Report: Integrated Water Resources Management (IWRM) Workshop for Caribbean SIDS

"Leveraging SDG 6 for Accelerated Water Investments in Caribbean SIDS"

Date: July 9–10, 2025
Location: Grenada

GLOBAL WATER PARTNERSHIP CARIBBEAN

UN environment programme

Government of Grenada

G-CREWS Climate-Resilient Water Sector in Grenada

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1. EXECUTIVE SUMMARY

The IWRM Workshop for Caribbean SIDS brought together over 50 regional experts (refer to Annex A), government representatives, and development partners from Antigua & Barbuda, Barbados, Grenada, Guyana, Saint Vincent and the Grenadines, and Trinidad & Tobago, to identify practical, country-led strategies to accelerate SDG 6 implementation. Hosted in Grenada, this two-day event provided an in-depth exploration of the region's water management challenges, institutional gaps, practical solutions, and financing pathways.

The workshop featured interactive scenario-based activities, regional diagnostics, and multi-stakeholder dialogue aimed at shifting from planning to implementation. A significant milestone was the co-creation of country-specific mini action plans, designed to unlock climate-resilient water investments (refer to Annex B).

2. BACKGROUND AND OBJECTIVES

Background:
Caribbean SIDS face increasing water stress due to climate change and variability, pollution, limited infrastructure, and institutional fragmentation. Recognizing these threats, the Global Water Partnership Caribbean (GWP-C), UNEP, and the Government of Grenada convened this workshop to foster knowledge-sharing, capacity-building, and resource mobilization.

Objectives:

- Enhance IWRM Knowledge and Capacity as a means of building climate resilience: Improve understanding of IWRM principles, freshwater-marine ecosystem linkages, SDG 6 monitoring, and pollution prevention approaches.
- Drive Political Commitment and Action: Equip government officials with tools to identify gaps and opportunities for implementing governance improvements and cross-sector initiatives.
- Foster Regional Collaboration on investment planning: Promote peer learning, exchange of best practices and experiences and strengthen coordination among Caribbean SIDS in translating national and regional water- and **climate-related objectives at political and technical levels into investment opportunities.**

Expected Outcomes:

- Country-led mini-action plans: Each participating country outlines immediate, practical steps they can take to strengthen water governance, improve coordination, and address pollution challenges.
- Regional alignment around the OECS Council of Ministers on Environmental Sustainability (COM:ES) -endorsed IWRM Action Framework: Countries commit to advancing priority actions already identified under the framework, creating consistency and momentum across the region.
- A foundation for joint resource mobilization: Participating countries agree to pursue catalytic funding sources— that can unlock both regional and domestic finance to move from planning to implementation.

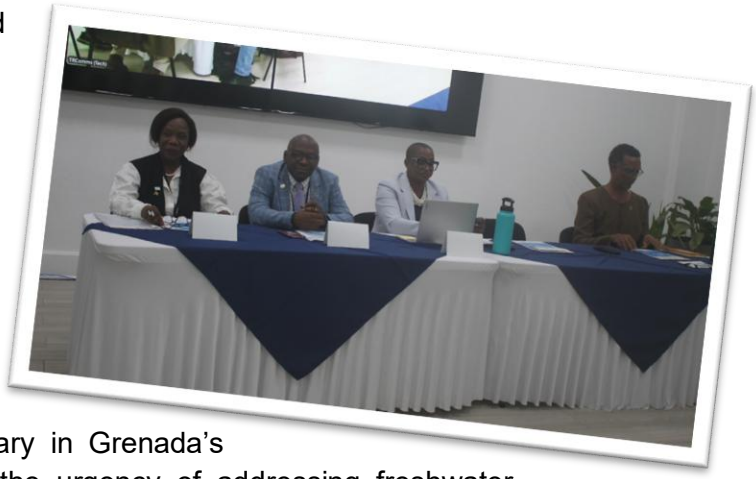
3. DAY 1 HIGHLIGHTS: UNDERSTANDING & DIAGNOSING CHALLENGES

Opening the workshop was Dr. Roxanne Graham Victor, who welcomed participants on behalf of the Global Water Partnership-Caribbean (GWP-C), the United Nations Environment Programme (UNEP), the Grenada Climate-Resilient Water Sector Project (G-CREWS), and the Government of Grenada. In her remarks, Dr. Graham-Victor emphasized the importance of the workshop as a regional platform to leverage SDG 6 for accelerating water investments in Caribbean Small Island Developing States (SIDS). She highlighted the long-standing commitment of GWP-C to enhancing water governance over the past two decades, and underscored the urgency of moving from planning to action. By convening stakeholders from across sectors—water, health, environment, tourism, and agriculture—she noted that the workshop aimed to build a shared understanding of integrated water management, promote cross-sector collaboration, and initiate practical strategies to improve water security and climate resilience across the region.

Opening Session

Speakers from **UNEP, GWP-C, the Ministry of Climate Resilience, and Grenada's SDG Office** emphasized that **water is foundational to regional resilience** and sustainable development.

- **Mr. Vincent Sweeney**, Head of UNEP's Caribbean Sub-Regional Office, highlighted water as central to sustainable development, ecosystem integrity, and public health.
- **Professor Paulette Bynoe**, Chair of the GWP-C Steering Committee, underscored the strategic importance of SDG 6 and called for bold leadership, improved coordination, and climate-resilient investment.



- **Ms. Peron Johnson**, Permanent Secretary in Grenada's Ministry of Climate Resilience, stressed the urgency of addressing freshwater vulnerabilities and called for inclusive, cross-sectoral action.
- **Ambassador Kennedy Roberts**, SDG Ambassador for Grenada, emphasized the interconnectedness of SDG 6 with other development goals, the importance of human capital, and the role of community-level stewardship in achieving water sustainability.

Keynote Address: Hon. Kerryne James

The Minister outlined the urgency of implementing IWRM as a rights-based, climate-informed strategy. She emphasized moving beyond policy rhetoric to inclusive, climate-resilient water action. Examples from Grenada, Jamaica, and St. Vincent and the Grenadines highlighted drought-related challenges and fragmented infrastructure responses.

The Lead Facilitator of the workshop proceedings was Mr. Christopher Corbin, Coordinator of the UNEP Cartagena Convention Secretariat. Mr. Corbin provided strategic guidance throughout the workshop, ensuring that discussions remained focused on practical outcomes, regional alignment, and cross-sector collaboration. He facilitated key sessions, moderated dialogue between technical experts and policymakers, and emphasized the importance of turning dialogue into delivery—particularly through action planning, stakeholder coordination, and financing readiness. His leadership was instrumental in fostering an inclusive, solutions-oriented atmosphere that bridged technical knowledge with real-world policy needs.

Session 1: Regional Context for Caribbean Water Management

Presentation: Regional Action Frameworks and SDG Alignment
Presenter: Vincent Sweeney, Head, Caribbean Sub-Regional Office, UNEP
Moderator: Christopher Corbin

This opening technical session set the stage for shared understanding of how global goals—specifically **SDG 6**—translate into regional action in the Caribbean context. Vincent Sweeney introduced the OECS COM: ES **IWRM Action Framework**, emphasizing its alignment with global indicators and its potential to unify fragmented water governance systems across Small Island Developing States (SIDS).

The IWRM framework is built around a **shared vision for water security** in Caribbean SIDS and a mission focused on sustainable governance, resilience to climate threats, and the inclusion of cross-cutting themes like gender equity and stakeholder empowerment. It aims to guide countries in moving **from plans to measurable action**.

Special emphasis was placed on three SDG 6 indicators:

- **6.5.1** – Degree of Integrated Water Resources Management (IWRM) implementation
- **6.3.2** – Ambient water quality of monitored bodies
- **6.6.1** – Change in extent of water-related ecosystems

Sweeney shared global trends from UNEP reporting, including:

- **High pollution risk** and **weak monitoring infrastructure** in SIDS
- **Declining freshwater and coastal ecosystems** due to land-use pressures and climate shocks
- Persistent governance issues such as **fragmented mandates**, limited funding, and insufficient cross-sector coordination

He encouraged countries to:

- Use the regional framework to **strengthen enabling environments** (policy, laws, institutions)
- Invest in **ecosystem restoration and pollution control**
- Build national **capacity for data collection, interpretation, and reporting**

A key takeaway: "When we leave this workshop today and tomorrow, remember—it is not just a technical issue, but about figuring out how best we can collectively manage this resource."

