

Building a Water Security Agenda for Latin America and the Caribbean 2030

Contributions from the Conference
on Water Finance and Governance
in Latin America and the Caribbean:
Towards Dakar 2022



Title: **Building a water security agenda for Latin America and the Caribbean 2030. Contributions from the Conference on Water Finance and Governance in Latin America and the Caribbean: Towards Dakar 2022**

Editor: CAF

Management of Urban Development and Creative Economies

Author:

Emilio Lentini

Editing and supervision:

Franz Rojas-Ortuste, Coordinator of the Water Agenda

Fabiana Bianchi Falco, Water Specialist

Graphic design:

Estudio Bilder / Buenos Aires

This document is based on the Conference held by CAF on November 23 and 24, 2021 on Water Finance and Governance in Latin America and the Caribbean, with the participation of fifty personalities from the region.

The ideas and approaches contained in this edition are the sole responsibility of the authors and are not binding on them and do not compromise the official position of CAF.

This and other publications on Water can be found at: scioteca.caf.com

Copyright © 2022 Corporación Andina de Fomento. This work is licensed under licence Creative Commons Atribución-No-Comercial-SinDerivar 4.0 Internacional. To find a copy of this license, visit <http://creativecommons.org/by-nc-nd/4.0/>.



Content

- 5 Executive Summary**
- 8 Introduction**
- 12 Diagnosis: gaps and priorities**
 - Water: a key player in sustainable development
 - Water security: a pillar for development
 - Climate change: risks and disaster management
 - Financial requirements for water security
 - Finance and Governance Symbiosis
- 26 Governance challenges**
 - Water resources and irrigation management
 - Management of drinking water and sanitation utilities
 - Water-related disaster management
- 40 Financing challenges**
 - Increasing funding: a recurring issue
 - Financing policies
 - Visions in water financing
 - Optimizing sectoral financing
 - Increasing financing: new instruments
- 58 Core messages and vision**
- 68 Bibliography**
- 70 Anexos**
 - Speakers, panelists, moderators of the Conference
 - Authorities of participating countries and international organizations

Acronyms

ADASA	Regulatory Agency for Water, Energy and Basic Sanitation of the Federal District (Brazil)
ADERASA	Association of Drinking Water and Sanitation Regulatory Bodies of the Americas
AFD	French Development Agency
ALIDE	Latin American Association of Development Financing Institutions
AySA	Argentinian Water and Sanitation S.A. (Argentina)
PPP	Public-Private Partnerships
BANOBRAS	National Bank for Public Works and Services (México)
EIB	European Investment Bank
IDB	Inter-American Development Bank
ALOAS	Latin American Association of Water and Sanitation Operators
CEPRENAC	Coordination Center for Disaster Prevention in Central America and the Dominican Republic
CIDH	Inter-American Commission on Human Rights - IACHR of the Organization of American States - OAS)
CLOCSAS	Latin American Confederation of Community Water and Sanitation Organization
WWC	World Water Council
COP 26	26th United Nations Climate Change Conference 2021
CoFiGo-LAC	Conference on Water Finance and Governance in Latin America and the Caribbean: Towards Dakar 2022
DAEE	Department of Water and Electric Power of the State of Sao Paulo (Brazil)
HRWS	Human Right to Water and Sanitation
IWRM	Integrated Water Resources Management
NDC	Nationally Determined Contributions
SDGs	Sustainable Development Goals
SDG 2	Sustainable Development Goal to eradicate hunger
SDG 6	Sustainable Development Goal to ensure availability and sustainable management of water and sanitation for all
OECD	Organization for Economic Co-operation and Development
UN	United Nations
PforR	Program for Results
GDP	Gross Domestic Product
PPSA	CAF Preinvestment Program for the Water Sector
RADESCA	Office of the Special Rapporteur on Economic, Social, Cultural and Environmental Rights
SABESP	Basic Sanitation Company of the State of São Paulo S.A. (Brazil)
NbS	Nature-based Solutions
ICT	Information and Communication Technologies

Executive Summary

From March 21 to 26, 2022, the 9th World Water Forum organized periodically by the World Water Council (WWC) is held in Dakar, Senegal.

CAF - Development Bank of Latin America, is a member of the WWC Board of Directors and leads the WWC Water Finance Bureau, which promotes innovative models to increase financing for a global water security agenda. In this regard, and in order to strengthen the main messages and recommendations to be presented at the Forum, the **“Conference on Water Finance and Governance in Latin America and the Caribbean: Towards Dakar 2022”** (CoFiGo-LAC)¹ was held, which allowed for a debate focused on the interrelation of finance and governance for the fulfillment of SDG (Sustainable Development Goals) 6 and the Human Right to Water and Sanitation (HRWS), and thus achieve adequate levels of Water Security, as an essential contribution to sustainable development.

During the Conference, initiatives undertaken by the countries of the region were analyzed from different functions and responsibilities: governing, parliamentary, regulatory and service provision levels, as well as from the point of view of financing entities, multinational coordination and civil society actors. There were nearly 50 participants: 11 messages from sectoral authorities at ministerial or vice-ministerial level, 7 international institutions with relevant activity in the water sector in Latin America and the Caribbean, and multiple panelists, moderators and speakers from the region.

The efforts and progress made in the water sector were also highlighted, as well as the magnitude of the challenges that most countries must overcome to meet the needs of both human consumption and productive activities. A common denominator is that, if the current pace continues, Latin America and the Caribbean as

a whole will not be able to meet the SDG 6 targets by 2030, and CAF estimates that some of the targets will be achieved from 2045.

Indeed, considering that the gaps affect the poorest and most vulnerable populations, both the IDB and CAF estimate that meeting the targets for drinking water and sanitation services in the region would require a threefold or fourfold increase in historical sectoral investment. In addition, a similar equivalent should be invested for the subsectors of agricultural irrigation, urban drainage and flood control, and water-related disaster prevention.

The regional macroeconomic context, strongly affected by the effects of the pandemic, as well as the progressive increase in natural disasters —exacerbated by climate change— imposes a complex scenario that demands concrete and innovative actions, especially in the areas of finance and water governance. In this regard, managing greater financing is a necessary condition for good governance, as a guarantee of socially appropriate and efficient use of resources, and several changes or actions to improve governance require financing. Therefore, Finance and Governance have a bidirectional and symbiotic link.

To expect spontaneous and substantial growth in the level of sectoral public spending may be very optimistic, which is why greater innovation is required, not only in technology, but also in sources of financing and in the use of resources; under these conditions “business-as-usual” is not an option.

The CoFiGo-LAC allowed the establishment of several courses of action, which are integrated and further developed in this document. CAF presents a brief sectoral diagnosis, as well as reflections and proposals on water

¹ CoFiGo was the virtual event organized by CAF that took place on November 23-24, 2021. A recording of the event is available at <https://www.caf.com/es/actualidad/eventos/2021/11/finanzas-y-gobernanza-del-agua-en-america-latina-y-el-caribe/>

security, establishing guidelines for action in the areas of finance and governance, which will serve as input to continue the constructive debate during the 9th World Water Forum, Dakar 2022, with the sectoral community and the general public.

Action guidelines

In financing and economic resources:

- Equity and efficiency in the use of resources; through: (i) timely and transparent accountability; (ii) adequate allocation of subsidies, with mechanisms aimed at favoring those who need them most (to reduce vulnerability and poverty).
- Increase and improve the allocation of public fiscal resources; compliance with the Principle of Progressivity should govern.
- Innovation in financing, through incentives: (i) program for results (PforR) scheme with payments or disbursements in line with achievement of performance targets that are monitored; (ii) financing with user contributions.
- Leverage resources external to the sector, with Blended Finance-type structures, in which development banks can catalyze resources from commercial banks, amplifying financing for a larger number of projects.

- Leverage external climate resources from: (i) climate funds, from the COP26 agreements for mitigation and adaptation projects, such as those referring to energy efficiency, circular economy, loss reduction and demand management, flood protection, integrated watershed management, and projects with NbS (Nature-based Solutions); (ii) special funds through the issuance of impact bonds and others. In all cases, without overlooking the need for capacity building for the requesting organizations or companies.

- Creation of contingency funds for disasters; the pandemic showed more clearly structural problems and the fragility of the sector, which was greatly affected by quarantines and payment waivers.
- Implement creative ways to directly finance operators; whether in post-pandemic revenue generation projects - reduction of non-revenue water, energy efficiency and the like or even to improve their liquidity, affected by the pandemic crisis.

In terms of governance:

- De-ideologize the debate on water; promote State policies and national covenants in the countries that guarantee access to water and sanitation in the shortest possible time, particularly in favor of populations in conditions of vulnerability.
- Establish clear rules for political decision-makers and the main actors in the public sector, providing participatory coherence and a foreseeable horizon for the attraction of new investments.
- Strengthen institutions, since governance facilitates the efficient use of available resources; to this end, improve the corporate governance of providers and entities in charge of watershed management.

- Extend the sustainability of services. Applicable to both rural and peri-urban areas; in the first case: (i) promote models of associativity of community (ii) facilitate access to technology and use of resources, (iii) provide greater assistance from subnational governments; in the second case, (iv) study the feasibility of aggregation or regionalization of urban services to take advantage of economies of scale (cost reduction) and (v) apply sustainable and at the same time affordable tariffs, (vi) strengthen autonomous regulation in accordance with new environmental and climate criteria, including application of environmental and similar charges to preserve water resources, and (vii) improve baselines for SDG indicators and monitor sector and operator performance to facilitate transparency and accountability.
- Strengthen partnerships among related actors in the countries of the region and with international institutions; for example, among water and sanitation regulators and operators, transboundary basin agencies, rural community providers.
- Encourage the use of cost-effective and socially acceptable technologies, including: (i) non-traditional solutions to bridge the gap in informal settlements and rural areas; (ii) combined gray and green infrastructure solutions, or environmentally sustainable on-site solutions. These should be supported by regulatory flexibility for service provision in informal settlements, as well as incentives for providers to undertake last mile actions.
- To promote new generation IWRM (Integrated Water Resources Management) application models (quantity as well as quality management); in this sense (i) strengthen watershed management organizations, and (ii) in transboundary water resources management and disaster prevention, promote the coordinated work of national and regional basin organizations in working groups of global scope (network governance).
- Promote the formulation of sustainable, technically and financially viable projects; good pre-investment leads to better projects, reduces execution times, project changes, which result in higher costs and price escalation, reducing the judicialization of works.

1—

Introduction



From March 21 to 26, 2022, participants from multiple countries from all continents will gather in Dakar, Senegal, to participate in the 9th World Water Forum, an event organized every three years by the World Water Council (WWC). This Forum, the most important global water forum, aims to update and strengthen the innovative framework for action in the water sector, connected to the agendas, platforms and commitments of the Sustainable Development Goals (SDGs), the Sendai Agreement on Natural Hazards and Disasters, and the Paris Climate Agreement.

The 9th World Water Forum focuses on the theme “Water Security for Peace and Development” and will be structured around four priorities: Priority 1: “Water Security and Sanitation”; Priority 2: “Water for Rural Development”; Priority 3: “Cooperation”; Priority 4: “Means and Tools”, with the latter, in turn, addressing three major cross-cutting themes: Finance, Governance and Innovation and Technology.

In this context, CAF, as a member of the WWC Board of Governors since 2016, leads the Water Finance Task-Force for the period 2019-2022. The work led by CAF includes the development of research that contributes to promote innovative models to increase financing in favor of a water security agenda. In addition, CAF actively participates in the co-organization of Priority 4: Means and Tools.

Based on the above and with the aim that the 9th World Water Forum builds bridges between the various actors involved in the sector and between regions of the planet, CAF, in collaboration with the presidency and secretariat of the WWC, held in November 2021 the “**Conference on Water Finance and Governance in Latin America and the Caribbean: Towards Dakar 2022**” (CoFiGo-LAC) that allowed to draw messages, reflections and proposals, which consolidate the vision of the region around water, to be shared in the 9th Forum.

At the CoFiGo-LAC, CAF’s President, **Sergio-Diaz Granados**, highlighted that the fulfillment of SDG 6 in the region requires an increase in financing for the sector; otherwise, several of the SDG 6 targets could only be met by 2045, and this requires an increase in public resources and the catalyzing of greater private resources, for example, through combined financing, as well as the capacity to attract environmental and climate funds, especially those agreed in the COP 26

agreements. He also pointed out that Latin America and the Caribbean has made progress in integrated water resource management, however, it is still below the world average standard, so it is necessary to reinforce efforts to take care of water availability, a relevant dimension for a region that is characterized by having a resource that is distributed asymmetrically. He also referred to the corporate governance of service providers, which require management autonomy and greater accountability, capable of providing accurate information on the level of services, a fundamental basis for legitimacy. He concluded by pointing out that it is necessary to advance in a fairer and greener recovery and growth in the region, for which CAF reaffirms its commitment, announced at COP26, to become the Green Bank of Latin America and the Caribbean, for which it will make available to the region USD 25 billion in direct financing over the next five years, in favor of climate action, biodiversity conservation and nature-based solutions.



Sergio Díaz-Granados
Executive President, CAF

Loic Fauchon, President of the World Water Council, highlighted the need for a stronger commitment to water and a better financing environment that includes concrete policies, an adequate institutional framework, viable projects, and the expertise and personnel to properly design and implement these projects. He also mentioned that, despite all the progress made, there is a long way to go to achieve the SDGs related to water, especially in the context of a pandemic that exacerbated existing inequalities, emphasizing that “business-as-usual” is not an option, and greater innovation is required, not only in technology, but also in financing models and governance models.



The presentation by **Julián Suárez-Miglozzi**, Vice President of Sustainable Development at CAF, endorsed the existing gap in access to drinking water and sanitation, including wastewater treatment. He said that the pandemic has hit Latin America and the Caribbean particularly hard, both in economic and social terms, hence the importance of working on a recovery agenda that involves allocating greater financial resources to address the urgent but also the sustainable, i.e. also address structural problems, through innovative mechanisms, as well as promoting favorable environments for water governance.

At the closing of the CoFiGo-LAC, **Christian Asinelli**, Corporate Vice President of Strategic Programming at CAF, emphasized that the presentations and reflections contributed by the ministers, sector authorities and the many panelists, allow us to conclude, without a doubt, on the urgent need to substantially increase financial resources to resolve gaps in access, quality and sustainability of water, an agenda that demands the support of greater public and private resources, as well as to improve efficiency in spending. At the same time, it is necessary to have a favorable environment to make it possible to attract greater investments, and this requires updating standards, improving planning, and strengthening institutions in their management capacity, both at the watershed level and in natural disaster management, both with an intersectoral and multilevel approach, involving national and subnational governments, academic institutions, and organized civil society. Finally, it is particularly important to promote governance in drinking water and sanitation services to ensure efficient and affordable services for the population.



2—

Diagnosis: gaps and priorities



Water: a key player in sustainable development



In 2000, the member countries of the United Nations (UN) approved the Millennium Development Goals (MDGs), setting a set of targets to be met by 2015 that are closely linked to human development and poverty, including water. In July 2010, the UN also recognized drinking water and sanitation as an essential human right for the full enjoyment of life and all human rights.

In 2015, the UN approved the Sustainable Development Goals (SDGs), whose main purpose is to commit countries to intensify efforts to eradicate poverty, reduce inequality and fight climate change.²

Water is directly and indirectly involved in achieving the various goals. SDG 6 states “ensure availability and sustainable management of water and sanitation for all” and to this end, the goal is broken down into six technical targets: drinking water, sanitation, wastewater management, efficient water use, integrated water resources management and protection of water-related ecosystems.

Food insecurity arises when there is a lack of regular access to sufficient, safe and nutritious food for an active and healthy life.³ SDG 2 calls for ending world hunger, improving nutrition and developing an agriculture that is more productive and sustainable over time. In 2019, 7.4% of the population of Latin America and the Caribbean lived in hunger —47.7 million people— a situation that has been deteriorating due to the effects of the pandemic, with an increase of 13.2 million people suffering from undernourishment (FAO, IFAD, PAHO, WFP and UNICEF, 2020). Hence, to the extent that technology and practices fail to reduce water requirements per unit of crop or type of livestock, the increase in production will demand an increase in water use.

SDG 3 calls for “ensuring healthy lives and promoting well-being for all at all ages”. Nutrition and water, sanitation and

hygiene interventions are closely linked to healthy living and health. Inadequate dietary intake and related diseases and infections lead to malnutrition. All of them affect nutrient absorption and put the health of the population at risk, especially that of groups with higher degrees of vulnerability, in this case children (IFPRI, 2016; UNICEF and Humanitas, 2018), especially in rural and isolated areas of developing countries (Aheto et al., 2015; Tasnim, 2018).



