

## The CARIBSAVE Partnership: Climate Change Impacts & Tourism

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**Anna Agosta G'meiner** is a fourth year student double majoring in Environmental Policy & Practice and Physical Geography at the University of Toronto. Her areas of interest include the impacts of climate change in the Caribbean region, paleo-reconstruction of sea level changes, and effective policy implementation in SIDS. At the University of Toronto, she has done research on Red Spruce distribution in the Appalachian Mountains, and more recently on paleo sea level changes in the Caribbean region during the Quaternary period. Anna also completed a summer internship at The CARIBSAVE Partnership in Barbados where she provided research assistance to the CARIBSAVE's Climate Change Risk Atlas Project. This project, as well as her previous research, will be used to further her studies at the Masters level, focusing on developing a greater understanding of the social, economic and physical capacity and constraints that the Caribbean region faces in adapting to climate change.

### Introduction

The purpose of this paper is to introduce a work placement opportunity which was undertaken in Barbados, in the summer of 2011, through the Centre for the Environment ENV440H Professional Work Experience Course at the University of Toronto. This course is an opportunity for students with interests in the Caribbean region, climate change research, and the intersection of tourism, livelihoods and the environment to gain greater knowledge and understandings in these fields. I will be discussing my personal experience during this work placement, as the first intern to complete a placement with The CARIBSAVE Partnership. I will also briefly discuss issues relevant to climate change impacts and tourism.

### Introduction to the CARIBSAVE Partnership

I conducted my summer work placement at The CARIBSAVE Partnership (CaribSave), a not for profit non-governmental organization (NGO), created in 2008 as a partnership between the Caribbean Community Climate Change Centre (5Cs) and Oxford University, with the regional office and headquarters

located in Hastings, Barbados since June 2010 (CaribSave 2011). CaribSave was created to address several environmental issues. As it is defined within its goals and mission statement, CaribSave seeks to address the challenges surrounding climate change, tourism, the environment, economic development, and community livelihoods across the Caribbean Basin (CaribSave 2011). Their research focuses on the climate change impacts on the tourism industry and its adaptive capacity, since tourism is the major economic activity in the region (Hillman and D'Agostino 2009). CaribSave seeks to build adaptive capacity in Caribbean countries, primarily by providing invaluable information in several key sectors (such as disaster management, gender equality, and biodiversity) affected by climate change to policy makers (Agosta G'meiner 2011, CaribSave 2011). CaribSave addresses several gaps including: primary research on sea-level rise and livelihoods, poverty & gender, making updated information and knowledge available to regional governments, building technical and human resources in the region, and implementation of recommendations at the community level (Agosta G'meiner 2011, CaribSave 2011).

The organizational structure of CaribSave is complex since it is a multi-localational organization. The headquarters are in Barbados, with a staff comprising of the regional coordinator and regional administrator, along with 5 to 7 staff members (depending on the project), which make up the regional technical team. An office is also located in Kent, United Kingdom (UK), where the human resources department is, and where most of the administrative tasks take place. The CEO and several head research scientists are also in the UK, at Oxford University. Several research assistants and project officers can be found in Trinidad, Jamaica, Belize, Canada, Germany and Switzerland (CaribSave 2011). The staff is passionate about their work, and there is a laid back but highly productive atmosphere in the regional headquarters. CaribSave is funded completely through international donors, international funding agencies, and development partners, mainly solicited through proposal applications. Previous funders include CCCCC, Oxford University, DfID, AusAID, IDB, UNEP, and ACS (CaribSave 2011).

#### Placement Activities

The nature of my placement activities was to provide research, writing and technical support to the CaribSave Climate Change Risk Atlas (CCCRA) project, as well as writing funding proposals for small

projects. The main project I worked on was the Phase I of the CCCRA, which has an expected completion date of March 2012. My main task consisted of writing a draft report for the Belize Water Sector, which included doing extensive secondary research. I also helped project managers with various tasks when needed, and had the opportunity to take part in a Livelihoods, Gender, Poverty, and Development (LGPD) Mission to St. Vincent and the Grenadines. These missions were undertaken by CaribSave staff in fifteen Caribbean countries associated with the CCCRA project in order to collect primary research on the impacts of climate change to LGPD.