Group Activity: Country Status and Trends – IWRM Self-Assessment

Facilitators: Prof. Paulette Bynoe & Reginald Burke, GWP-C Steering Committee Members

This interactive activity mirrored the **UN SDG 6.5.1 global reporting process**, enabling each country team to evaluate their IWRM implementation using the official four-dimension framework:

1. **Enabling Environment (Policies and Laws)**
2. **Institutions and Participation**
3. **Management Instruments (e.g., water quality monitoring)**
4. **Financing**

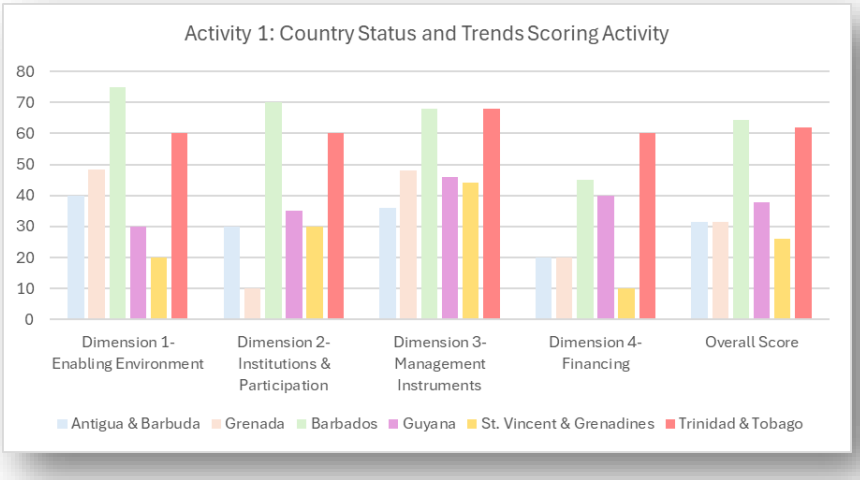
Countries assigned scores (0–100) based on maturity and coverage of each sub-component. Teams then analyzed trends, strengths, and critical gaps.

Key findings:

Barbados & Trinidad & Tobago

These two countries demonstrated relatively strong institutional frameworks and water management capacity. Participants reported that legal mandates are more clearly defined, coordination mechanisms (while not perfect) are functioning, and technical expertise exists within core agencies. However, there's still room for improvement in data sharing and engaging non-water sectors in IWRM planning.

St. Vincent & the Grenadines & Antigua & Barbuda



Both countries scored lowest on institutional readiness, citing several critical gaps:

- Outdated or fragmented policies that don't reflect current challenges or cross-sector needs
- Weak inter-agency coordination, with overlapping mandates or unclear responsibilities
- Limited enforcement mechanisms, resulting in policy-to-practice breakdowns

Despite these challenges, both countries expressed strong interest in using the draft IWRM priority plans to advocate for national reform and targeted capacity-building support.

Grenada

Grenada's case was more complex, as insights were submitted by three different teams, reflecting various perspectives across institutions. While scores varied, a few themes emerged:

- Progress has been made in setting up new institutional arrangements to support water governance.
- However, many of these units remain underfunded or not fully operational, underscoring the need for targeted resource mobilization and inter-agency alignment.

This diversity of inputs highlighted both momentum and the need for continued support in turning frameworks into functioning systems.

Guyana

Guyana presented a moment of transition in its water governance landscape. Highlights included:

- The recent activation of a National Water Council, a major step toward inter-agency coordination.
- The pending finalization and approval of a National Water Policy, which could provide the policy foundation for comprehensive IWRM.

Participants noted optimism but emphasized the importance of ensuring these new structures are empowered, funded, and effectively integrated into national planning.

Key Takeaway:

These assessments underscored that while each country is at a different stage in its Integrated Water Resources Management (IWRM) journey, there is a clear regional appetite for reform, capacity-building, and collaboration. The draft national priority plans — combined with the practical tools, templates, and diagnostic exercises shared during the workshop — now provide a solid base for continued progress, advocacy, and investment mobilisation.

Across the board, countries highlighted several common priority areas that will be central to advancing IWRM implementation:

- Policy reform and harmonization
- Creation or empowerment of lead IWRM agencies
- Improved water quality testing and national data infrastructure
- Dedicated national budget allocations for IWRM
- Greater stakeholder integration and public awareness

Together, these priorities point to a shared regional understanding — that meaningful progress depends not only on technical solutions, but on strong institutions, inclusive governance, and sustained investment. The foundation has been set. The challenge now is to carry it forward.

Open Discussion and Q&A:

Participants reflected on two critical questions:

1. **What is the greatest stumbling block to sustaining water resources in the region?**
   → Consensus: Countries are often addressing **symptoms** (like drought or pollution) rather than root causes such as poor governance and disjointed planning.
2. **Is data really lacking, or is it a matter of access and use?**
   → Participants agreed that **data often exists** but remains underutilized due to limited access protocols, weak institutional coordination, and a lack of systems for converting raw data into actionable insights.

Key Comments:

- "We have failed to move from theory to action in IWRM. This must change."
- "We need to be ready when funding becomes available—not scramble after it arrives."
- "Let's build data systems that not only collect—but also analyze, inform, and empower decisions.

Session 2: Institutional Diagnostics and Governance Mapping

Presentation: Framing Governance and Mandate-Mapping
By: Astrid Regler, Project Manager, G-CREWS Project

This session focused on diagnosing the institutional architecture that underpins or obstructs effective **Integrated Water Resources Management (IWRM)** across the participating Caribbean SIDS. It began with a presentation from **Grenada**, spotlighting their ongoing **G-CREWS programme journey**. Astrid Regler shared how the country has progressed from conceptualizing a national **Water Resources Management Unit (WRMU)** and drafting a Water Policy, to confronting the real-world hurdles of bill finalization, multi-stakeholder engagement, and resourcing the unit for implementation.

Her presentation illustrated a recurring regional tension: **even with strong political support, weak legal frameworks, overlapping mandates, and limited technical or financial capacity can stall momentum**. Grenada's experience served as a timely case study for the group discussions that followed.

Antigua & Barbuda
Antigua & Barbuda exhibited clear institutional gaps in stakeholder engagement and policy coherence:

- The Antigua Public Utilities Authority (APUA) is the primary water supplier but lacks a legal mandate to engage non-water sectors like health and agriculture.

- The Central Board of Health is active in sanitation but limited by outdated legislation.
- The Department of Environment operates under EPMA 2019 and participates in inter-agency platforms but coordination with APUA is weak.
- A Water Resource Management Policy has yet to be approved by Cabinet, delaying cross-sectoral planning.
- Quick wins: Infrastructure upgrades, increased water production, formalizing stakeholder-inclusive policies.

Barbados

Barbados showcased a relatively mature institutional environment, with active agencies and recent legislative updates. However, key issues remain:

- Barbados Water Authority (BWA) is fully functional and supported by a modern legal framework (including amendments and protection orders from 2023). It plays a central role in drinking water provision and sanitation services.
- The Barbados Agricultural Development and Marketing Corporation (BADMC) manages agricultural irrigation and development. However, overlaps in data collection with BWA exist.
- The Environmental Protection Department (EPD) supports groundwater protection and pollution control, but integration with water agencies is limited.
- While formal coordination platforms like the Water Resilience Steering Committee exist, mandates are still fragmented across sectors.
- Quick wins identified: expanding metering for non-utility users, SCADA integration in irrigation districts, and automatic groundwater monitoring.

Key challenge: Overlapping functions and under-leveraged coordination mechanisms, especially in data sharing and integrated monitoring.

Absence of institutionalized coordination and an overarching policy framework hinders integrated planning.

Grenada

Three separate institutional teams in Grenada contributed insights, showing a nuanced picture:

- NAWASA remains the key water utility under a clear legal framework but coordination with ministries is mostly informal.
- The Ministry of Infrastructure contributes data and supports drainage improvements but lacks central regulatory authority.
- GSWMA manages solid waste but has ambiguous responsibilities around coastal and waterway contamination cleanup.
- While institutions are operational and politically supported, the system suffers from under-resourcing and lack of formal enforcement coordination.

- Quick wins: Monthly cleanup campaigns, improved drainage in hotspots, RWH systems in public buildings, and composting incentives.

Key challenge: Bridging environmental and water supply functions under a cohesive operational and legal framework.

Guyana

Guyana is at a pivotal moment, with several institutional reforms underway:

- Guyana Water Inc. (GWI) and the Hydrometeorological Service share overlapping roles in water resource management and data collection.
- The National Water Council has been recently reactivated and is seen as the central coordination platform.
- The Environmental Protection Agency (EPA) and Geology & Mines Commission (GGMC) have conflicting regulatory oversight over mining sector impacts on water quality.
- Agencies operate under solid legal frameworks but face issues around data silos and inconsistent enforcement.
- Quick wins: Strengthen Hydromet's monitoring network, real-time water quality assessments, and formalize MoUs for data exchange.

Key challenge: Lack of formalized data-sharing agreements and monitoring overlaps between key environmental and utility agencies.

Trinidad & Tobago

Trinidad & Tobago demonstrated strong technical capacity, but institutional conflicts were evident:

- WASA and the Water Resources Agency (WRA) are both active, but WRA reports to WASA, creating a conflict of interest and compromising regulatory independence.
- Formal coordination exists between water agencies, climate planners (MPU), and academic institutions.
- The country has a Revised IWRM Policy (2022) and inter-agency MOUs, but full autonomy for the WRA is still needed.
- Quick wins: Advancing IWRM through the Climate Change Master Plan, expanding collaborations with UWI, and improving drainage coordination.

Key challenge: Realignment of institutional roles to ensure autonomous water regulation and oversight.