SDG 7 calls for “ensuring access to affordable, reliable, sustainable and modern energy for all”. In 2015, 17.5% of the world’s energy consumption was obtained from renewable sources, the largest source being water, so the achievement of this goal will depend on the investments made for this purpose.

For its part, **SDG 11** establishes “making cities and human settlements inclusive, safe, resilient and sustainable”, considering that more than half of the world’s population lives in cities, a situation that in the region exceeds 81% and is expect to continue to increase until 2050. The starting point is the existence of growing peri-urban neighborhoods lacking adequate basic services, many of

² <https://www.un.org/sustainabledevelopment/es/objetivos-de-desarrollo-sostenible/>

³ FAO measures food insecurity using the Food Insecurity Experience Scale (FIES), which is used to measure food insecurity.

which are located in areas of geological risk or exposed to flooding; therefore, the challenge is to ensure decent and safe housing and neighborhoods, significantly reducing the number of deaths and damages caused by disasters, including those related to water, with special emphasis on the protection of the poor and people in vulnerable situations.

Other SDGs function as conditionalities for finding solutions to the above goals. **SDG 13** states: “take urgent action to combat climate change and its impacts”; while **SDG 14** establishes the following “conserve and

sustainably use oceans, seas and marine resources” and **SDG 15** “Protect, restore and promote sustainable use of terrestrial ecosystems, sustainably manage forests, combat desertification, halt and reverse land degradation and halt biodiversity loss”. In these three goals, water is a vital resource because it contributes to regulate the climate, water bodies are often used for the final disposal of discharges and forests are CO₂ sinks and contribute to retain and infiltrate water. This implies that solutions or investment projects to meet any objective must be made within a framework of environmental sustainability, which leads to the concept of water security.

Water security: a pillar for development



Water Security is the capacity of the State and Society to protect sustainable access to water in order to preserve livelihoods, well-being and socioeconomic development. For CAF (CAF, 2019), water security rests on four pillars: (i) guaranteeing the population access to water in adequate conditions of quantity and quality; (ii) having the physical availability to ensure productive and sustainable development; (iii) conserving and protecting water bodies from contamination; and (iv) reducing the risks associated with lack or excess of water.

Taking into account these pillars on which water security is based, Latin America and the Caribbean must resolve a series of problems that are key to its development: the level of poverty that still exists, the infrastructure gap, inefficient public management, low productivity, and last but not least, low access to water and sanitation services in peri-urban and rural areas. In this regard, multiple institutions and sector experts estimate that, at the current rate, most Latin American and Caribbean countries will not be able to achieve the SDG 6 targets by 2030.

On the demand side, household water consumption represents 11% - 15% of total fresh water demand⁴. The

largest water consumption is through agricultural and livestock activities, close to 70%, and the remaining 15% - 19% corresponds to industrial uses.



From the supply of the resource, Latin America and the Caribbean represents 15% of the world's land surface and possesses close to 30% of water resources (WWAP, 2016). The total volumetric availability per capita should not be a problem, however, a more specific

⁴ See variable "Municipal water withdrawal as % of total withdrawal (%)" in AQUASTAT database - <https://www.fao.org/aquastat/statistics/query/index.html?lang=es>.

analysis allows recognizing that the distribution of this endowment is not uniform throughout the region and, in turn, within each country there are strong disparities. In addition to the asymmetrical distribution of water resources, there are two additional problems: i) climate change (EM-DAT, 2021) and ii) the quality of available water (IANAS-IAP, 2019, 2021).

This raises questions: a) how can more resources be obtained for the water sector, and b) what should be the legal, institutional and management improvements necessary for the sources of these resources to have the right incentives for making financing decisions.

Climate change: risks and disaster management



A major determinant of the capacity to solve water security problems are the effects of climate change and Latin America and the Caribbean is highly vulnerable to it, which is expressed through the hydrological cycle, modifying hydrometeorological patterns, altering the intensity and frequency of rainfall, modifying water availability, altering soil humidity and infiltration conditions, river runoff and others (CAF, 2019). Between 1997 and 2017, one out of every four disasters recorded in the world occurred in Latin America and the Caribbean. Of the 1,786 events recorded, 93% corresponded to events of climatic origin (UNDRR, 2021).

With respect to **floods**, in the last 20 years the region has experienced an 80% increase in the frequency of floods compared to the previous 20 years, which poses the challenge of advancing in integrated water resource management that contributes to the necessary regional climate resilience agenda. By 2030, the region's urban land exposed to flooding will increase by 2.7 times what it was at the beginning of the millennium. By that year, almost half of the global urban expansion (more than 500 thousand km²) will occur in high-frequency flood zones, with the cities of the Amazon delta-estuary being the most affected, as well as the coastal cities of the Caribbean, where 70% of the population lives (UNDRR, 2021). In Latin America and the Caribbean there have been processes of growth of large urban areas and in most cases, this growth has not been planned, aggravating urban drainage problems and

with an unequal impact, because it affects the poorest population to a greater extent. Floods also affect agriculture, damaging crops and eroding the topsoil of major cropping areas (FAO, 2017).

The other climatic extreme is **drought**. Latin America and the Caribbean are highly vulnerable to this phenomenon and, although this occurs throughout the region, the effects are severe in the drylands, where a third of the population is concentrated. There are critical cases, referred to in CAF's water strategy, such as the case of Peru, where 40% of its territory is considered arid or semi-arid and is home to more than 80% of its population (Magalhaes, 2018; MINAM, 2011 and 2012); in Argentina and Mexico, more than 60% of their territories are classified as arid lands. Droughts affect small farmers who depend on rainfed agriculture the most and damage yields (FAO, 2017). For its part, the lack of drinking water affects the most vulnerable groups, characterized by women, the elderly and children. Droughts also drastically affect island lands, which express their concern and attention to water

conservation and demand management. This is the case of the authorities of Barbados and Trinidad and Tobago, during their messages on the occasion of the CoFiGo-LAC.⁵

In the period 2015-2020, the damage in the region was estimated at USD 41.3 billion due to the effect of droughts and USD 56 billion due to the effect of floods. The planning capacity to address these problems and the responses implemented have been weak. In general, there is a low integration of emergency plans and protection works with watershed management and urban planning.

Hence, a first step for Integrated Water Resources Management (IWRM) is to improve the coordination of water management plans⁶. In this sense, the basin as a management unit avoids potential externalities between different parts of a basin, especially if they are under different jurisdictions, as well as by optimizing water use among the various activities and on the definition of the works to be executed.

Financial requirements for water security



Investment in drinking water and sanitation

In order to assess the magnitude of resources needed to achieve SDG 6, CAF has made estimates regarding investment needs in drinking water and sanitation, soon to be published. Based on the sectoral plans of the countries —where they exist— it is estimated that, to

achieve universal water and sanitation coverage and halve the wastewater treatment gap, an average annual capital investment (CAPEX) equivalent to 0.50% of regional GDP by 2030⁷ would be required.

⁵ Gonzales, Marvín, Minister of State-Owned Companies of Trinidad and Tobago; Griffith, Charles, Minister of Transport, Works and Water Resources of Barbados CoFiGo-LAC.

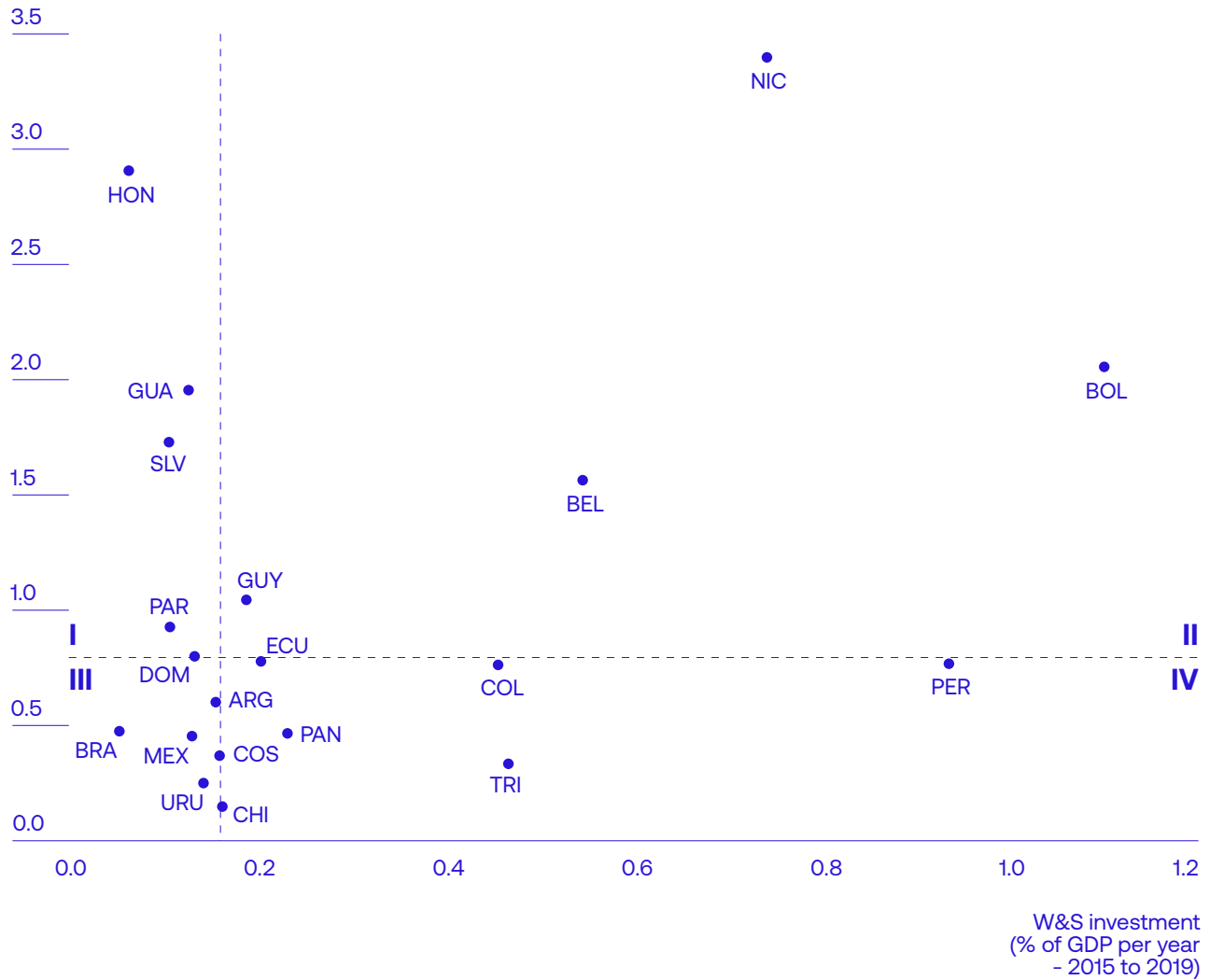
⁶ This activity was repeatedly expressed in the messages of the ministers and vice-ministers participating in the CoFiGo-LAC

⁷ Suárez M, Julián, Presentation, CoFiGo-LAC. GDP of 2020.

Graph 1. Investments made and investments needed. Latin America and the Caribbean by country

Source: own elaboration based on Infralatam and IDB (2021) ⁸

Required investment
2019-2030
(in % of 2019 GDP)



⁸ With the support of Federica Brenner, Augusto Mercadier and Ana Miño Foncuberta

A similar percentage is estimated by the IDB (IDB, 2021). Using the methodology developed by the IDB, based on per capita costs, closing the access gap and maintaining the quality of water and sanitation services, including wastewater treatment, would require an average annual investment of 0.52% of GDP in 2019, of which 0.20% corresponds to access to safe water, 0.30% to safe access to sanitation and 0.02% to wastewater treatment plants. In turn, this estimate distinguishes between new investment and rehabilitation and replacement of stock.

Infralatam, a strategic alliance between IDB, CAF and ECLAC, measures public investment in infrastructure in Latin American and Caribbean countries and reports that in the period 2015-2019⁹ the average investment in the water and sanitation sector has been around 0.16% of GDP, so that, compared to the requirements mentioned above, the challenge for this decade is to **at least triple** investment efforts.

Average investment patterns are different among countries, as shown in Graph 1, which presents the relationship between investment in water and sanitation for the period 2015-2019 as a percentage of GDP in each of the countries (horizontal axis) and the investments required according to the IDB methodology for the period 2019-2030 as a percentage of 2019 GDP in dollars at current prices (vertical axis). The vertical line at 0.16% of GDP is the median and indicates the half of the countries that have invested the most (right) and those that have invested the least (left). The horizontal line splits the sample, the median being 0.79%. Countries above this line are those that require the greatest investment effort relative to their GDP, while countries below it are those that require the least investment relative to their GDP.

Although the two dimensions are not strictly comparable because they respond to different methodologies, some relationships can be established from the quadrants generated:

- Those located in quadrant I invest less than the region's median and, in the future, should be those that invest the most in relation to their GDP.
- Those located in quadrant II invest more and should sustain this effort in the future.
- Those in quadrant IV invest more and their future pressure is lower.
- Finally, those in quadrant III invest less and for the future their pressure is also lower, associated with their existing high levels of coverage.

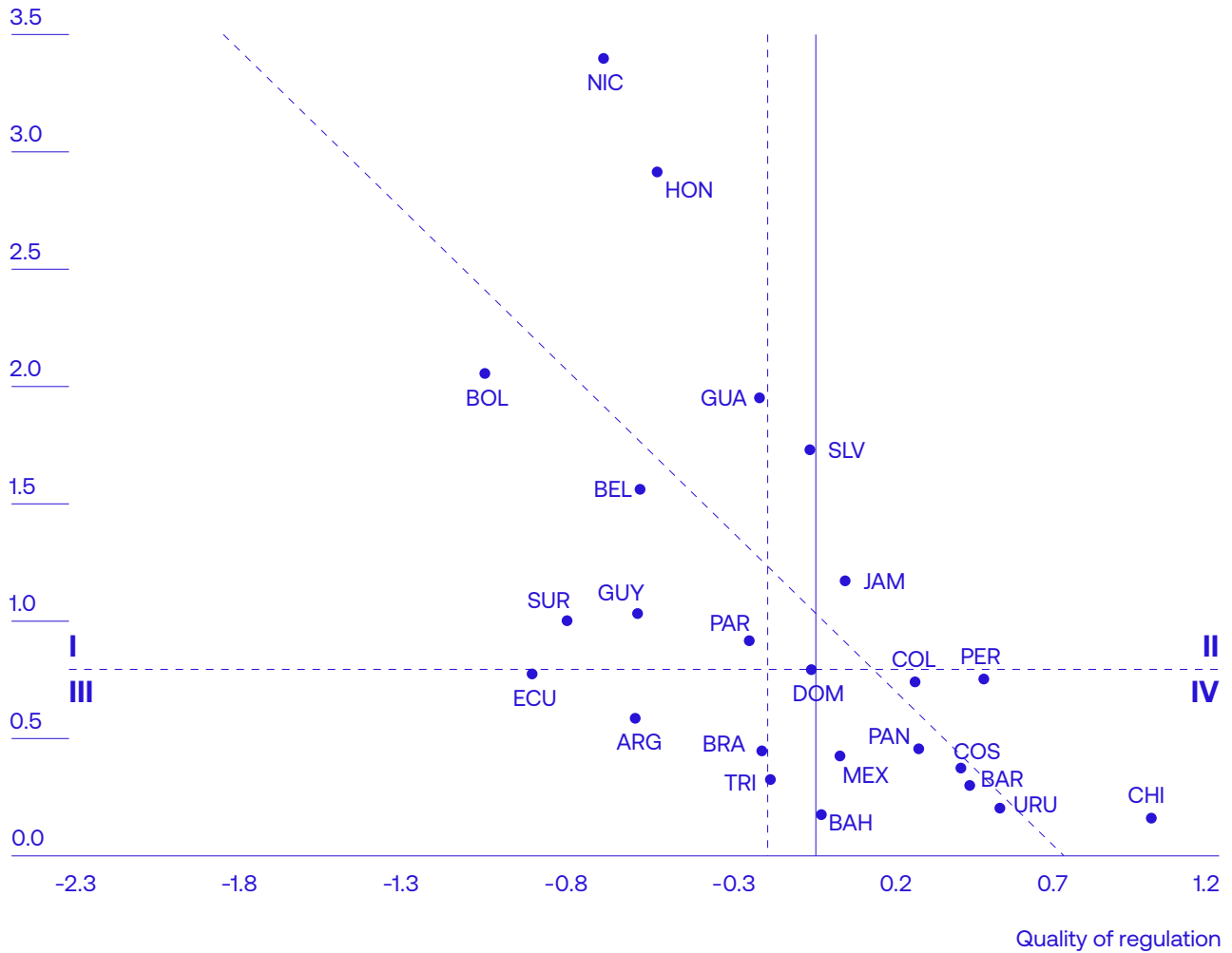
Given the need for third-party financing, one of the conditioning factors for raising private funds is "regulatory quality", understood as the perception of economic agents regarding the government's capacity to formulate and implement sound policies and regulations. The World Bank's Global Governance Indicator scores countries in units from -2.5 to 2.5 following the methodology of Kaufmann, Kraay and Mastruzzi (2010). Graph 2 presents, for Latin American and Caribbean countries, the ratio between the average investments needed per year 2019-2030 as a percentage of GDP (in dollars at 2019 prices) and the Regulatory Quality Index for the year 2020. The lines correspond to the medians and divide the graph into quadrants. The trend line helps to visualize a correlation between governance quality and investment needs. In this regard, the greatest investment needs are found in economies with comparatively weak governance (quadrant I), which suggests that institutional adjustments to improve governance are an additional challenge that must be addressed in order to prevent an increase in their access gaps.

