

**Dominica: Hurricane Resilience**  
**Projects on assessing hurricane damage to marine and forest ecosystems and**  
**trail maintenance supported by the Organization of American States**  
**Department of Sustainable Development**

The **Commonwealth of Dominica**, is a sovereign [island country](#). The capital, [Roseau](#), is located on the [leeward](#) side of the island. It is part of the [Windward Islands](#) in the [Lesser Antilles](#) archipelago in the [Caribbean Sea](#). Dominica has been nicknamed the "Nature Isle of the Caribbean" for its natural environment. It is the youngest island in the Lesser Antilles, still being formed by [geothermal-volcanic](#) activity, as evidenced by the world's second-largest [hot spring](#), called [Boiling Lake](#). The island has lush mountainous [rainforests](#), and is the home of many rare plants, animals, and bird species. There are [xeric](#) areas in some of the western coastal regions, but heavy rainfall occurs inland. Source: <https://en.wikipedia.org/wiki/Dominica>

The island has large tropical forests, including one which is on the UNESCO list of World Heritage sites, hundreds of streams, coastlines and coral reefs. The [Sisserou parrot](#) (*Amazona imperialis*) is Dominica's national bird and is [endemic](#) to its mountain forests. A related species, the Jaco or [red-necked parrot](#) (*A. arausiaca*), is also a Dominican endemic. Both birds are rare and protected, though some forest is still threatened by logging in addition to the long-standing threat of hurricanes.

Dominica is especially vulnerable to [hurricanes](#) as the island is located in what is referred to as the hurricane region. (See Annex 1.) Days after it was hit by Hurricane Irma, the Caribbean island of Dominica was ravaged by the most powerful storm in its history -- Category 5 [Hurricane Maria](#) that struck the island in September, 2017. Many buildings were completely destroyed and virtually none were left untouched. With the sheer scale of the devastation hampering relief efforts, officials believe the recovery process will take several years and billions of dollars.

Dominica's people are resilient and are making recommendations for how to use private, philanthropic, local government, and recovery dollars to repair and rebuild the critical systems devastated by the hurricanes in a way that makes the island stronger – physically, economically, and socially – and more prepared to confront future challenges. Efforts in the sectors of energy; mobility; economic development; infrastructure; housing; and fiscal strength hope to plans for a longer-term resilience and equitable growth strategy.

**Two projects are proposed supported under the ReefFix project**  
<http://www.oas.org/dsd/IABIN/Component1/ReefFix/ReefFix.htm> **by the Organization of American States Department of Sustainable Development:**

- 1.) Under the supervision of the Fisheries Division (The Chief Fisheries Officer (CFO) Sebastien Riviere Delanco [sebastien65@ufl.edu](mailto:sebastien65@ufl.edu) under the Ministry of Agriculture and Fisheries) conduct a Coral Reef Monitoring, Survey and Evaluation of Hurricane Impact

on East Coast of Dominica and collaborate on coral reef health monitoring and outreach. And the other managed by the Division of Forestry, Wildlife and National Parks.

2.) Under the supervision of the Dominica Forest Service: Request forestry student interns from **Yale University School of Forestry and Environmental Studies** and **Sewanee the University of the South** (both have large forests to maintain in their forestry programs) to help maintain 115 miles of trails on Dominica. The Dominica Forest Service was established in 1949 refers to itself as the Forestry, Wildlife and Parks Division and has the following priorities:

- Sustainable utilization of forest, wildlife and national park resources
- Soil and water conservation
- Public relations and environmental education
- Enforcement of forestry, wildlife and national parks legislation
- Research and Monitoring
- Administration of Waitukubuli National Trail
- Upgrading and developing the infrastructure, institutional capacity and resources for implementing the Division's mandate

