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Title: A STEP TOWARDS A MORE RESILIENT FUTURE IN GRENADA'S WATER SECTOR



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1 INTRODUCTION

1.1 Overview of Grenada and its Water Situation

Grenada, Carriacou & Petit Martinique is beautiful tri-island state having a total square area of 133 square miles (Grenada Explorer, 2023) and a population of just over 126,000 (Worldometer, 2023). Its allure lies in its distinctive lush mountains, fertile valleys, and pristine beaches, which are intimately tied to water resources. Grenada receives an average annual rainfall of around 2,350 mm (UNCCD, 2019), while neighbouring Carriacou and Petite Martinique have a drier climate, depending on rainwater harvesting and desalination. Mainland Grenada depends primarily on 23 surface water and 6 groundwater facilities, managed exclusively by the National Water and Sewerage Authority (NAWASA) for potable distribution (GCFP, 2023).

1.2 G-CREWS Intervention

The Climate- Resilient Water Sector in Grenada (G-CREWS) project will support the water sector’s comprehensive transformation on multiple levels” (Grenada Climate Finance Portal, 2019). With a 45.297 million Euro budget, the six-year project is jointly funded by the Green Climate Fund (GCF), the German Federal Ministry for the Environment (BMUV) through its International Climate Initiative (IKI), and the Government of Grenada. Its executing partners include the Grenada Development Bank (GDB) and the National Water and Sewerage Authority (NAWASA), in collaboration with German Development Cooperation (GIZ) as the accredited entity managing implementation. The main goal of the GCREWS project is to avoid future critical climate induced water shortages, and “increase systemic climate change resilience in Grenada’s water sector”, through good water governance, policy improvement and infrastructural development.

2 GRENADA'S WATER SECTOR CHALLENGES

2.1 Climate Change

As a SIDS, Grenada is confronted with heightened challenges caused by climate change, particularly with respect to exposure to increased temperatures, reduction in rainfall during the dry season, saltwater intrusion in aquifers by sea level rise and exposure to natural disasters making our water sector vulnerable. In light of these vulnerabilities and risks, climate resilience especially within the water sector is central to Grenada's transformative policy agenda however, this is compounded by limited financial resources and inadequate access.

2.2 Inadequate Resources

As other islands in the region, Grenada grapples with the multiple challenges for the preservation of its water resources. These include an aging and inadequate infrastructure, intensifying climate risks, compounded by financial hurdles.

The nation's growing population further complicate water availability with construction, education, and tourism playing a major factor. Rapid growth in urban development and sectors such as tourism and construction drive investments that lead to a demand in Grenada's water resources. These drivers of change show the need for a more comprehensive and adaptable approach to water governance that adequately addresses current and future changes. The preceding information highlights the net result of growing water demand and shrinking supply as shown in Figure 2.1. The following chapter shows how the G-CREWS project seeks to address some of these challenges.

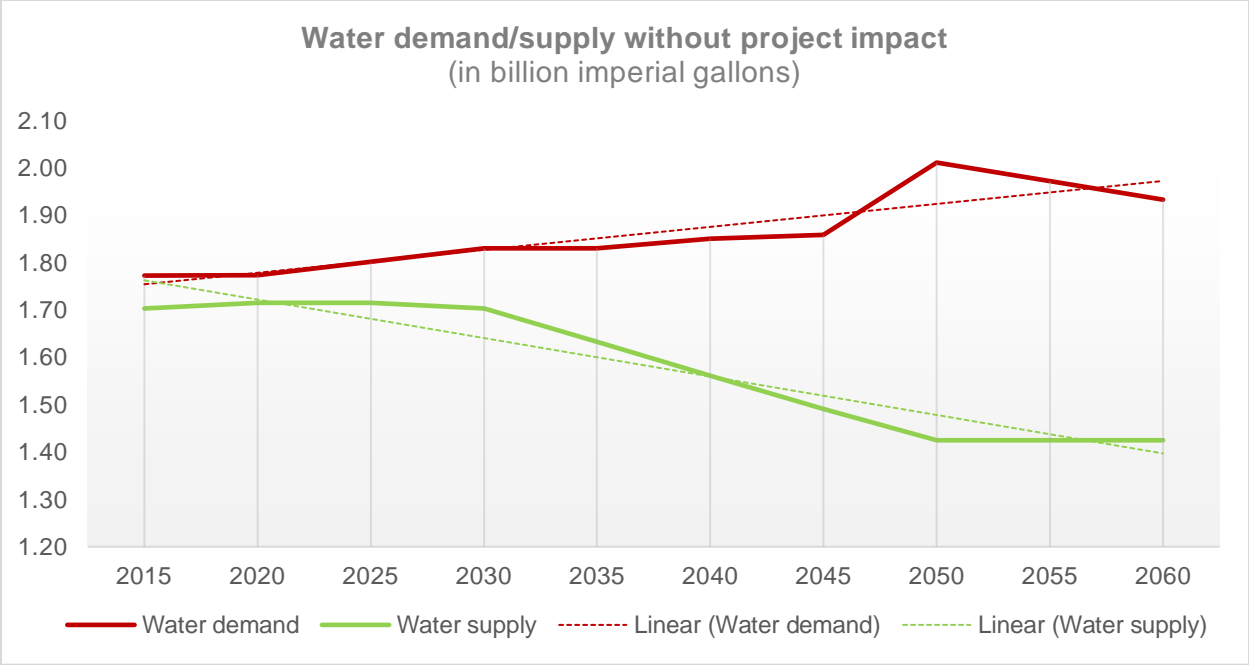


Figure 2.1 - Current situation relating to water supply and demand.