St. Vincent & the Grenadines
SVG showed active institutions but with notable functional and legal limitations:

- CWSA is responsible for water, sewerage, and solid waste. While operational, the lack of wastewater monitoring and enforcement is a major gap.
- Water data ownership is fragmented across ministries, and coordination is limited to informal or emergency response settings (e.g., NEMO).
- The National Technical Advisory Committee on Climate Change (NTACC) plays a role in advising IWRM-related proposals.
- Quick wins: Integrating IWRM into an upcoming GCF proposal, formalizing data protocols, and leveraging NTACC for cross-sector coordination.

Key challenge: Institutional silos and lack of formal data-sharing mechanisms limit effective resource management and policy alignment.

Session 3: Practical Methods and Approaches for Source-to-Sea (S2S) Management

Session 3 of the IWRM Capacity-Building Workshop offered participants a shift from institutional and policy diagnostics into the realm of implementation — demonstrating how water and coastal pollution challenges can be addressed through practical, innovative, and community-driven solutions. The session focused on the Source-to-Sea (S2S) framework, highlighting the vital connection between land-based pollution sources and marine ecosystem health — an issue of particular urgency for Small Island Developing States (SIDS) like those in the Caribbean.

The session was moderated by Chris Corbin and supported by rapporteurs Giselle Gravesande and Tamyer Munroe. It was anchored by two compelling presentations: a local case study on wastewater treatment and reuse in Grenada, and a regional showcase of nature-based S2S solutions presented by The Nature Conservancy. A rich Q&A followed, surfacing technical considerations, community acceptance challenges, and the broader implications for Caribbean resilience.

Case Study: Pollution and Coastal Threats in Grenada
Presenter: Dr. Lindonne Telesford, Assistant Professor, Department of Public Health and Preventive Medicine, and Project Lead, Wastewater Treatment Project (Mirabeau)

Dr. Telesford's presentation detailed an ambitious and timely initiative in Grenada: the construction of an advanced wastewater treatment and reuse system at Princess Alice Hospital. This effort is grounded in a clear goal — to transition away from conventional, environmentally harmful disposal methods and toward sustainable water reuse, especially in agriculture.

The initiative is directly inspired by the World Bank's "From Waste to Resource" report, particularly Action #2, which advocates for the transformation of traditional wastewater treatment plants into

resource recovery facilities. In Grenada's context, this concept was brought to life after extensive site assessments narrowed the project location to Princess Alice Hospital — a health facility with long-standing wastewater management issues.

Prior to intervention, untreated black water from the hospital was leaking into nearby agricultural areas, creating significant public health risks: mosquito breeding, chemical contamination of crops, and runoff into the Great River, which connects to downstream coastal ecosystems. At the same time, local farmers were struggling with water scarcity during dry seasons. The site therefore presented a clear opportunity for a closed-loop solution: treat wastewater and reuse it safely in agriculture.
To initiate the project, the Ministry of Health convened a think tank of stakeholders and successfully secured US$1 million in funding from the Caribbean Development Bank (CDB). Implementation followed a four-component structure:

1. Baseline study and site selection
2. Public education and awareness campaign
3. Treatment system design and installation
4. Technology integration for efficiency and monitoring

A significant innovation in the system is the use of Activated Filter Media (AFM) — a highly engineered glass product proven to outperform traditional sand or gravel filters in removing contaminants. The treatment process incorporates a three-stage septic system, an AL-2 belt system, AFM filtration, UV disinfection, and solar-powered pumps, all monitored in real time through a digital platform.

The project is being delivered in collaboration with Clean Water Wave and Pure Water International, with oversight from the Ministry of Health, NAWASA, WINDREF, and the CDB. Despite delays due to excessive rainfall during construction, the system is near completion and expected to be fully operational within weeks.

Critically, Dr. Telesford emphasized that technology alone is not enough. Success hinges on public trust and farmer buy-in. Farmers were not just consulted, but directly involved in system design — including the decision to install grease traps to improve water quality and safety. The project includes a phased implementation, with testing to confirm water safety before use in agriculture. A Customer Day will invite farmers and stakeholders to see the system in action, fostering transparency and dialogue. Once confidence is built, farmers will be supported to become advocates for the system, driving wider acceptance of greywater reuse in Grenada and potentially the region.

Presentation: Nature-Based Solutions for Source-to-Sea Resilience
Presenters: Andre Joseph-Witzig (Conservation Practitioner) and Olando Harvey (Coastal and Marine Project Manager), The Nature Conservancy

The second presentation offered a regional lens on S2S resilience, through the work of The Nature Conservancy (TNC) in Grenada, Saint Lucia, and other Eastern Caribbean countries. Joseph-Witzig and Harvey detailed how nature-based solutions (NbS) are being implemented to combat land-based pollution, enhance biodiversity, and strengthen community-based climate resilience.

The presentation underscored the importance of ridge-to-reef approaches. At the upstream level, interventions include:

- Stormwater retention ponds to reduce surface runoff
- Stabilization of upper watersheds to prevent erosion
- Vegetative buffers along riverbanks

Downstream, TNC is focused on shoreline and reef restoration. In Grenville Bay, for instance, mangrove and coral ecosystems are being actively restored through community-based partnerships. Local nurseries grow native mangrove species, while coastal plants are reintroduced to buffer storm surges and reduce sedimentation.

A standout feature was the coral reef nursery project, which included 12 coral tables and applied micro-fragmentation techniques to accelerate regrowth. Local fishers were trained as coral gardeners, blending conservation with alternative livelihoods — particularly crucial in areas affected by declining fisheries and tourism.

TNC also emphasized a wastewater awareness campaign that spans several countries, engaging national agencies and communities to reshape public understanding of pollution and greywater reuse. Tools include visual media, surveys, and perception studies to inform policy and outreach strategies.

A key upcoming initiative involves a GEF-funded partnership between Grenada and Saint Kitts, aimed at addressing marine hypoxia (low oxygen levels) caused by nutrient overloads. This effort will focus on upstream land-use practices and watershed management to prevent downstream marine ecosystem collapse.

Interactive Discussion and Q&A
The session concluded with an open Q&A that brought out diverse technical and cultural considerations relevant to both projects. Highlights included:

- Greywater acceptance in Caribbean culture: Dr. Telesford emphasized education, co-design, and phased rollout as tools to address public hesitation.

- Exploring local alternatives to imported AFM: Participants raised the potential of using coconut shell-derived activated carbon as a regionally appropriate substitute. While promising, there's insufficient local research, and the project team aims to document learnings for wider regional benefit.

- Handling pharmaceutical contaminants: While AFM is effective and tested in hospital settings abroad, Grenada lacks the capacity for local validation. External lab testing will be needed to ensure safety in agricultural reuse.
- Coral survival and monitoring: Coral bleaching remains a serious threat, compounded by Sargassum influx, especially in wave-exposed areas like Grenville Bay. TNC acknowledged the need to adjust restoration strategies and increase monitoring frequency.
- Wastewater system classification: It was clarified that while tertiary treatment includes disinfection, it does not make water potable or safe for human contact. This is why drip irrigation is the preferred application method — to minimize exposure.
- Public relations and trust-building: Project leads emphasized that outreach is being approached cautiously and intentionally — prioritizing demonstrable results before scaling up PR campaigns.
- Regional examples: Barbados' long-standing experience with wastewater reuse was cited, including a new Wastewater Reuse Act, updated plumbing codes with color-coded piping, and training programmes for plumbers. Mustique was also mentioned as a small island example where treated wastewater is successfully used for irrigation.

Regional Relevance and Lessons Learned

The session highlighted how local innovation, regional cooperation, and strong stakeholder engagement can produce tangible, scalable results in water resource management. Grenada's wastewater project represents a regional model for closed-loop reuse systems, while TNC's work shows how nature-based solutions can protect both ecosystems and economies. Together, the two case studies demonstrated that Source-to-Sea management is not theoretical — it's practical, effective, and underway in the Caribbean.
Furthermore, the session underscored that:

- Wastewater reuse is viable — but cultural, regulatory, and technical barriers must be addressed deliberately.
- Nature-based interventions are cost-effective, climate-resilient, and locally empowering.
- Monitoring, data, and community trust remain vital pillars for long-term success.
- Knowledge sharing across countries is key, particularly as more SIDS explore similar models in water-scarce and climate-vulnerable contexts.

4. DAY 2 HIGHLIGHTS: BUILDING SOLUTIONS & COMMITMENTS

Session 4: Scenario-Based Action Labs

The fourth session marked the launch of the workshop's Action Labs, where country teams applied knowledge from previous sessions in hands-on, scenario-based exercises. This session aimed to simulate real-world IWRM crises and test institutional readiness, communication strategies, and inter-agency coordination.

Participants were divided into country groups and assigned one of three realistic and complex scenarios. Each group worked through their assigned scenario, identified coordination challenges, and proposed concrete actions. This was followed by a group reporting and debrief session to reflect on lessons learned and inter-country comparisons.

