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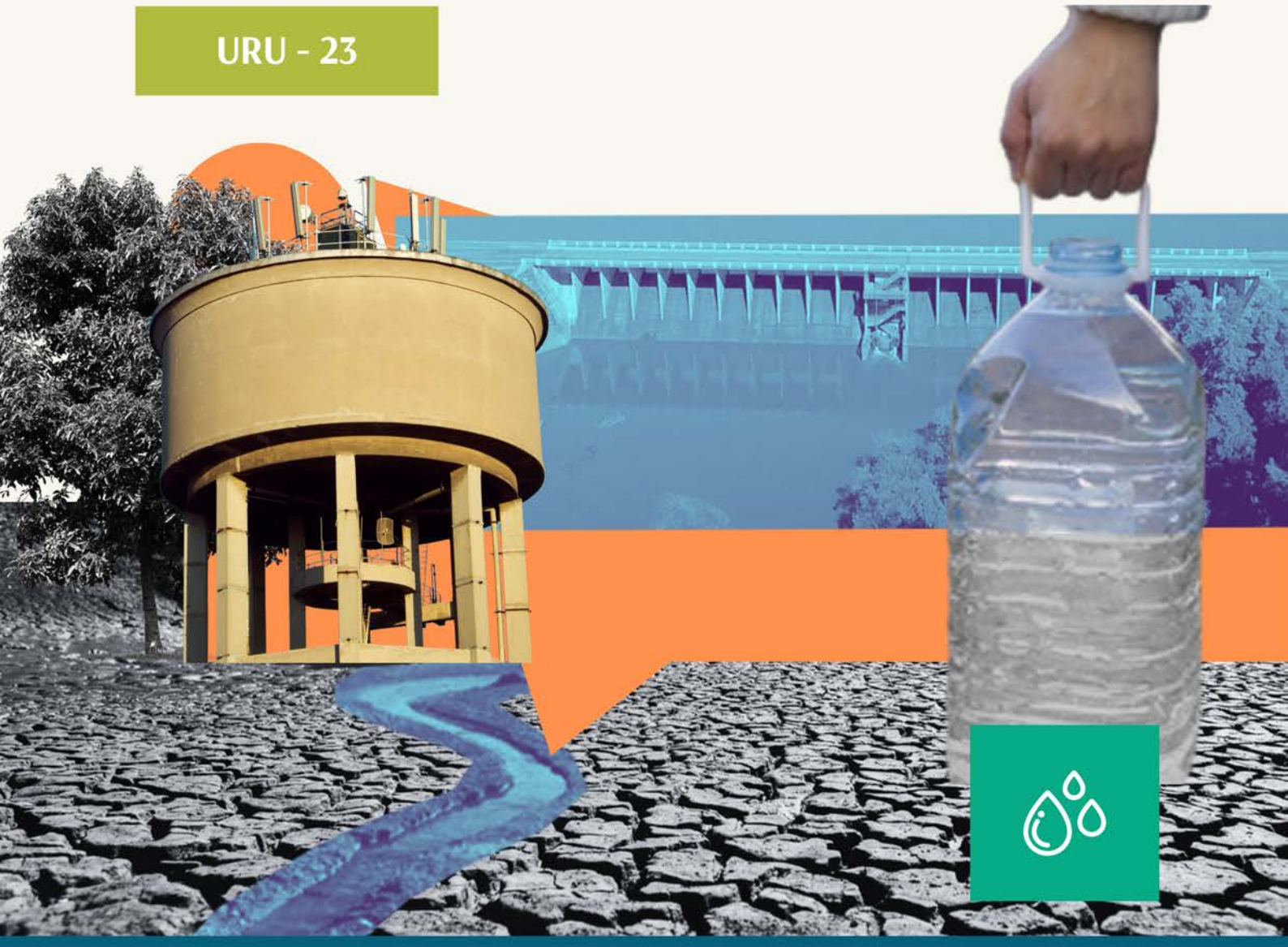
UNITED NATIONS CLIMATE CHANGE CONFERENCE

Water as the cornerstone of resilience and transformation

Uruguay's Resilience in Facing Its Worst Water Crisis—and Preparing for the Future

URU - 23



CONTEXT

In 2023, Uruguay faced one of the most severe droughts in its recent history. At the heart of the Santa Lucía River basin—the primary water source for 1.8 million people in the Montevideo Metropolitan Area—freshwater became critically scarce. With the Paso Severino reservoir reduced to less than 2.5% of its capacity and the drought persisting for three consecutive years, the country declared the most serious water emergency of its modern era. In response to this crisis, the URU-23 Program: Support to Mitigate the Impacts of the Water Emergency in Uruguay offers a structural solution to ensure continuity of supply and strengthen the resilience of the urban drinking water system.

