scenarios.
- * From April to June 2020, shortfalls in collections from customers were expected to range from \$0.9 million to \$2.3 million in the low-impact and high-impact scenarios, respectively.
- * The total losses in Bolivian water utilities after a year into the pandemic were estimated at \$18 million in the low-impact scenario and \$23 million in the high-impact scenario. These losses include revenues and collections shortfalls, higher operational expenses, bill deferrals, and the suspension of fees for late payments and reconnections.

BRAZIL



Utilities assessed

This study included six utilities in Brazil. Together they service 30.3 million people in six states.

The utilities' size ranges from 668,000 to 6.6 million customers.

Four utilities are public and two have a mixed public-private capital structure.



Key measures with an impact on the country's WSS sector

- * The Government of Brazil did not introduce a nationwide lockdown during the COVID-19 pandemic.
- * The following measures were introduced by state governments of the five Brazilian utilities assessed:
 - ◇ Two out of five state governments allowed customers to defer water bills, while five state governments forbid service suspensions due to non-payment. Out of these, two states forbid service suspensions only for families under social tariff programs.
 - ◇ Four out of five state governments waived payments by families under social tariff programs for specific time periods.
 - ◇ Three out of five state governments froze tariff increases during the pandemic.
 - ◇ The five utilities assessed provided ways for customers to pay and contact customer service remotely in order to avoid contact.

Changes in water consumption and average tariffs

- * The aggregate water consumption of four utilities in 2020 was 1.8 percent higher compared to 2019.
- * For the same four utilities, average tariffs decreased by 2.7 percent on average between April and December 2020 when compared to the average tariffs that would have been expected for those months without the pandemic.

Impact on revenues, operating expenses, EBITDA, net result, collections, and cash flow

- * In five of the utilities assessed, operating revenues were, on average, 6.2 percent lower from April to December 2020 when compared to non-COVID-19 scenario projections. In three utilities, operating expenses were 0.4 percent lower than non-COVID-19 projections during the same period.
- * Also, when compared to non-COVID-19 projections, the utilities' EBITDA from April to December 2020 were 21.3 percent lower on average. Net results were reported to be 36.1 percent lower.
- * During the same period, collections were down by 5.9 percent on average compared to non-COVID-19 projections. Also on average, cash flows were estimated to be 34.6 percent lower than cash flows projected in non-COVID-19 scenarios.

COLOMBIA

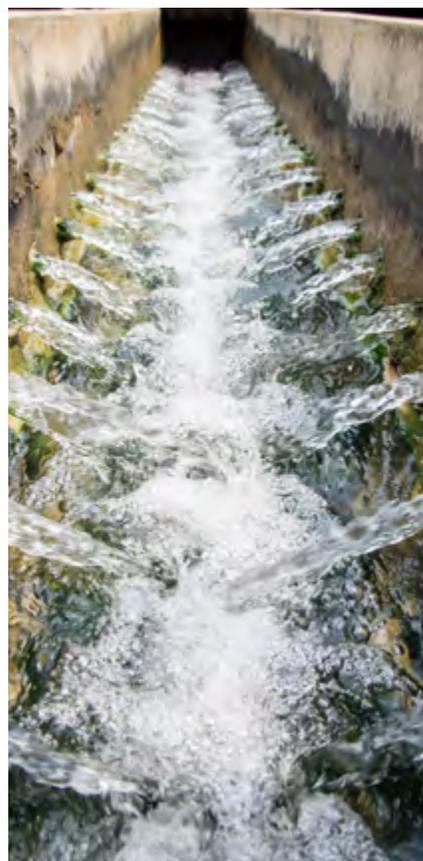


Utilities assessed

This study included five utilities in Colombia. Together they service 3.1 million customers in five departments (Colombia's administrative divisions).

The utilities' size ranges from 95,000 to 2.3 million customers.

Three utilities have a mixed public-private capital structure, one is private, and one is public.



