

FS 3.4 Pricing determinants in the water and sanitation sector: A quick view of heterogeneity in Latin America and the Caribbean

Water policymakers view water tariffs as an instrument to balance objectives, such as efficiency, accessibility, cost recovery, and environmental preservation. These competing objectives imply that effective water tariff structures must be customized to local contexts and priorities, a reality that is especially pertinent to Latin America and the Caribbean (LAC) due to its large geographic and temporal variability in water availability and demand.

There are several factors that influence water tariff structures, which can largely be categorized into four groups: **(1) environmental factors**, **(2) urban factors**, **(3) political and ideological factors**, and **(4) management and institutional factors**. The first two of these factors affect water pricing because of their direct impact on the cost of water provision, while ideological and political factors and management and institutional factors represent external forces that affect pricing, including political expediency, degree of institutional oversight, and management structure. Although not an exhaustive list, these categories have been widely identified in the water pricing economics literature as key determinants. This factsheet provides a summary of these factors and their context throughout the LAC region as described in the Inter-American Development Banks (IDB) Water and Sanitation Knowledge Team's publication: **"Pricing Determinants in the Water and Sanitation Sector: A quick view of heterogeneity in Latin America and the Caribbean."**



Go to: "Pricing Determinants in the Water and Sanitation Sector: A quick view of heterogeneity in Latin America and the Caribbean."

1. Environmental Factors

Environmental factors play a crucial role in determining water prices because of their key role in supply. Factors such as geographic variation, seasonal variability and how water is accessed all contribute to the cost of water provision and affect pricing.

Seasonal variation in rainfall is one environmental factor that affects water pricing by raising the cost of water provision because water managers must balance variable water supply with relatively consistent levels of demand. Seasonal variability also puts pressure on storm-management infrastructure due to flooding during the wet season while high sediment loads in runoff after the dry season can damage drainage infrastructure and create water quality problems, increasing the cost of water purification. High seasonal variability is observed throughout LAC. For example, in Mexico, Central America, and the Caribbean, 49.3% of stream flow takes place between August and October, and only 7.3% from February to April (Libra, Collaer, Datshkovsky, & Pérez-Urdiales, 2022). This pattern is true for much of the region and is sometimes reflected in the choice of water tariff structure, as in Chile where they implement an Increasing Block Tariff structure during the summer months to prevent overconsumption and a uniform rate for the remainder of the year.

Geographic variation and **water origin** are other environmental factor that impacts pricing by raising the cost of water provision.

To read more about how environmental factors affect tariffs and pricing throughout LAC, see **"Pricing Determinants in the Water and Sanitation Sector: A quick view of heterogeneity in Latin America and the Caribbean."**

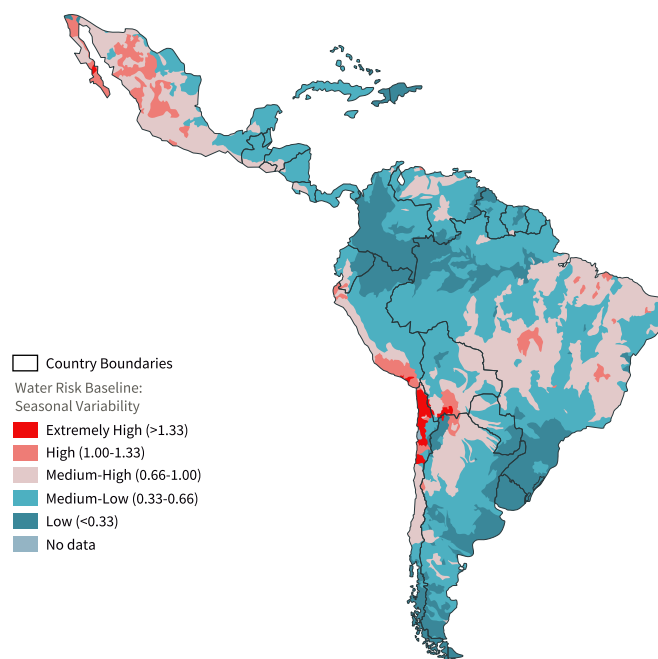


Figure 1: Seasonal Variation by Hydrological Sub-basin Computed for the Period 1960-2014. Source: Authors' own elaboration using data from the World Resources Institute's Aqeduct 3.0

2. Urban Factors

LAC has experienced rapid urban growth in recent decades. Around 80% of LAC’s population lives in urban areas, with the region containing four of the world’s 20 cities with more than 10 million inhabitants.