The interns would also be able to define educational/scientific activities that pertain to the above priorities of either the Forestry Service or the Fisheries Division. For example on-going work on Dominica's endemic Amazon parrots, the Imperial and Red-necked (*Amazona imperialis* and *A. arausiaca*, respectively), have proven to be effective conservation flagships for Dominica's diverse rainforest ecosystem. Continuous parrot-conservation and public-education efforts focusing on the Imperial, Dominica's national bird and emblem, have achieved a broad base of public support and awareness, along with significant protection of parrot habitat, including the oldest forest stands on the island. Both parrot species' secretive natures and Dominica's terrain have impeded quantitative research into the parrots' ecologies, even as a comprehensive parrot conservation program has yielded tangible results. Current field-research activities aim to quantify the parrots' distribution and abundance using GPS/GIS survey methods, which contrast with conventional ornithological abundance estimates. Research teams also use new camera technology to monitor and document reproduction and parental care, and are quantifying the botanical inventories of critical parrot nesting and foraging habitats. The Dominica parrot-conservation program has stimulated novel research and enhanced protected-area policies island-wide, ensuring a future for Dominica's vast montane forests and its native fauna.

<http://www.birdscaribbean.org/jco/index.php/jco/article/view/304>

<https://hari.ca/hari/global-networking/conservation-education/dominica-parrot-program/>

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## Annex 1. Caribbean Nations: in the Frontline of Recurrent Disasters

Caribbean islands are highly exposed to natural hazards, especially heavy rain and hurricanes. The long history of disasters has brought the region to increasingly adopt disaster risk management and, more recently, include climate change risk considerations in their transport policies, investment prioritization, insurance schemes, among others.

Once again, the 2017 hurricane season demonstrated the devastation that extreme events can bring to the region and the clear need to invest and integrate both the disaster risk management and climate change adaptation (CCA) agendas to promote resilience in the Caribbean. Hurricanes Irma and Maria both led to deaths and massive devastation in numerous island countries in the Caribbean, including the Dominican Republic (displacement of 24,000 persons of which 10,701 stayed in official shelters and 13,415 stayed with family relatives) and Barbuda (95 percent of all houses were damaged by the storm, with 70 percent of all houses suffering severe damage). In Dominica, the entire island was affected with significant impacts for its economy.

The 2017 very active hurricane season has brought many countries to a daunting challenge: How to be resilient to external shocks? The word “resilience” implies characteristics of both avoiding or limiting the impact of external events on the economy and society as well as being able to cope with human and economic shocks so normality can be restored in a timely manner. In this context, the transport sector plays a key role in emergency response and in restoring normality.

Transport resilience is the first step, but the challenge goes beyond transport and will require an integrated approach to ensure critical lifelines and infrastructure survive in the aftermath of a disaster. As tweeted by Sir Richard Branson, “To recover, [the] Caribbean must take the leap from 20th century technology to 21st century innovation. [As such, we need to bring] together heads of state, international community & business leaders to create [a] Marshall Plan for [the] Caribbean.”

Source: World Bank and Sir Richard Branson Official Tweet,  
<https://www.virgin.com/richard-branson/creating-marshall-plan-caribbean.1>

## Annex 2: Build Back Better: The Tiny Island of Dominica Faces New Climate Reality

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**THE ISLAND NATION OF DOMINICA, ONCE KNOWN AS A MODERN-DAY GARDEN OF EDEN, WAS RAVAGED BY HURRICANE MARIA IN SEPTEMBER 2017. (PHOTO CREDIT: DESMOND BROWN/IPS)**

**By Desmond Brown**

**ROSEAU, Dominica, Wednesday December 1, 2017 (IPS)** – McCarthy Marie has been living in the Fond Cani community, a few kilometres east of the Dominica capital, Roseau, for 38 years. The 68-year-old economist moved to the area in 1979 following the decimation of the island by Hurricane David.

But even though David was such a destructive hurricane, Marie told IPS that when Hurricane Maria hit the island in September, islanders witnessed something they had never seen before.



“The entire city of Roseau was completely flooded,” Marie told IPS. “There is a major river flowing through the centre of the city. The river rose pretty quickly and that was compounded by the fact that we have five bridges crossing the river and a couple of those bridges, especially those we built more recently, were definitely built too low so they presented a barrier to the river and prevented the water from flowing into the sea as it would otherwise have done.”

Hurricane Maria, a category five storm with sustained winds reaching 180 miles an hour, battered the Caribbean nation for several hours between Sep. 18-19. It left 27 people dead and as many missing, and nearly 90 percent of the structures on the island damaged or destroyed.

Marie said Dominicans have been talking a lot about climate change for quite some time, but the island was not fully prepared for its impacts.

