

Barbados launches major water security programme to tackle losses, sanitation and long-term resilience

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Barbados is moving ahead with a major new water security and infrastructure programme aimed at modernising the island’s ageing water systems, reducing significant supply losses and strengthening long-term climate resilience.

The Barbados Water Security and Sector Performance Program, funded by the World Bank, will focus on improving operational efficiency at the Barbados Water Authority (BWA), expanding sanitation services and strengthening national groundwater management as the country faces growing pressure on already limited water resources.

Barbados is considered one of the world’s most water-scarce nations, relying on groundwater for around 86% of its water supply. Demand is projected to increase by 30% by 2050, placing further strain on an already stressed system.

At the same time, the BWA currently loses approximately half of all treated water before it reaches customers due to ageing infrastructure, leaking pipes, metering inaccuracies and billing inefficiencies.

The new programme is designed to address those structural weaknesses while creating a more resilient and sustainable water management system.

Modernising utility operations

A major component of the programme centres on operational transformation within the Barbados Water Authority.

The initiative will introduce a private sector delivery partner to work alongside BWA teams to improve utility performance, modernise billing and metering systems, reduce non-revenue water losses and strengthen revenue collection.

For project and infrastructure professionals, the programme reflects the increasing use of operational modernisation and performance-based delivery models within public utility transformation projects.

Rather than focusing solely on new infrastructure, the programme combines digital systems, operational reform and asset management improvements to improve long-term service delivery outcomes.

Expanding sanitation infrastructure

The second phase of the programme focuses on expanding sanitation coverage and reducing environmental risks associated with untreated sewage.

Around 80% of Barbados' land area is considered vulnerable to groundwater contamination caused by poorly managed sewage disposal systems.

The programme will support approximately 2,000 new household sewage connections while introducing updated regulations governing waste collection and treatment.

Improving wastewater management is also viewed as economically important for Barbados, where tourism and coastal ecosystems play a major role in employment and national income.

Untreated waste entering coastal waters continues to place pressure on marine environments and tourism-related infrastructure.

Stronger governance and climate resilience

Alongside operational and infrastructure improvements, the programme includes a governance and planning component aimed at strengthening long-term water resilience.

This includes:

- establishing a national groundwater monitoring system
- improving coordination between water, agriculture, energy and climate planning
- creating a high-level national coordination framework for water management

The programme reflects a growing recognition that water security is increasingly linked to wider economic resilience, climate adaptation and national infrastructure planning.

Performance-based delivery model

The initiative will be delivered using a results-based financing structure, where funding is released only when independently verified performance targets are achieved.

These targets include:

- reductions in water losses
- improved customer service performance
- delivery of regulatory reforms
- sanitation expansion milestones

Performance-based infrastructure programmes are becoming increasingly common across utility and public infrastructure sectors, particularly where governments are seeking greater accountability, measurable delivery outcomes and operational reform alongside capital investment.

Economic and employment impact

The programme is also expected to support employment and economic resilience over the long term.

According to programme estimates, up to 58,000 jobs could be generated or protected over the lifetime of the initiative through improved infrastructure reliability, environmental protection and stronger economic resilience linked to water security.

The Barbados initiative forms the first phase of a wider Caribbean Regional Water Security Program, which also includes Dominica, Grenada, Jamaica and Saint Lucia.

For project leaders, the programme highlights how water infrastructure projects are evolving into broader resilience and economic transformation programmes — combining operational reform, environmental protection, governance modernisation and climate adaptation into a single integrated delivery model.