The session was moderated by Chris Corbin with instructions delivered by Roxanne Graham (GWP-C Regional Coordinator). Facilitation support was provided by Trevor Thompson (GWP-C Steering Committee Member) and Raunak Shrestha (GWPO Programme Officer, AIP).
Scenario Summary and Country Assignments

1. **Scenario 1:** New Water Resources Management Unit Challenges
   Countries: Trinidad & Tobago and Guyana
   A newly appointed director of a fledgling WRMU is faced with an escalating drought and competing demands from agriculture, tourism, and domestic users. Internally, the unit lacks clarity in mandates, SOPs, and inter-agency protocols. Externally, it faces growing public scrutiny and institutional confusion.
2. **Scenario 2:** Escalating Drought Crisis
   Countries: Antigua & Barbuda and Barbados
   A country experiences the worst drought in a decade, with widespread water shortages, protests, misinformation, and rising public health risks. Government must coordinate emergency responses while balancing economic priorities and rebuilding trust.
3. **Scenario 3:** Freshwater Ecosystem Collapse and Public Health Crisis
   Countries: Grenada and St. Vincent & the Grenadines
   A river ecosystem suffers mass die-offs after a rainfall event, triggering public panic, agency blame-shifting, and the urgent need for a coordinated investigation, response, and long-term monitoring strategy.

Scenario 1: New Water Resources Management Unit (WRMU) Challenges

Trinidad and Tobago

Trinidad's team situated themselves in the role of a nascent WRMU grappling with a deepening drought and unclear institutional standing — a reflection of their real-world dynamics between WASA and the Water Resources Agency (WRA). The scenario surfaced a core dilemma: how to assert leadership in a fragmented governance landscape without triggering turf wars.

To resolve this, the group proposed the creation of clear internal operating protocols, including:

- Standard Operating Procedures (SOPs),
- Cross-agency data-sharing frameworks,
- Formalized communication structures within the water sector.

An early move would be to convene a multi-sectoral Drought Coordination Task Force, pulling in key actors from health, agriculture, planning, tourism, and utilities. Importantly, the WRMU would need political support to cement its role, either via a Cabinet directive or through a mandate from its parent ministry.

Given public sensitivity to water crises, the team highlighted the need for a transparent communications strategy. This would include:

- Weekly press releases and live TV updates,
- Stakeholder consultations and digital dashboards showing water levels,
- Early outreach to media and local influencers to shape public expectations and trust.

From a longer-term perspective, the team underscored the importance of water allocation frameworks, regular policy simulations, and stakeholder mapping to identify both supporters and resisters of reform. Their approach blended ambition with institutional realism, acknowledging that legitimacy must be earned through delivery, not just declared.

Guyana

Guyana’s approach was shaped by its own history with water governance reform. With the National Water Council having lapsed into inactivity, participants advocated its reactivation as a central coordinating entity. This Council would:

- Unify fragmented mandates between agencies like GWI, EPA, Hydromet, and GGMC,
- Facilitate vertical coordination between central, regional, and community-level actors,
- Serve as a platform to define a national water allocation policy.

Recognizing that inter-agency confusion can paralyze crisis response, the team stressed the importance of clarifying roles via MOUs, establishing a central data repository, and mapping sectoral mandates. Internally, the WRMU would also build a stakeholder database to track political and public pressure points, ensuring more responsive decision-making.
Interestingly, the team leaned into the idea of “soft power” — suggesting that even without legal teeth, a WRMU could build credibility by:

- Hosting technical forums and public education events,

- Publishing regular bulletins on water availability and trends,
- Leading by convening, rather than controlling, sectoral partners.

Their vision presented a pragmatic pathway to institutional strengthening in a context of legacy fragmentation and institutional drift.

Scenario 2: Escalating Drought Crisis

Barbados

Barbados' team approached the drought scenario from a systems-level perspective, informed by the island's real-world experience as one of the most water-scarce nations in the region. The group proposed activating a National Drought Emergency Task Force with powers to:

- Coordinate across water, health, tourism, and emergency sectors,
- Fast-track emergency supplies and water redistribution,
- Mobilize public and private resources quickly.

Recognizing the role of perception in crisis escalation, the team prioritized public communication and equity, with emphasis on:

- Mapping and prioritizing vulnerable groups (schools, hospitals, rural communities),
- Scaling up desalination and rainwater harvesting for critical services,
- Deploying multi-platform communication (TV, social media, town halls).

The team also referenced recent legislative reforms, including the Wastewater Reuse Act and updates to plumbing codes — both seen as longer-term tools for resilience, but also requiring public engagement and training to be effective.

Coordination would hinge on agencies like the Barbados Water Authority, the EPD, and BADMC, with emphasis on avoiding duplication and ensuring transparent decision-making. Importantly, they noted that while Barbados has the tools, implementation and inclusive coordination remain the frontier.

Antigua and Barbuda

Antigua & Barbuda's scenario was set against a backdrop of intensifying drought, fragile trust in public water data, and strained coordination among water agencies. The group proposed the rapid formulation of a national Water Resource Management Policy, endorsed by Cabinet and co-owned by key sectors such as health, agriculture, and environment.

A central bottleneck identified was the absence of a standing inter-agency coordination mechanism. In response, the team proposed:

- A Cabinet-backed Inter-Ministerial Drought Response Unit,
- Sector-specific response thresholds and triggers (e.g., rationing levels),

- Rationing protocols based on sectoral priority, with health and sanitation prioritized over tourism or landscaping.

Engagement of the Prime Minister and Opposition in a joint public address was seen as vital to building unity and trust.

They also emphasized grassroots engagement through:

- Town hall meetings and community suggestion boxes,
- Working through trusted local influencers and religious leaders.

Recognizing resource limitations, the team suggested international support be sought to bolster technical and financial readiness. Overall, their approach highlighted that technical plans alone are insufficient without institutional legitimacy, inclusive governance, and trusted leadership.

Scenario 3: Freshwater Ecosystem Collapse & Public Health Risks

Grenada

Drawing on real-life experience with greywater reuse and river contamination incidents, Grenada's team offered a granular, stepwise crisis response to sudden ecological collapse. The scenario involved a major river contamination event following intense rainfall, resulting in the die-off of aquatic life and public panic.

Immediate response actions included:

- Activation of a joint response team (Health, Environment, Agriculture, NAWASA, Solid Waste),
- Halt of water abstraction and deployment of mobile testing teams,
- Formal press releases and community outreach through hotlines and media briefings.

Community engagement was central to the strategy. The team proposed:

- Town halls for affected communities (e.g., farmers, fishers),
- Use of radio call-ins and social media for real-time updates,
- Provision of psychosocial support to affected populations.

To avoid finger-pointing, they recommended a blame-free investigation protocol, backed by third-party validation. Gaps identified included poor information sharing, overlapping mandates, and lack of preparedness protocols — all of which would be addressed by:

- Forming a standing crisis task force with quarterly simulations,
- Drafting MOUs to define lead roles in environmental emergencies,
- Enforcing existing policies and sensitization around environmental compliance.

Saint Vincent and the Grenadines

SVG's scenario mirrored Grenada's, involving river contamination that threatened public health and livelihoods. The team proposed immediate action led by the Central Water and Sewerage Authority (CWSA) in collaboration with Public Health, Fisheries, and NEMO.

Response actions included:

- Cessation of water use in the contaminated area until testing confirmed safety,
- Rapid deployment of public service advisories, with harmonized messaging across agencies,
- Engagement with local park officers and community workers to help relay updates.

To ensure coordination, the team proposed:

- Cross-sector quality testing using standardized protocols,
- Establishment of a central communication framework with joint briefings,
- Development of a national water contingency plan and early warning system.

Longer-term, they stressed:

- Creating a case study to inform future crisis planning,
- Formalizing inter-agency roles via MOUs,
- Investing in testing capacity and real-time monitoring tools.

They noted that community trust is hard-earned but easily lost — and must be maintained through clear roles, regular updates, and compensation/support for affected users (e.g., farmers, fishers).

Session 5: From Dialogue to Delivery – Co-Creating Mini Action Plans

Facilitators:

- **Terrence Smith**, Managing Director, T.P. Smith Engineering Inc. (Former Acting General Manager, NAWASA Grenada)
- **Raunak Shrestha**, AIP Programme Officer, Global Water Partnership Organization (GWPO)
- **Trevor Thompson**, Steering Committee Member, GWP-C

Following the institutional diagnostics, crisis simulations, and technical exchanges from Day 1, **Session 5** transitioned the workshop into its most outcome-oriented phase: **co-creation of country-led IWRM Mini Action Plans**. This session was structured to enable each participating country to define **realistic, time-bound, and finance-ready actions** that reflect national priorities, align with SDG 6.5.1, and can feed into upcoming support pipelines.

Session Objectives:

- Translate lessons from the workshop into **tangible national actions**
- Support countries in identifying **"low-hanging fruit"** that can be addressed within 6–18 months
- Develop concise plans aligned with the **CARICOM IWRM Action Framework** and **national development strategies**
- Build ownership over the planning process through a **multi-stakeholder approach**
- Establish a foundation for accessing **technical support and climate financing**

Presentation: Planning Framework Introduced

Terrence Smith introduced a **three-phase approach** to IWRM Action Planning:

1. **Preparation Phase**
    - Appoint a lead facilitator and identify an anchor institution
    - Conduct a baseline assessment of IWRM capacity, legal frameworks, and data systems
    - Establish a multi-agency task force to guide plan development
2. **Consultation & Co-Development**
    - Engage stakeholders to define priority challenges
    - Develop and shortlist potential actions with cost estimates
    - Align with SDG targets and existing policies
    - Draft monitoring and evaluation indicators
3. **Formalization & Implementation**
    - Secure government endorsement
    - Launch a promotion and communications strategy
    - Mobilize resources (climate funds, government budgets, private investment)
    - Implement, monitor, and report progress

The focus of the workshop session was on **steps within Phase 2** — identifying **2 to 3 concrete actions per country**, with supporting details such as timelines, lead agencies, and potential funding sources.

