

# CASE STUDY



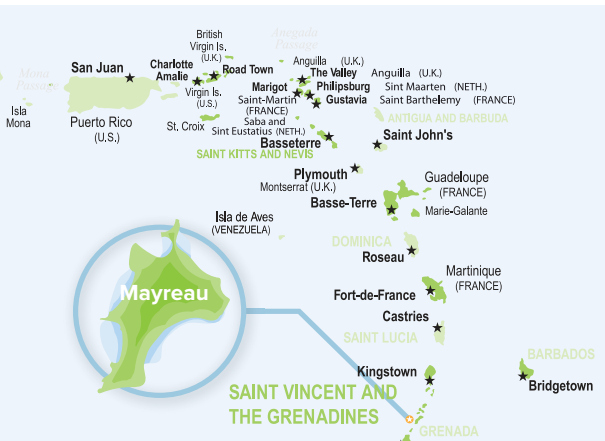
## Creating an Oasis

Case Study: The Potable Water Resources Management Project  
(The Case of Jamaica and St. Vincent and the Grenadines)



# Background

Water, known to many as the elixir of life, is one of our most precious resources. However, for many islands in the Caribbean, a clean reliable supply of drinking water is not a given. Several territories within the region battle with water scarcity, drought and limited access to potable water. One such territory is Mayreau, a Grenadine Isle of St. Vincent and the Grenadines. Rainwater is the island’s only natural source of water and, during the dry season or droughts, water must be shipped from the mainland at a cost to residents. The current situation is unsustainable and is further exacerbated by researchers’ predictions of an increase in the average frequency of hot days and nights, attributed to climate change. It is expected that the mean annual temperature will continue to rise, resulting in longer dry seasons and increased instances of drought, which in turn will result in the Mayreau community suffering from further water scarcity in the future.



Pictured above is a map of Mayreau, St. Vincent and the Grenadines

But Mayreau is not alone. In Jamaica, the communities of Richmond Park and Victoria in the parish of Clarendon also face several water woes. Some of these communities are not connected to the municipal water supply provided by the National Water Commission, and rainwater serves as the primary source of potable water. Without a reliable supply, residents are at the mercy of unpredictable weather patterns, which result in droughts as well as floods. During drought, water shortages cause numerous school closures and residents have to travel in excess of four miles for access to water, oftentimes visiting local rivers such as

the Peace River. However, when the weather reverses, drought can quickly turn to flood – but this is not a blessing as the floods can cause an increase in cases of water-borne illnesses.

To remedy these situations, The United Nations Development Programme’s Japan-Caribbean Climate Change Partnership (UNDP J-CCCP) executed two projects to assist these territories. The projects were designed to provide the affected communities with access to more reliable and sustainable potable water supplies and improved water management solutions.



Pictured above is a map of Clarendon, Jamaica

# Project Overview

The United Nations Development Programme’s Japan-Caribbean Climate Change Partnership (UNDP J-CCCP) conducted two projects in St. Vincent and the Grenadines, and Jamaica. Although addressing different problems, both projects increased the affected communities’ potable water capacity.

## [The St Vincent and the Grenadines Example](#)

Mayreau, the smallest inhabited island of the Grenadines, with an area of 1.5 sq. miles and a population of approximately 271, suffered from drought and water scarcity. The potable water resource management project, titled “Adapting to the Effects of Drought through Increasing Water Storage Capacity to address Climate Change on Mayreau”, aims to increase the island’s water storage capacity by providing sixty 1,000-gallon water tanks for households and public entities with the greatest need. In addition to this, the project included the refurbishment of an existing but derelict system by repairing the 10,000-gallon cistern located at the Mayreau Primary School allowing for a boost in the community’s water management capacity.

The Union Island Environmental Attackers, a local NGO, implemented the project supported by the J-CCCP in the amount of US \$77,918.52. The project further equipped the residents with hands-on knowledge of the maintenance and operation of water storage tanks to enable them to maintain high quality water for drinking and utilise it in a sustainable manner.



**A refurbished water tank on the Grenadine island of Mayreau**

## [The Jamaica Example](#)

Victoria and Richmond Park, two communities in Clarendon, Jamaica’s third largest parish, are plagued by fluctuating rainfall that affect their water availability and quality. The potable water resource management project, titled “Improving the Adaptive Capacity to Climate Change through Rehabilitation and Construction of Water Harvesting Infrastructure in Upper Clarendon”, was designed to increase the communities’ water storage capacity and stabilise the parish’s water supply. J-CCCP partnered with the Clarendon Parish Development Committee Benevolent Society (CPDCBS), a local community-based organisation (CBO), to refurbish existing water storage systems which have been in disrepair for many years in order to boost the community’s water supply capacity.

Students and residents are both affected by frequent water shortages due to the limited availability of water from the municipal sources. The communities had access to two concrete catchment areas, known locally as “barbeques” which are connected to two underground concrete water storage tanks. These tanks have been derelict and out of service for years. Under the J-CCCP Pilot Project, these were rehabilitated to facilitate an increase of 292,000 litres of water storage. In Victoria, three 1,000-gallon above ground tanks were installed as well as a Solar PV pumping system to fill the secondary storage tanks. More than two thousand community members will benefit from repairs to the large concrete water tank.



**The refurbished ‘barbeque’ water tank in Clarendon, Jamaica**

Additionally, with an aim of building the knowledge/ technical capacity of the community, over 400 persons (252 females and 157 males) were trained in adaptation technologies and practices related to climate change. To create a strong foundation for the training, the first goal was to raise the community's awareness as it related to climate change. With an improved understanding of climate change, the facilitators focused on educating the residents in disaster risk management techniques as well as the use and care of water harvesting systems and solar powered pumps.