### Regional Setting

The Caribbean region consists of hundreds of islands and cays belonging to approximately 34 country groupings, as well as 12 continental countries with Caribbean coastlines and islands (CARICOM 2011). These islands vary considerably in size and are made up of mainly the upper parts of a submerged chain of volcanic mountains, as well as some coral islands that have been tectonically uplifted (Meditz and Hanratty 1987). There are several geological formations found throughout the region. These include igneous and metamorphic rocks, karst, coastal sedimentary plains, and fossilized coral formations (Ibid). These formations result in the varying landscapes that can be found in the region; high rugged mountains often covered with dense evergreen rain forests, hilly countryside and high plateaus from sloping mountains, karst terrain and corral terraces, and coastal plains usually on the southern or western sides of mountains (Ibid). Rugged coastlines can be found with many inlets containing white or dark sands (Fig. 1). There are also active volcanoes in the region, most notably on the island of Dominica.



Fig. 1: White sand beach in Barbados and Grape Vine trees in the foreground.

Source: author's collection 2010.

## Tourism in the Caribbean Context and Climate Vulnerabilities

Tourism resources in the Caribbean region, the main example being the climate itself, are all sensitive to climatic changes. The region has done so well as a tourist destination because it has pristine beaches, a balmy 30 degrees Celsius average annual temperature, and thriving marine and terrestrial ecosystems. These systems often have a very slow response time, and thus any damage to them brought on by hydro-meteorological events (such as hurricanes, tropical storms, tropical waves, flooding, and windstorms) or changes in sea level or sea temperature are severe and lasting (Fig. 2 and Fig. 3) (Hillman and D'Agostino 2009; Pulwarty *et al.* 2010).



Fig. 2: Bottom Bay Beach in Barbados, June 2010.

Fig. 3: Bottom Bay Beach in Barbados, after the passage of Hurricane Tomas in October 2010. Source author's collection 2010 and 2011 respectively.

Of importance, as mentioned above, is the high vulnerability of the Caribbean region to changes in sea level. The Intergovernmental Panel on Climate Change Fourth Assessment Report (IPCC AR4) lists various ways in which changes in sea levels could adversely affect small island states such as those found in the Caribbean region. These include, but are not limited to: intrusion of saltwater into freshwater aquifers, degradation of coastal areas, beach sand erosion, and an increase in large storm surges from increased sea surface temperatures. All are possibilities which could lead to coastal degradation.

The importance of coastal degradation is further put into perspective when applying this to the economy of the region. Tourism is the driving economic force in many Caribbean countries (Mimura *et al.* 2007; Hillman and D'Agostino 2009). In most

Caribbean islands, tourism accounts for 20 to 70 percent of total employment (the higher percentages often found on the smaller islands), and can generate upward of 50 percent of the Gross Domestic Product (GDP) on the smaller islands (Hillman and D'Agostino 2009). Any sea level change would cause massive destruction of coastal environments such as sand beaches, corals, mangroves, and waterfront establishments which would negatively impact the economy.

Of importance to note is that tourism is also the main contributor of carbon related emissions in the region, particularly due to air conditioning systems and transportation (air, land, and water) (Clayton 2009). For this reason, many initiatives have been undertaken, or are underway, in order to green this dominant sector of the economy. There have been noted successes, particularly in Costa Rica and Belize, although many other Caribbean islands have been lauded for their contributions to greening the tourism sector, particularly Jamaica, Barbados, and Dominica (CTO 2011). The highest number of Green Globe certifications in the Americas can be found in the Caribbean region, with over 150 hotels and attractions carrying the Green Globe international standard for sustainability stamp (Green Globe 2011).

Although there have been noted successes, there are still thousands of hotels, attractions and transportation systems which have not achieved high levels of sustainability. The hopes of Caribbean economies increasingly rest on a strong and resilient tourism economy, however many countries and companies in the region do not have the means to create a sustainable tourism sector.

### Conclusion

It is due to these complex and inter-related issues that CaribSave has dedicated itself to addressing the challenges surrounding climate change, tourism, the environment, economic development, and community livelihoods across the Caribbean Basin. These are important issues which require extensive research in order to comprehend their interconnectedness. This understanding is also important so as to develop and implement policies that provide adaptive capacities to climate change, as well as allowing un-obstructed participation in the decision making process at all levels, particularly those of affected local communities. CaribSave is well adapted to succeed in its environment.

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