Mini Action Plan Development – Group Work Highlights

Participants broke into country teams and used a standardized template to outline their draft Mini Action Plans. Below are highlights from selected countries:

Regional Summary Table: Country Mini Action Plans

Country	Top 3 Priority Actions	Lead Entity(ies)	IWRM Focus Areas	Timeline	Estimated Cost (USD)
Antigua & Barbuda	1. Establish National IWRM Agency 2. Secure External Funding for IWRM 3. Develop Regional OECS IWRM Policy	Ministry of Agriculture; Ministry of Finance; OECS Secretariat	Enabling Environment, Institutions & Participation, Financing, Management Instruments	18–24 months (Action 1 & 3);	• $315,000– IWRM Agency • $185,000 – External Funding • 85,000 OECS Policy *Note: Continuous (Funding)*
Barbados	1. Groundwater Monitoring Programme (Extension & Automation) 2. Wastewater Reuse Regulations	BWA, EPD, Ministry of Health and Wellness	Institutions & Participation, Management Instruments, Regulation, Enabling Environment	1 – 4 years	• $3M – Groundwater Monitoring • $200,000 – Wastewater Reuse Regulations **Total= $3.2M**
Grenada	1. Operationalize Water Resources Management Unit (WRMU) 2. Implement Watershed Management Plans 3. Secure Sustainable	PURC; WRMU; Government of Grenada	Institutional Strengthening (2.1), Water Planning & Management (3.2), Financing	3–5 years (WRMU)2–3 years (Watershed Plans)Ongoing (Financing)	• $40M – Operationalizing WRMU • $8M – Watershed Management • Financing Action – *Not costed*

	Financing for Water Governance				
Guyana	1. Revision & Approval of National Water Policy 2. Watershed Management Plans 3. National Water Resources Database	National Water Council (NWC); Hydromet	Enabling Environment, Management Instruments	18 months – 5 years	• $500,000 – National Water Policy • $250,000 – Watershed Plans • $1.5M – Water Database **Total = $2.25M**
Saint Vincent & the Grenadines	1. Policy Reform & IWRM Plan 2. Stakeholder Integrated Management 3. Water Quality Testing & Monitoring Systems	CWSA, Sustainable Development Unit	Policy, Coordination, Management Instruments	1.5 – 3 years	• $3.5M – Policy Reform • $25M – Stakeholder Mgmt • $4M – Water Quality Testing **Total = $32.5M**
Trinidad & Tobago	1. Strengthen IWRM Governance & Coordination (IWRM Steering Committee) 2. Enhance Water Security & Climate Resilience 3. Promote Water Conservation & Public Engagement	WRA, WASA, MPU	Enabling Environment, Institutions & Participation, Management Instruments	2–3 years	• $3M – Governance & Coordination • $1M – Climate Resilience • $2.5M – Public Engagement **Total = $6.5M**

Next Steps

As part of the post-workshop follow-up:

- Each country will receive **technical support** over a **5-month period** to refine their Mini Action Plans
- GWP-C, UNEP, and other partners will assist with **resource mobilization**, including concept note development for climate funds
- Countries are encouraged to **align their plans with national development and NDC strategies** to ensure long-term integration and funding eligibility for the 5-month technical support phase promised under the GWP-C/UNEP partnership.

Regional Financing Roundtable – Toward a Regional Roadmap

Facilitator: Christopher Corbin

This panel discussion brought together seasoned climate finance experts, water sector professionals, and regional institutions to explore mechanisms for unlocking funding for water resilience and IWRM in Caribbean SIDS. The session focused on bridging planning and finance, identifying practical bottlenecks, and recommending pathways to move from concepts to capital.

Panelists Included:

- **Dr. Spencer Thomas** – Grenada's Ambassador and Special Envoy for Multilateral Environmental Agreements (and NDC Advisor)
- **Terrence Smith** – Managing Director, T.P. Smith Engineering Inc.
- **Martina Duncan** – NAP Advisor, International Institute for Sustainable Development (IISD), Canada
- **Tara Francis** – Project Development Officer, CCCCC
- **Raunak Shrestha** – Programme Officer, Global Water Partnership Organisation (GWPO)

Key Insights and Messages:

- **Financing is complex, time-consuming, and politically sensitive.** Dr. Spencer Thomas highlighted that climate finance is often misunderstood and framed as development or disaster relief aid. The slow pace of disbursement and negotiation has made finance one of the most divisive issues in the climate space.
- **Water is central to both adaptation and mitigation.** Water is cross-cutting, impacting health, energy, agriculture, and disaster management. Embedding water priorities within Nationally Determined Contributions (NDCs) and National Adaptation Plans (NAPs) is essential for finance alignment.
- **Project design matters.** Tara Francis emphasized the importance of clearly structured, country-owned proposals. Regional approaches are viable but must be aligned with country needs and capacities.

- **Data gaps weaken bankability.** Inconsistent and inaccessible data was repeatedly cited as a barrier to project packaging, particularly for IWRM initiatives. Countries need to invest in standardized monitoring and management platforms.
- **Bankable project pipelines are weak.** Terrence Smith urged Caribbean professionals to use their expertise to produce realistic, actionable, and bankable projects. Regional ownership, not donor-dependency, must drive proposals.
- **Long wait times hurt progress.** Martina Duncan described how accessing funds (e.g., through GCF) can take 3–4 years due to lengthy approval cycles and in-country instability. Stronger national coordination is needed to sustain momentum across election cycles.

Financing Opportunities and Recommendations:

Opportunity Area	Description	Country Action Suggestions
Tourism Levies	Build on SVG's Climate Resilience Fund, financed via tourism sector	Replicate in Grenada, Saint Lucia, and Antigua as sustainable climate-water fund
Private Foundations	Underutilized option; some target disaster resilience, health, or youth	Countries should map foundation priorities and align proposals accordingly
Regional Platforms	Shared proposals through OECS, CARICOM, or 5Cs	Pool technical assistance and target GCF/GEF with multi-country submissions
Climate Finance Accreditation	GCF access requires working through accredited entities	Consider partnerships with existing regional accredited institutions (e.g., CCCCC, CDB)
Proposal Readiness Support	GWP, UNEP, and 5Cs offer technical support for proposal development	Ministries should formalize technical requests and build dedicated grant writing units

"We cannot continue to rely on external aid alone. We have the expertise, and it's time to use it."
– *Terrence Smith*

6. CROSS-CUTTING THEMES AND INSIGHTS

Throughout both days of the workshop, several recurring challenges and opportunities emerged that cut across countries, scenarios, and sessions. These **cross-cutting themes** represent the systemic issues that must be addressed to advance effective Integrated Water Resources Management (IWRM) and accelerate progress on **SDG 6** in Caribbean SIDS.

a. Governance and Coordination

Participants consistently emphasized that **fragmented mandates and weak interagency collaboration** are central barriers to effective water resource management. Many agencies operate in silos, leading to confusion, duplication, and delayed responses during crises. Recommendations included:

- Clarifying roles and mandates through formal agreements (e.g., MOUs)
- Establishing cross-sectoral **crisis or drought committees**
- Mainstreaming IWRM into national governance systems

b. Public Trust and Engagement

Trust between institutions and communities was identified as a **critical success factor** in water crisis response. Misinformation, delayed advisories, and vague government messaging can quickly erode public confidence. Countries emphasized the need for:

- **Timely, transparent, and honest communication**
- Engagement of **community leaders, social media influencers**, and local organizations
- Institutionalizing **stakeholder consultations** before, during, and after emergencies

c. Financing Readiness

While financing needs are well recognized, many countries struggle with **limited capacity to develop bankable water projects**, especially under climate financing frameworks. Contributing factors include:

- Weak coordination between finance and water sectors
- Inadequate understanding of donor requirements
- Lack of data and baseline studies to justify investment
  Several participants advocated for **regional fundraising strategies**, public–private partnerships (PPPs), and innovative mechanisms such as **tourism surcharges or resilience funds** (e.g., the SVG Climate Change Resilience Fund).

d. Data Gaps

Across all sessions, participants highlighted that **water-related data often exists, but remains underutilized**. Issues include:

- Fragmented or uncoordinated data collection across agencies
- Poor storage, sharing, and access protocols
- Limited capacity to **analyze and translate data into decisions**
  Countries recommended investments in:
- **National Water Information Systems**
- Cross-sectoral data platforms
- Capacity building in **GIS, monitoring, and SDG 6 reporting**

7. RECOMMENDATIONS FOR MOVING FORWARD

A. Strengthen Water Governance and Coordination

- **Region-wide**: Establish or reinforce legal mandates for national IWRM bodies and clarify roles among agencies through Memoranda of Understanding (MOUs).
- **Grenada**: Finalize and implement the **Water Resource Management Bill**, and operationalize the **Water Resource Management Unit (WRMU)** with staff, office space, and equipment.
- **Antigua & Barbuda**: Fast-track the **development of a national IWRM policy**, supported by revised legislation to guide institutional coordination.