⁹ <http://infralatam.info/>

Graph 2. Investment needs and quality of regulation. Latin America and the Caribbean by country

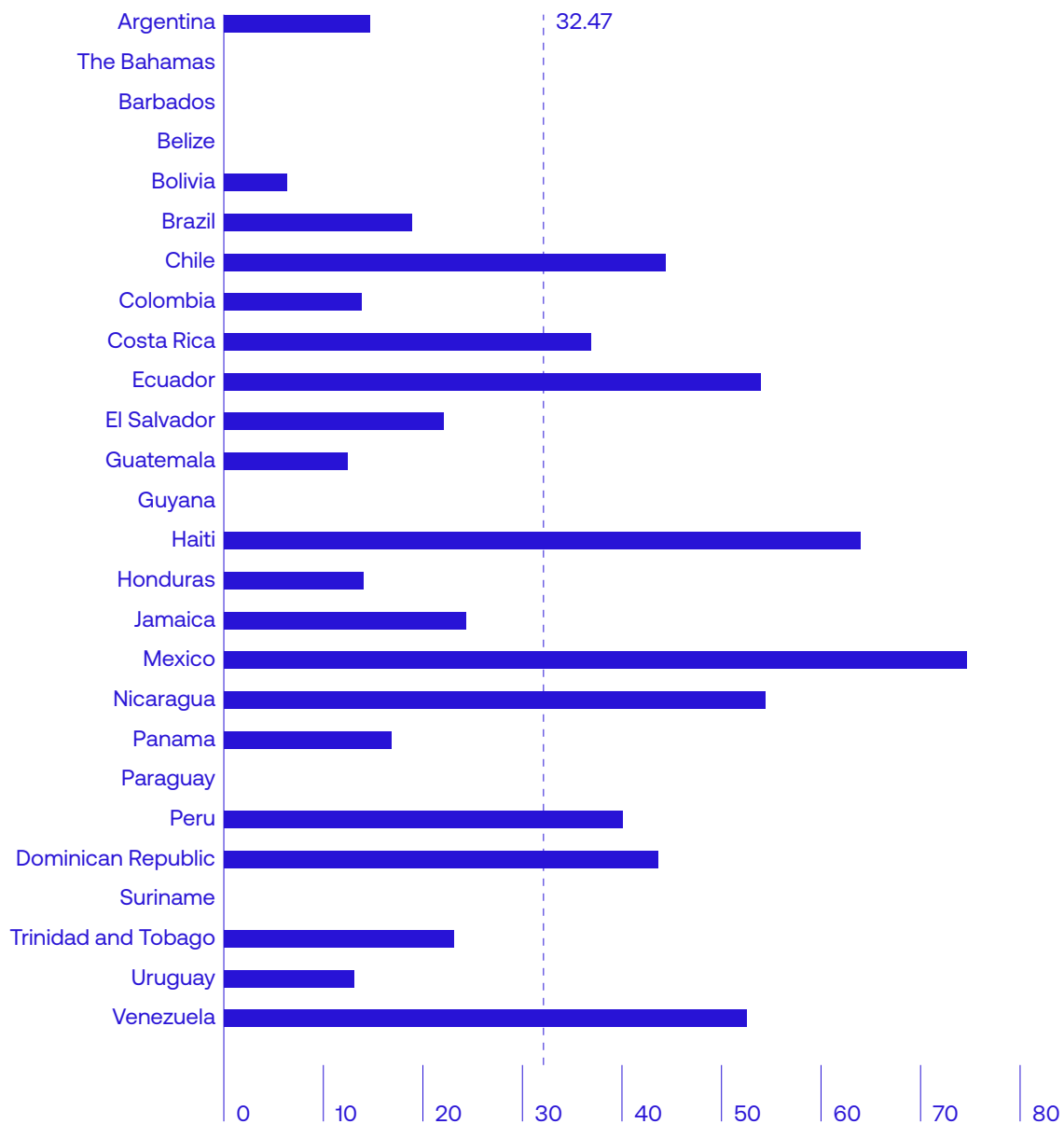
Source: own elaboration based on Infralatam and Worldwide Governance Indicators - World Bank.

Required investments
- % de PIB



Graph 3. Percentage of potential irrigated area equipped with irrigation by country.

Source: Aquastat - % of potential irrigated area equipped for irrigation (Variable ID: 4330)



Investment in irrigation

The multi-sectoral use of water resources provides benefits due to the economies of scale generated, which contribute to productive, industrial and hydroelectric potential. In the region, there is growing interest and development of multipurpose dams for irrigation, drinking water, hydroelectric power generation, flood control and other uses. Similarly, and particularly in areas with water scarcity, the construction of desalination plants is of interest, especially for the industrial and mining sectors.

There is great potential for using the irrigation system in Latin America and the Caribbean. Graph 3 shows that on average, irrigation utilization is 32% of its potential. In fact, while countries such as Argentina, Bolivia, Brazil, Colombia and Uruguay do not have irrigation at 20% of their potential, countries such as Ecuador, Haiti, Mexico, Nicaragua and Venezuela have an irrigation percentage above 50% of their potential area.



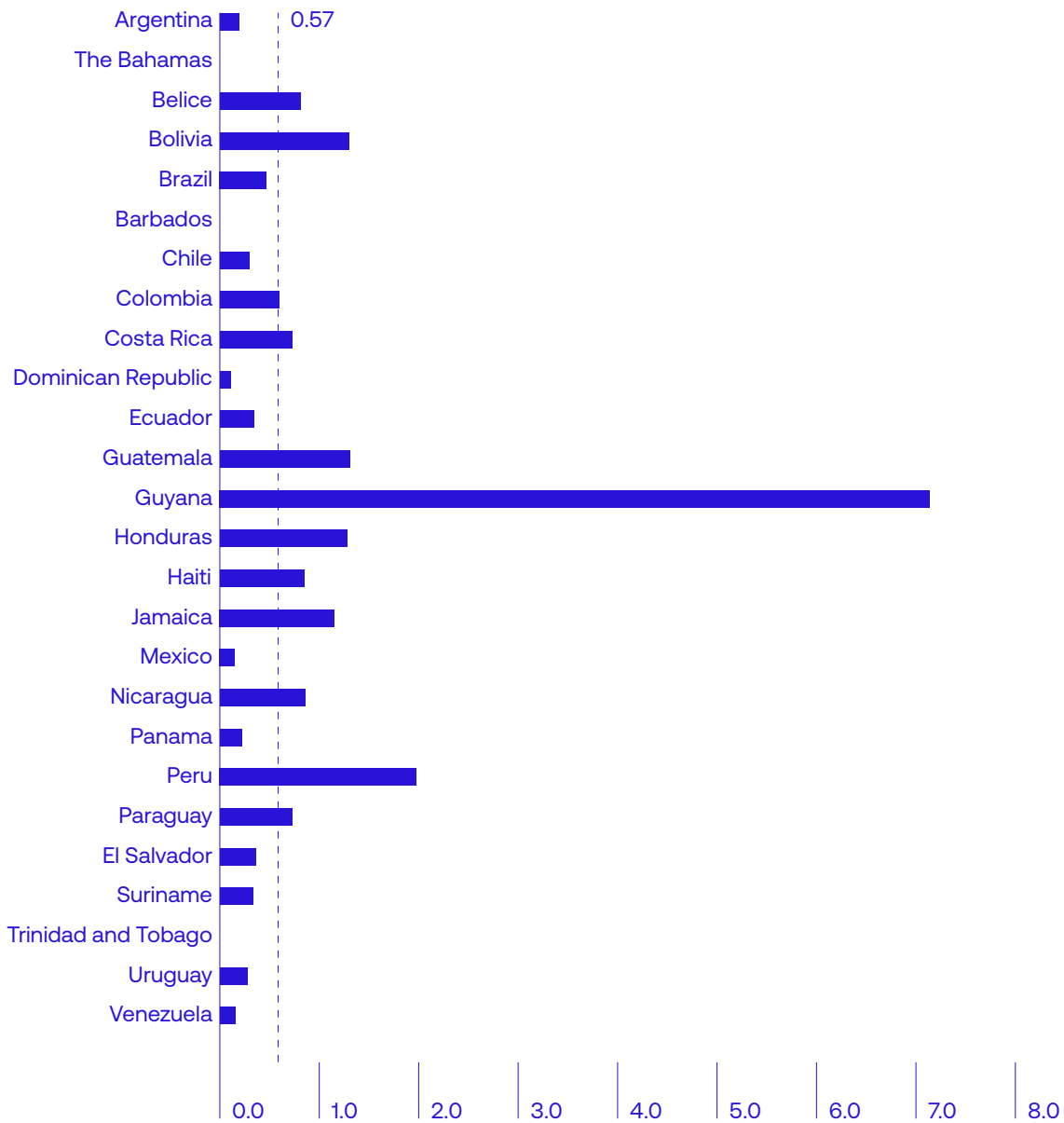
Some studies indicate that, for the case of low- and middle-income countries, extending irrigation to its full potential would cost between 0.15% and 0.25% of GDP per year, depending on policy options related to subsidies (Rozenberg and Fay, 2019). Additionally, it is noted that the main driver of future investment for irrigation will continue to be public financing.



Costs vary significantly between regions, for the specific case of Latin America and the Caribbean estimates indicate that, in a scenario of moderate financing by governments, investments would be approximately 0.08% of GDP while, if financing were high, investments would be around 0.19% of GDP, values similar to those of the Middle East and North Africa (Palazzo, Valin, Batka and Havlík, 2019).

Graph 4.
Percentage of population with droughts, floods or extreme temperatures,
period 1990-2009

Source: World Bank - Droughts, floods, extreme temperatures (% of population, average 1990-2009) (Variable ID: EN.CLC.MDAT.ZS)



Management of water-related extremes events

Graph 4 shows the average percentage of the population affected by natural disasters associated with droughts, floods or extreme temperatures.

It can be noted that, for half of the countries in the region, the affected population was above 0.57%. This figure has been higher for the smaller countries, particularly, in one year 7.17% of a country's population was affected by a natural disaster.¹⁰

Rozenberg and Fay (2019) estimate flood prevention investment needs by establishing three scenarios: (i) keeping coastal flood risk constant; and accepting higher risks from river floods based on cost-benefit analysis; (ii) adopting high standards of coastal flood protection and accepting higher risks from river floods based on cost-benefit analysis; and (iii) adopting high standards of coastal flood protection and keeping river flood risk constant. In the case of Latin America and the Caribbean, coastal flood protection implies an investment

of 0.20% of GDP in capital and 0.08% in infrastructure maintenance, while river flood protection can amount to 1.5% of GDP.



Finance and Governance Symbiosis



Finance and water governance have a bidirectional or symbiotic relationship. Increased financial flows require a favorable legal framework and strengthened institutional capacities in the different territorial spaces, both at the national and subnational levels, with defined and articulated roles and responsibilities.

Otherwise, there is a risk that investments will fail to close the gaps and address the challenges arising from extreme events. Any sectoral reform must be underpinned by informed public policies that specifically incorporate the financial dimension.

As mentioned in the previous section, there is consensus that Latin America and the Caribbean needs to boost the pace of investment, for which it is necessary to increase both public and private financing flows throughout the infrastructure project cycle: from conceptualization and pre-investment (CAF, 2021b), to implementation and subsequent actions needed to ensure sustainability (CAF, 2021b).

¹⁰ Average annual percentage of population affected by natural disasters classified as droughts, floods or extreme temperature events. Affected population is the number of people injured, made homeless or requiring immediate assistance during a period of emergency due to a natural disaster. It may also include displaced or evacuated people. The average percentage of population affected is calculated by dividing the sum of the total affected in the period reported by the sum of the annual population figures for the period indicated.



This financing requires conditions conducive to its development: sectoral governance, which establishes the dynamic and sometimes sensitive balance between the growing demands for water use and the response capacity of decision makers (Rojas, 2010), and the adequate institutional framework of basin systems, including corporate governance in decision-making, regulatory and service provision bodies, as well as effective and legitimate management tools.



Based on the above, the cross-cutting nature of finance and governance, as well as the interrelation at the sector and country levels, is key. Financing for water requires favorable macroeconomic conditions, and in turn water governance is closely linked to the governance of the country. Thus, governance depends on financing, financing depends on the economy, and the economy depends on the institutional framework that provides an efficient and equitable service.



3— Governance challenges



Governance for effective implementation of integrated water resources management is a dynamic concept, involving processes and mechanisms of interaction between governmental and non-governmental sectors. Its essence is the interrelation of formal and informal structures, procedures and processes, systems of rulemaking, networks of actors at all levels of society from local to global within the context of sustainable development. In this sense, water governance enables stakeholders to articulate their interests and have their concerns taken into consideration and holds decision-makers accountable for their water management.



Ladia Kamal-Chaoui
Director of the Center for Entrepreneurship, SMEs, Regions and Cities, OECD

Under the premise that there is no universal solution to water challenges around the world, but rather a set of options based on the diversity of administrative and organizational legal systems among countries, the application of certain basic governance principles has been pursued.

In this regard, the 12 principles of water governance were formulated in 2015 with the intention of contributing to the creation of tangible and results-oriented public policies (OECD, 2015). These principles are framed by more general and basic concepts such as: legitimacy, transparency, accountability, human rights, rule of law and inclusiveness. In turn, they are organized based on three mutually reinforcing and complementary pillars: (i) the trust of the population and their active participation; (ii) effectiveness to define sustainable objectives and goals; and (iii) efficiency to maximize welfare at the lowest cost.

Focusing on financial resources, there are Governance Principles that relate primarily through efficiency: (i) producing, updating, and sharing data and information to improve water policy (Principle 5); (ii) governance frameworks that help mobilize water finance and allocate financial resources in an efficient, transparent, and timely manner (Principle 6); (iii) regulatory frameworks implemented in the public interest (Principle 7); and (iv) promoting the adoption of innovative governance practices (Principle 8). These criteria recognize that governance is highly contextual and that water policies must be adapted to different water resources systems and territorial specificities, and that governance responses must adapt to changing circumstances.

According to OECD, water governance systems contribute to managing extremes in a sustainable, comprehensive and inclusive manner at an acceptable price and over a period of time. These challenges, under the scenario of climate change, have become greater, in that extremes are of greater magnitude and more frequent, and with this, competition for the resource and conflicts over water have also increased.

Water resources and irrigation management



National and transboundary watershed management

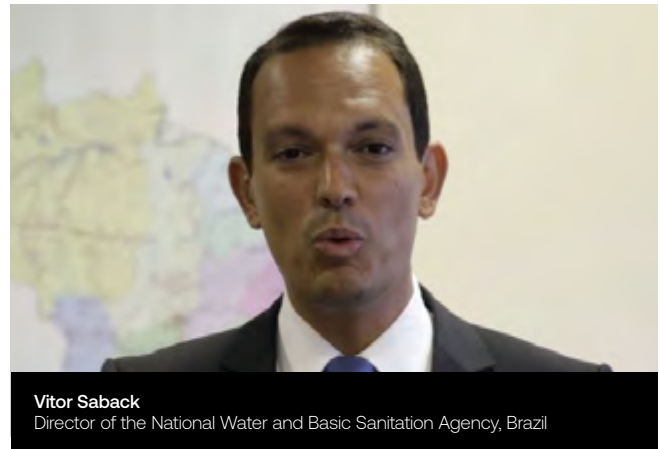
Watercourses pass through different jurisdictions, whether within a country or even between countries. It is therefore essential to have a technical understanding of river basins as a complex, interconnected, systemic, adaptive and scalable system, with institutional arrangements and mechanisms for consensus and negotiation among the different stakeholders.