Increasing urbanization throughout the region has important ramifications for water provision and water pricing. On the one hand, as the size of cities increases, average cost of service decreases due to economies of customer density and scale. On the other hand, providing water to a larger population implies a larger distribution network, exposing service providers to higher network maintenance costs and increasing the system’s vulnerability to losses.

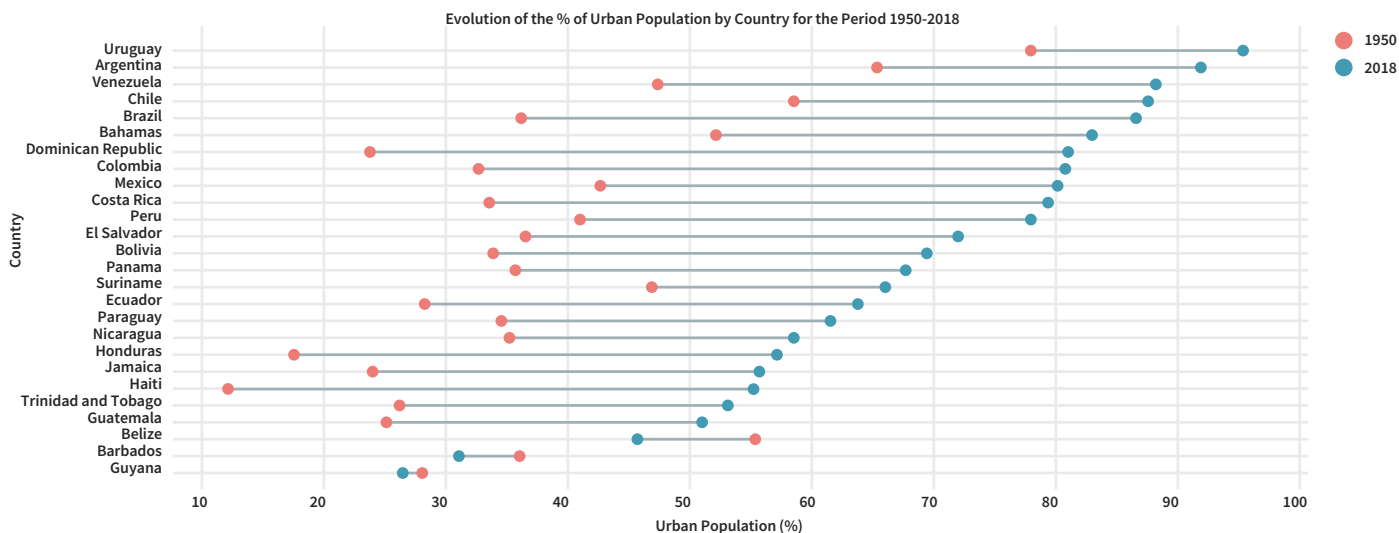


Figure 2: Evolution of the % of Urban Population by Country for the Period 1950-2018. Source: Authors’ own elaboration using data from LAPOP’s Americas Barometer 2018-2019

3. Ideological and Political factors

Ideological and political factors have a significant effect on pricing. The political viability of adjusting water prices is heavily influenced by public perception and the idea that water is a fundamental human right, which is codified in constitutions and other legislation in many countries throughout LAC. Public perception of water prices may affect the political feasibility of water price reforms in multiple ways.