The program, financed by FONPLATA with USD 60 million and matched by a local counterpart contribution, is implemented by Obras Sanitarias del Estado (OSE) and covers the Montevideo Metropolitan Area (MMA), home to over 60% of Uruguay's population. Its objective is twofold: to secure alternative sources of freshwater for the drinking water treatment system in the short term, and to strengthen the resilience of supply in the face of extreme weather events.

Uruguay, with a high Human Development Index (HDI 0.809) and 95.2% coverage of drinking water services, remains highly dependent on surface water sources, which account for 90% of total supply. Combined with an unaccounted-for water (UAW) rate exceeding 50%, this dependency revealed critical vulnerabilities during the crisis.

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KEY TECHNICAL DIMENSIONS OF THE PROJECT

Water Sources and Storage: The program adopts a redundancy strategy by capturing freshwater from the San José River through the construction of a temporary dam and a 13.3 km pipeline to the Aguas Corrientes reservoir. This critical infrastructure will enable the pumping of 8,000 m^3 per hour, ensuring an essential reserve volume to sustain water treatment operations.

Governance and Institutional Framework: OSE leads the implementation of emergency management mechanisms, coordinating with sectoral ministries and the Uruguayan Institute of Meteorology (INUMET) to monitor the crisis.

Water Supply and Quality: The program prioritizes solutions that minimize saline intrusion and restore the physicochemical parameters of potability—particularly sodium and chloride levels—which have been affected by the transfer of water from the la Plata River.

Efficient Use and Demand Management: Reducing unaccounted-for water (UAW) is recognized as a structural measure to improve system efficiency and sustainability over the medium term.

Energy and Carbon Dimension: Although not addressed directly, the program considers energy and carbon impacts through the optimization of water pumping and transport, aiming to minimize the energy footprint of emergency interventions.

Social Inclusion: While the program does not directly implement empowerment initiatives, it embraces a rights-based approach to universal access to drinking water, in line with Uruguay's constitutional mandate.

CLIMATE RESILIENCE AND WATER SECURITY STRATEGIES

Aligned with the "New Water Storage Paradigm" (WB, 2023) and the recommendations of "Climate Ready Water Utilities" (EPA, 2020), the URU-23 Program adopts a flexible, multisectoral, and risk-based strategy. It diversifies water catchment sources to reduce critical dependence on a single system, reinforces strategic storage, optimizes dredging and management of surface water bodies, and strengthens rapid-response operational capacity through the acquisition of emergency equipment such as tanker trucks and mobile pumping stations.

This systemic approach is grounded in principles of flexible adaptation, combining traditional gray infrastructure with nature-based adaptive management measures. Hydrometeorological monitoring systems are also reinforced to anticipate scarcity scenarios, in line with best practices from "Water Security and Climate Resilient Development" (AMCOW, 2012). By integrating infrastructure, governance, demand management, and early warning systems, the URU-23 Program stands as a model of comprehensive urban climate response in Latin America.

EXPECTED IMPACTS AND SUCCESS METRICS

The program aims to ensure continuous water supply for over 1.8 million residents in the Montevideo Metropolitan Area, restore drinking water quality to regulatory standards, and enhance the resilience of critical infrastructure.

Key indicators include:

- Reduction in the proportion of users exposed to high-salinity water (target: <5% by 2024)
- Increase in system water reserve capacity (+8% compared to 2022)
- Progressive reduction of unaccounted-for water (UAW) to below 45% by 2025
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The URU-23 Program marks tangible progress in climate adaptation within Uruguay's water sector, demonstrating that responses to water crises must go beyond containment and lay the groundwork for more resilient, flexible, and inclusive infrastructure. In the lead-up to COP30, Uruguay is delivering a concrete response to the water crisis through an emergency intervention designed to prevent drinking water shortages in the Montevideo Metropolitan Area during the 2023 drought. While the program serves as a valuable reference for future resilience efforts, it should be understood primarily as an urgent mitigation measure—not as an early adaptation initiative. The project is currently in its closing phase, consolidating the technical and institutional lessons learned from the management of this unprecedented emergency.


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