

# YOUTH IN IWRM

## The Guyana Experience



Global Water  
Partnership  
Caribbean

# Case Study

# YOUTH IN IWRM – GUYANA

## BACKGROUND

In recent years, the Government of Guyana has grappled with addressing the multifaceted challenges in its water sector, yielding varying levels of success. The Water and Sewerage Act (2002) introduced the potential for national water standards and the establishment of a National Water Council (NWC) to guide water resource management policies. However, for the past decade, the NWC has remained inactive, resulting in a lack of coordination among stakeholder entities impacting water quantity and quality. This situation has been attributed to traditional siloed approaches, concerns over jurisdictional "turf," a lack of engaging processes, and institutional fragmentation stemming from policies and legislation.

From August 2021 to August 2022, and funded by the **Small-scale Integrated Water Resources Management (IWRM) Grants** from the **Global Water Partnership-Caribbean (GWP-C, The University of Guyana** collaborated with the Faculty of Earth and Environmental Science (FEES) Eco Trust Society and the University of Geographical Society to brainstorm water resource management (WRM) issues in Guyana and implement the project's objectives.

## ACTIONS TAKEN

In the pursuit of effectively engaging Youth in IWRM in Guyana, a comprehensive set of project activities were diligently planned and executed. Due to issues encountered during implementation regarding the establishment of Stakeholder Platform, the initial objectives of the project grant were changed. The amended objectives were implemented as follows. Firstly, the project commenced with a thorough assessment of stakeholders' awareness, knowledge, and understanding of the threats posed to water resources within the region. Through a purposive sample selection and a well-structured questionnaire survey, valuable insights were gathered, and this data served as the foundation for informed decision-making. The pilot survey, followed by necessary modifications, ensured the accuracy and relevance of the information gathered, highlighting the pressing need for Integrated Water Resources Management (IWRM) in Guyana.

Furthermore, a critical facet of this endeavour was the creation and distribution of **300 brochures** dedicated to IWRM. These brochures comprehensively outlined the definition, goals, principles, benefits, and implementation steps of IWRM, serving as a vital tool to raise awareness and foster a heightened sensitivity to the importance of effective IWRM practices.

Moreover, the establishment of the "Youth in IWRM" initiative under the **Faculty of Earth and Environmental Sciences** at the **University of Guyana** was a pivotal step in nurturing the next generation of water resource stewards. The subsequent development of a **Virtual Platform for Youth in IWRM** further amplified knowledge dissemination and engagement among the youth, solidifying Guyana's commitment to sustainable water resources management for generations to come.

## OUTCOMES

The project achieved several noteworthy outcomes and results:

**Stakeholder Assessment:** A comprehensive assessment of the awareness, knowledge, and understanding of water resource threats in Guyana was conducted among 25 key stakeholders. This assessment served as the foundational knowledge base for subsequent project activities.

**Brochure Production:** Leveraging the insights gained from the stakeholder assessment, the project successfully prepared, produced, and distributed 300 informative brochures on Integrated Water Resources Management (IWRM). These brochures cover essential aspects of IWRM, including its definition, goals, principles, benefits, and implementation steps, contributing to enhanced public awareness.

**Youth Engagement:** A significant achievement was the establishment of a "Youth in IWRM" initiative under the Faculty of Earth and Environmental Sciences (FEES) at the University of Guyana. This initiative has actively engaged youth members from organizations such as Ecotrust Society and the Geographical Society, fostering a new generation of water resource advocates.

## Promoting IWRM in Guyana

### IMPORTANCE OF INTEGRATED WATER RESOURCES MANAGEMENT (IWRM) IN GUYANA

#### What is IWRM?

Integrated Water Resources Management (IWRM) is defined as a process that promotes coordinated development and management of water, land and related resources to maximise the resultant economic and social welfare equitably without compromising the sustainability of vital ecosystems.



IWRM replaces the traditional, fragmented sectoral approach to water resources and management that has led to unsustainable resource use. To this end, it is considered as a cross-sectoral approach that is crucial for sustainable governance and healthy aquatic ecosystems. (Mattheis, Goral, Volz and Strosser, 2010).

**Imperative Number 2 Sustaining Water**  
Sustainability of water resources in Guyana must be based on five building blocks: (i) wise use of water resources; (ii) harmonisation of laws, regulations and guidelines pertaining to water quality and water quantity that may be compromised by other sectoral activities; (iii) water efficiency through reduced demands on, and less pollution of water resources by households, communities and the private sector and (iv) climate change adaptation techniques such as drip irrigation for farmers.