Key measures with an impact on the country's WSS sector



- **18 March 2020.** The water regulator (CRA) introduces the following measures: temporary suspension of tariff increases; immediate reinstallation and reconnection of the service (providers assume the costs of reinstallation and reconnection, but reinstallation or reconnection does not imply debt forgiveness); and services cannot be suspended or cut off.
- **21 March 2020.** The National Government announces a 19-day nationwide lockdown starting on 24 March 2020. Essential workers from the WSS sector are exempt from these measures. This lockdown was extended multiple times and officially ended on 31 August 2020. However, exemptions to the lockdown mandate were introduced gradually during this 5-month period.
- **25 March 2020.** The Ministry of Housing, City, and Territory announces free reconnection of suspended water services due to nonpayment; deferral of payment for residents of strata 1 and 2 (socioeconomic groups with the lowest income) who are unable to pay the next water services bill, up to 36 months without penalty or risk of being reported; a discount of up to 10 percent on current bills to incentivize those who are employed/have an income to continue with timely payments; and a freeze on regulatory tariff increases.
- **5 April 2020.** Findeter, the national development bank, launches a COP713 billion credit line to support the public and private sectors affected by COVID-19, including WSS service providers.
- **24 April 2020.** The National Government announces direct transfers to municipal service providers. This aims to guarantee the provision of drinking water and sanitation services by subsidizing the tariffs of the subsidized population group (strata 1-3) for the duration of the national health emergency.
- **4 June 2020.** The National Government announces that families in strata 1 and 2 have until July 31 to defer payment of water and sanitation bills for up to 36 months, with an interest rate of 0 percent. Households in strata 3 and 4, and commercial and industrial users can defer the payment of their bills for up to 24 months with 0 percent interest.

Changes in water consumption and average tariffs



- * On average, total water consumption from March to May 2020 was 2.9 percent higher than the consumption for the same months in 2019.
- * Residential water consumption grew by 3.0 percent on average during the same period, while commercial water consumption fell by 14.6 percent.
- * These changes in consumption by customer type had an impact on average tariffs as residential customers pay lower tariffs than commercial customers. Average tariffs decreased by 5.4 percent between March to May 2020 when compared to the average tariffs that would have been expected for those months had the pandemic not occurred.

Impact on revenues, operating expenses, net result, collections, and cash flow



- * On average, operating revenues from March to December 2020 were expected to fall by 6.9 percent when compared to non-COVID-19 scenarios, while operating expenses were expected to decrease by 0.9 percent.
- * According to ANDESCO, a multi-sector association of utilities, 303,000 customers were reconnected in 2020, which cost utilities US\$13.5 million.
- * Also, when compared to non-COVID-19 projections, the utilities' net results from March to December 2020 were expected to be 35.3 percent lower on average.
- * During the same period, collections were projected to fall by 17.1 percent on average. Cash flows were estimated to be 90.5 percent lower than cash flows projected in non-COVID-19 scenarios.
- * According to ANDESCO, outstanding bills have increased from US\$115 million in March 2018 to US\$135.3 million in November 2020.

COSTA RICA



Utilities assessed 

This study included one utility in Costa Rica, which provides water and sanitation services to 670,000 customers.

The utility assessed is public.

Key measures with an impact on the country's WSS sector

- **20 March 2020.** The water regulator (ARESEP) requested the Presidency to suspend the disconnection of water services due to late payment.
- **24 March 2020.** All water utilities committed to not suspending or cutting off services for the next 60 days, with possible extension of measure if necessary. This applies to all household and commercial clients, regardless of whether they are in default or non-payment.
- **25 March 2020.** The national water utility (AyA) announces that it will only provide customer service by phone or mail and all offices are closed for the public. Billing will be based on an estimate from March 2020. As of March 2020, water services will not be suspended due to late payment.
- **25 June 2020.** The National Government extends the continuity of water services to households with financial difficulties for an additional 30 days (the new end date is 15 September 2020).
- **21 August 2020.** AyA extends the moratorium to cut off or suspend services with bills outstanding until 15 September 2020. AyA extends the due date of invoices for March, April, May, and June until December 2020 without implementing any fines.

Changes in water consumption

- * The monthly volume invoiced between March and April 2020 (13.4 and 11.4 million m³ respectively) decreased when compared to the monthly average registered in 2019 (12.8 million m³).
- * Residential consumption dropped in March (9.8 million m³) but remained the same in April (10.1 million m³) when these months are compared to the residential monthly average registered in 2019 (10.1 million m³).
- * Average monthly non-residential consumption increased from 2.7 million m³ in 2019 to 3.6 million m³ in March 2020, but then fell to 1.3 million m³ in April 2020.

Impact on revenues, operating expenses, EBITDA, collections, and cash flows

- * On average, operating revenues from March to December 2020 were expected to be 5 percent lower when compared to revenues in a non-COVID-19 scenario.
- * However, operating expenses were projected to rise by 20 percent on average during the same period.
- * Therefore, the impact on the utility's EBITDA was estimated at -19 percent.
- * Collections were projected to be 7 percent lower on average from March to December 2020, while the cash flow was expected to fall by 19 percent during the same period.



ECUADOR



Utilities assessed 

This study included four utilities in Ecuador. Together they provide services to 3.3 million people in four municipalities.

The utilities' size ranges from 54,000 to 520,000 customers.

Three utilities are public and one is private.