B. Improve Data Systems and Access Protocols

- **Region-wide**: Develop shared national and regional platforms for **water quality, usage, and climate-related data**, with standard operating procedures for access and use.
    - **Note**: *Vincent Sweeney highlighted that "while many Caribbean SIDS do collect water data, the lack of coordination, accessibility, and standardized protocols for sharing and using data is a major barrier. He emphasized the need for harmonized regional systems that enable better tracking of SDG 6 indicators and informed decision-making."*
- **Guyana**: Strengthen and fully operationalize the **National Water Information System** to support real-time decision-making and drought planning.
- **St. Vincent and the Grenadines**: Harmonize water quality testing procedures across agencies and improve coordination between the **Central Water and Sewerage Authority (CWSA)** and environmental monitoring bodies.

C. Institutionalize Crisis Preparedness and Response

- **Region-wide**: Establish cross-sector crisis task forces and early warning systems for droughts, pollution events, and infrastructure failures.
    - *This recommendation primarily stems from the water crisis simulations, where country teams had to respond to complex emergencies under pressure — including droughts, pollution events, and institutional breakdowns.*

      Observed gaps across teams:

        - *No pre-established crisis committees or task forces to coordinate response.*
        - *Fragmented responses due to overlapping mandates and unclear lead agencies.*
        - *Lack of early warning systems to trigger coordinated action before the crisis escalates.*

- *Delayed public communication due to institutional uncertainty and lack of protocols.*

- *Country Examples:*

  - *Trinidad & Tobago (WRMU scenario): Highlighted confusion between WASA and WRA, and called for a formal coordination mechanism during crises.*
  - *St. Vincent (pollution scenario): Identified the need for an interagency protocol to respond to environmental and public health risks.*
  - *Grenada (pollution scenario): Proposed a standing multi-agency Crisis Committee and noted the lack of joint planning and clear communication channels.*
  - *Antigua & Barbuda emphasized that effective cross-sector crisis response requires high-level political leadership. During the scenario exercise, the team proposed that drought and water emergencies be coordinated directly from the Prime Minister's Office or Cabinet level, ensuring all ministries align under a unified national strategy. This, they argued, would strengthen accountability, reduce mandate confusion, and accelerate decision-making in politically sensitive situations.*
  - *Guyana: Proposed activating or formalizing a Drought Committee with sectoral representation.*

- *Also from Session 2: Institutional Diagnostics and Mandate Mapping*

  Participants identified a widespread absence of institutionalized emergency coordination structures, especially those that span sectors (e.g., health, environment, agriculture, tourism). The lack of standing bodies meant countries often responded reactively rather than proactively.

- **Barbados**: Develop a **sector-specific drought response plan**, supported by updated water demand estimates and early warning communication tools.
- **Grenada**: Conduct **vulnerability assessments** and implement protocols for rapid public notification and stakeholder coordination during river contamination events.

  - *Participant: "We need to do vulnerability mapping for communities using the river daily. Who's drinking, fishing, farming — and how do we reach them fast? Right now, each agency talks to their own people. That's not coordination."*

D. Enhance Financing Readiness and Resource Mobilization

- **Region-wide**: Strengthen project preparation capacity to develop **bankable, climate-aligned water projects**, and build relationships with both international and private funders.
- **Trinidad and Tobago**: Translate the updated IWRM policy into a fully costed investment plan and assign dedicated resources for implementation and capacity building.

- **Saint Vincent and the Grenadines**: Scale the **Climate Change Resilience Fund**, which channels revenues from tourism to disaster and water management interventions—an approach that can serve as a regional model.

E. Advance Nature-Based Solutions and Infrastructure Resilience

- **Region-wide**: Promote **ridge-to-reef** and **source-to-sea** interventions, including watershed rehabilitation, rainwater harvesting, and coastal ecosystem restoration.
- **Grenada**: Expand the wastewater reuse project piloted at **Princess Alice Hospital** and replicate it in other health and agricultural settings using a phased, community-informed model.
- **Barbados**: Accelerate implementation of the **Wastewater Reuse Act**, including capacity building for plumbers, color-coded pipe systems, and public education campaigns on greywater safety.

F. Foster Public Trust and Stakeholder Engagement

- **Region-wide**: Develop long-term communications strategies that include community leaders, private sector actors, youth, and social media influencers.
- **Guyana**: Formalize feedback loops between the **Drought Committee**, civil society, and farming communities to build trust and improve response effectiveness.
- **Grenada**: Establish a standing, multi-agency **Crisis Committee** with dedicated communications staff trained in transparent and culturally sensitive messaging.

G. Build Technical and Human Capacity

- **Region-wide**: Provide sustained training on IWRM, proposal writing, monitoring, and climate finance access for technical staff and policymakers.
- **Antigua & Barbuda**: Launch inter-agency simulations and scenario exercises to clarify roles, build institutional muscle memory, and prepare for extreme climate events.
- **Barbados & Trinidad**: Expand sectoral partnerships (e.g., tourism, agriculture, finance) through regular roundtables and training to mainstream IWRM across economic planning.

These recommendations are intended not just as guidance, but as **entry points for immediate follow-up** under the five-month technical support phase offered by GWP-C and UNEP. Countries are encouraged to align these actions with their draft **Mini Action Plans**, national adaptation strategies, and ongoing donor programs to accelerate both local and regional impact.

8. Annexes

Annex A: List of Participants

Name	Position	Country	Institution
Abigail Ellis	National Coordinator	Grenada	CYEN
Alex Ifill	Manager, Water Resources	Barbados	Manager Water Resources & Environmental Management Unit Barbados Water Authority (BWA)
Allison Neptune	Project Manager	Grenada	Grenada Solid Waste Management Authority
Alva Browne	Permanent Secretary, MOIID	Grenada	Ministry of Infrastructure, Works, Transportation
Angela Franklin	Hydrologist	Guyana	Guyana Water Incorporated
Anthony Headley	Director	Barbados	Environmental Protection Department
Aria St. Louis	Environmental Specialist for Govt of Grenada, Head of Environment Division	Grenada	Government of Grenada
Carol Forbes	Project Manager	Grenada	Windref
Christopher Corbin	UNEP	Jamaica	UNEP
Chrystal Williams	Technical Advisor	Grenada	GIZ
Colin O'Keiffe	Permanent Secretary	Antigua and Barbuda	Ministry of Health, Wellness, Environment and Civil Affairs
Dennies Burris	General Manager Acting	Grenada	Nawasa
Faylene King	Director of Tourism	St. Vincent and the Grenadines	Ministry of Tourism, Civil Aviation, Sustainable Development and Culture
Frank Grogan	Specialist Hydrologist	Guyana	Hydrometeorological Service
Giselle Gravesande	—	Grenada	CYEN Grenada
Glenn Marshall	Senior Agricultural Officer	Barbados	Ministry of Agriculture, Food and Nutritional Security
Gregory Bailey	Director of Agriculture	Antigua and Barbuda	Ministry of Agriculture, Lands, Fisheries and the Blue Economy
Jaime Paul	Hydrogeologist	Barbados	Barbados Water Authority
Jaabari Reynolds	Technical Officer	Antigua & Barbuda	Department of Environment
Jonathan Francis	Senior Engineer	St. Vincent	Central Water and Sewerage Authority

Joyce Thomas	GWPC Steering Committee	Grenada	GWPC
Kerry Mitchell	Associate Professor and Chair	Grenada	St. George's University
Kenneth Hazzard	Chief Environmental Health Officer	Grenada	Ministry of Health
Kendon James	Co Project Manager	Grenada	Windward Islands Research & Education Foundation
Kerron Martinez	Programme Officer	Grenada	GWP-C
Kevin Providence	Superintendent of Terrestrial and Marine Parks	Saint Vincent and the Grenadines	National Parks, Rivers and Beaches Authority
Leyana Romain	Climate and Outreach Advisor	Grenada	GIZ
Lindonne Telesford	Associate Professor	Grenada	St. George's University
Martina Duncan	NAP Advisor	Grenada	IISD
Mina Booker	Communications Officer	Grenada	GWP-C
Olando Harvey	Eastern Caribbean Marine and Coastal Projects Manager	Grenada	The Nature Conservancy
Paulette Euranie Bynoe	Chair, Steering Committee	Guyana	GWP-C
Peron Johnson	Permanent Secretary	Grenada	Ministry of Climate Resilience, the Environment and Renewable Energy
Raunak Shrestha	Programme Officer	Nepal	Global Water Partnership
Reene Smith	Project Officer	Grenada	Ministry of Climate Resilience, the Environment & Renewable Energy
Reginald Burke	Steering Committee Member	Barbados	GWP-C
Roxanne Graham	RC	Grenada	GWP-C
Sharon Archie	Manager, Water Resources	Trinidad and Tobago	Water and Sewerage Authority
Spencer Thomas	Ambassador for Multilateral Environmental Agreements / Chair, Grenada Sustainable Development Council / Member, National Climate Change Committee	Grenada	Climate Change Specialist
Tara Francis	Project Manager CCCCC	Grenada	CCCCC
Terrence Smith	Managing Director	Grenada	T.P. Smith Engineering Inc.
Thaddeaus Peters	Chief Agricultural Officer	Grenada	Ministry of Agriculture