3 GOVERNANCE AND POLICY SOLUTIONS

3.1 Water Resource Management Unit

Recognizing the multiple challenges that threaten water availability, the Government of Grenada (GoG) emphasizes the need to improve institutional structures for water management. In 2007, Grenada initiated policies and strategies to enhance water sector governance and a revised Water Policy was approved in 2020 calling for the creation of the Water Resources Management Unit (WRMU). The WRMU will regulate water resource management, develop climate-responsive regulations, manage water abstraction, prioritize water uses, and enhance the climate and water information system. Additionally, the WRMU will improve data collection and management to address water-related information needs and support adaptation planning.

3.1.1 Financing the WRMU

Initially, G-CREWS has under its remit to fund the capital expenditure to set up the unit.

However, the sustainability of the unit relies on a strong financial mechanism that insures its stability and as well as its independence. Several approaches for financing the unit have been proposed by the Project and are still being reviewed at this time. They include a portion of Government financing through budgetary allocation and a portion of non-government financing to include levy on water abstractors (water utility, bottled water producers, farmers), end users, and the tourism sector (short term visitors).

Once the unit is in place, it will be in charge of enhancing the water sector resilience by developing and implementing a climate-responsive tariff structure for NAWASA. The new tariff structure will provide price signals to water users based on water availability, encouraging efficiency and conservation, especially during the dry season. Additionally, it will generate the necessary financial resources for NAWASA to upgrade its infrastructure for climate resilience and respond to changing water availability due to climate change.

3.1.2 WRMU Cross Sectoral Approach

By making sure that multiple stakeholders were involved in the planning and development of the WRMU, the Project ensured that the Unit's mission statement would be fulfilled: "A water secure Grenada in which stakeholders are treated equitably and fair."

Lead by the Government initiative, the WRMU development process took into account the views and needs of non-government stakeholders such as the water utility, the private sector extractors such as farmers and bottled water producers, as well as the end users. Over and beyond the stakeholder's consultations that were put in place to plan for the WRMU, the Project also used a comprehensive public relations and awareness strategy

to communicate about the role of the unit in improving access to critical water resources for all.

3.2 Rainwater Harvesting Regulations

Under its Component on water governance, the G-CREWS project seeks to promote rainwater harvesting by improving building regulations, that will make all new developments have some form of rainwater harvesting system, relative to the size and function of the building. This solution is not void of challenges like additional installation cost, water quality management and harsh dry seasons, but it is believed that benefits far outweigh the challenges. These benefits include reduce water bill, improved water sustainability, improved food security and environmental protection.

3.2.1 Regulatory Cross Sectoral Approach

These regulations will be executed using a cross sectoral approach. The ministry with responsibility for infrastructure along with its subsidiary statutory body the Planning and Development Authority (PDA) will partner to steer the development, approval and implementation process. Private sector engineers, architects and builders will be consulted to provide best practices to tailor the regulations to socio-economic conditions of the country. Further consultation and sensitization sessions will be carried out with the general public and non-governmental organisations to ensure that their interests are properly met and receive valid feedback.

3.2.2 Financing the Regulations

The rainwater harvesting regulations development, approval, legal drafting, and implementation will be funded under the G-CREWS project. After implementation, oversight financing will be borne by the PDA, which will be an extremely miniscule

amount. Additionally, application fees received by the PDA for approval of rainwater systems will continue to finance operating expenses related to review and approvals.

3.3 Phase out of Inefficient Devices

The project also proposes solutions to phase out all inefficient water devices currently available on the market. Analysis suggests that as much as 30% reduction in water usage can be realised by replacing inefficient devices with efficient ones.

3.3.1 Cross Sectoral Approach

The approach will target suppliers through collaboration, seeking the importation of only efficient devices; encourage and incentivize users to purchase only efficient devices; educate plumbers and builders of the benefits and best practices; garner support from the government to provide appropriate tax incentives, and appropriate legislative regulations. It is believed that this phase out will not be successful apart from a cross sectoral approach.

3.3.2 Financing the Phase Out

Can the phase out of inefficient devices be sustainably financed? The answer is an absolute yes, simply because not much financing is required. Suppliers will sell efficient devices; the investment cost for switching will be recovered over time by using less water; reduction in taxes which may reduce government revenue, will be recovered through the trickle off effect of increased tourism, agriculture, and construction.