Key measures with an impact on the country's WSS sector



- **12 March 2020.** The National Government announces a national lockdown from 17 March to 31 March, but it was extended multiple times. On 12 April 2020, the Government introduced a traffic light system to allow for the flexibilization of certain activities in each province while lockdown measures were still in place.
- **17 March 2020.** Water utilities are prohibited from cutting off services due to non-payment, at least for the period from 15 March to 29 March.
- **15 May 2020.** The Congress of Ecuador approves a bill which prohibits an increase in tariffs of basic services for a year after the national state of emergency, and that service cut offs for non-payment are suspended for two months after the end of the state of emergency. The monthly payment collections will restart a month after the end of the state of emergency, allowing outstanding bills to be paid in 12 installments, without interest, fines, or surcharges.

Changes in water consumption



- * Data on changes in total water consumption varied in each utility. However, they all compared consumption levels in 2020 against consumption during the corresponding periods in 2019:
 - ◇ One utility reported a 5 percent decrease from March to June 2020, while a second utility saw a 2 percent increase during the same period.
 - ◇ A third utility registered a 3 percent increase from March to May 2020.
 - ◇ The fourth reported a drop in 5 percent from March to August 2020.

Impact on revenues, operating expenses, net result, and collections



- * Also compared with 2019 data, operating revenues decreased by 7.3 percent on average in 2020. This accounted for US\$2.8 million in losses that year.
- * Operating expenses increased by \$0.2 million in one utility from March to June 2020. No information was available for the other three utilities.
- * The drop in collections in the four utilities accounted for an additional \$13.4 million in losses. However, some of this revenue may be collected later.
- * The total net loss for 2020 in the four utilities was estimated at \$4.2 million. This would see the net margin fall from 9 percent before the crisis to -2 percent.

HONDURAS



Utilities assessed

This study included three utilities in Honduras. Together they provide services to 1.4 million people in three municipalities.

The utilities' size ranges from 8,000 to 125,000 customers.

The three utilities are public.



Key measures with an impact on the country's WSS sector

- **20 March 2020.** The water regulator (ERSAPS) announces that service cut offs due to non-payment are suspended for 3 months or for the duration of the national health emergency. Also, it orders immediate reconnection of suspended water services due to nonpayment, except for clandestine connections. Tariff increases are frozen during the national health emergency, after which utilities can make the respective adjustments based on the tariff proposals issued by ERSAPS.
- **20 April 2020.** The national water utility (SANAA) temporarily enables new phone numbers for enhanced customer service. SANAA also launched an online platform for online payments.
- **17 August 2020.** Considering that the suspension of service cut offs has expired, ERSAPS notifies that water service providers may begin to collect rates, negotiate and provide facilities to pay the debt, and grant amnesty until December 31 to pay interests, penalties, and surcharges for arrears accumulated until 31 May 2020. It also recommends adjusting rates if considered necessary by the municipality.

Impact on revenues and operating expenses

- * On average, operating revenues from March to December 2020 were expected to increase by 2 percent when compared to revenues projected in non-COVID-19 scenarios.
- * During the same period, operating expenses were expected to be 5.3 percent higher on average than the expenses incurred had the pandemic not taken place.

Impact on net result, collections, and cash flow

- * On average, the impact on the utilities' net results was estimated at -68.9 percent after comparing COVID-19 and non-COVID-19 scenarios.
- * Collections were projected to be 19.7 percent lower on average from March to December 2020.
- * The utilities' cash flows were projected to fall by 58 percent on average during the same period.

MEXICO⁴²



Utilities assessed 

This study included four utilities in Mexico. Together they provide services to 2.6 million people in four municipalities.

The utilities' size ranges from 27,000 to 1.6 million customers.

The four utilities are public.



Key measures with an impact on the country's WSS sector

- * The Government of Mexico did not introduce a nationwide lockdown during the COVID-19 pandemic.
- * Mexican authorities did not introduce bill deferrals to ensure "service providers have sufficient resources to guarantee their operation, and thereby to ensure continuity of the service provision."

Impact on revenues and operating expenses

- * On average, revenues from March to December 2020 were 96 percent higher than revenues projected for the same period in non-COVID-19 scenarios.
- * Operating expenses were projected to be 5.3 percent higher from March to December 2020.

Impact on net result, collections, and cash flow

- * In one utility, EBITDA was projected to be 109 percent higher from March to December 2020 when compared to non-COVID-19 scenarios.
- * In contrast, EBITDA in the other three utilities was estimated to be 325 percent lower on average than the levels projected in non-COVID-19 scenarios for the same period.
- * Collections were expected to be 109 percent higher on average from March to December 2020.
- * Cash flow trends were not consistent among utilities:
 - ◇ Cash flows in two utilities were projected to be 46 percent and 100 percent higher from March to December 2020.
 - ◇ The cash flow of a third utility was expected to shrink by 122 percent in the same period against a without-COVID-19 scenario.

