



ENHANCING COASTAL RESILIENCE IN GRENADA

At the Water's Edge Project

CONTEXT

Grenada is a small island state dependent on limited natural resources to support its primary economic sectors: tourism, agriculture, and fishing. Climate change is placing intense pressure on human livelihoods and coastal and marine resources in Grenada and across the rest of the Eastern Caribbean islands. Even though small islands states contribute very little to global climate change in terms of greenhouse gas emissions, these nations are the most vulnerable to the impacts from climate change due to their high coastal population densities, limited land space, geographic isolation, scarce freshwater supplies and significant dependence on tourism and fisheries. Grenada is already experiencing hotter temperatures, more frequent and intense storms, coastal flooding and erosion from sea level rise, and degraded coral reefs, which in turn threaten lives, property, food, fresh water, livelihoods, and overall economic stability.

THE PROJECT

From 2012 The Nature Conservancy (TNC) and the Granada Red Cross Society (GRC) began the partnership to develop the At the Water's Edge (AWE) Project with the support of the Grenada Fund for Conservation (GFC).

The aim of the five-year AWE project is to increase the social and economic capacity of local communities to adapt to climate change and build resilient communities by empowering people to assess risks and vulnerabilities and make informed decisions on the use of their coastal environment. Community resilience is also built by infusing eco-based solutions and finding sustainable ways to improve the livelihoods and the economic stability of communities by addressing the effects of climate change.

The project is composed of two key components: The socioeconomic component and the structural component. On the one hand, the socioeconomic component is being developed by the GRC in partnership with the GFC and the TNC to promote community mobilization and engagement and provide training in disaster risk management and in mangrove restoration; on the other hand, the structural component is being developed by the TNC with the support of both GRC and GFC to address the issues of degraded coral reefs by installing a series of submerged breakwaters structures using local labour and materials.

Specific Objectives of the AWE Project

- To help communities assess their social, ecological and economic risks from sea level rise and storms in order to make important coastal planning and management decisions.
- To build local capacity and leadership that empowers communities to address the effects of climate change.
- To work with vulnerable communities and key stakeholders to design and implement a suite of innovative community-based conservation projects demonstrating Ecosystem-based Adaptation (EBA) solutions to climate change.
- To identify key indicators for success and integrate monitoring and evaluation frameworks into each EBA demonstration project.

Areas of action

Socioeconomic Component:

- Community mobilization: Bringing communities together to develop tools to secure their future and build environmental awareness.
 - National Initiatives: Mapping tool to examine the connections between ecological, economic, physical and social vulnerability.
 - Local Initiatives: a) mapping activities with community residents to incorporate local knowledge and cultural resources; b) Vulnerability Capacity Assessment; c) Community resilience plan.
- Restoration of Coastal Vegetation: Provision of training to community residents to restore, collect, care for and plant mangrove seedlings along specific vulnerable areas.

Structural Component:

- Installation of breakwater structures: The aim of this component is to reduce the coastal erosion and storm related salt water flooding, restore the wave-breaking function of the degraded reefs, facilitate the reestablishment of coral growth and increase the social and economic capacity of local communities to adapt to climate change by utilizing local labour and materials.

OUTCOMES

This 5-year AWE project has been implemented in four communities of Grenada: Telescope, Marquis, Soubise and Grenville. The GRC has achieved great results in mobilizing and training communities with the support of the GFC, while the TNF has brought to the project the scientific approach, methods and tools to restore and manage their marine and coastal ecosystems by building community capacities and resilience with the support of the GRC and the GFC. The following outcomes correspond to the implementation of the project in the four communities mentioned above.