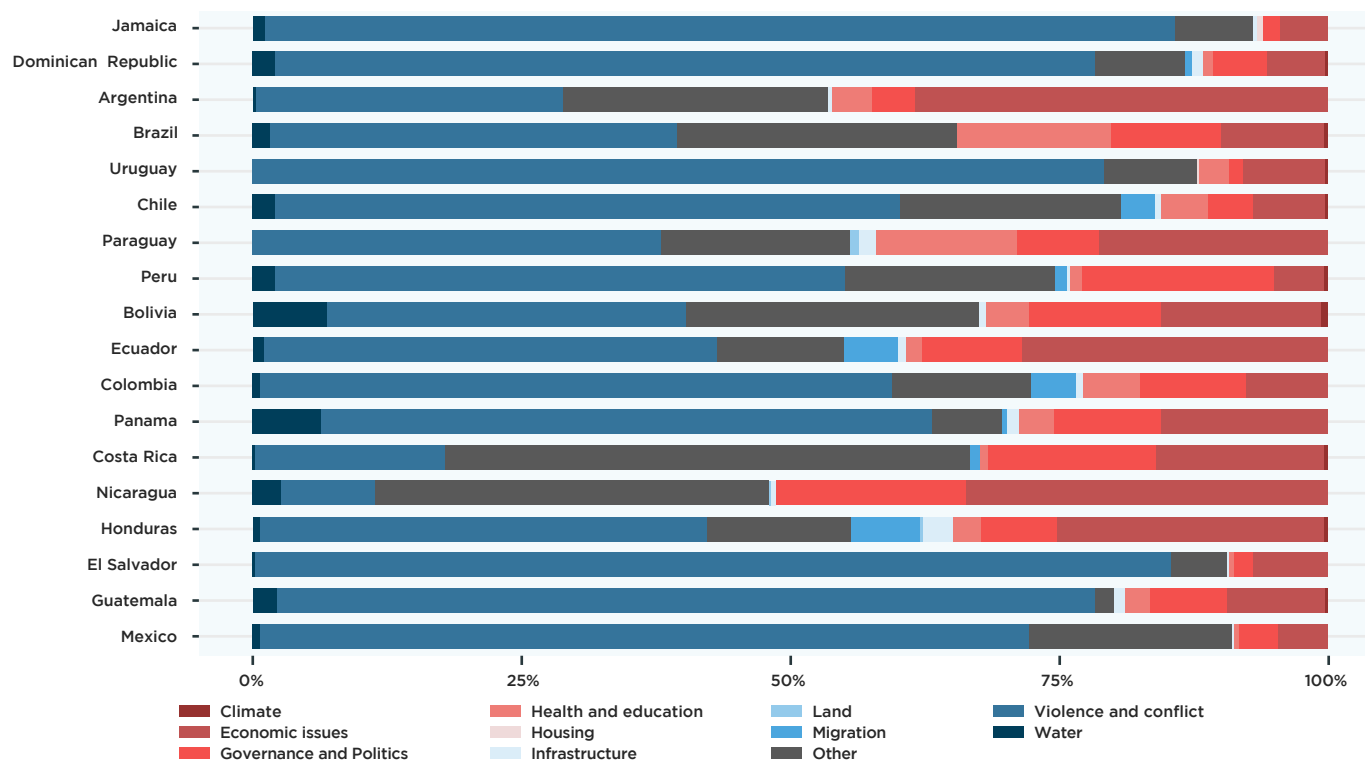


Figure 3: "What is the Most Serious Problem Faced by the Country?"

Generally, there is an appreciation of water as a necessity combined with an overarching lack of prioritization of water services or consumer awareness of costs. Results from the 2018-2019 AmericasBarometer survey, which captures public opinion throughout Latin America on a suite of issues, suggest that water is an important issue to respondents in the region compared to other infrastructure categories, yet less than 10% of respondents per country prioritize it (Figure 8). When asked how much they would be willing to pay for water services, most respondents would prefer to pay less (Gomez-Vidal & Cabezas Navarro, n.d.; Gomez-Vidal, Machado, & Datshkovsky, 2021).

The priorities and ideology of the ruling political party can also affect tariff structures and the final price of water for consumers.

4. Management and Institutional Framework

Institutional frameworks and management structures are a key element in water pricing. Some of the factors that shape and determine these structure are water rights, regulatory structures, political (de)centralization, utilities, government capacity and regime type. The heterogeneity of structures and policies in Latin America and the Caribbean make it particularly challenging to identify the direction and magnitude with respect to the effects of these factors on water pricing.

The existence of a regulatory body and the scope of power given to it is one example of an institutional factor that plays an important role in determining pricing structures. Generally, countries with more robust frameworks that determine and regulate water prices based on technical factors such as provision costs, efficiency needs, environmental protection, and social equity are less vulnerable to political and ideological influence. In past decades, many LAC countries have tried to improve their institutional frameworks by separating the functions of policymaker, regulator, and service provider (Bertoméu-Sánchez & Serebrisky, 2019), but there is still a governance deficit in the region's water sector (Garcia de Durango, 2019), which can lead to arbitrary water pricing (González-Gómez & García-Rubio, 2018).

To learn more about how a country's institutional framework impacts water pricing, please see **“Pricing Determinants in the Water and Sanitation Sector: A quick view of heterogeneity in Latin America and the Caribbean.”**

Conclusion

This factsheet provides a summary of the determinants of water prices and their context within LAC from the Inter-American Development Bank's publication “Pricing Determinants in the Water and Sanitation Sector: A quick view of heterogeneity in Latin America and the Caribbean.” These categories are not exhaustive; external shocks, such as Covid-19, and other factors within the local context can have large impacts. However, while not exhaustive, the factors discussed demonstrate the variability seen throughout the region and the resulting need for an in-depth understanding of local contexts when examining factors that influence water pricing.



Read more here:

“Pricing Determinants in the Water and Sanitation Sector: A quick view of heterogeneity in Latin America and the Caribbean.”



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