⁴² It is important to note that there may be distortions in Mexico's data. The country lacks regulation on utility accounting and, therefore, it also lacks a standard on how to record financial information. Moreover, there are quite different accounting practices implemented across utilities. On the other hand, the proximity of utilities to local governments have made it easier for utilities to access funding aimed at improving services, which is key during the pandemic. However, there is no clarity on how this is reflected in financial statements, or in the data sheets provided by the utilities assessed in this study.

PERU



Utilities assessed 

This study included data from one utility in Peru, which provides water and sanitation services to 320,000 customers. (*)

The utility assessed is public.

(*) A quick assessment on a sample of 10 utilities allowed developing a solid understanding of the impact of COVID-19. This exercise allowed identifying the key assumptions to model the impact and develop the scenarios which facilitated the deep-dive quantitative analysis of the utility included in this analysis.



Key measures with an impact on the country's WSS sector

- **15 March 2020.** The National Government announces a 15-day nationwide lockdown starting on 16 March 2020. Essential workers from the WSS sector are exempt from these measures. This lockdown was extended multiple times, but most of the country's industries had restarted activities by early June.
- **18 March 2020.** The water regulator (SUNASS) starts monitoring water utilities to ensure that they do not cut off services due to lack of payment and ensures immediate reconnection when needed.
- **23 March 2020.** SUNASS suspends water services cut offs due to non-payment during the national state of emergency.
- **10 April 2020.** The National Government suspends all service disconnections due to non-payment during the national state of emergency. It also mandates the deferral of bills issued during the emergency and allows for their payment in 24 months. The Government also orders the free supply of potable water by water trucks for the vulnerable and unconnected communities; the use of funds earmarked for disaster risk management (DRM), watershed restoration, and climate change adaptation activities to cover for O&M expenses; and the suspension of transfers from the utilities to these special funds for 5 months.
- **10 April 2020.** SUNASS supervises water utilities in the use of investment funds and reserves, ensuring use of funds to cover the operation and maintenance expenses of water and sewerage services.
- **27 May 2020.** SUNASS announces that amounts billed in excess during the National State of Emergency (where billing calculations have been based on historical averages) will be returned to the user. Commercial or industrial users who are not operating can request suspension of services.

Changes in water consumption and average tariffs

- * The average monthly volume invoiced from March to October 2020 (4.5 million m³) decreased slightly when compared to the monthly average registered in 2019 (4.7 million m³).
- * During the same period, the average monthly residential consumption was the same as the monthly average registered in 2019 (3.8 million m³).
- * Monthly non-residential consumption from March to October 2020 did not change either when compared to the average monthly consumption in 2019 (0.3 million m³).
- * Although average tariffs fell from S/.1.49 per m³ in January 2020 to S/.1.29 in July 2020 (13.4 percent), they recovered to S/.1.94 in October 2020 (30.2 percent higher when compared to January).

Impact on revenues, operating expenses, net result, collections, and cash flow

- * Monthly operating revenues decreased from S/.13.3 million in January 2020 to S/.8.6 million in July 2020 (35.3 percent). Revenues increased back to S/.12.2 million in October 2020 (albeit 8.3 percent lower than in January).
- * Monthly operating expenses decreased from S/.7.9 million in January 2020 to S/.7.1 million in July 2020 (10.1 percent), but then rose to S/. 9.4 million in October 2020 (19.0 percent higher when compared to expenses reported in January).
- * Monthly net result fell from S/.2.6 million in January 2020 to negative S/.1.4 million in July 2020 (-240 percent), recovering some ground in October 2020 (negative S/. 0.1 million, still 104 percent lower than in January).
- * Collections first decreased from S/.12.4 million in January 2020 to S/.7.8 million in July 2020, and then increased to S/.14.3 million in October 2020 (15.3 percent higher than in January).
- * Cash flows improved from negative S/.1.8 million in May 2020 to S/.5.6 million in October 2020 (information on cash flows before May 2020 was not available).

URUGUAY



Utilities assessed 

This study included one utility in Uruguay, which provides water and sanitation services to 1.4 million customers.

The utility assessed is public.