The creation of new institutions faces the possible collision between the competencies established in national and subnational regulatory frameworks and in the planning systems of the different countries. Therefore, an important strategy for advancing IWRM is to use the competencies and capacities already established, promoting participatory schemes, such as basin commissions or councils, a widely used approach that is part of the water resources agenda in several countries in the region.¹¹

In addition, financing management requires the adoption of informed policies that demand adequate and up-to-date accounting of water resource use and availability. To this end, observation networks of water courses and bodies of water are needed. Although several countries in the region are working on the implementation of early warning systems for floods, droughts and fires in vulnerable areas, the challenge remains on how to strengthen the networks, to develop plans, improve the capacity for analysis and decision making. The creation and coordination of local forums or committees at different levels of government or territorial administration, in a staggered manner from the local to the national level, makes it possible to improve and consolidate information systems with the capacity for prospective analysis of the behavior of climatic variables and extraordinary events in the region.



Gustavo Manrique Miranda
Minister of Environment, Water and Ecological Transition, Ecuador



Vitor Saback
Director of the National Water and Basic Sanitation Agency, Brazil

¹¹ As expressed by Manrique, Gustavo, Minister of Environment, Water and Ecological Transition of Ecuador, as well as the emphasis on participatory water management, by Berrío, Ivette, Vice Minister of Health of Panama, CoFiGo-LAC.



Edgar Salas
Director of Sustainability, Inclusion and Climate Change, CAF



Alexandra Moreira
General Secretary, Amazon Cooperation Treaty Organization (ACTO)



Berta Alicia Olmedo
Executive Secretary, Regional Committee on Water Resources, SICA



Juan Carlos Alurralde
General Secretary, CIC-Plata

Considering that the region has three of the largest freshwater basins in the world, in addition to glaciers and snow in mountains and ranges, the CoFiGo-LAC discussed the experiences of organizations that coordinate the management of basins shared among several countries in the region.¹²

The CoFiGo-LAC emphasized that good governance requires a benign international environment of mutual trust that fosters cooperation, whether in the exchange of information, the implementation of joint research projects, technical and financial cooperation, or the development of consultation forums.

It is therefore crucial to increase the channels of communication between participating members and to ensure that similar perceptions of existing uncertainties form the basis for future cooperative actions.

Moreover, one of the fundamental factors for transboundary cooperation is the establishment of planning processes. In recent years, the countries have consensually adopted long-term strategic action programs (SAPs) and, in order to move on to the implementation of concrete actions, have agreed on the formulation of project implementation plans (PIPs).

¹² CoFiGo-LAC, Panel 2.1 Governance in the management of transnational water resources. Moderator: Edgar Salas, DSICC, CAF. Panelists: Alexandra Moreira, Secretary General, Amazon Cooperation Treaty Organization (ACTO); Berta Alicia Olmedo, Executive Secretary, Regional Committee on Water Resources, SICA; Juan Carlos Alurralde, Secretary General, CIC-Plata.

This type of organization makes it possible for the countries not to act in isolation on climate change issues, facilitating the comparison of results and enabling the region or subregions to negotiate as a bloc before the climate change convention. It is highly positive that the national and transboundary basin organizations of Latin America and the Caribbean participate and intervene in a coordinated manner in global working groups such as the IPCC (Intergovernmental Panel on Climate Change) and the World Meteorological Organization, so

that the studies and actions take into account a much more precise approach to the evidence of the impact of climate change in the region and subregions.

All these actions require significant financial resources, to which governments have not made a firm decision to contribute from their budgets. It is necessary for the institutions and actors in the sector to generate funds from their own management, as well as create incentive mechanisms.

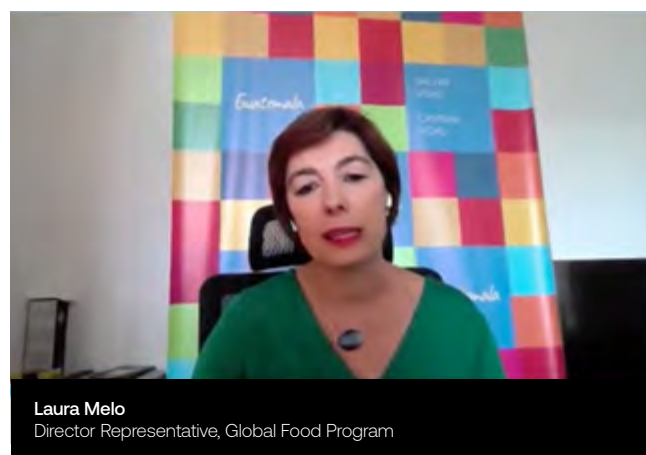
Agricultural irrigation and food safety

Making progress in eradicating hunger in line with SDG 2 requires a considerable increase in the amount of food produced, and to do so through practices that involve sustainable use of resources. Agricultural irrigation offers the opportunity to guarantee water all year round, increase crop cycles and diversify production, as well as being part of the strategy to adapt to climate change. However, this is a necessary but not sufficient condition.

The region uses 190 million hectares in agriculture, mainly rainfed (FAO, 2018). It is estimated that the potential irrigated area in Latin America and the Caribbean reaches 96 million hectares (CAF, 2019) and it is estimated that only about 32% are equipped with irrigation (FAO, 2018). The expansion of food production should be done on the basis of improved land productivity and not by advancing in extension over forested areas. For this, improvements in soil moisture conservation techniques or applying supplemental irrigation in the growth stages of drought-sensitive crops are necessary.

Irrigated agriculture is the largest consumer of water in the world and in the region, this is no exception, accounting for almost 75% of total consumption (FAO, 2017; WWAP, 2015). As water use increases and the effects of climate change are evident, water-scarce areas are expanding. Reported cases of overexploitation of aquifers in several countries in the region are increasing and there is greater competition for water. This scenario contrasts with the existence of multiple unlined irrigation canals and the continuation of techniques based on gravity irrigation and flooding of plots, which motivates the need to carry out actions to

increase efficiency in the use of water for agricultural irrigation.



In line with the above, large-scale irrigation projects, subsidized by the State, should be articulated with small-scale projects for harmonious agricultural development. Agricultural production in Latin America and the Caribbean is characterized by a concentration of land in large farms with high levels of mechanization and advanced agronomic practices for the production of grains, oilseeds and livestock, making it a fundamental supplier of agricultural raw materials at the global level. This agriculture coexists with 16 million family farms, which group together more than 60 million people and use 23% of the agricultural land in Latin America and the Caribbean (FAO, 2014). These farms provide, at the country level, between 27% and 67% of total food production and generate between 57% and 77% of agricultural employment, but more training is needed to

improve their yields, raise the level of technology in their systems, diversify their products and commercialize them in local markets.

Based on the above, a panel was held at the CoFiGo-LAC to discuss the expansion and financing of irrigation to eradicate hunger and contribute to food security (SDG 2). The presentations by representatives from Ecuador, Peru and Uruguay provided valuable experiences and needs to guide and deepen the actions to be taken in this area.¹³

In **Ecuador**, the current irrigated area has a large potential for expansion of at least double. In order to make progress in investments for new irrigation systems, priority must be given to achieving effective coordination between local governments and the relevant sectoral ministry at the national level¹⁴. Although there are agreements with multilateral banks to finance irrigation projects, for the moment they represent a minimal contribution in relation to the potential for expansion. To boost this expansion, it is essential to strengthen irrigation organizations and key stakeholders through public-community and public-private partnerships, and the prioritization of irrigated agricultural areas to help reduce inequity in rural areas and improve the living conditions of the population involved.

Uruguay, on the other hand, has a potential irrigated area five to seven times the current one. Irrigation is fundamental as a tool and opportunity for the sustainability of its productive systems; it allows for better crops, higher yields and better resilience and predictability. On the other hand, it makes it possible to better manage water excesses and shortages depending on the time of the year. The country has built an institutional framework around irrigation (irrigation law, institutions such as the Ministry of Agriculture and Fisheries and the National Water Directorate, and major infrastructure: dams). At the present stage, it is essential to increase the irrigated crop area, for which a water and irrigation culture must be promoted through the adoption of appropriate technologies and training, given that it

is not enough to build infrastructure, but to develop specialized knowledge of integrated water management, linked to soil conditions¹⁵.



The trend should be to increase water use efficiency; to this end, the Uruguayan government has an action plan that is being developed and implemented, which includes: (i) legal framework conducive to public and private investments; (ii) institutional framework adapted to the challenge of sustainable irrigation; (iii) organized and environmentally sustainable public and private intervention framework, aggregated by each basin and sub-basin; (iv) legal framework for the sustainable operation of irrigation organizations; (v) promotion of projects adapted to the diversity of prevailing conditions; (vi) modernization of existing irrigation systems with participation and strengthening of the information system; (vii) financing with incentives for private investment, optimizing public resources; (viii) research based on a consolidated data system, responding to current needs and anticipating future trends; (ix) knowledge transfer; and (x) monitoring the implementation and evaluation of the impact of irrigation development strategies.

¹³ CoFiGo-LAC. Panel 1.3 Financing irrigation to eradicate hunger and contribute to food security (SDG 2). Moderator: Laura Melo, World Food Program. Panelists: Jacinto del Lino Pacheco Mosquera, Undersecretary of Technified Parcel Irrigation, MAG, Ecuador; Martín Mattos, General Director of Natural Resources, Ministry of Livestock, Agriculture and Fisheries, Uruguay; Rafael Ugaz, Executive Director, Proinversión, Peru.

¹⁴ Lino Pacheco, Jacinto, Block 1, Panel 1.3, CoFiGo-LAC.

¹⁵ Mattos, Martín, Bloque 1, Panel 1.3, CoFiGo-LAC



These mechanisms have made it possible to design self-financing irrigation PPPs, with the expectation that private investment could double or even triple the cost of the infrastructure financed by the State, although the achievement of the objectives and goals of irrigation PPPs, to be replicated in other areas of the country, will depend on the incentive system for the private sector, which will predominantly finance a second phase.¹⁶

However, land and irrigation management are not sufficient for the deployment of large export businesses. Efforts are also required to extend value-generating linkages to the surrounding small and medium-sized farmers. To this end, the State must promote the necessary institutional strengthening to ensure conditions that encourage this integration, given that the cost of organization cannot be borne by the private sector alone. In this sense, in Peru it is considered that one of the main factors that justifies greater private investment is to ensure the predictability of the social and macroeconomic situation of the countries, as well as a legal and institutional framework in line with the sectoral investment promotion mechanisms to be implemented. For this reason, legal security (respect for agreements and submission to dispute resolution mechanisms) is essential, limiting the risks of generating contingent liabilities that could have a negative impact in the future.



In the case of irrigation PPPs in Peru, the partial participation of the State in the financial scheme of the concession has been positive, and ideally, this contribution should end up being reimbursed; however, even if this does not happen, this contribution has a multiplier effect on the necessary private investment, since experience shows that, for every dollar invested temporarily by the State, the private contribution is projected to be five times greater.

In **Peru**, the Agency for the Promotion of Private Investment (Proinversión) was the promoter of private investment through irrigation Public-Private Partnerships (PPPs), which aims to incorporate 140,000 new hectares on the Peruvian coast. This process has been favored by the country's legal framework that regulates the promotion of private investment through the sale of public lands and legislation that allows setting irrigation water tariffs in accordance with the investments made and the operation and maintenance costs. The enactment of the Agricultural Promotion Act and the signing of Free Trade Agreements have marked the takeoff of agroexport activity.

On the other hand, a mechanism that can be promoted by the state is the temporary granting of tax incentives to encourage the expansion of agricultural businesses, as has occurred in Peru with the Agrarian Promotion Act.

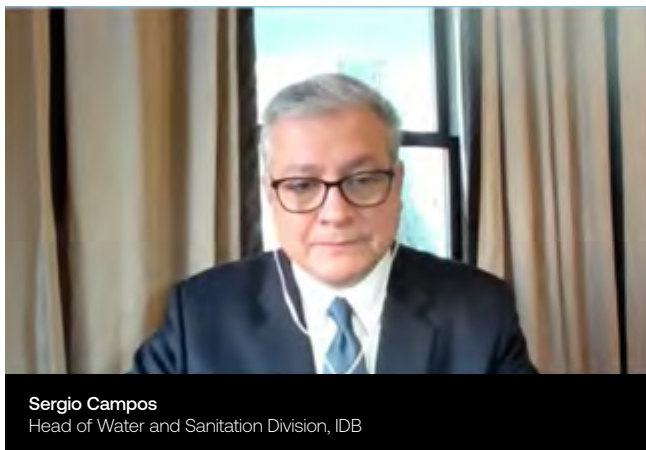
¹⁶ Pita, Luis, Bloque 1, Panel 1.3, CoFIGo-LAC

Management of drinking water and sanitation utilities



It is estimated that, despite the efforts made over the last two decades, 161 million Latin Americans and Caribbeans still do not have access to safe water, and 17 million of them do not even have basic access to a sink or an improved water source. Of the 431 million who still do not have safe access to sanitation, 72 million do not have basic access—they discharge into latrines or precarious pits—and 10 million still defecate in the open, exposing themselves to health and safety problems (Suárez Miglozzi, J. 2021) (WHO-UNICEF, 2021).

In this regard, the CoFiGo-LAC included a panel that specifically addressed the main problems of governance of water and sanitation services in the region, as well as the trends on the solutions to be addressed to achieve the desired goals.¹⁸



Sergio Campos
Head of Water and Sanitation Division, IDB



Iván Lucich
President, SUNASS, Perú

Therefore, in Latin America and the Caribbean, investments of significant magnitude are required to close existing gaps, and to improve the execution capacity in spending, quality, efficiency and impact of actions. In any case, the greatest cost is that associated with maintaining the status quo. Aware of this challenge, several authorities who shared their vision for CoFiGo-LAC stated that in recent years it has allocated and foresees significant resources to water and sanitation compared to past years.¹⁷



Hugo Rojas
General Director, ANEAS, Mexico

¹⁷ Rodríguez, Carlos, Secretary of Infrastructure and Water Policies of Argentina; Acero, José Luis, Vice-Minister of Drinking Water and Sanitation of Colombia

¹⁸ CoFiGo-LAC. Panel 2.2 Governance in the provision of drinking water and sanitation services. Moderator: Sergio Campos, IDB. Panelists: Iván Lucich, President, SUNASS, Peru; Hugo Rojas, General Director, National Association of Water and Sanitation Companies (ANEAS), Mexico; Camilo Sánchez, President, National Association of State-Owned Enterprises (ANDESCO), Colombia.

The governance of water and sanitation services is characterized by the existence of a multiplicity of actors of different natures, as well as multiple operating entities of dissimilar conformation: from those to serve a rural population to those to provide services in megacities, including small and medium-sized cities.



Camilo Sánchez
President, ANDESCO, Colombia

Being services of a local or municipal nature, their governance structure implies competencies and powers of jurisdictions of different levels (local to national) that require vertical coordination. At the same time, there is a need for horizontal coordination with other directly related areas of government, such as health, water resources, environment, public works, public finance, urban development, housing, in addition to the productive and commercial sectors that use water and household users.

In addition, there are other governance issues which, although not new in the region, are exacerbated by the effects of the pandemic. Socio-environmental conflicts are becoming more acute, leading to a rethinking of the role of civil society in project decision-making and water management.

The low economic growth of the region in the last decade, reflected in macroeconomic indicators, has a direct impact on water and sanitation operators due to the generalized reduction of resources in the national budget and in the budget allocated to water and sanitation in particular. This situation is aggravated by cost inflation and the difficulty of indexing and transferring this increase in tariffs, putting the operators

in financial trouble. Within this framework, it is vital to have an **explicit and autonomous regulation** to define tariff structures and set values based on efficient service costs.

In this scenario, good governance requires, in the first instance, improved coordination and communication between national and subnational governments, given that there are environmental, economic, social and political dynamics surrounding water that must be specifically analyzed, as well as the appropriate form of integration of these dynamics and the role and competencies of each and every one of the participating institutions and actors. In short, **multilevel governance** is required. Within this framework, it is a priority for companies to apply a basin approach that allows them to establish relationships beyond the scope of direct provision, promoting the integration of the systems and the peasant communities that inhabit the basins, in order to share benefits linked to the best use of available resources. The aim is to configure potential markets and glimpse population dynamics and their settlements in order to determine the expansion of services, generating predictability to facilitate obtaining financing to close the gaps.