**Students sharing about their climate change training**

Because youth play such an important role in any society, special care was taken to involve them in the project. At least 100 students from each community were involved in an awareness-raising climate adaptation quiz competition to ensure the knowledge would be shared across all generations.

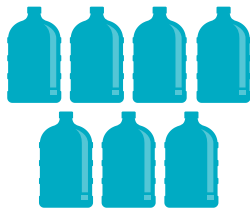
With respect to the sustainable maintenance of the upgraded systems, a draft manual for the maintenance and upkeep of the water storage system has also been developed including roles and responsibilities of community personnel after project handover.

## Reducing Water Woes: Impact of the Projects

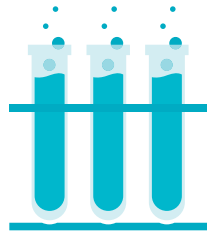
Although the two projects were implemented in different environments, they both made a substantive impact on the livelihoods of the local communities.

### St. Vincent and the Grenadines

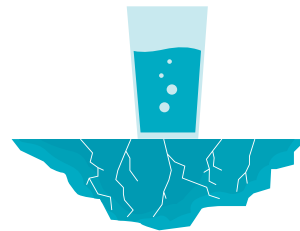
Outcomes of the Project



**Increased residential and commercial water storage capacity by approximately 70,000 gallons of water**



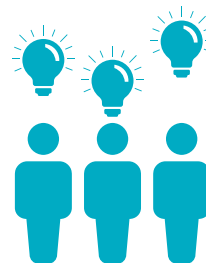
**Increased capacity in system maintenance, on site water treatment and water quality testing**



**Reduced water shortages during drought**



**Reduced cost to import water from the mainland**



**Increased knowledge base of community members**

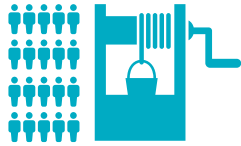
## Jamaica

### Outcomes of the Project



#### Increased access to clean water

(reduced cases of water-borne illnesses)



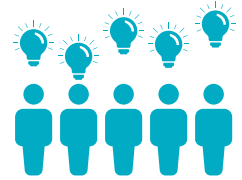
More than two thousand community members benefit from reliable water supply



Less school closures due to water shortages



Access to a more convenient, safe water supply



Increased knowledge base of community members

The projects achieved J-CCCP's Outcome 2, the adoption and implementation of mitigation and adaptation technologies, as it relates to water resources management, and also addressed some of the Sustainable Development Goals (SDGs) as outlined below:



### Goal 6:

#### Clean Water and Sanitation

- Increased population using safely managed drinking water services
- Reduced water stress to communities
- Both projects focused on educating communities on proper water hygiene (in the St. Vincent and the Grenadines example) and youth (in the Jamaica example)



### Goal 13:

#### Climate Action

- The projects boosted the water capacity of the two communities which strengthened their resilience and adaptive capacity to climate-related hazards (e.g. drought and water shortages)

# Insights and Take-aways

**NGOs can assist with the implementation of community projects.**

Generally, NGOs across the region maintain community-minded mandates and have the capacity to manage and execute various projects to strengthen their communities. This allows greater capacity to implement projects throughout the region if these organisations are considered as partners.

**Collaboration with direct beneficiaries allows for faster solutions.**

The projects bring together policy makers, experts and representatives of affected communities to encourage policy innovation for climate technology, incubation and diffusion. Having key stakeholders involved

reduces delays and increases buy-in and successful implementation of the project.

**Adequate maintenance of water facilities can reduce dependence on unreliable water sources and improve water scarcity.**

In both communities, derelict storage systems exacerbated the water woes. Adequate maintenance can reduce the need for replacement and maintain the water capacity of the community more effectively. To ensure the upkeep of these updated systems, both projects also trained community members in maintenance techniques. Additionally, in Jamaica, a maintenance manual was created to ensure that the community would be able to sustainably manage the upgraded facilities.

## Best Practices

Several best practices have been identified in the two projects as outlined to the right:

Local/ community-based NGO involvement	Increased skill set of the community	Maintenance and 'ownership' by community
<ul style="list-style-type: none"> <li>■ Community-based organisation involvement in Jamaica</li> <li>■ The involvement of NGOs was also a success for the project. The two groups were familiar with the needs of their communities and were better able to manage and execute the projects.</li> </ul>	<ul style="list-style-type: none"> <li>■ Training in water resource management of both communities</li> <li>■ Education of female-led households in Mayreau</li> <li>■ Education of the youth in Jamaica (via school quizzes)</li> </ul>	<ul style="list-style-type: none"> <li>■ The communities were educated on climate change and trained in the maintenance of the updated water systems</li> <li>■ Training allowed the community to sustainably maintain the new system</li> </ul>



A resident of Clarendon sharing the benefits of the refurbished 'Barbeque'

## Final Thoughts

Through the involvement of community-based organisations, both J-CCCP projects were executed and resulted in increased potable water storage capacity. They also bolstered local capacities through training and education, and improved the self-sufficiency of the two communities.

As we have witnessed across the region, climate change is recognised as one of the most serious

challenges compounding vulnerabilities inherent to the Caribbean (e.g. water scarcity and unreliable potable water supplies).

**However, with the interventions and measures executed in the two projects, the communities are now more resilient to the impacts of climate change.**