Key measures with an impact on the country's WSS sector



- The Government of Uruguay did not introduce a nationwide lockdown during the COVID-19 pandemic.
- **12 March 2020.** The state water utility increases tariffs by 10.7 percent as planned before the pandemic.
- **1 May 2020.** The state water utility presents payment facilities to pay the debts generated in 2020.
- **1 July 2020.** The Ministers of Tourism, of Housing, and of Industry, announce the partial or total exemption, depending on the case, of the fixed charges of WSS services provided by the state water utility for those companies that have been most affected by the pandemic; the benefits apply to businesses in the education, culture and sports, and hospitality and gastronomy sectors.
- **24 November 2020.** The state water utility announces new payment facilities to help customers pay debts generated by invoices issued in 2020. Customers will be able to request a financing contract in up to 15 equal, monthly and consecutive installments, without fines, surcharges or interest.

Changes in water consumption



- * Residential consumption increased by 7 percent from April to December 2020 when compared to the same period in 2019, while non-residential consumption decreased by 13 percent.
- * Total consumption increased by 4 percent during the same period. The largest impact was seen in coastal areas, where consumption increased by 9 percent.

Impact on revenues, operating expenses, net result, and collections



- * Operating revenues from April to December 2020 were 1 percent lower when compared to 2019 revenues (in 2020 prices).
- * Operating expenses increased by approximately US\$627,000 mainly driven by increases in personnel costs (changes in work shifts, outsourcing of some personnel, increased insurance premiums) and purchase of personal protection equipment.
- * Net income before taxes decreased by 99 percent in 2020, while collections rates decreased from 98 percent in 2019 to 96 percent in 2020.

Appendix B – Data Availability

Table B.1. presents the months in 2020 for which utilities provided data, and the months in 2020 for which projections were made in each financial impact assessment.

Country	Number of Utilities	Months in 2020 for which data was available	Months in 2020 for which projections were made
Bolivia	NA ¹	NA ¹	April to December
Brazil	6	April to July (2 utilities) January to December (4 utilities)	August to December (2 utilities)
Colombia	5	January to May	June to December
Costa Rica	1	January to April ²	April to December ²
Ecuador	4	March to May (1 utility) March to June (2 utilities) March to August (1 utility)	June to December (1 utility) August to December (2 utilities) September to December (1 utility)
Honduras	3	March to May	June to December
Mexico	4	January to April	May to December
Peru	1 ³	January to October	November to December
Uruguay	1	April to December	NA

Notes: ¹ Bolivia's financial impact assessment was carried out using information for 2018 from Bolivia's WSS Regulatory Agency (Autoridad de Fiscalización y Control Social de Agua Potable y Saneamiento Básico—AAPS) for all the operators under its regulation (70 operators serving 64 percent of the population in Bolivia). Thus, individual utilities in Bolivia provided no data for 2020.

² The utility assessed in Costa Rica provided some data for April. However, some other values for the same month are projections.

³ Before collecting data and assessing the utility in Peru, a quick analysis of a sample of 10 utilities was conducted to obtain an understanding of how COVID-19 could be affecting the utilities. This exercise was key to identify the key assumptions to model the impact and to develop the scenarios which facilitated a deep-dive quantitative analysis of the utility in this analysis.

Appendix C – Examples of Liquidity Fund Designs in Mexico

This appendix presents three possible designs for a liquidity fund for WSS utilities in Mexico.

Option 1: Financing to WSS utilities through Banobras with resources from an international financial institution (IFI)

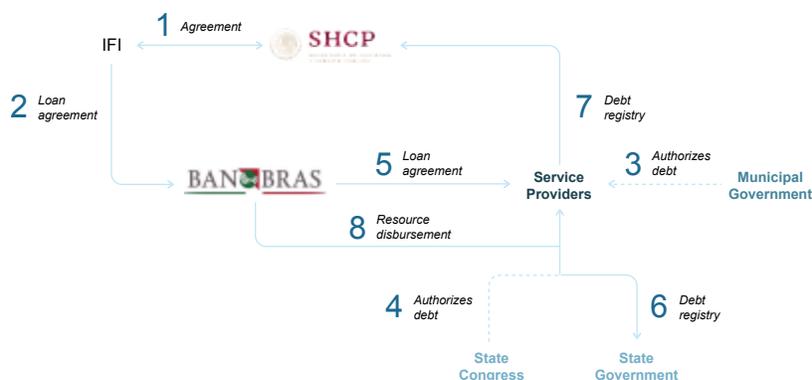
Under this design, an IFI grants a loan to the federal government, so it can grant loans to utilities with the corresponding municipal and/or state guarantees. The federal government would grant loan agreements through Banobras⁴³ or another local development bank. The main advantages of this structure are that it does not require changes in the regulatory framework and resources are recoverable. However, some disadvantages include longer implementation times, bureaucratic processes within the Ministry of Finance and Public Credit (SHCP), several municipal, state, and federal authorizations would be needed, and resources can be used only for public-productive investments and not for current spending. Implementing this fund design may follow the steps below:

- * The IFI and Banobras determine the terms of the loan and sign the sovereign-guaranteed loan agreement.
 - * Banobras and the SHCP determine the main terms of the loans to be granted to utilities, and the source of payment and/or guarantees.
 - * Banobras, with prior authorization from state congresses and town councils, enters into loan agreements with utilities.
 - * The procedure is carried out for the registration of financing in the state registries of public debt and in the Single Public Registry in charge of the SHCP.
 - * Disbursement of loan resources that can be used only for public-productive investments and not for current spending.
- * The IFI signs an agreement with the federal government, through the Ministry of Finance and Public Credit (SHCP).