**Imperative Number 3 Monitoring Water**  
The review of policy and regulation must be evidence based, hence the importance of regular, timely, and science-based data. Monitoring and assessment of water resources throughout Guyana is critical for effective planning and sustainable use of the country's water resources.

**Imperative Number 4 Innovating through Science, Technology and Finance**  
The success of IWRM in Guyana is dependent on the research and technological innovation that may only be possible through the provision of adequate funding and technical capacity building of the nation's key water related institutions, as well as the University of Guyana. To this end, the private sector and international organisations have a key role to play in the funding of such activities, with a view to moving Guyana closer to IWRM.

**Imperative Number 5 Integrating and Collaborating for Water**  
Guyana must break the organisational and legislative silos and improve stakeholder collaboration in water resources management. Women, farmers and local communities are key partners.

**Imperative Number 6 Legislative Reform**  
The current pieces of legislation for water resource management in Guyana must be reviewed and updated in response to the growing concerns of dwindling water resources, increased conflicts over its use and decreased quality. For example, the Water and Sewerage Act of 2002 does not address directly the issue of watershed protection, and the Environmental Protection Act of 1996 does not mandate the application of Strategic Environmental Assessment.

**Imperative Number 7 Administrative Reform**  
The Ministry of Natural Resources, in collaboration with the reconstituted National Water Council, and the Ministry of Housing and Water should review the performance and institutional capacity of the GWI. This review should lead to institutional reforms and the creation of new mechanisms and infrastructure to give effect to IWRM in Guyana.

**Imperative Number 8 Continued Political Support**  
Political support and commitment are indispensable to the success of any change process in Guyana's water sector. This continues support from the Government should galvanise actions aimed at reforming the current legal and institutional structures to ensure that IWRM becomes a cross-sectoral issue for Guyana, and that adequate and sustained financing are provided for its successful implementation.

#### Brochure on IWRM

Guyana has no single national water policy. Currently, at least eight entities are tasked with the management of water resources in accordance with their legal mandates:

- Guyana Water Incorporated (GWI);
- Guyana Sugar Corporation (GUSCO);
- The Ministry of Agriculture Hydro-meteorological Service Unit;
- The National Drainage and Irrigation Authority (NDIA);
- The Environmental Protection Agency;
- The East Demerara Water Conservancy Board (EDWC); and
- The Guyana Geology and Mines Commission (GGMC).

NOTE: Water Users Associations (WUA) operate at a more localised level and comprised mostly of farmers.

**THREATS TO WATER RESOURCES IN GUYANA**

Based on stakeholder interviews conducted between March-July 2011, and situational analysis conducted in 2008; the following are the threats to water resources.

**Water pollution from mining activity (turbidity)**

- Climate change and climate variability and associated floods and droughts
- Rapid development of housing schemes in urban areas
- Inappropriate land use practices
- Low level of public awareness and the perception that water is plentiful and can be wasted
- Pollution from mining wastes and faecal wastes
- Limited institutional capacity (technical resources, inadequate legislation)
- Limited management of freshwater aquifers and cross boundary water resources

**Why is IWRM necessary in Guyana?**  
Currently there are increasing demands for water for various uses including irrigated agriculture, the domestic sector, industry and commerce. However, there are challenges on the availability of this resource, particularly in the dry seasons. The situation is aggravated by inappropriate water resource

**Objectives**

- **Economic efficiency** – to make scarce water resources go as far as possible and to allocate water strategically to different economic sectors and uses.
- **Social equity** – to ensure equitable access to water and the benefits from water use across different social and economic groups both within and across countries. This involves issues of entitlement, access and control.
- **Environmental sustainability** – to protect the water resources base and related aquatic ecosystems, and to help address global environmental issues, such as climate change mitigation and adaptation and sustainable energy and food security.

**IWRM Principles**

**Principle No. 1:** Freshwater is a finite and vulnerable resource, essential to sustain life, development, and the environment.

**Principle No. 2:** Water development and management should be based on a participatory approach, involving users, planners and policy-makers at all levels.

**Principle No. 3:** Women play a central part in providing, managing, and safeguarding water.

**Principle No. 4:** Water has an economic value in all its competing uses and should be recognised as an economic good. (Declaration of the International Conference on Water and the Environment, Dublin, Ireland, 26th-31st January 1992)

**Imperatives for Successful Implementation of IWRM in Guyana**

**Imperative Number 1 Saving Water**  
Citizens of Guyana must appreciate the true value of a clean and safe water supply in the wake of droughts due to climate variability, as well as the predictions of the impacts of global climate change. Such a transformation is only possible through sound valuation in pricing and sector financing, and a conservation ethic that promotes sustainable utilisation of water resources and protection of critical watersheds in Guyana.

