

HOW NEW TECHNOLOGIES
ARE TRANSFORMING
WATER AND WASTEWATER
TREATMENT INDUSTRY
IN LATIN AMERICA AND THE CARIBBEAN

CONTEXT: INNOVATION TO IMPROVE WATER AND SANITATION SERVICES

Water and sanitation are vital resources to improve societies' living conditions and development. Latin America and the Caribbean has almost a third of the world's water resources, which is essential for the growth of other sectors.

Within the region, one of the main challenges of the industry pertains to investment needs. A very interesting opportunity to close this gap is to attract private investors willing to participate in the design, construction, financing, operation, and maintenance of infrastructure in the water and wastewater treatment industry.

Alongside this, the private sector complements the public sector's effort by supporting it to improve the quality of public water and sanitation services provided to users, at a reasonable cost. All this is powered by the inclusion of digital and innovative tools to improve efficiency, effectiveness, and quality in the management and provision of the service.



"IDB Invest mobilizes private capital, relies on mixed financing, and provides technical assistance to improve service provision efficiency, climate change, corporate governance, and gender issues"

DIGITALIZATION AS A TOOL TO ADDRESS INDUSTRY CHALLENGES

Implementing technology-enabled solutions can help overcome or mitigate the risks encountered by water and sanitation



Systems Integration/ Interoperability

Progress should be made in the integration and streamlining of systems to mitigate the risk of having different data silos, favoring interoperability and allowing data analytics to make better decisions.



Digital talent

It is necessary to change the companies' mindset to move towards a digital culture and attract resources with knowledge in the application of new technologies.



Funding digital transfer projects

Participation of the private sector through concessions, proposals, or PPPs for the management and exploitation of water that favors the implementation of digital solutions that generate value and long-term efficiencies.

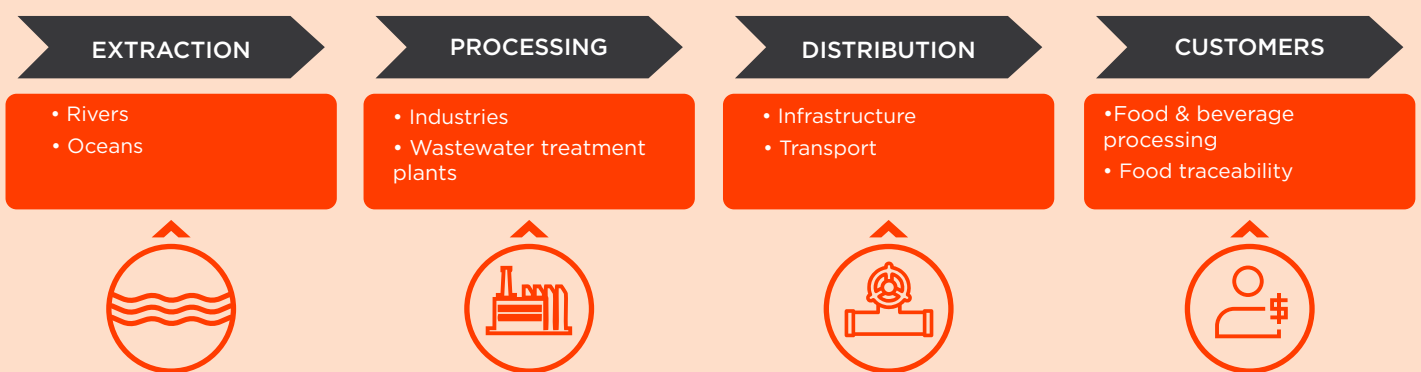


Cybersecurity

Cybersecurity policies, processes, and standards to keep critical information about water resources safeguarded.

New digital solutions are helping manage water use more efficiently and effectively across the value chain.

Digitalization of value chain in water Generation of digital ecosystem



CASE STUDIES

- Drones for monitoring water levels
- IoT to capture data on water properties and characteristics

- Big Data and Artificial Intelligence for resource management and predictive analytics
- Measuring water quality

- IoT devices and sensors for infrastructure maintenance
- Virtual reality for repairs
- Digital twins to prevent errors

- Monitoring water quality
- Tools for efficient use
- Demand estimate
- Decentralization solutions
- Transparency in water management and quality

- Blockchain to ensure water traceability along the entire chain

INDUSTRY TRENDS

Digitalization and the use of new technologies is a driving force of transformation in the water and sanitation industry. In this regard, they serve as a link and enhancer of the different trends that will be detailed below:



INCREASED PUBLIC-PRIVATE PARTNERSHIPS (PPPs)

Favoring these agreements brings significant benefits for water and sanitation, since the private sector covers the potential gaps that the public sector does not reach due to budget constraints, such as: i) improving management and efficiency, ii) improving the coverage and quality of services, and iii) increasing capillarity, reaching more areas.



APPLICATION OF TECHNOLOGIES TO STREAMLINE THE VALUE CHAIN

The increase in digitalization along the value chain generates a greater volume of data, which can then be analyzed more accurately (more information is equivalent to more robust models) to make better strategic decisions on water and sanitation.



BOOSTING CIRCULAR SOLUTIONS

Many companies are looking for innovative solutions that allow a second use of water following a production-consumption-recovery chain that allows its long-term sustainability.



INCREASED PARTICIPATION OF INVESTMENT FUNDS

This increased investment appetite is supported by two ideas: solving the challenges pertaining to resource scarcity and social concern for the environment (which encourages investments in companies with sustainable goals).



NEW BUSINESS MODELS

Governments, companies, and universities are exploring the applications of new technologies in the water and wastewater treatment industry to find solutions to solve the shortage of this resource in the future, such as those presented below:

DECENTRALIZATION OF NETWORKS

Innovative solutions that allow the decentralization of networks, with lower operating costs compared to centralized systems, and quicker implementation.