Figure C.1 shows the proposed process to set up this liquidity fund.



Figure C.1. Liquidity Fund Option 1



Source: World Bank. 2021. Recomendaciones para el Diseño de un Fondo de Liquidez para Organismos Operadores frente al COVID-19 en México. Washington DC.

⁴³ Banobras is a state-owned development bank in Mexico. Its core business is sub national and project finance.

Option 2: Grants to utilities through the federal programs in charge of CONAGUA

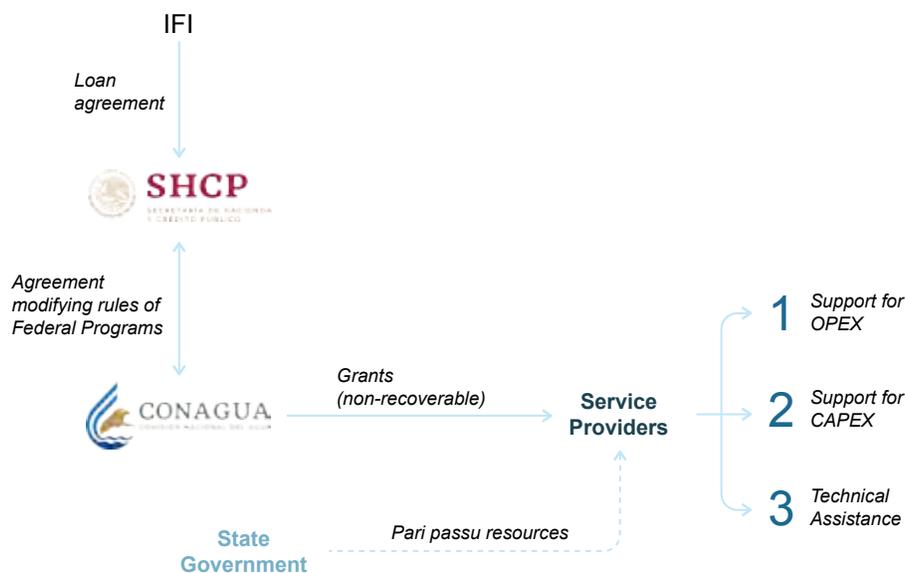
Under this design, an IFI grants a loan to the federal government, so it can provide grants to utilities through CONAGUA.⁴⁴ Its advantages include shorter implementation times, easy to modify operating rules of federal programs already known by utilities, less authorization processes, and resources can be employed for OPEX, CAPEX and technical assistance. Disadvantages include non-recoverable resources (grants), limited resources from states, and the large political buy-in required from SHCP and CONAGUA. The implementation of this fund design may follow the steps below:

- * IFI signs into a loan agreement with the federal government, through the SHCP.
- * The SHCP and CONAGUA determine the terms of the non-recoverable support and modify the operating rules of the Federal Programs through which the resources could be granted. This is needed so the scheme is not created from scratch.
- * The operating rules could consider three components of the resources: (i) support for emergent payments in substantive areas for operating the services in charge of the utilities (OPEX); (ii) support for expenses related to institutional improvements, strengthening of governance and regulation and investments (CAPEX); and (iii) consider other resources for technical assistance.
- * State governments could provide resources for the above components in pari passu, if required.
- * The utilities will have the resources complying with the requirements established in the operating rules.
- * CONAGUA must supervise the application of resources and or fulfillment of the goals that, if applicable, are established.

Figure C.2 shows the proposed process to set up this liquidity fund.



Figure C.2. Liquidity Fund Option 2



Source: World Bank. 2021. Recomendaciones para el Diseño de un Fondo de Liquidez para Organismos Operadores frente al COVID-19 en México. Washington DC.

⁴⁴ CONAGUA es the federal agency in charge of the administration and preservation of water resources in Mexico.