Todd La Barrie	Production & Quality Manager	Grenada	NAWASA
Trevor Thompson	SC Member	Grenada	GWPC
Troy Gill	Reporter	Grenada	MTV Grenada
Tessa Charles	Technical Advisor	Grenada	GIZ Grenada – G-Crews
Vivían Joseph	Environmental Programme Officer II	Trinidad & Tobago	Environmental Management Authority

Annex B: Workshop Agenda

(See: https://drive.google.com/file/d/1AVCz3wRoTn9RNUu5vXmcSJj4G0UvHeVD)

Annex C: Mini Action Plans Summary

Antigua and Barbuda – Draft IWRM Priority Actions

Action 1: Establish a National IWRM Agency

At present, Antigua and Barbuda lacks a designated agency mandated to address Integrated Water Resources Management (IWRM). This institutional gap has significantly hampered the country's ability to effectively respond to pressing water-related challenges, especially in times of drought, pollution crises, and intersectoral water competition.

Strategic Objective:

To coordinate, plan, and organize all IWRM-related activities through a centralized national body.

Rationale:

Antigua and Barbuda is currently behind in terms of IWRM implementation. A dedicated agency would ensure that the country aligns with both regional and international water management standards while meeting domestic sectoral demands. Centralized coordination would also support better enforcement, resource allocation, and stakeholder engagement.

Lead Entity:

Ministry of Agriculture

Key Collaborators:

APUA, National Office of Disaster Services, Ministries of Health, Social Transformation, Tourism, Meteorology, Environment, Agriculture; Chamber of Commerce, and UWI Five Islands.

Estimated Cost:
EC$850,000 per annum

Financing Options:
Consolidated Fund, Citizen Investment Programme (CIP), Donor Agency Funding

Timeline:
18–24 months

IWRM Dimensions Addressed:
- Enabling environment
- Institutions and participation
- Management instruments
- Financing

SDG Targets:
6.5.1 (IWRM implementation at all levels)

Action 2: Secure External Funding for IWRM Implementation
While a dedicated IWRM agency is proposed, national resources alone will not be sufficient to sustain its operations. This action targets the attraction of external financing to ensure the agency can function efficiently and fulfill its mandate.

Strategic Objective:
To carry out the agency's mandate in an effective and efficient manner by securing long-term financing beyond the Consolidated Fund.

Rationale:
Government resources are currently stretched, and it is anticipated that staff for the new IWRM agency would need to be seconded from existing institutions. This model would not be sustainable without additional funding for tools, equipment, data systems, stakeholder engagement activities, and other operational necessities.

Lead Entity:
Ministry of Finance and Department of the Environment

Key Collaborators:
Ministry of Finance, Department of Environment, OECS, UNEP, GWP, GCF

Estimated Cost:
EC$500,000 per annum

Financing Options:
Donor agencies and international development partners

Timeline:
Continuous

IWRM Dimension:
Financing

SDG Targets:
6.5.1

Action 3: Develop a Regional OECS IWRM Policy Document
Given the absence of a harmonized OECS framework on IWRM, this action seeks to develop a guiding policy document to assist member states — including Antigua and Barbuda — in aligning their national plans within a regional context.

Strategic Objective:
To provide OECS countries with one coherent window for policy and legislative guidance on IWRM.

Rationale:
Currently, there is no regional policy framework to define or unify IWRM actions across OECS territories. This lack of coordination creates inefficiencies and missed opportunities for joint action, funding, and knowledge sharing.

Lead Entity:
OECS Secretariat

Key Collaborators:
OECS Governments and Development Partners

Estimated Cost:
EC$500,000

Financing Options:
OECS Governments and external donor agencies

Timeline:
18 months

IWRM Dimensions Addressed:
- Enabling environment
- Financing

SDG Targets:
6.5.1

Barbados:

Action 1: Groundwater Monitoring Programme Extension and Automation

Strategic Objective
To establish an enhanced monitoring system within **five years** to track the impact of **land use changes** on groundwater aquifers, with real-time monitoring of critical water quality indicators for human health and environmental safety.

Rationale
Growing land development and wastewater disposal are increasing pollution risks, particularly transferring pollutants from coastal to inland groundwater. Current delays in test results hinder timely responses. Installing **boreholes and telemetry equipment** will enable early detection and response using real-time monitoring of **REDOX, DO, pH, temperature**, and other pollution indicators.

Key Details
Leading Entity:BWA/EPD
Key Collaborators: BWA, EPD, MET, Agriculture, CIMH
Scale: National
Estimated Cost: $3 Million USD – includes boreholes, telemetry, equipment, training, IT
Financing Sources: GOB, GCF, GEF, DCFO
Timeline: 4 Years
IWRM Dimension: Institutions Participation & Management Instrument
Related SDGs: SDG 1 (No Poverty), 2 (Zero Hunger), 6 (Clean Water), 12 (Responsible Consumption), 14 (Life Below Water)

Action 2: Development of Wastewater Reuse Regulations

Strategic Objective
To work with stakeholders and provide national-level clarity within **three years** on treated wastewater use regulations.

Rationale
Treated wastewater is currently used without standardized guidelines across sectors like **agriculture, urban use, groundwater recharge**, and **domestic use**. The lack of regulation leads to risk and inconsistency. Regulations will improve safety, investment readiness, and set national standards for all reuse pathways.

Key Details
- **Leading Entity:** Ministry of Health and Wellness
- **Key Collaborators:** EPD, BNSI, BWA
- **Scale:** National

- **Estimated Cost:** $200,000 – includes assessments, stakeholder consultations, and drafting
- **Financing Sources**: Government, GCF, GEF
- **Timeline**: 1 Year
- **IWRM Dimension**: Enabling Environment
- **Related SDGs**: SDG 1, 2, 6, 12, 14

Grenada – Mini-Action Plan Summary

Priority Action 1: Operationalize the Water Resources Management Unit (WRMU)

Objective: Establish and strengthen the WRMU's institutional and operational capacity.
Leading Entity: Public Utilities Regulatory Commission (PURC)

Key Collaborators: Ministry of Health (MoH), NAWASA, Grenada Bureau of Standards (GBS), Ministry of Agriculture, Forestry and Lands (MoAFL)

Geographical Scale: Tri-island State

Estimated Cost: $40 million USD
Potential Sources of Financing: G-CREWS, GoG National Budget, Global Environment Facility (GEF)

Timeline: 3–5 years

IWRM Dimension: 2.1 (Institutional strengthening and coordination)

Related SDG Target: 6.5.1

Priority Action 2: Formalize and Implement the Watershed Management Plan
Objective: Protect and rehabilitate critical watersheds through structured planning.

Key Details:
- **Leading Entity:** WRMU
- **Key Collaborators:** MoAFL, Forestry Department, Land Use Division, Fisheries Department, Farmer Groups
- **Geographical Focus:** Annandale & Beausejour Watershed Areas, Forest Reserves
- **Estimated Cost:** ~$8 million USD
- **Potential Sources of Financing:**
  - GoG National Budget
  - Green Climate Fund (GCF)
  - GEF CRA Project

    - Bilateral donors, CDP, PPP, CDB
    - Adaptation Fund, CIF, CDF
- **Timeline:** July 2025 – July 2028 (2–3 years)
- **IWRM Dimension:** 3.2 (Water resources planning and management)
- **Related SDG Target:** 6.5.1

Priority Action 3: Secure Sustainable Financing for Water Governance

Objective: Develop and mobilize diversified funding streams for water resource initiatives.

Key Details:

- **Leading Entity:** Government of Grenada (GoG)
- **Key Collaborators:** Ministry of Finance (MoF), WRMU, Climate Resilience Executing Entity (CREE), MoAFL
- **Estimated Cost:** Not specified
- **Potential Sources of Financing:**
    - GoG National Budget
    - GCF, GEF CRA Project
    - Bilateral sources
    - CDP, PPP, CDB
    - Adaptation Fund, CIF, CDF
- **Timeline:** Not specified
- **IWRM Dimension:** Not specified (likely 1.3 – Financing)
- **Related SDG Target:** 6.5.1

Guyana – Mini action plan

The National Water Council was resuscitated in 2024, with the key role focused on the development, amendment, implementation of a National Water Policy to coordinate, promote, manage and ensure sustainable management of water resources in Guyana

Guyana

1. Revision and Approval of National Water Policy

Strategic Objective: Achieve Cabinet approval of a modernized National Water Policy to promote sustainable water management.

Rationale: The National Water Council (NWC) has been revived after decades and is now leading the update of Guyana's water governance framework under the 2002 Water and Sewerage Act.