- **Surveys:** conducted in 300 hundred households in the Telescope area to learn what local knowledge, practices and actions related to disaster preparedness and risk reduction were being implemented in the communities.
- **Vulnerability and Capacity Assessments (VCA):** conducted in the four communities by the GRC with the involvement of community residents. Emphasis was made in ensuring that communities understand the meaning and consequences of climate change, coastal erosion, sea level rise, degraded coral reefs and mangrove destruction along the seashore.
 - Community training: in partnership with the GFC, the GRC carried out training activities to explain the different tools that were needed to conduct VCAs and draw community maps.
 - Community mapping: participatory mapping activity with community members to incorporate local knowledge and cultural resources. It was carried out by community residents in the four selected communities under the guidance of the GRC and the GFC. This activity was based on community engagement and involved the participation of fishermen, farmers, schoolchildren, housewives, vendors, and the business community, among others, to draw a three-dimensional map of hazards, capacities and resources. Through this community mapping it was also possible to understand the historical development of the community and the most important social, environmental and economic aspects for community members.

- **Community Disaster Response Teams (CDRT):** trained in Disaster Management and Disaster Risk Reduction. These teams carry out several activities to strengthen their capacities and keep active and prepared to act in the event of an emergency. A CDRT has already been created in the Telescope community and soon the other CDRTs will be created in the communities of Grenville, Marquis and Soubise.
- **Community talks:** Organized by the GRC with the support of the GFC and TNC to raise awareness about climate change and introduce the importance of eco-based solutions to respond to the environmental effects of climate change.
- **Community trainings:** the following trainings have been provided in the four selected communities (Telescope, Marquis, Soubise and Grenville):
 - Disaster Preparedness training: focused on the importance of protecting the environment and how to be better prepared in the event of a disaster. (Provided by the GRC).
 - First Aid training. (Provided by the GRC).
 - Safer House training: focused on training community residents in how to build much safer timber houses and the use of safer building methods. Aimed at building community empowerment and resilience (Provided by the GRC).
 - Mangrove Restoration training: community members were trained to collect, care for and plant mangrove seedlings along specific vulnerable areas. (Provided by the GFC).
 - Disaster Risk training: aimed at fishermen and focused on the main risk issues regarding livelihoods and coastal degradation (sea level rise, coastal erosion, reef degradation, overfishing, and degradation of coastal vegetation). (Provided by the GRC and the GFC)
 - Training in the installation of breakwater structures: aimed at fishermen with the purpose of utilising local labour to implement eco-based and community-based solutions to address the effects of climate change. (Provided by the TNC).
- **Safer House program:** It provides vulnerable families that are living in poor housing conditions with training and building materials so they can build or rebuild their houses using safer methods and disaster-resistant materials.
- **Mangrove Restoration:** This is one of the socioeconomic pillars of the AWE project aimed at preventing coastal erosion and sea level rise. TNC has worked jointly with the GRC and the GFC to provide training to community members in collecting, caring for and planting mangroves. Likewise, TNC and the GFC provide community members that live close to the seashore with mangrove seeds.
- **Installation of breakwater structures:** This is the structural pillar of the AWE project. With support from The German Federal Foreign Office and in partnership with the GFC, the GRC and community members (fishermen), the pilot project for building a submerged breakwater on the Grenville reefs was formally launched by TNC in early January 2015. A total of 30 meters of submerged breakwater structures were constructed on the northern portion of the Grenville reef flat. Materials for the pilot breakwaters were assembled in advance by a team of local welders that fabricated over 270 steel baskets, cement cinder blocks, and large stones from the adjacent Telescope Quarry. And most importantly, local fishermen that were already engaged in the GRC trainings took part in the installation works, and in the span of 8 to 10 days they were able to successfully install these breakwater structures. A second series of breakwater structures have been already installed in Grenville Bay and a fundraising campaign is being carried out to continue the development of this project.
- **Institutional engagement:** the GRC, the GFC and TNC have worked together to raise awareness about the effects of climate change among government agencies such as the Ministry of Agriculture, Forestry & Fisheries.