Option 3: Financing to private sector firms through programs with CONAGUA

Under this design, the IFI signs an agreement with the federal government, through CONAGUA, for implementing a utility support program. Private firms can adhere to this program and then sign service provision contracts with utilities to help them improve operation and commercial operations, and to make capital investments. This program may include technical assistance from the IFI and IFC financing to the participating private firms. This fund's advantages include recoverable resources (loans to the private sector); no modifications to the regulatory framework needed; employs know-how and capacity from the private sector; technical assistance from the World Bank can be applied; less authorization processes; and resources can be used for OPEX, CAPEX and technical assistance. However, its disadvantages include the large political buy-in required from CONAGUA and SHCP, and the possible negative perception of promoting private sector participation in the WSS sector. The implementation of this fund design may follow the steps below:

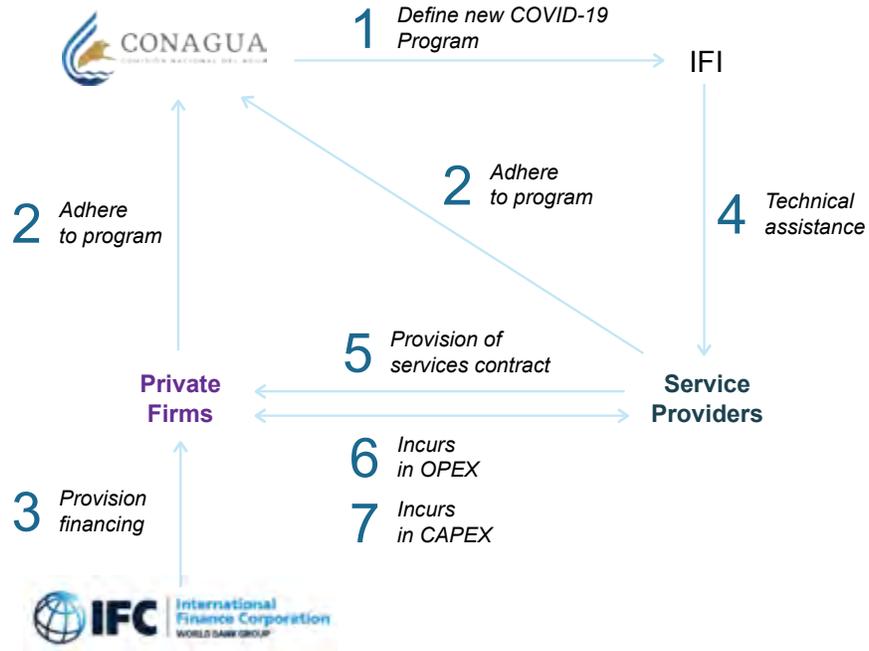
- * IFI signs an agreement with the federal government, through CONAGUA, for implementing a support program for utilities, which may include technical assistance from the IFI and loans to private sector firms through the IFC.
- * CONAGUA issues a statement and guidelines for firm with sector experience that wish to participate and comply with the indicated requirements, so they can enter a registry run by CONAGUA.
- * CONAGUA prepares the scheme's agreement or contract under which the program will be implemented.
- * The participating firms must adhere to the agreement/contract, and the participating utilities.
- * The firm and the corresponding utility define the necessary resources that the firm must provide the utility, and the activities that the firm will carry out to improve the utility's operation and commercial management and recover the investment.
- * The firm and the corresponding utility sign a service provision contract, only for the period for the recovery of the resources provided by the firm.
- * Based on needs, the IFC grants financing, under competitive terms, to private sector firms that have sign service provision contracts
- * The IFI provides technical assistance to utilities with resources from the loans granted by the IFC.
- * The service provides will have the resources comply with the requirements established in the program's guidelines and the respective contract.
- * Monitoring of the execution of resources is carried out by the IFI and CONAGUA.

Figure C.3 shows the proposed process to set up this liquidity fund.





Figure C.3.
Liquidity Fund Option 3



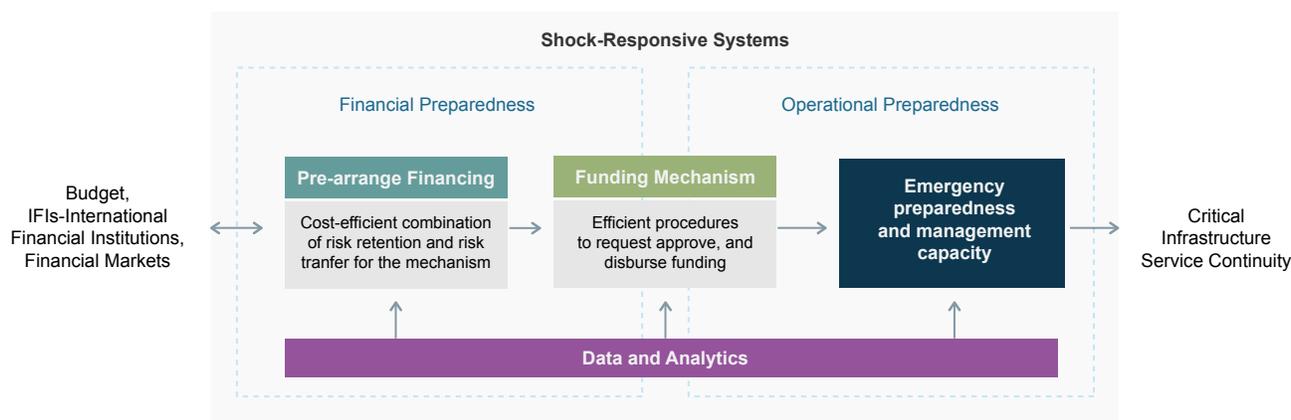
Source: World Bank. 2021. *Recomendaciones para el Diseño de un Fondo de Liquidez para Organismos Operadores frente al COVID-19 en México*. Washington DC.