And while Dominicans in general have not been building with monster hurricanes like Maria in mind, Marie said he took an extraordinary step following his experience with Hurricane David.

“I prepared for hurricanes by building my hurricane bunker in 1989 when I built my house. When the storm [Maria] started to get serious, we went into the bunker and we stayed there for the duration of the storm,” he said.

“I have been seeing more and more buildings going up that have concrete roofs but it’s not the standard by far. The usual standard is a house made of concrete and steel with a timber roof. So, most of the houses, the damage they suffered was that the timber roof got taken off and then water got inside the house and damaged all their stuff.

“We need to build houses that can withstand the wind, but the wind is not so much of a big problem. Our big problem is dealing with the amount of water and flooding that we are going to have,” Marie explained.

Like Marie, Bernard Wiltshire, who is a former attorney general here, believes Dominica is big on talk about climate change but the rhetoric does not translate into tangible action on building resilience.

He cited the level of devastation in several countries in the Caribbean over the last hurricane season.

“We certainly did not act fast enough in Dominica, we know that. And from looking at what happened in Puerto Rico and in Antigua and Barbuda, I didn’t see any evidence that we have really come to grips with what is required to make us more resilient in the face of those conditions that are going to confront us,” Wiltshire said.

“It brings us to the question how do we make ourselves more resilient, what do we do? I would say we have to look not just to the question of making buildings stronger and more rigid, but we also have to look at ways in which the community is made more resilient; our pattern of production and consumption, we’ve got really to reorient our society to eliminate the causes that prevent those communities from being able to withstand the effects of these disasters.”

Dominica acts as a microcosm of the climate change threat to the world, and the island's prime minister, Roosevelt Skerrit, has called for millions of dollars of assistance so the country can build the world's first climate-resilient nation.

"How many of the countries that continue to pollute the planet had to suffer a loss of 224 percent of their GDP this year?" asked Skerrit.

"We have been put on the front line by others. We were the guardians of nature, 60 percent of Dominica is covered by protected rain forests and has been so long before climate change," he said.

The island's Gross Domestic Product has been decimated, wiped out due to severe damage to the agriculture, tourism and housing sectors.

It is the second consecutive year that all 72,000 people living on Dominica have been affected by disasters.

Skerrit is convinced that the only way to reduce the number of people affected by future severe weather is to build back better to a standard that can withstand the rainfall, wind intensity and degree of storm surge which they can now expect from tropical storms in the age of climate change.

As Dominica seeks to become the world's first climate-resilient nation, Skerrit said they cannot do this alone and need international cooperation.

But Wiltshire said Caribbean countries must shoulder some of the blame for climate change.

"I don't want us in the Caribbean simply to point fingers at the bigger countries and completely ignore our own role. There is a problem I think, in our islands, if not causing climate change, in contributing to the degree of damage that is actually done, the severity of these disasters," Wiltshire said.

"In Dominica for example, one of the most obvious things was the deluge of debris from the hillsides, from the interior of the country, carried by the rivers down to the coast. It is up there where we have unplanned use of the land, building of roads, the construction of houses without a proper planning regime. So, we ourselves have a role to play in this where for example we are giving away our wetlands and draining them for hotel construction," he added.

Head of the Caribbean Climate Group Professor Michael Taylor said climate change is happening now and Caribbean residents no longer have the luxury to see it as an isolated event or a future threat.

"I think the first thing that we have to think about is how in the Caribbean are we really perceiving climate change and not necessarily only at the government level but at the individual level, at the community level," he said.

“Do we perceive climate change as something that is an event or are we beginning to recognise that climate change for us in the Caribbean is a developmental issue? We have to begin to see that climate change is interwoven into every aspect of our lives and it impacts us daily. It’s where you get your water from, the quality of your roads. Until we begin to realise that climate change is interwoven into life then we will always be almost with our foot on the backburner, always trying to catch up.

“We do have resource constraints within the region, we do have other pressing issues which sometimes tend to cloud over both at the community level going right up to the government level, but I think climate has put itself on the forefront of the agenda and that said, we need now to mainstream climate into the very short-term planning and at all levels of community going right up through government and even regional entities,” Taylor added.