A second aspect is to implement and consolidate inter-institutional coordination mechanisms between the governing body, the regulator, the service providers, as well as other areas of government linked to the service. This should be complemented with systems and procedures for periodic monitoring by the highest government authorities. The premise is: “involve stakeholders to move forward”, which becomes **intersectoral coordination** and the water-food-energy-health nexus.

The third element is **sectoral incentive policies**. These should be designed on the basis of a prioritized investment program, based on a process of configuring potential zones or markets, as well as rewards for meeting quality targets as a result of the execution of the prioritized investment program. In this context, a key element is the participation of a regulatory entity to arbitrate compliance with the agreements between the different agents, contributing to the granting of incentives.

In the different countries, it is essential for operators to be able to adapt their organizational structure to improve their performance and increase efficiency.



Adrián Peña
Minister of Environment, Uruguay



Carlos Rodríguez
Secretary of Infrastructure and Water Policy, Argentina

To this end, the application of **corporate governance** principles should be strengthened in large and medium-sized providers, taking small operators into account in a differentiated manner. Regulators can implement regulations for their application, as well as oversight of compliance with the corporate governance code and accountability and performance.

Another challenge is to promote the participation of companies in **multi-stakeholder platforms** and basin councils, coordination spaces for multisectoral management with specific tasks, such as action plans for emergencies, for which it is necessary to strengthen technical capacities and manage the adaptation and circularity of water.

In this action, it is important to give greater validity and credibility to the valuation of water ecosystem services by users, for which in some countries an **environmental or ecosystem services fee** has been introduced through regulation, aimed at reimbursing rural communities for the provision of water regulation and pollution control, as well as to finance ecosystem conservation and restoration projects, thus involving water operators to contribute to and manage potential social conflicts.

Finally, it is necessary to increase the **voice and participation of the community** and civil society through specific mechanisms (public consultations and hearings).

Water-related disaster management



Disaster risk management due to lack or excess of water (droughts and floods) should be based on an intersectoral and multilevel approach; for this reason, it is also relevant to have governance that ensures high efficiency of the institutional organization.

The CoFiGo-LAC had a specialized panel to learn about and discuss three cases with differentiated¹⁹ and representative characteristics of the region, from a subregional level, a state or provincial level, and a municipal/local level.

19 CoFiGo-LAC. Panel 2.3 Governance in the management of water-related disasters. Moderator: Jorge Werneck (ADASA). Panelists: Claudia Herrera Executive Secretary, Coordination Center for Disaster Prevention in Central America and Dominican Republic; Lupericio Ziroldo Antonio Director of Engineering and Works of the Department of Water and Electric Energy of the State of São Paulo (DAEE), Brazil; Pedro Palacios, Mayor of Cuenca, Ecuador.

Subregional level: The Coordination Center for Disaster Prevention in Central America and the Dominican Republic (CEPREDENA)²⁰ stated that strengthening governance in integrated risk management in SICA is a priority and constitutes a fundamental pillar as a guiding framework. This sub-region is exposed to multiple hazards and is highly vulnerable to climate change. Consequently, national and local governments have paid special attention to respond to new emergencies and redouble efforts for a sustainable and resilient transformation.



Although in the last decade the capacity to manage risk levels has been strengthened, efforts have been redoubled to move from a reactive approach to a preventive approach, through a systemic approach by promoting inter-institutional coordination. It is urgent to strengthen this preventive approach through risk governance, the harmonization of guidelines for the management of extreme events, the increase in public awareness and the development of tools for the more accurate prediction of hydrometeorological events. It is also important to apply long-term measures and establish clear policies and coherence between regional and national policies.



For the coastal areas of the region, given their high tourism and economic potential but also their vulnerability to extreme events, we are seeking sustainable coastal development, for which we are strengthening the links with the tourism system, as well as strengthening the EWS, reinforcing actions to promote greater knowledge and active participation of communities about the risks to which they are exposed, generating a culture of prevention, public awareness, efficient dissemination of warnings and constant preparation on protocols. Finally, regarding the impact of hurricanes, a recovery observatory is being developed to provide information to be incorporated into the recovery and reconstruction plans of the environmental subsystem. In particular, reefs are the main natural barrier to disasters, so damage must be prevented and restored.²¹

State level: The Department of Water and Electric Energy (DAEE)²² of the State of São Paulo (Brazil) is responsible for water and energy management in an area inhabited by 45 million inhabitants. The high dependence on the availability of surface water to supply the State of São Paulo led, in times of water crisis, to the rationing of the resource, as happened in 2014. On that occasion, the DAEE had to act in an integrated manner with all government bodies, especially with SABESP (provider of water and sanitation services) and the Secretariat of Agriculture, to establish policies regarding the use of water for irrigation.

²⁰ Regional organization of the Central American Integration System (SICA), created to strengthen the governance of integrated risk management.

²¹ Herrera, Claudia, Part 2, Panel 2.3, CoFiGo-LAC

²² Decentralized entity that implements water resources policy in the State of São Paulo and coordinates the Integrated Water Resources Management System.



Pedro Palacios
Mayor, Cuenca, Ecuador



Lupercio Zirolido
Director of Engineering and Works, DAEE, Brasil

Also, as a result of the drought, standards and procedures were established and preventive actions were taken to make the systems more resilient; in particular, a program was developed to drill deep wells in the State's municipalities, the periodic cleaning of water courses, and a program to maintain the availability of water for all uses.²³

Regarding the other extreme, floods, the São Paulo Metropolitan Region prepared the Master Plan for macro-drainage of the Tieté River Basin in the metropolitan region, which includes the implementation of works and services, non-structural measures - such as recommendations for better land use and occupation and environmental education. In this region, the DAEE

performs cleaning services for the Tieté and Pinheiros rivers, the main rivers of the capital, operates and maintains reservoirs to regulate rainfall, including warning and information systems on possible floods, as well as coordination with the State's civil defense area.

Municipal level: The management area of the canton of Cuenca in Ecuador integrates the capital city of about 600,000 inhabitants, which has developed tools to strengthen sectoral governance for the fulfillment of the SDGs linked to water, environment and climate change. These include the "Environmentally friendly watershed" axis, which is organized on the basis of the land use and management plan and land development and planning, with participatory processes to assess the risks involved. As an example of actions undertaken, there was a popular consultation on the protection of water sources in water recharge zones, mining exploitation in these areas, and specific issues such as the efficient management of drinking water consumption.²⁴

Among other relevant actions, the organization of an early warning system (through indicators, meteorological and flow meters) that allows us to warn citizens in a timely manner about extreme events and to determine the work plan for immediate attention to the population. In relation to flood management, the construction of reservoirs and irrigation canals stands out, guaranteeing minimum ecological flow in summer, as well as flood control points for rainfall in winter, which are also used for water purification and electricity generation. There is also a management plan for streams and watercourses, and work is being done to recover these streams.

The planning process is also fundamental and, in this sense, it is a priority to recover the upper basins through low wetlands and primary forests through reforestation, as well as to regulate or limit the agricultural expansion achieved by cutting down forests that limit the normal behavior of the water cycle.

23 Zirolido Antonio, Lupercio, Part 2, Panel 2.3, CoFiGo-LAC

24 Palacios, Pedro, Part 2, Panel 2.3, CoFiGo-LAC





4— Financing challenges



Increasing funding: a recurring issue



Most of the authorities participating in the CoFiGo-LAC expressed, as a high priority, the need to close the drinking water and sanitation gaps in their respective countries.²⁵

In the document on Water Governance in the framework of the preparatory process towards the VII World Water Forum Korea 2015 (CAF, 2014), it was highlighted that universalization in access to drinking water and sanitation was mainly a problem of policy and financing, rather than the availability of the water resource, since drinking water is a minor demand compared to other water uses. In fact, while it is essential to explore additional financial alternatives, increase the efficiency of services, update tariff structures and subsidy policies, political will and a stable economic framework are needed in the countries.

This has been emphasized for some time (Lee and Jouravlev, 1992). According to the literature review on the financing of water and sanitation services (Machete and Marques, 2021), in the 1980s the discussion on the costs of provision and their distribution stood out, while in the 1990s “management” gained strength from the first performance evaluations of the new operating models. In the 2000s, the study of risks —associated with the emergence of conflicts in private contracts— led to studies in the last decade focusing on the analysis of policies and investments and the importance of regulatory frameworks and policies for risk mitigation.

Regarding the evolution of sector reforms, in the 1980s, many countries in the region undertook a process of decentralization, whereby national governments transferred responsibilities to subnational governments. In some cases, this led to the loss of economies of scale, which are now being reversed.²⁶ In addition, it

generally resulted in fewer resources for providers due to the decrease in national public contributions (CAF, 2019). In the 1990s, in order to obtain financing for the universalization of services and improve operational efficiency, several countries in the region resorted to private sector participation (PSP). In general, the region has witnessed remarkable successes and failures of both public and private companies, so it cannot be stated in advance that one modality is more efficient than the other (CAF, 2014).

Just as there is no one best delivery modality, there is no ideal governance structure, nor is there a single financial solution for the efficient and equitable operation of the system as a whole. However, in most cases, investment levels are insufficient and, therefore, the implementation of alternative financing instruments is not an option, it is a necessity.

In this regard, there is consensus that the private sector is an additional source of investment —without implying that provision should be private— that is largely untapped, and this could be leveraged for the achievement of sustainable drinking water and sanitation services (Machete and Marques, 2021).

25 Expressed in their messages by: Valda, Carmelo, Vice Minister of Drinking Water and Sanitation of Bolivia; Rodríguez, Carlos, Secretary of Infrastructure and Water Policy of Argentina; Saback, Victor, Director of ANA of Brazil; Barzuna, Cynthia, Vice Minister of Water and Seas of Costa Rica; Wiens, Arnoldo, Minister of Public Works and Communications of Paraguay; and Peña, Adrián, Minister of Environment of Uruguay, among other authorities.

26 In Colombia, one of the four pillars of sector development is the strategy of regionalization of services (Acero, José Luis, CoFiGo-LAC), similar to the case of Paraguay, which is working on models of associativity in the 5,500 existing operators (Wiens, Arnoldo, CoFiGo-LAC).

Financing policies



National States have the responsibility to establish policies aimed at the general welfare of the community, according to their respective government programs, including sectoral policies, based on the principles and objectives that guide the planning of actions to be developed. In the particular case of water, there are also the commitments assumed as members of the international community.

The design of water financing policies should be based on a set of concepts that have been studied for some time by national and multilateral or international institutions.



Arnoldo Wiens
Minister of Public Works and Communication, Paraguay

In this regard, it is appropriate to refer to the 3 Ts model (tariffs, taxes and transfers). It argues that the ultimate source of financing (or repayment) is based on three pillars: tariff revenues, public funds, and non-refundable transfers. Public funds for the sector generally come from taxes and royalties collected, and may eventually also include the sale of resources and state goods and services; “transfers” include non-refundable financial aid from multilaterals, NGOs, philanthropic entities and national and international institutions. It should be noted that all reimbursable financing must be covered by revenues from tariffs or public funds. In sum, the 3 Ts are the genuine sources for filling the gap, while

reimbursable sources are a means of bridging the gap. As water and sanitation investments are characterized by being capital intensive and the benefit flows are spread over a long period of time, repayable financing allows providing the required funding (OECD, 2010), whether in the form of loans, bonds or equity, and in all cases the 3 Ts should cover the repayment of the financed capital plus a remuneration for the use of the capital.

Thus, a decrease in one source must be compensated by an increase in another. Each country’s sectoral policy determines the desired balance between the 3 Ts. It is important to note that public tariffs and transfers, in addition to contributing to the financing of the sector, are key to demand management, since they provide signals for the valorization of the resource, and allow the implementation of a social policy through direct or cross-subsidies (Leflaive and Hjort, 2020).



José Luis Acero
Vice-Minister of Water and Basic Sanitation, Colombia

Within this category, a distinction is made between favorable financing (concessional financing) provided by multilateral and/or bilateral development banks, which usually include some type of subsidy for market-based financing. Other sources of financing include:

- Commercial banks: provide short or long-term commercial loans, usually to finance working capital or short-term projects. In order to access them, the service operator must be solvent. They are desirable for the last stage of infrastructure projects with positive profitability.
- Financial markets: they take the form of the sale of shares or the placement of fixed-income instruments (such as green bonds); the main barrier is the low level of development of domestic financial markets in most countries, with Chile and Brazil being the exceptions.
- Microfinance institutions: relevant for small community or household projects, such as financing for the construction of a sanitary module on the property, connections or adaptation of the internal facilities of the property, among others.
- Customer advances, such as supplier credits, which are easy to access, but are generally limited in amount and allocated to specific investments.
- Equity investments: pension funds, insurance companies, corporations, private equity funds, infrastructure investors.

Regarding access to these reimbursable sources of financing, two aspects should be considered: (i) investments in the sector are highly profitable from a socioeconomic perspective due to positive social and environmental externalities; (ii) there are commercial funds that are very selective in seeking profitable investments (e.g., earmarked bonds). Matching the demand and supply of financing requires sometimes complex mechanisms, mainly associated with better governance.

Therefore, in order to achieve better conditions of access to the financial market, it will be necessary to have good levels of governance. In this sense, at the country level, a good sovereign credit rating will be fundamental to access financing in international bond markets, while, at the operator or company level, being a subject of credit implies having good management and efficient operations, for which basic considerations are listed (Vargas- Ramirez,2017).

- Be profitable in its operations: commercial discipline through governance and professional management.
- Operate in an enabling environment: transparent, consistent and predictable environment; reducing political interference.
- Tariff as main source of resources: independent regulation, targeted subsidies.
- Public financing for targeted assistance: subsidize connections or basic consumption, facilitate access to commercial banks or capital markets.
- Use of domestic and international capital: access to financing based on the company's credit capacity to gain financial independence.

There is consensus on the possibility of attracting commercial capital for financing water investments. For this it is important that both public budgets and risk mitigation instruments (such as guarantees or credit enhancement instruments) are strategically employed to improve the risk-return profile of investments, which can attract commercial financing (Leckie et al, 2021). Thus, in order to be able to close the financing gap, sectoral policies should maximize resources and leverage all existing sources of financing: (i) review tariffs to sustainable levels and taking into consideration their affordability, (ii) expand public budget and national fund contributions, and (iii) resort to external financing.

Visions in water financing



CoFIGo-LAC held two sessions on financing: (i) from the legislative and regulatory view, and (ii) from the view of financiers and lenders.

Legislative and regulatory view²⁷

The States made commitments in the area of water and sanitation to leave no one behind, consistent with the SDG 6 and the Human Right to Water and Sanitation (HRWS), which need to be materialized in concrete policies. A basic action is to recognize the HRWS in national regulatory frameworks and public policies, with a participatory strategy, sufficient budgets and clear and measurable objectives, as well as contemplating the necessary resources under the principle of progressivity and non-regressivity.

To this end, the achievement of a consensus among the main stakeholders is the essential basis for defining the foundations and justification of the legal, regulatory and institutional framework. Although the debate on water is politicized, it requires an open attitude without ideological interference, and it is important to start by considering “water as a public good”²⁸ or merit.

In this sense, it is a priority to promote and protect the general economic, social, cultural and environmental human rights of the vulnerable population. In recent years, progress has been made in standardizing the demand for human rights with a focus on water in the context of the climate and health emergency, “the climate emergency and also the health crisis are crises of human rights and the human right to water”²⁹ and under this vision the concept of resilience to climate

change is integrated with a vision of human rights. For these reasons, the analysis and resolution requires an approach of indivisibility and interdependence.