Appendix D – Characteristics of Shock-Responsive Systems

Shock-responsive systems can help governments and utilities to protect critical infrastructure services in the WSS sector during emergencies. Figure D.1 below illustrates the key characteristics of these systems.



Figure D.1. Liquidity Fund Option 2



Source: World Bank. 2021. *Financial Protection of Critical Infrastructure Services*. Washington DC.

Financial preparedness should be developed by considering two aspects—mobilizing and delivering funding. The first requires the correct financial engineering to guarantee cost-efficient access to sufficient funding for shocks of different severity, coupled with sufficient funding for regular operations and maintenance (O&M). The second aspect requires the appropriate public finance mechanism to ensure effective flow of funds. For example, an O&M fund can be created with standard operating procedures

for rapid approval of emergency expenditures to implementing agencies. Insurance or other financial instruments can then backstop this fund, ensuring that it has enough resources to meet needs even after catastrophic events. Such financial preparedness can be centralized for the government or decentralized (for example, by sector or region). The best approach will depend on each country's specific context, institutions, laws, and policies.⁴⁵

⁴⁵ World Bank. 2021. *Financial Protection of Critical Infrastructure Services*. Washington DC.

Bibliography

ANDESCO. 2020. "Impacto en Colombia de la pandemia por COVID-19 en la prestación de los servicios de acueducto, alcantarillado, aseo y gestión de residuos peligrosos." https://www.andesco.org.co/wp-content/uploads/2020/07/Informe-impacto-en-AAA-en-el-marco-del-COVID-19-01.07.2020.pdf?fbclid=IwAR3AzugTQnv6bsPvqU8qEfggalM0YMxuVCr1N5zDkr_wdzPZX2BpjYsojXU&dplrid=63616D696C612E616365726F40616E646573636F2E6F72672E636F

Brazilian Federal Senate. 2020. Bill 4162/2019 approved by the Brazilian Federal Senate on June 24, 2020.

World Bank. 2017. Guidance Note: Introducing Commercial Finance into the Water Sector in Developing Countries. <https://openknowledge.worldbank.org/handle/10986/26187>

World Bank. 2018. Disaster Risk Finance: A Primer Core Principles and Operational Framework. <https://www.financialprotectionforum.org/publication/disaster-risk-finance-a-primercore-principles-and-operational-framework>

World Bank. 2018. Policy, Institutions, and Regulation. Avoiding pitfalls, policy and pipes: <https://blogs.worldbank.org/water/avoiding-pitfalls-between-policy-and-pipes>

World Bank. 2020. Considerations for Financial Facilities to Support Water Utilities in the COVID-19 Crisis. Washington DC. <https://openknowledge.worldbank.org/handle/10986/34043>

World Bank. 2020. Identification of mechanisms to improve the financial resilience of the water sector in Colombia. Working Papers.

World Bank. 2021. Circular Economy: <https://circularwaterforall.com/>

World Bank. 2021. Financial Protection of Critical Infrastructure Services. Washington DC. <https://www.financialprotectionforum.org/event/world-bank-group-virtual-report-launch-financial-protection-of-critical-infrastructure>

World Bank. 2021. Recomendaciones para el Diseño de un Fondo de Liquidez para Organismos Operadores frente al COVID-19 en México. Working Papers.

World Bank. 2021. Securing Access to Water & Sanitation Services in Times of COVID-19: Monitoring Responses in Latin America & the Caribbean: <https://www.worldbank.org/en/topic/water/brief/monitoring-responses-in-lac>

World Bank. 2021. Utility of the Future: <https://www.worldbank.org/en/topic/water/publication/utility-of-the-future>

Yogita, Mumssen., Saltiel, Gustavo., Kingdom, Bill. 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." Washington, DC. <https://openknowledge.worldbank.org/handle/10986/29795>