LESSONS LEARNT

First of all, one of the main challenges of the project was to convince communities that it is possible to adopt eco-based solutions based on community organization and engagement to mitigate the effects of climate change and make positive changes in the community. People tend to conform to the idea that these effects come from nature, and that there is nothing they can do to minimize them. It has also been a challenge to raise awareness about the need of taking care of coastal vegetation and eliminate bad practices to reduce coastal erosion. Hence the importance of engaging communities at the very beginning of the project. When community members are engaged at the planning stage, it is easier to get people to own the project, and once communities get involved, they are willing to participate in every activity.

Secondly, it was quite rewarding to prove the importance of joint work. In this project, the joint efforts of the GRC, the GFC and TNC made possible to combine experience and innovation to activate community awareness and engagement, effectively increasing local capacity to implement eco-based solutions that respond to the challenges posed by climate change and help to build safer communities.

Finally, a major outcome of the project has been to use community knowledge on environmental issues and people's potential to develop new capacities. In this sense, it is of great importance to value and make the best use of the capacities people have to offer. With regard to the breakwater structures, fishermen got involved in activities that are very different from fishing, and learnt to install these submerged structures with the aim of protecting the seashore and the sea itself which is the very source of their livelihood.

“My house will be the first one to go if I don’t protect the mangroves”

Doney Cliram knows well the effects of coastal erosion and floods. He has seen how the sea is devouring the land, approaching his home near the Telescope beach where he was born 34 years ago. When it rains heavily, the water rises over the breakwater and covers the distance that usually separates his house from the sea shore.

“Mangroves protect us. This is why I have planted hundreds of them here. It is the only thing that can prevent the beach from disappearing. If we don’t act, sooner or later we will have to leave our homes,” Cliram said while he stared at the sea.

But Cliram would not be able to fulfil his mission of recovering the mangroves all by himself. He receives the little mangrove plants from the Grenada Fund for Conservation (GFC). The GFC works jointly with the GRC and The Nature Conservancy through At the Water’s Edge, a community resilience project aimed at mitigating the effects of climate change in Grenville Bay.



THE WAY FORWARD

The AWE project aimed at strengthening community resilience in the coastal communities of Grenada has been successfully implemented in four communities (Telescope, Marquis, Soubise and Grenville). These communities have shared their local knowledge and have actively participated in assessing their vulnerabilities and capacities, receiving training on disaster risk reduction and implementing eco-based measures to address the effects of climate change and protect their property, their livelihoods and their environment. This community engagement has been possible thanks to the joint work of the Grenada Red Cross, the Grenada Fund for Conservation and The Nature Conservancy.

The AWE project aims to pursue the following steps:

- To complete the development of the 2016-2030 Community Resilience Plan based on an initial draft already prepared by the GRC.
- To secure funding for the full build out of the breakwater: This will include up to 20 structures spread over a 300 meter length of the northern reef in Grenville Bay. The constant monitoring of the pilot submerged breakwater structures have proven that they are stable in variable wave conditions and that they are actually functioning to reduce current and wave energy.
- To develop the Fishermen’s Village Project: the GRC vision for strengthening community resilience involves the implementation of this project in a near future to improve socioeconomic conditions and livelihoods. The aim is to work with partners and stakeholders to develop the Fishermen’s Village Concept, which seeks basically to secure and create spaces for fishermen’s livelihoods in seashore areas. The plan includes securing ports from erosion, building secure spaces for the boats, building facilities for cold storage of fish, and also looking at developing other livelihoods related to the fish industry, such as fish processing. The idea is to develop other working opportunities and sources of income for fishermen in case they can no longer depend on the sea to make a living.

This case study is based on the following sources: 2016 AWE Fact Sheet: Innovative Reef Engineering for Small Island States; At the Water’s Edge (AWE) Project: Coastal Resilience in Grenada and St. Vincent; and in interviews with Terry Charles, General Director – Grenada Red Cross Society (GRC), and Nealla Frederick, AWE Project Manager - The Nature Conservancy (TNC).



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Humanitarian Aid
and Civil Protection



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of Red Cross and Red Crescent Societies



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