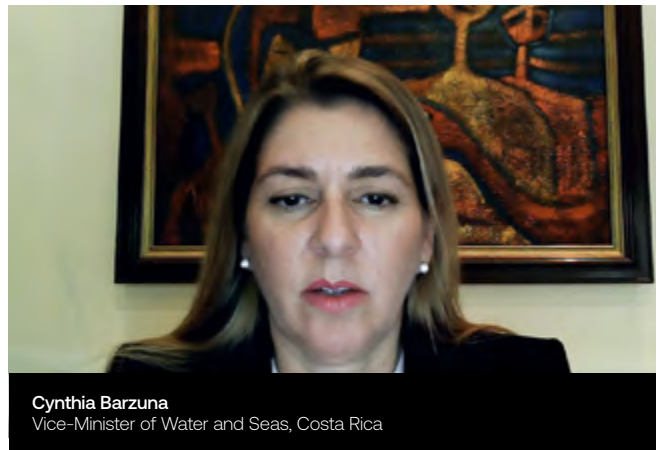
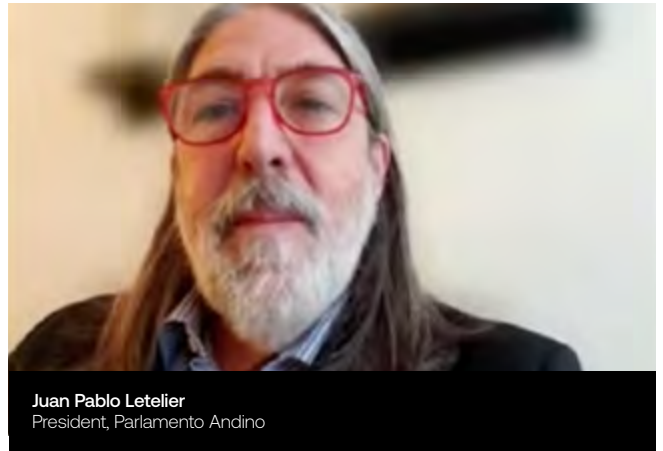
In many countries of the region, institutional weaknesses extend beyond the water sector, and good governance is essential, as it is “the key that opens the door to financing”³⁰. Developing effective sector governance, particularly to obtain the necessary financing, requires coordination and cooperation between the sectoral authorities and the economic authorities of the region’s governments. Fiscal and economic policies must ensure that states comply with the availability of resources to guarantee the commitments undertaken. This is a challenging approach in times of economic crisis following the health emergency, requiring efficiency, transparency and equity in public spending. In this way, good governance is the key to ensure that financing can reach infrastructure works and operations.

27 CoFIGo-LAC - Panel 1.1 "Financing Water and Sanitation so that no one is left behind (SDG 6) - Legislative and regulatory vision". Moderator: Jorge Concha, CAF. Panelists: Juan Pablo Letelier, President of the Andean Parliament; Soledad García Muñoz, Special Rapporteur on Economic, Social, Cultural and Environmental Rights (REDESCA) of the Inter-American Commission on Human Rights (IACHR), OAS; Oscar Pintos, President, Association of Drinking Water and Sanitation Regulators of the Americas.

28 The definition of "public good" corresponds to the legal interpretation that water is essential for life and that, consequently, the State must guarantee that the entire population has access to it. From an economic point of view, a "public good" has two central characteristics: (1) it is not excludable and (2) it does not imply rivalry, which implies that the use or enjoyment of a good by one person does not eliminate its use or enjoyment by others.

29 García Muñoz, Soledad, Part 1, Panel 1.1, CoFIGo-LAC

30 Pintos, Oscar, Bloque 1, Panel 1.1, CoFIGo-LAC



In general, the countries of the region have high percentages of the population living in poverty. For this reason, considering that the HRWS contributes to combating poverty, inequality and discrimination of the social groups affected, sectoral policy includes a significant component of social policy, which in turn is linked to fiscal policy. Tariff policy must be linked to subsidy policy³¹ and be expressed in transparent methodologies that explicitly consider how service quality, asset maintenance and expansion investments will be ensured in a sustainable and efficient manner. For this reason, coordination among these three areas of government is relevant to guarantee universal access.

As a specific reference, the Andean Parliament has developed an Andean Water Security Strategy that constitutes a regulatory framework for the region's water resources. It seeks, as a general vision, that the countries of the region stop managing the issue as they did in the past, otherwise they will not be able to meet the SDG 6 targets: "we will not meet the targets if we do not do things differently"³², and the message is to adapt to new challenges and innovate. It is also understood that governments must design public policies as state policies. According to the vision discussed in the Andean Parliament, it is a priority to solve the problems of financing, as well as the role of the State in management, and to establish conditions to allow public-private alliances in both finance and governance. To this end, it is essential to have a strong and stable regulatory framework over time, with public policies covering tariff aspects, and to establish an institutional organization that will last for the next 40-50 years, so that this sector "ceases to be a contingent policy and becomes a State policy".

For its part, the Office of the Special Rapporteur on Economic, Social, Cultural and Environmental Rights (REDESCA)³³ is especially concerned with the issue of vulnerable populations, giving importance to the participation of civil society and all populations in situations of vulnerability and discrimination, including

indigenous populations, and as such, calls on States to pay attention to these groups. The HRWS is at the center of the action of the Inter-American Commission on Human Rights (IACHR/OAS) and REDESCA, and is reflected in press releases, reports and different activities, as well as through the "mechanism of cases and petitions" that operates within the framework of the IACHR, where cases focused on groups of special vulnerability are presented, as well as the "mechanism of precautionary measures", which the Commission carries out and REDESCA advises.

From the perspective of the Association of Drinking Water and Sanitation Regulators of the Americas (ADERASA), in order to establish financing needs and adequate resource allocation, it is necessary to improve the determination of the SDG 6 indicators, for which each country must develop appropriate sectoral statistics and information. It also raises the importance of innovations in technical aspects, as well as in management, which implies a change of vision among the actors (governing body, regulators and providers). For example, the regulator should accept non-traditional solutions and propose incentives for their adoption by both the provider and the user, given that they are generally less costly and quicker to implement, which would help in financing and narrowing the gaps in meeting the SDG 6. Finally, the region has made progress in the development and application of NbS (Nature-based Solutions) and circular economy criteria. In this context, several countries are considering fees for environmental services aimed at providing funds to preserve or recover natural conditions that favor the dynamics of the water cycle and mitigate the impact of climate change.

31 Letelier Juan Pablo, Part 1, Panel 1.1, CoFiGo-LAC.

32 Ibid.

33 Member of the Inter-American Commission on Human Rights (IACHR) of the Organization of American States (OAS).

Funders' and lenders' views³⁴

The experience in Latin America and the Caribbean on the financial sustainability of drinking water and sanitation services expresses the challenge of boosting the investment process to achieve SDG 6 and the HRWS, in a context where public finances are insufficient to sustain a high investment process. It is also necessary to innovate financially to put countries on a different path.



Gustavo Saliel
Global Water and Sanitation Leader in Global Water Practice, World Bank



Carlos Puente
Director of Water, Energy and Environment, BANOBRAS, Mexico

In this sense, public development banks have an important role to play in disseminating best practices and promoting dialogue between actors (government, international organizations and the private sector). In addition, their role is relevant to better evaluate the momentum and prospective of public-private projects, make public-private objectives compatible, take lessons learned for the adequate preparation of projects, avoid rent appropriation strategies and close the information gap in the treatment of risk transfer³⁵. Based on the above, the work of the Water Finance Coalition³⁶, which integrates multiple public development banks at the global level, stands out for coordinating activities to study and disseminate the role and good practices of development banks in the financing of water and sanitation projects.

Historically, the pre-investment process for projects has been extremely slow and sometimes inefficient. For this reason, development banks have been increasingly contributing to the financing and supervision of studies and final designs as part of the integral project cycle, with the objective of improving the quality of the projects. Such is the case of the Water Sector Pre-Investment Program (PPSA) promoted by CAF since the end of 2018, with non-reimbursable resources amounting to USD 20 million until the end of 2021.

Likewise, several programs promoted by the multilateral bank include ad-hoc mechanisms for the bidding process, management and supervision of the execution and corresponding disbursements, with the safeguarding of funds from fiduciary institutions with disbursement procedures conditioned to the fulfillment of performance goals. Some multilateral bank loan modalities called PforR (Programs for Results) are oriented along these lines (World Bank, 2021).

34 CoFIGo-LAC – Panel 1.2 "Financing Water and Sanitation so that no one is left behind (SDG 6) - Vision of financiers and providers". Moderator: Gustavo Saliel, World Bank. Panelists: Carlos Puente, Director of Water, Energy and Environment, BANOBRAS, Mexico; Gonzalo Meschengieser, Secretary of the Latin American Association of Water and Sanitation Operators (ALOAS) and Director of International Relations, Agua y Saneamientos Argentinos S.A (AySA), Argentina; Luis Velasco, President, Latin American Confederation of Community Water and Sanitation Organizations (CLOCSAS).

35 Puente, Carlos, Part 1, Panel 1.2, CoFIGo-LAC.

36 Initiative promoted by AFD, CAF and BEI.







Gonzalo Meschengieser
 Manager of International Relations, AYSA, Argentina



Luis Velasco
 President, CLOCSAS

In terms of financing and in the face of fiscal resource limitations, which is common to several countries, BANOBRAS³⁷ (Mexico) carries out various initiatives, such as Blended Finance or Combined Financing. Within the framework of PROMAGUA³⁸, this public-private participation scheme is used through the creation of a specific purpose vehicle and an administration trust through which all project flows are channeled. The most important element of the development is to ensure the flow of the public promoters (operating agencies, municipalities and states) by guaranteeing through the contracting of lines and the allocation of tax revenues

received by the municipalities and states that are transferred from the national state.

In addition, self-financing and efficiency in operation and investments are promoted and required, since a historical weakness has been the high degree of inefficiency of the lenders and the increasing weakness of guarantees through national fiscal funds in the face of decreasing budgets. In addition, the quality of the projects is being improved so that the operators themselves are eligible for loans from development banks or private banks.

In turn, all financial mechanisms should include incentives –and demand their implementation– with improvements in governance, particularly in the corporate governance of the operators, taking into account that they should also comply with due diligence for granting loans and offer guarantees on the repayment capacity of the loan.

On the other hand, the Latin American Association of Water and Sanitation Operators (ALOAS) has undertaken to make the necessary contacts to disseminate the advantageous conditions that Latin America and the Caribbean have for investment opportunities in the water industry, highlighting that it is a stable region with important world water reservoirs, and can be considered as a “creditor in environmental aspects”³⁹, without alarming climatic situations. It also states that Latin America and the Caribbean offer adequate conditions for applying NbS (Nature-based Solutions), a vision that addresses the problem of climate change, for which operators are strategic actors.

With respect to operational management, Agua y Saneamientos Argentinos S.A. (AySA), which is the second largest company in the region and provides services to the Buenos Aires metropolitan area, similarly to most of the operators in the region, seeks to reduce costs by increasing efficiency through improvements in energy efficiency, the implementation of intelligent pumping systems, the mitigation of leaks and losses with

37. The National Bank of Public Works and Services (BANOBRAS) is a Mexican government institution created with the mission of promoting infrastructure, allocating resources to road works and developments in key sectors, such as water and energy.

38. In Mexico, the Program for the Modernization of Water Operating Agencies (PROMAGUA) is a program jointly promoted by CONAGUA and BANOBRAS, which aims to provide concessional and reimbursable financing from the National Infrastructure Fund (FONADIN) and create incentives for private capital participation in this type of projects.

39. Meschengieser, Gonzalo, Part 1, Panel 1.2, CoFiGo-LAC

state-of-the-art technologies, and the use of sludge. These actions imply lower energy consumption and reduced emissions, and are therefore important in view of the possibility of accessing climate financing. Likewise, in the case of AySA, other sources of financing are being explored, access to financing for the “fine network” of connections by users or clients, as well as the generation of resources through the export of knowledge (studies and projects).

In the area of small rural communities, the Latin American Confederation of Community Water and Sanitation Organizations (CLOCSAS)⁴⁰ points out the scarcity of information related to rural areas, which limits the determination of the baseline of the magnitude of the communities involved. For example, in Colombia there are 16,000 organizations identified, but there may be more, up to 40,000, without counting other villages or smaller settlements. In this area, technical and financial assistance from the State is required, as well as committed and active community participation, where one of the most difficult challenges is to achieve true and effective articulation.

Another difficulty faced by rural areas is the fact that there are regulations that also apply to providers in urban centers that are inadequate for the management of rural services. It is advisable to have specific frameworks and the intervention of autonomous and decentralized entities that provide technical assistance, as well as other key actors such as local and international non-governmental cooperation agencies, businesses and academia.

Experience shows that the associativity or grouping of small community providers improves the sustainability of services, because it facilitates the exchange of knowledge and experiences, which is reflected in greater productivity, as well as in access to technologies, and favors advocacy at the local level and access to resources. On the other hand, the merger of organizations in order to achieve economies of scale has in some cases presented greater difficulties, especially in the social area, and also to the detriment of the response to contingencies that affect the continuity and quality of the service as they are more rigid structures. For this reason, initiatives in this direction should be analyzed and studied specifically, and not as generic solutions.

Optimizing sectoral financing



In water and sanitation services, there are multiple actions that can be taken to maximize existing resources, as well as others that can increase efficiency in the provision of services and therefore reduce associated costs, which in turn will also have a favorable impact on access to financial markets. This “doing better” encompasses mainly improvements in governance (sustainable tariffs, political independence, corporate governance) and operational efficiency (institutional arrangements to promote economies of scale or scope, and in technical aspects: non-revenue water, energy efficiency, among others).

Furthermore, since many of the possible new sources of financing, such as access to climate finance (mainly those envisaged at COP 26), involve sometimes complex access procedures, institutional capacity building is essential.

40 Institution that brings together leaders from 15 countries in the region that are part of the more than 145,000 rural water committees, known as Community Water and Sanitation Organizations (OCSAS) in Latin America and the Caribbean and that promotes the organization of community entities for the provision of water and sanitation

Planning

There is ample room for improving the operational efficiency of the providers, and proper investment planning is also crucial for setting goals, prioritizing projects taking into account socio-environmental impacts, specifying the necessary resources (institutions, knowledge, time, etc.), and undoubtedly the financing needs in the short, medium and long term.

When there is rigorous planning and evaluation of investment and operational decisions within an economic and financial framework, there is a greater probability of sustainability and, therefore, of accessing reimbursable sources of financing. When there is no investment planning, investments are usually defined by short-

term priorities and leads—in general terms—to greater dependence on budgetary transfers, limiting the cost of capital allocated to replacements or new infrastructure (Vargas-Ramirez, 2017). In this line, it is also evident the lack of final designs that enable the implementation of projects, therefore, it is important that countries move forward in the formulation of studies, allowing them to move forward with greater dynamism. Aware of this need, CAF launched, in 2018, the PPSA, a program to support countries, with non-refundable resources, in the development of studies and designs; to date, the PPSA has approved USD 20 million, with more than twenty technical cooperation in nine countries in the region.

Financial sustainability

In many cities in Latin America and the Caribbean, water and sanitation tariffs do not cover the full operating costs of the service, and in some cases, tariffs are extremely low, so that public transfers play an important role, even for current spending. On the other hand, greater efficiency in billing, associated with tariffs that reflect efficient costs, would make it possible to increase the sector's financing for infrastructure, provided that two situations are met: (i) guaranteeing the condition of affordability for all users, and (ii) that public funds destined to finance the provider remain available for the sector.

Although the level of tariffs is usually highlighted as the main variable for increasing the provider's revenues, it is important to bear in mind that in many cases there is room for improving billing by regularizing clandestine connections, or by charging users who, having both services, only pay for one of them, as well as improving

collection by recovering delinquent accounts that in many cases date back a long time; experiences of their application have been documented (Rojas O., 2008). There is also the possibility of innovations in terms of tariff structures and collectability, as well as the generation of additional income through the incorporation of new users (for example, facilities in new connections and adaptation of internal installations) and the development of related non-regulated activities (such as technical advice) (Vargas Ramírez, 2017; Leckie et al, 2021), as well as cost reduction through energy efficiency programs, reduction of non-revenue water and others.

Financial sustainability is achieved if the tariff covers at least operating and maintenance costs, and ideally capital (or part of it), generating conditions of financial solvency, which facilitates access to reimbursable financing.

Affordability

The HRWS establishes that in addition to having access to services, they must be affordable. Although it is understood that each government will establish the affordability criteria, there is a certain consensus in the public knowledge that the water bill should not represent more than 3% of the available family income of any socioeconomic stratum, and the threshold is raised to cover both services, although the limit is subject to review.

Operational efficiency

Achieving high levels of operational efficiency in the provision of water and sanitation services is a condition for making better use of existing assets and financial resources, and also a requirement for attracting other sources of financing, whether public or private (Leckie et al, 2021). In this sense, the States of the region, with disparate efforts and results, are gradually putting more effort into demanding higher levels of efficiency in terms of coverage, quality and safety, operation of the service at minimum cost and reasonable tariffs. The great challenge is to ensure that some obligations of service providers (e.g., providing water to low-income peri-urban or rural areas) are compatible with—and enhance—their commercial obligations (efficiency being their maximum expression) (CAF, 2014).