“Rainwater harvesting”

+33.000
total installed
systems

+600.000
beneficiaries

+200.000
waterpipes
saved annually

INFRASTRUCTURE MANAGEMENT SOLUTIONS

They aim to improve the efficiency and effectiveness of network repairs, reducing costs for long-term maintenance, and avoiding waste that has a high social and environmental impact.



“Technology and innovation at the service of water”

Investments by funds:
Cimbria and Emerald

3 international
projects

SMART DEVICES FOR CONSUMERS

The goal is to make water use more efficient, avoiding unnecessary waste. On the other hand, it helps consumers save by reducing spending, while encouraging the construction of sustainable housing.

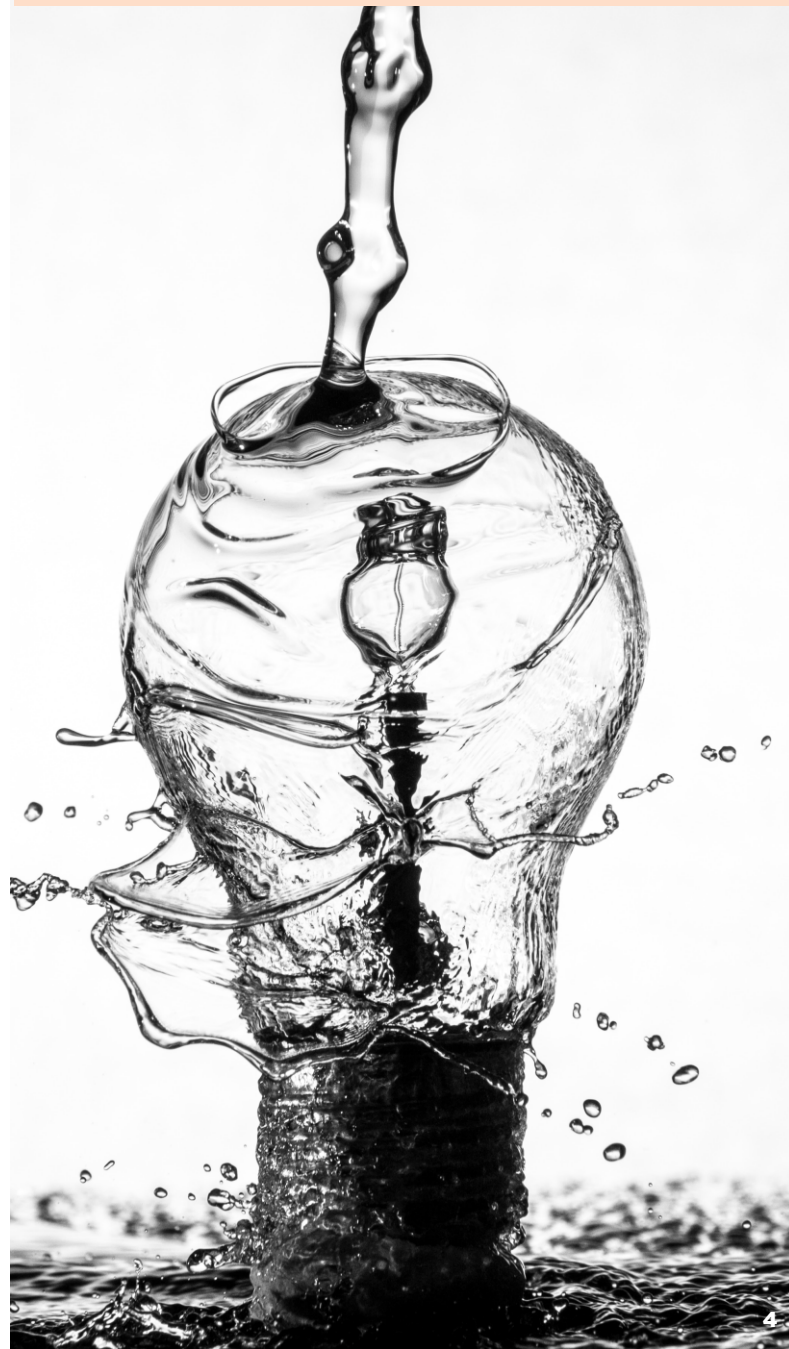


AquaReturn®

“The satisfaction of saving while still enjoying”

Waterwise Award:
House of Lords -
London

UN Water Finalist,
New York



SUCCESS CASE: GRUPO ORTIZ

IDB Invest has provided USD 50 Million to Consorcio Anillo Hidráulico, a joint venture between subsidiaries of Ortiz Construcciones y Proyectos, S.A. ("Grupo Ortiz"), to finance the execution of civil works aimed at improving Panama City's drinking water system, including the expansion and rehabilitation of the North Panama Aqueduct under a construction contract with the National Council for Sustainable Development (CONADES) of Panama.

GRUP ORTIZ

Grupo Ortiz is one of the leading Spanish companies in the concessions, power, and infrastructure industries. It has a global presence and, since 2010, has been performing, operating, and tendering in concessions for basic services (roads, health, and power) with multilateral financing in emerging countries. It has a presence in Spain, Colombia, the United States, Mexico, Panama, and Japan

USD 50 Million

Credit granted

2023

Approval Date



Country

We develop sustainable infrastructure, devise efficient technical solutions, and invest and manage projects to help make the world a better place

+2.460 M

Investment in Health and Safety

+2.700

Professionals

1.492 M

Grupo Ortiz Investment in Concession Projects



If you want to know more about how technologies are impacting the water and sanitation industry, favoring sustainable economic development in the region, click on the link to see the details of the report.

[Follow link](#)