**STEPS IN IMPLEMENTING IWRM**



(Source: Policy Briefs GWP Global Water Partnership, <http://www.gwp.org>)

**Agenda**

**14:00 hrs** - Welcome and Opening Remarks by Honorable Ministers (Ministry of Natural Resources, Ministry of Housing and Water)

**14:15 hrs** - Presentation IWRM in Guyana: Through user Organizations (Mr. Peter Matthews, National Commission, WWF)

**14:25 hrs** - General and Advisory of the National Council President (Mr. Michael Roper)

**14:35 hrs** - Mr. Minister, Minister

**15:00 hrs** - Move Order and Closing Remarks - Dr. Parvathi Bhandari

**Brainstorming session on IWRM issues in Guyana with student clubs**



**Conduct water monitoring in their communities - Planning**



**Virtual Platform Creation:** A [virtual platform](#) dedicated to "Youth in IWRM" was successfully created. This online platform serves as a dynamic hub for knowledge sharing, collaborative efforts, and the dissemination of water-related information. It has allowed for the upload of water sampling results from various communities, enhancing data accessibility and public engagement.

**Water Sampling Efforts:** The project also facilitated the acquisition of several water sampling kits, enabling the youth members of the "Youth in IWRM" initiative to conduct water sampling activities in multiple communities. These efforts have resulted in the generation of simple analysis reports, which have been made available on the project's website, contributing to a greater understanding of local water quality.



3. The project has successfully generated and disseminated information on the status of drinking water quality and surface water quality in targeted communities, making this data readily accessible to local government and the general public for informed decision-making.
4. The project's commitment to a longitudinal study on water quality in these communities also holds promise for baseline metrics that will inform future collaborative governance efforts, spearheaded by the enthusiastic "Youth in IWRM."
5. The project's potential for scalability and replication throughout Guyana, with aspirations to secure funding for expansion, signifies its enduring impact on the nation's water resource management landscape. Ultimately, these tangible benefits emphasize the project's invaluable contributions to the sustainable management of Guyana's water resources.

## LESSONS LEARNED

The project yielded valuable lessons learned, primarily centred around two key challenges. Firstly, the complexity of establishing a local chapter of the Global Water Partnership (GWP) within the project's given timeframe posed a significant hurdle. This experience underscores the importance of careful consideration and alignment of organizational processes with project timelines to ensure successful implementation.

Secondly, the unexpected initiation of a Caribbean Development Bank-funded project by the Government of Guyana, focused on reviewing institutional and governance arrangements for Integrated Water Resources Management (IWRM), highlighted the need for close coordination and communication with relevant stakeholders to avoid duplication of efforts and maximize the impact of resources.

Additionally, the following was observed:

1. Political support is required very early in the process to realise an objective that has national implications.
2. Flexibility in project implementation is critical to success, particularly when the governance landscape changes.
3. Young people are very creative and visionary and should play an important role in IWRM related activities.
4. Stakeholder support is critical for project sustainability.

These lessons emphasize the importance of adaptability and proactive engagement with external developments when executing water resource management projects.

The actions taken to address the identified problems included:

1. **Brainstorming Session:** A brainstorming session was organized with members of EcoTrust and the Geographical Society to discuss their interest in and ideas for the establishment of "Youth in IWRM" and the creation of a Virtual Platform. This step aimed to secure support and input from the students, aligning project activities with their engagement and insights.
2. **Execution of Amended Concept Note:** Following the students' endorsement and involvement, the project proceeded with the execution of specific activities outlined in the amended Concept Note. This ensured that the project remained adaptable and responsive to the evolving needs and interests of the youth.
3. **Hand Over Ceremony:** To guarantee institutional support and sustainability, a Hand Over Ceremony was organized. During this event, remarks were delivered by key stakeholders, including the Vice Chancellor of the University of Guyana (UG), the Executive Director of the Environmental Protection Agency, and representatives from the Meteorological Service unit of the Ministry of Agriculture and Guyana Water Incorporated. These remarks underscored the commitment of various institutions to the project's long-term success and impact.

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**Key Themes:** Youth - Integrated Water Resources Management (IWRM) – Water Quality – Stakeholder Engagement - Guyana