In order to achieve greater efficiency in the management of providers, actions should be contemplated around “Asset Management” and “Demand Management”, approaches that maximize the use of existing infrastructure. The former stimulates the registration, control and timely maintenance of the infrastructure, which prolongs its useful life and allows deferring investments. The second encourages the control of water waste by the user, as well as the reduction of water losses by the provider. Both approaches are often overlooked in new water projects, to the detriment of public finances. (CAF, 2019)

States must become more involved and establish efficient social policies, through mechanisms targeted by level of poverty or vulnerability, to specifically address capacity to pay problems. Otherwise, low-income households that are not connected to the water network resort to private providers—which in some cases operate illegally—and charge exorbitant rates for suboptimal services.

A recurring problem in Latin America and the Caribbean is the construction of important infrastructure works, which are underutilized (excessive idle capacity) or are not used, or have a much lower performance than designed, due to lack of funds to meet operating and maintenance costs (CAF, 2019). An example of this are wastewater treatment plants in areas where there is still no sanitation network, or after the construction of the network, users are not connected to the sanitation service. These cases represent situations where a significant investment has been made and the expected benefits are not obtained, either in economic terms for the provider or in socio-environmental terms for society.

Finally, it is important to highlight the importance of the development and incorporation of technological innovations, especially ICTs, which generate greater efficiency and effectiveness in technical, administrative and commercial processes. They have recently proven to be very effective in mitigating the impact of the COVID-19 pandemic on the management of providers.

Increasing financing: new instruments



In this section, innovative financing instruments are identified in their design: blended finance, program for results (PforR), water funds and thematic bonds.

Blended finance

Blended finance is a financial structuring approach, comprising public or development funds —from multilateral banks or philanthropic entities— to improve the risk profile and assist in the commercial viability of projects, with the objective of attracting commercial investors (public or privately owned). In this way, this approach can play a key role in mobilizing additional repayable financing resources.

The highlight of blended finance is that it leverages commercial resources by improving project profitability and mitigating political risk, foreign exchange risk, as well as systemic risk associated with weaknesses in the country's financial markets and/or sectoral regulatory frameworks. This is achieved through a

wide diversification of instruments that allows a better targeting of the different risks. Some of the financial instruments used are: guarantees⁴¹, insurance⁴², hedges⁴³, subordinated/junior capital⁴⁴, securitization⁴⁵, performance-based incentives⁴⁶, contractual mechanisms⁴⁷ and donations⁴⁸ (Del Valle, 2019).

The success of blended finance depends on the ability to mobilize local commercial investment. Given the local scope of water and sanitation services, it is essential to work closely with local stakeholders and align with local development needs (Leckie et al, 2021). The WWC and CAF have prepared a review of case studies, with their attributes and challenges, to be presented at the 9th World Water Forum, to be held in Dakar 2022.

Programs for Results (PforR)

This mechanism was designed by the World Bank in 2012. This instrument finances and supports new or existing programs, with the main characteristic that disbursements are made once the results (or targets), initially agreed upon, have been achieved and verified by an independent evaluator.

Thus, unlike traditional loans, disbursements are not made according to a pre-established program linked to physical execution but are made on the basis of the results obtained. This modality generates incentives to reach goals as soon as possible, and to achieve maximum efficiency levels.

41 Provides protection to one party if the other party fails to perform.

42 Provides protection or compensation for a specific loss or damage, in exchange for a premium.

43 Reduces the risk of adverse movements in asset prices and associated earnings.

44 Subordinated debt or junior capital protects senior investors by taking the first losses in the value of an asset.

45 Transforming a pool of illiquid assets into a tradable financial instrument.

46 Instruments that provide incentives and disincentives to achieve desired effects and outcomes.

47 Agreements to support the development of bankable projects, including tax benefits or subsidies.

48 Capital with no expectation of repayment or compensation.



Franz Rojas Ortuste
Water Agenda Coordinator, CAF

Another advantage of this mechanism is the independence of national actors to define and act under their own frameworks and programs, which encourages the country's institutional strengthening. PforRs also

include due diligence procedures, evaluations and follow-up mechanisms.

The experience of their application in Brazil in the National Water Agency's River Basin Decontamination Program (PRODES) is of interest. This program, created 20 years ago, aims to reduce the level of wastewater pollution in watersheds and to promote improvements in watershed governance and encourage the creation of watershed committees, management plans and charges for water use. PRODES functions as an incentive for lenders to invest in wastewater treatment plants (WWTPs) as they will receive an ex-post subsidy based on the verified capacity of the treated wastewater. PRODES does not finance the works, and it is the responsibility of the operator to make the resources available for the construction, operation and maintenance of the WWTP.

Water funds and Nature-based Solutions (NbS)

Water funds aim to propose solutions by promoting natural infrastructure projects in order to contribute to water security and integrated watershed management through NbS. They seek to promote collective and local action by bringing together private, public, civil society and academic stakeholders. Thus, water funds are financial, governance and management mechanisms that integrate the relevant stakeholders of a basin to promote water security and channel long-term investments.

In 2000, the National Water Protection Fund (FONAG) was created in Quito, Ecuador, becoming the first water fund in Latin America and the Caribbean. According to a study carried out, for every dollar invested in conservation actions for the sustainable management of El Cinto by the Empresa Pública Metropolitana de Agua Potable y Saneamiento (EPMAPS), a savings of US\$2.15 was determined over a 20-year period (website Alianza Latinoamericana de Fondos de Agua -ALFA- (Latin American Alliance of Water Funds-ALFA-).

It is important to highlight the proliferation of water funds in the region, with a total of 26 water funds in nine countries as of June 2021 and another eight funds in the process of being created (See Annex 5). It is estimated that together they have leveraged investments of USD 243 million. It is also worth mentioning that in several countries (Brazil, Peru, Ecuador and Mexico) progress has been made in regulatory matters by incorporating watershed conservation costs in water tariffs (ALFA website).

There are other NbS, some incorporating gray and green infrastructure, which also enable investment from non-traditional sources. The WWC, TNC and CAF will present at the 9th World Water Forum, within the framework of the Water Finance Task Force, several NbS business lines to guide their application.

Climate finance and sustainable finance

Adaptation and mitigation policies associated with climate change are becoming increasingly relevant, and the water sector can make a significant contribution in this regard⁴⁹. At the same time, funds available for climate finance are increasing and represent an opportunity to increase investments in the water sector.

However, due to the silo work that is prevalent in many countries, these programs are known only to climate change policy makers and are not taken into account by water stakeholders, just as the potential of water services to increase climate resilience is not appreciated. For this reason, the commitment of stakeholders and their coordination are prerequisites for accessing these funds. On the other hand, as the accreditation process encompasses a rigorous assessment of fiduciary, environmental and social practices, many entities are often reluctant to invest time and money in this process, considering that it may take several years before the financing is effective (WaterAid, 2016).

However, most countries are beginning to implement actions for the promotion of green finance, given the high potential of green, social and sustainable bonds for revenue generation for the water sector.

At the regional level, the Latin American and Caribbean Green Finance Platform (GFP), developed by the Latin American Association of Financial Institutions for Development (ALIDE) to facilitate the exchange of knowledge, aimed at national development banks, private sector financial institutions and several actors in the capital markets, are worth mentioning. Among the actions carried out, it is worth mentioning the implementation of the Green Bond Transparency Platform (GBTP) to promote transparency in the green bond market in Latin America and the Caribbean.

As an example, the case of Aguas Andinas (Chile) may be of interest, which in 2018 made the first placement on the Santiago Stock Exchange of a green and social bond for USD 30 million for a term of seven years. Then, in 2019, it launched a second green and social bond for around USD 80 million for a term of 25 years. In both cases, demand exceeded supply by almost three times.

⁴⁹ Water-energy-food nexus and climate change.



5— Core messages and vision⁵⁰

50 Based on the conclusions presented by Rojas-Ortuste, Franz, CoFiGo-LAC.



In most countries, investment levels have been insufficient and the expectation is that Latin America and the Caribbean as a whole will not meet the SDG 6 targets within the stipulated timeframe⁵¹. Therefore, “business-as-usual is not an option” as stated by the president of the World Water Council in his participation in the CoFiGo-LAC. It is imperative to invest more, and mainly to invest better; with the implementation of alternative financing instruments, as well as to increase operational efficiency. It is estimated that in the future, capital investment should at least triple or even quadruple compared to the historical annual investment level.

States have the political and ethical obligation to achieve SDG 6, for which they must allocate funding and implement actions and works in the shortest possible time, since access to both services is a human right that cannot wait until 2045/2050 for its materialization; “water is politics”⁵² and as such it is of common interest, precisely because it is a public good with high social, economic, environmental and cultural value.

Given the interconnection of services with water resources, the importance of simultaneously advancing in the new generation IWRM for Water Security, as well as the resilience and recovery of systems, cannot be overlooked in order to face disasters caused by water-related events, whose intensities and frequency are exacerbated by climate change: “the climate crisis is a water crisis, climate change manifests itself fundamentally through effects on the hydrological cycle”⁵³, as well as “the climate emergency and the health crisis are crises of human rights and the human right to water”⁵⁴.

For this reason, it is particularly positive that the national and regional basin organizations of Latin America and the Caribbean participate and intervene in a coordinated manner in the management of transboundary water resources and disaster prevention, as well as in the joint negotiation of the climate change convention. In this area, progress has been made in the implementation of actions, early warning systems and NbS.

On the other hand, irrigation management culture must be promoted through the adoption of state-of-the-art technologies and the development of specialized knowledge related to soil conditions, in order to achieve sustainability and contribute to food security. Given that there is great potential in terms of the use of irrigation in the region, the role of the State is to stimulate and expand this expansion, for which it is essential to define a legal and institutional framework conducive to sustainable irrigation and strengthen public-community and public-private partnerships, ensuring the integration of family farmers. These policies also contribute to social integration and linkages for food security.

In this scenario, new financing schemes, such as combined financing, water and NbS funds, offer innovations that reflect the lessons learned and seek to improve coordination among stakeholders, making their respective interests compatible. The use of incentive mechanisms based on the fulfillment of pre-established performance targets, such as the results-based programs (PforR) or even results-based contracts, is also on the rise.

Blended finance offers the opportunity to attract resources from commercial banks or directly from the private investment sector. This would make it possible to expand the resources available by leveraging concessional loans from development banks. In this sense, there is consensus that the private sector is a source of additional investment —without implying that the provision must necessarily be private—, and this can be leveraged to achieve the goals of the water sector.

51 Díaz-Granados, Sergio, CoFiGo-LAC.

52 Fouchon, Loïc., Opening, CoFiGo-LAC.

53 Díaz-Granados, Sergio, Opening, CoFiGo-LAC.

54 García Muñoz, Soledad, Part 1, Panel 1:1 CoFiGo-LAC.



Christian Asinelli
Corporate Vice President of Strategic Programming, CAF

“governance would be the key that opens the door for financing to arrive”.⁵⁶

Given that Latin America and the Caribbean is characterized by unequal income distribution and the presence of extreme poverty, the HWR should be considered essential to combat poverty, inequality and discrimination. Numerous conflicts are related to the lack of access to water that affect the most disadvantaged communities and groups, which is why it is understood that “investing in satisfying the human right to water is investing in social peace”⁵⁷.

The new financing options reinforce the need to improve good sectoral governance practices.

Other means of financing come from climate finance, aiming to be channeled in the form of concessional loans or non-reimbursable resources given that Latin America and the Caribbean “... can be considered a creditor in environmental matters”⁵⁵. In these aspects, it is a priority for the countries to establish and promote mechanisms to use the funds prescribed at COP 26, for the use of developing countries. Likewise, most countries are beginning to implement actions for the promotion of green finance, which represents an opportunity given the high potential of green, social and sustainable bonds to generate income for the sector.

Special attention should be paid to peri-urban areas where informal settlements with a high infrastructure deficit proliferate. A greater allocation of fiscal resources governed by the principle of progressivity is required, establishing subsidy policies with transparent mechanisms that guarantee access and minimum consumption for all inhabitants and without affecting the sustainability of the providers. For this reason, it is important to coordinate three government policies: sectoral, fiscal and social, in order to guarantee universal access.

Good governance is a necessary condition for achieving sectoral and financing objectives. Finance and governance have a bidirectional and symbiotic link, where

- Regardless of the financing model chosen, it is necessary to have a **solid institutional framework**, with separation of roles, autonomous and effective regulation, as well as clear tariff and subsidy policies that are independent of political criteria, to ensure the necessary rate of investment.
- Government authorities must adapt or **develop legal and regulatory frameworks** that promote the adequate performance of institutions, with incentives based on the continuous monitoring of the performance of the main actors in the sector. To this end, it will be necessary to improve information systems to know the current situation (baselines) and to verify progress, as well as to have a bank of projects with high social profitability. Data, their correct recording and auditing, are the basis for the principles of transparency and accountability required for good governance.
- It is essential to **reduce costs by improving efficiency**. As a recent and ongoing phenomenon, the COVID-19 pandemic revealed the structural weaknesses of the sector and had a particular impact on the finances of governments and providers. In response, the creation of contingency funds linked to emergency plans has been proposed.

55 Meschengieser, G., Part 1, Panel 1.2 CoFiGo-LAC

56 Pintos, Oscar, Part 1, Panel 1.1 CoFiGo-LAC.

57 García Muñoz, Soledad, Part 1, Panel 1.1 CoFiGo-LAC.

- It is a priority for operators to adapt their organizational structure to improve their performance, transparency and accountability, considering the application of **corporate governance principles** in large and medium urban providers, and in a differentiated manner in small urban operators.
- the rural sector, **associativity** is a widespread methodology, given that one of the most difficult challenges is to achieve true and effective articulation. It is necessary to start from specific frameworks according to the conditions of each country and location.

Lastly, the States have assumed global commitments in the area of water and sanitation, which need to be materialized, not only through legal regulations, but also through concrete actions. The debate to reach consensus requires an open attitude, in order to reach national water agreement that will become State policies.

Finance and governance are part of the necessary equation for fulfilling the human right to drinking water and sanitation, for boosting agricultural production aimed at food security, and for better management of a finite and vulnerable resource, the basis for the growth and development of countries, with social peace and environmental sustainability.

Common messages from government authorities



- Strengthen the recognition of the HRWS and achieve their effective implementation.
- Design policies and actions focused on catching up on the delay in the fulfillment of SDG 6.
- Achieve universal access to safe drinking water and sanitation with a special focus on the most vulnerable populations (informal urban settlements and rural areas).
- Significantly increase wastewater treatment.
- Significantly and sustainably increase investments
- Implement financing mechanisms in line with the fulfillment of SDG 6.
- Formulate plans and projects with indicators to monitor targets and performance
- Adapt legal and regulatory frameworks
- Improve sectoral governance, as well as corporate governance of providers
- Ensure overall sustainability with a holistic view of water and environmental resource management that includes specific climate change policies
- Develop information systems and indicators for monitoring sector performance and compliance with SDG 6.

Common messages from international organizations



- The region has significant gaps in access to and quality of water and sanitation services.
- Policies and goals are aimed at recognizing the HRWS and achieving SDG 6.
- Sector governance is a basic issue that conditions the development of the sector.
- The most vulnerable population should be prioritized in planning for the expansion and improvement of services.
- Pollution of watercourses and maritime coasts must be avoided.
- Productivity and efficiency in the use of water resources and in the management of services should be encouraged.
- Legal and regulatory frameworks should be sound, transparent, include incentives for overall sustainability, and provide the enabling environment for technological innovation and for attracting financing.
- Information systems and indicators for monitoring sector performance and SDG 6 compliance.
- Systems should be resilient in the face of the growing impact of climate change.