3.4 Other Supporting Solutions

3.4.1 Challenge Funds

The G-CREWS project incorporates a “Challenge Fund” component that aims to bolster Grenada's agriculture and tourism sectors against climate change impacts. The Fund

supports water-efficient solutions in both sectors through grants for water audits and equipment purchase, targeting improved irrigation, rainwater harvesting on farms, and more efficient water use in hotels. To address barriers like high upfront costs, it offers subsidies and promotes co-financing. The Challenge Fund is managed by the Grenada Development Bank. The water conservation measures demonstrated under the challenge fund seek to provide good practices for other businesses in Grenada on how to save water and use rainwater harvesting.

3.4.2 Public Awareness Campaigns

The G-CREWS project aims to raise awareness, educate, and outreach to households, businesses, hotels, and farmers regarding climate change challenges and water conservation solutions. It involves a comprehensive communication strategy with four campaigns that focus on enhancing knowledge about the water sector, promoting efficient water use and rainwater harvesting, building trust in new water governance structures and tariffs, and creating awareness about the G-CREWS project. These campaigns employ a three-step approach, including publication, public relations, and social media plans. The project also conducts surveys to assess public knowledge, attitudes, and practices related to water and climate change, allowing for targeted messaging and evaluation of awareness and education efforts.

4 CONCLUSION

In conclusion, this paper has examined the pressing challenges facing Grenada's water sector in the context of climate change. It is clear that transformative change, necessitates an integrated approach encompassing governance, policy reforms, infrastructure investments, stakeholder engagement, sustainable financing and public awareness

campaigns. Grenada's vulnerabilities, from dwindling freshwater sources, which is further exacerbated by the increasing tourism sector, underscores the urgency of action. The G-CREWS project, a multi-faceted endeavour, stands as a comprehensive response to these challenges and aims to fortify Grenada's water sector against the impacts of climate change. The graph below shows how the project through its integrated approach, could reverse the water supply curve in Grenada.

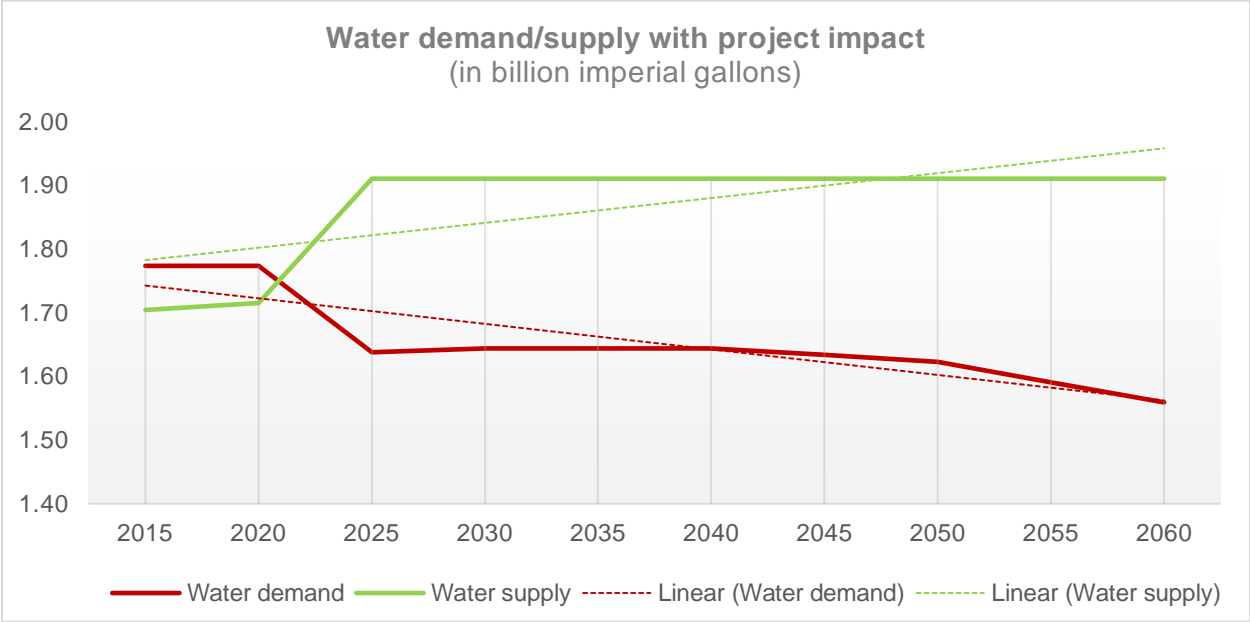


Figure 4.1 - Potential Impact of the G-CREWS project

Despite the project is ongoing, and its impacts are not yet realized, there is a high level of confidence in the successful outcome of the project, which will be measured in every facet. The G-CREWS project provides a real time case study on how to address climate resilience and sustainability issues in the water sector. It could provide best practices and suitable approaches of implementation and cross-sectoral collaboration. As it unfolds, it has the potential to serve as a model for other small island developing states grappling with similar water-related challenges in an ever-changing world.

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