Lead Agency: National Water Council (NWC)

Collaborating Partners: Hydromet, GWI, EPA, UG, NDIA, and others

Scope: National

Estimated Cost: $500,000

Funding Sources: Government of Guyana, Donor Funds

Timeline: 18 months
IWRM Dimension: Enabling Environment (Policies, Plans & Laws)
Relevant SDG Targets: SDG 6.5.1 (1.1a, 1.1b)

2. Watershed Management Plans
Strategic Objective: Develop comprehensive watershed management plans for major river basins.

Rationale: Basin-level management is fragmented and lacks integration. Structured plans will ensure water quality and resource protection.

Lead Agency: National Water Council (NWC)
Collaborating Partners: Hydromet, RDC, Communities, Ministry of Housing & Water, EPA, UG
Scope: Basin level
Estimated Cost: $250,000
Funding Sources: Government of Guyana
Timeline: 2–5 years
IWRM Dimension: Enabling Environment
Relevant SDG Targets: SDG 6.5.1 (1.2b)

3. Development of National Water Resources Database
Strategic Objective: Establish a centralized water data system to support planning and evidence-based decision-making.

Rationale: Multiple agencies collect water data, but without a centralized system, monitoring is inefficient. A national database will support better coordination and governance.

Lead Agency: Hydrometeorological Service
Collaborating Partners: GWI, GGMC, EPA, UG, NDIA, Bureau of Statistics
Scope: National
Estimated Cost: $1,500,000
Funding Sources: Government of Guyana, Donor Funds
Timeline: 2 years
IWRM Dimension: Management Instrument
Relevant SDG Targets: SDG 6.5.1 (3.1a–3.2d)

St. Vincent and the Grenadines – Mini-Action Plan
St. Vincent and the Grenadines has proposed three major priority actions aimed at improving national water governance and management in alignment with SDG 6. These actions target policy coherence, institutional coordination, stakeholder integration, and infrastructure development.

Action 1: Policy Reform

Objective:
To achieve water security and improved sanitation in SVG through a comprehensive policy reform approach.

Rationale:
The current water governance landscape in SVG is characterized by overlapping legislation and multiple ministries and agencies operating with separate mandates. This fragmentation has led to unclear jurisdiction and authority. A harmonized policy framework is essential to align interests, eliminate redundancy, and enhance coherence across institutions.
In tandem with policy reform, the action includes developing an IWRM plan and establishing a dedicated water resources unit.

Key Details:
- **Leading Entity:** Central Water and Sewage Authority
- **Collaborators:** National Parks, Rivers and Beaches Authority, Fisheries Department, Forestry Department, Public Health, Bureau of Standards
- **Geographical Scope:** Nationwide
- **Estimated Cost:** USD $3.5 million
- **Timeline:** 3 years
- **Financing Sources:** World Bank, GCF, UNEP
- **IWRM Dimension:** Enabling Environment (1.1.1 and 1.1.2)
- **SDG Target:** 6.5.1

Action 2: Stakeholder Integrated Management

Objective:
To establish a participatory, transparent, and coordinated stakeholder management system that strengthens governance, ensures equitable access to water resources, and enhances sustainable use and resilience of water systems across SVG.

Rationale:
St. Vincent and the Grenadines is highly vulnerable to climate change, droughts, and water-related disasters. A broad-based stakeholder approach—encompassing community groups, experts, and institutions—is crucial to building resilience and improving water governance. This action involves establishing a water resource unit that ensures inclusion, coordination, and alignment with national development and SDG 6 priorities.

Key Details:
- **Leading Entity:** Sustainable Development Unit
- **Collaborators:** Legal Affairs, National Parks, Rivers and Beaches Authority, Central Water and Sewage Authority
- **Geographical Scope:** Nationwide (across all watersheds)
- **Estimated Cost:** USD $25 million
- **Timeline:** 3 years
- **Financing Sources:** CEPF, GCF, World Bank
- **IWRM Dimension:** Institutional Roles (2.1 and 2.3)

- **SDG Target:** 6.5.1

Action 3: Increase Efficiency of Water Parameters Testing

Objective:
To enhance national capacity and infrastructure for water quality monitoring.

Rationale:
SVG currently faces underdeveloped testing systems and limited monitoring infrastructure. This action aims to enhance laboratory capacity, expand the testing network, train staff, standardize protocols, and create a centralized database to improve data accessibility and inform better water quality decision-making.

Key Details:
- **Leading Entity:** Central Water and Sewage Authority
- **Collaborators:** National Parks, Rivers and Beaches Authority, Fisheries Division, Forestry Department
- **Geographical Scope:** Nationwide
- **Estimated Cost:** USD $4 million
- **Timeline:** 1.5 years
- **Financing Sources:** World Bank, CEPF
- **IWRM Dimension:** Management Instruments (4.2, 3.1, 3.2, 3.3)
- **SDG Targets:** 6.3.2 and 6.6.1

Trinidad and Tobago: Mini-Action Plan Summary

Action 1: Strengthening Water Governance and Institutional Coordination
Trinidad and Tobago's first priority action centers on improving governance and coordination across the country's fragmented water management sector. The plan proposes the creation of a more integrated governance structure via the establishment of a national IWRM Steering Committee. This committee would serve as the central mechanism to promote inter-agency collaboration, reduce inefficiencies, and enhance evidence-based water resource management.

The **strategic objective** is to establish a unified and effective water governance framework that promotes integrated decision-making, transparent allocation of water resources, and enforcement of water-related policies. This is particularly important in Trinidad and Tobago's context, where responsibilities are currently dispersed across multiple ministries and agencies. By consolidating efforts and promoting policy coherence, the country seeks to meet SDG target **6.5** on IWRM implementation.

Rationale:
Water management in Trinidad and Tobago is highly fragmented, with overlapping responsibilities between agencies such as the Water and Sewerage Authority (WASA), the Ministry of Public Utilities (MPU), and the Water Resources Agency (WRA), among others. Strengthening coordination is expected to enhance compliance, policy alignment, and ultimately the sustainability of water governance.

Key Details:
- **Leading Entity:** Water Resources Agency (WRA), WASA, MPU, Ministry of Planning, Development & Economic Affairs (MPDEA), and Ministry of Agriculture, Land & Fisheries (MALF).
- **Collaborators:** Ministry of Works & Transport (MOWT), University of the West Indies (UWI), and others.
- **Estimated Cost:** USD 3 million
- **Financing Sources (Potential):** Public Sector Investment Programme (PSIP), UNEP, Global Environment Facility (GEF), GWP-C, Green Climate Fund (GCF)
- **Timeline:** 2 to 3 years
- **IWRM Dimension:** Enabling Environment
- **Related SDG Target:** 6.5

Action 2: Enhancing Water Security and Climate Resilience
Recognising the country's increasing exposure to seasonal water shortages and climate-related impacts, Trinidad and Tobago's second action targets watershed protection, groundwater recharge, and resilience-building through adaptive infrastructure and management systems. This includes flood and drought preparedness strategies, which are critical for ensuring long-term water security under changing climate conditions.
The **strategic objective** is to increase the availability and reliability of water resources through sustainable management, climate adaptation, and protection of critical watersheds and aquifers.

Rationale:
Seasonal water shortages and watershed degradation, combined with the effects of climate change, present serious threats to Trinidad and Tobago's water supply. Building resilience through ecosystem protection and improved water storage and recharge mechanisms will enhance the sustainability of supply for domestic, agricultural, and industrial use. This supports SDG **6.4** (efficient use) and **6.6** (protection of ecosystems).

Key Details:
- **Leading Entity:** WASA and WRA
- **Collaborators:** MPU, Ministry of Planning & Development (MPD), NGOs, CBOs, Adopt-a-River Project (AARP), Corporate Trinidad & Tobago
- **Estimated Cost:** USD 1 million
- **Financing Sources (Potential):** PSIP, UNEP, GEF, GWP-C, Green Fund
- **Timeline:** 2 to 3 years
- **IWRM Dimension:** Institutions & Participation

- **Related SDG Targets:** 6.4 and 6.6

Action 3: Promoting Water Conservation and Public Engagement
The third action addresses the behavioural dimension of IWRM by driving conservation awareness and empowering communities. The plan aims to reduce non-revenue water and improve public stewardship through education campaigns, smart metering, and the promotion of conservation practices in homes, schools, and businesses.
The **strategic objective** is to cultivate a water-conscious society through behavioural change, education, and active participation in conservation initiatives.

Rationale:
High levels of water demand, wastage, and limited public awareness continue to undermine efficient water use. By engaging communities and encouraging conservation, Trinidad and Tobago hopes to reduce water loss, improve service reliability, and enhance sustainability—contributing to SDG **6.3** (water quality) and **6.b** (community participation).

Key Details:
- **Leading Entity:** WASA, WRA, MPU, Environmental Management Authority (EMA)
- **Collaborators:** WASA, EMA, MPD, MPU, Ministry of Education, NGOs, CBOs
- **Estimated Cost:** USD 2.5 million
- **Financing Sources (Potential):** PSIP, UNEP, GEF, GWP-C, Green Fund, Water Pollution Rules Remittances
- **Timeline:** 3 years
- **IWRM Dimension:** Management Instruments
- **Related SDG Targets:** 6.3 and 6.b