Specific messages from government authorities

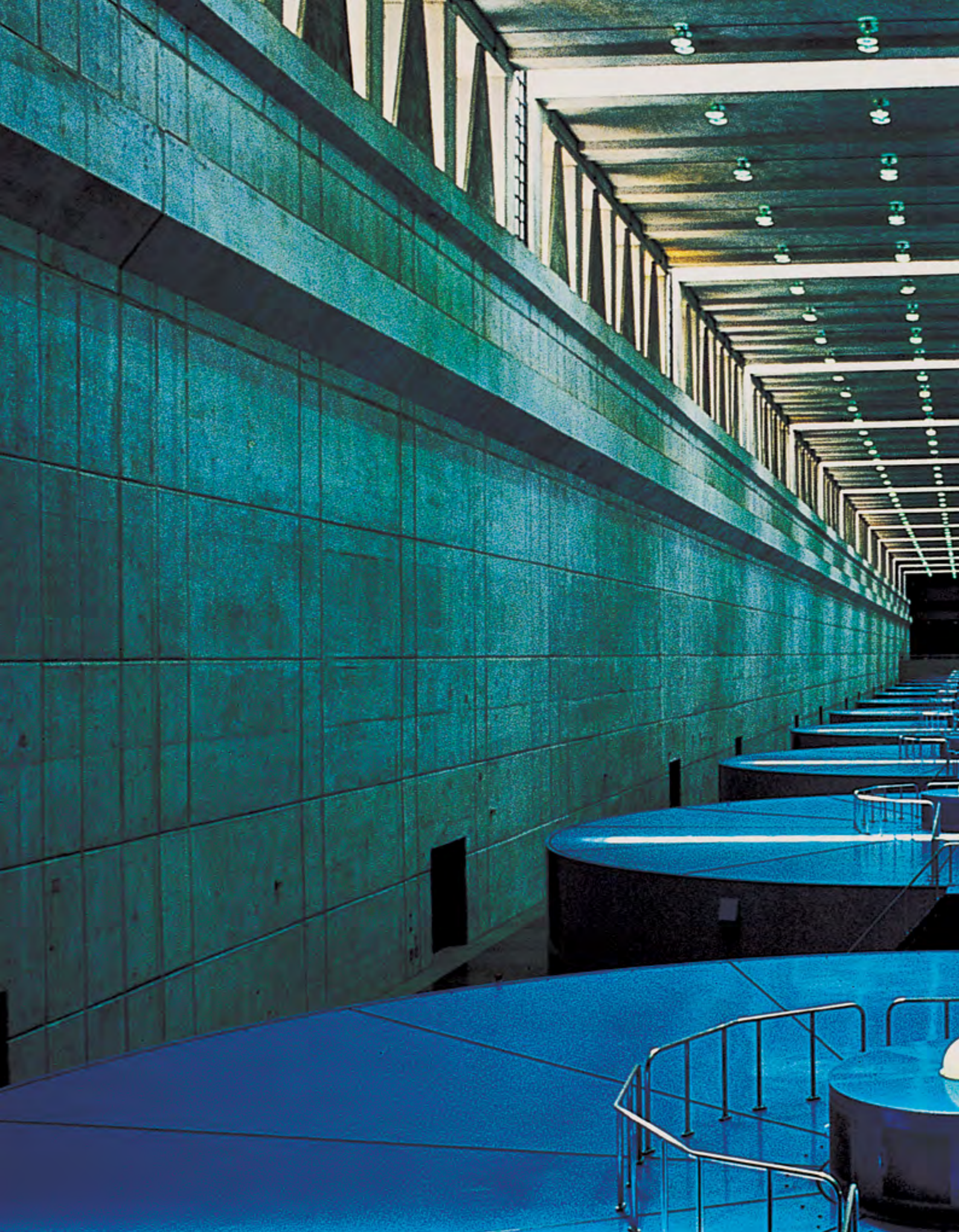


- Use non-conventional systems and techniques to accelerate expansion with procedures in informal urban areas and rural zones (Bolivia, Argentina).
- Implement regulatory frameworks that consider the diversity of the respective contexts and characteristics of the services provided (Brazil, Colombia).
- Regulate financial sustainability and regulatory requirements to diversify and expand sources of financing (Brazil).
- Promote regionalization and association or merger of small and medium-sized providers to take advantage of economies of scale and improve management capacity (Colombia, Paraguay).
- Promote the organization and operation of Watershed Management Councils or Agencies (Ecuador).
- Apply environmental taxes as a way of balancing water supply and demand (Colombia).
- Develop contingency plans with specific protocols for dealing with risk and disaster scenarios (Bolivia).

Specific messages from international organizations



- To guarantee HRWS requires greater equity in affordability with progressive social tariffs and subsidies for the most vulnerable segments (ECLAC).
- Responsible water consumption should be encouraged, particularly in the more affluent segments, and its efficient use in economic activities should be encouraged (ECLAC).
- Current linear water management should be transformed into circular water management (ECLAC).
- Importance of water in the agrifood system to provide food security (IICA)
- Importance of the interrelationship of SDG 6 with SDG 2 (IICA)
- Leveraging private investments is key to promote irrigation investments (FAO)
- Assessing climate change risks to increase resilience of systems and investments (UNDRR).





Bibliography

CAF (2014), "Governance and Finance for Water Sustainability in South America," Americas Regional Process, South America Sub-region, VII World Water Forum Korea 2015.

CAF (2019), "Water Strategy 2019-2022", Rojas O. et. al, Montevideo, Uruguay.

CAF (2021, a) Conference Water Finance and Governance: Towards Dakar 2022. November 2021. <https://www.caf.com/es/actualidad/eventos/2021/11/finanzas-y-gobernanza-del-agua-en-america-latina-y-el-caribe/>

CAF. (2021, b) Water Sector Preinvestment Program: more efficient projects with greater impact. Caracas: CAF. <http://scioteca.caf.com/handle/123456789/1705>

Del Valle, Clemente (2019) "Project Finance and Climate Finance," Center for Sustainable Finance, Universidad de los Andes.

ECLAC (2021) Reflections on water management in Latin America and the Caribbean

EM-DAT (2021) International Disaster Database. Centre for Research on the Epidemiology of Disasters (CRED). <https://www.emdat.be/database>

FAO (2017). The State of Food and Agriculture 2017. Rome, Italy.

FAO (2018). AQUASTAT Main Database, Food and Agriculture Organization of the United Nations (FAO). <http://www.fao.org/nr/water/aquastat/main/index.stm>

IANAS - IAP (2019) "Water Quality in the Americas. Risks and Opportunities", Interamerican Network of Academies of Sciences (IANAS) y The Interacademy Partnership Science Research Health (IAP). <https://ianas.org>

IANAS - IAP (2021) Water Quality in the Americas. A synopsis. <https://ianas.org/wp-content/uploads/2021/09/Calidad-del-Agua-en-las-Américas-Una-sinopsis.pdf>

IFRC (2016). World Disasters Report. Resilience: saving lives today, investing for tomorrow. Geneva, Switzerland.

Infralatam-IDB/CAF/ECLAC (2021) Data on Public Investment in Economic Infrastructure in Latin America and the Caribbean. <http://infralatam.info/>

Inter-American Development Bank - IDB (2021) "The infrastructure gap in Latin America and the Caribbean: estimation of investment needs until 2030 to progress towards the Sustainable Development Goals" / Juan Pablo Brichetti, Leonardo Mastronardi, María Eugenia Rivas Amiassorho, Tomás Serebrisky, Ben Solís.

Kaufmann, Daniel, Aart Kraay and Massimo Mastruzzi (2010). "The Worldwide Governance Indicators: Methodology and Analytical Issues". World Bank Policy Research Working Paper No. 5430 (http://papers.ssrn.com/sol3/papers.cfm?abstract_id=1682130).

Leckie, H., H. Smythe et X. Leflaive (2021), «Financing water security for sustainable growth in Asia and the Pacific», OECD Environment Working Papers, n° 171, Éditions OCDE, Paris, <https://doi.org/10.1787/3bc15c5b-en>.

Lee, Terence and Jouravlev, Andrei (1992) "A financing option for the provision of water and sanitation services", CEPAL Review, Economic Commission for Latin America and the Caribbean, Santiago, Chile.

Leflaive, X. and M. Hjort (2020), "Addressing the social consequences of tariffs for water supply and sanitation", OECD Environment Working Papers, No. 166, OECD Publishing, Paris, <https://doi.org/10.1787/afede7d6-en>.

Machete, Inês, and Rui Marques. 2021. "Financing the Water and Sanitation Sectors: A Hybrid Literature Review" *Infrastructures* 6, no. 1: 9. <https://doi.org/10.3390/infrastructures6010009>

Magalhaes, A. (2018). Towards national Drought Policies in Latin America and the Caribbean Region. White Paper. Bonn, Germany: UNCCD.

- MINAM (2011). National Strategy to Combat Desertification. Lima, Peru. MINAM (2012). National Environmental Action Agenda. Lima, Peru.
- OCDE (2015) “OECD Water Governance Principles.” <https://www.oecd.org/cfe/regionaldevelopment/OECD-Principles-Water-spanish.pdf>
- OECD (2010), Innovative Financing Mechanisms for the Water Sector, OECD Studies on Water, OECD Publishing, Paris, <https://doi.org/10.1787/9789264083660-en>.
- OECD (2015), Water Resources Governance in Brazil, OECD Studies on Water, OECD Publishing, Paris. <http://dx.doi.org/10.1787/9789264238121-en>.
- OECD (2019), Making Blended Finance Work for Water and Sanitation: Unlocking Commercial Finance for SDG 6, OECD Studies on Water, OECD Publishing, Paris, <https://doi.org/10.1787/5efc8950-en>.
- OECD (2019), Water Governance in Argentina, OECD Studies on Water, OECD Publishing, Paris, <https://doi.org/10.1787/bc9ccb6-en>.
- OECD (2021), Water Governance in Peru, OECD Studies on Water, OECD Publishing, Paris, <https://doi.org/10.1787/568847b5-en>.
- OMS-UNICEF (2021), Progress on Household Drinking, Sanitation and Hygiene 2000- 2020: Five years into de SDGs.
- Palazzo, A., H. Valin, M. Batka, and P. Havlík (2019). “Investment Needs for Irrigation Infrastructure along Different Socio-Economic Pathways.” Background paper prepared for this report, World Bank, Washington, DC.
- Rojas O., (2010), Governance and Governability, from Theory to Practice. Application to drinking water and sanitation services, ANEAS, Mexico.
- Rojas O., (2008), Rapid Impact Measures Program, Developing Capacities 2006-2008, GIZ, Lima, Peru.
- Rozenberg, Julie, and Marianne Fay, (2019). “Beyond the Gap: How Countries Can Afford the Infrastructure They Need while Protecting the Planet” (Overview). Sustainable Infrastructure Series. World Bank, Washington, DC. License: Creative Commons Attribution CC BY 3.0 IGO
- Suárez Migliozi, J. (2021). Keynote speech at the Conference on Water Finance and Governance: Towards Dakar 2022. November 2021. <https://www.caf.com/es/actualidad/eventos/2021/11/finanzas-y-gobernanza-del-agua-en-america-latina-y-el-caribe/>
- UNDRR (2021), Regional Assessment Report on Disaster Risk in Latin America and the Caribbean, United Nations Office for Disaster Risk Reduction (UNDRR).
- Vargas-Ramirez, Miguel (2017) “Innovative Methodologies for Financing the Water and Sanitation Sector. Experiences and Lessons from the World Bank”, Presentation at the 6th meeting of the Latin American Association of Water and Sanitation Operators (ALOAS), May 25-26, 2017, Panama.
- WaterAid (2016) Increasing climate finance to provide sustainable water and sanitation services in low-income countries. WaterAid’s Climate Finance Initiative Policy Brief
- Web site Alianza Latinoamericana de Fondos de Agua (ALFA); <https://www.fondosdeagua.org/es/>
- World Bank - WB (2021) Programs for Results. A new approach to World Bank financial support. www.worldbank.org/PforR - Last Updated: Oct 05, 2021
- World Bank - WB (2021) “Water Security in Argentina. Valuing Water.” World Bank, Washington, DC.
- WWAP (United Nations World Water Assessment Programme) (2018). United Nations World Water Development Report 2018: nature-based solutions for water management. Paris, UNESCO.

Annex 1.

Speakers, panelists, moderators of the Conference

**Latin American and Caribbean
Water Finance and Governance Conference:
Towards Dakar 2022
CAF - November 2021**

Speakers - First Day

		Name	Position	Agency/Country
Opening		Sergio Díaz-Granados	Executive President	CAF
		Loïc Fauchon	President	World Water Council
Keynote speech		Julián Suárez Migliozi	Vice President of Sustainable Development	CAF
Part 1: Water Finances Panel 1.1 Financing water sanitation so that no one is left behind	Moderates	Jorge Concha	Director of Analysis, Technical Evaluation and Sustainable Development	CAF
	Panelists	Juan Pablo Letelier	President	Parlamento Andino
		Soledad García Muñoz	Special Rapporteur on Economic, Social, Cultural and Environmental Rights	Inter-American Commission on Human Rights, OAS
		Oscar Pintos	President	ADERASA
Part 1: Water Finances Panel 1.2 Financing water sanitation so that no one is left behind	Moderates	Gustavo Saltiel	Global Water and Sanitation Leader in Global Water Practice	World Bank
	Panelists	Carlos Puente	Director of Water, Energy and Environment	BANOBRAS, Mexico
		Gonzalo Meschengieser	Manager of International Relations/Secretary	AYSA/ALOAS
		Luis Velasco	President	Latin American Confederation of Community Water and Sanitation Organizations (CLOCSAS)
Part 1: Water Finances Panel 1.3 Financing irrigation to eradicate hunger and contribute to food security	Moderates	Laura Melo	Director Representative	Global Food Program
	Panelists	Jacinto del Lino Pacheco Mosquera	Undersecretary	Technified Plot Irrigation of MAG, Ecuador
		Martin Mattos	General Director	General Directorate of Natural Resources, Ministry of Livestock, Agriculture and Fishing, Uruguay
		Rafael Ugaz	Executive Director	Proinversión, Peru
Conference and report of the first day of the Conference		Alejandro Maceira	Water Director	iAgua, Spain

Speakers – Second Day

		Name	Position	Agency/Country
Part 2: Water Governance in the Time of COVID-19 and Climate Change Panel 2.1 Governance in Water Resources Management	Moderates	Edgar Salas	Director of Sustainability, Inclusion and Climate Change	CAF
	Panelists	Alexandra Moreira	General Secretary	Amazon Cooperation Treaty Organization (OTCA)
		Berta Alicia Olmedo	Executive Secretary	Regional Committee on Water Resources, SICA
		Juan Carlos Alurralde	General Secretary	Intergovernmental Coordinating Committee of the La Plata Basin (Comité Intergubernamental Coordinador de la Cuenca del Plata)
Part 2: Water Governance in the Time of COVID-19 and Climate Change Panel 2.2 Governance in the Provision of Drinking Water and Sanitation Serv	Moderates	Sergio I. Campos G.	Head of Water and Sanitation Division	IDB
	Panelists	Iván Lucich	President	SUNASS, Perú
		Hugo Rojas	General Director	National Association of Water and Sanitation Utilities (ANEAS), Mexico
		Camilo Sánchez	President	National Association of Public Utility and Communications Companies (ANDESCO), Colombia
Part 2: Water Governance in the Time of COVID-19 and Climate Change Panel 2.3 Governance in Water-Related Disaster Management	Moderates	Jorge Werneck	Director	ADASA
	Panelists	Claudia Herrera	Executive Secretary	Coordination Center for the Prevention of Disasters in Central America and Dominican Republic
		Pedro Palacios	Mayor	Cuenca, Ecuador
		Lupercio Ziroldo Antonio	Director of Engineering and Works	Department of Water and Electric Energy of the State of São Paulo (DAEE), Brazil
Key Messages and Conclusions: Towards the 9th World Water Forum		Franz Rojas Ortuste	Water Agenda Coordinator	CAF
Cierre		Christian Asinelli	Corporate Vice President of Strategic Programming	CAF

Annex 2.

Authorities of participating countries and international organizations

	Name	Position	Country
Country authorities	Carlos Rodríguez	Secretary of Infrastructure and Water Policy	Argentina
	Carmelo Valda Duarte	Vice-Minister of Potable Water and Basic Sanitation	Bolivia
	Victor Saback	Director of the National Water and Basic Sanitation Agency	Brazil
	José Luis Acero	Vice-Minister of Water and Basic Sanitation	Colombia
	Cynthia Barzuna	Vice.Minister of Water and Seas	Costa Rica
	Gustavo Manrique Miranda	Minister of Environment, Water and Ecological Transition	Ecuador
	Arnoldo Weins	Minister of Public Works and Communication	Paraguay
	Ivette Berrio	Vice-Minister of Health	Panama
	Charles Griffith	Minister of Transportation, Labor and Water Resources	Barbados
	Marvin Gonzales	Minister of Public Services	Trinidad and Tobago
	Adrián Peña	Minister of Environment	Uruguay

	No. Name	Position	Agency
Authorities of international organizations	Jeannette Sánchez	Director of the Natural Resources Division	ECLAC
	Máximo Torero	Chief Economist	FAO
	Manuel Otero	General Director	IICA
	Lamia Kamal-Chaoui	Director of the Center for Entrepreneurship, SMEs, Regions and Cities	OECD
	Luis Felipe López-Calva	Director of the Regional Office for Latin America and the Caribbean	UNDP
	Raúl Salazar	Director of the Regional Office for the Americas and the Caribbean	UNDRR
	Jean Gough	Regional Director	UNICEF



CAF DEVELOPMENT BANK
OF LATIN AMERICA

www.caf.com