



INCEPTION SYMPOSIUM ON BROADENING THE APPLICATION OF
THE SUSTAINABILITY SCIENCE APPROACH IN SUPPORT OF 2030
AGENDA FOR SUSTAINABLE DEVELOPMENT

5-6 APRIL 2016
UNESCO HEADQUARTERS

Selected case studies focusing on Small Islands Developing States

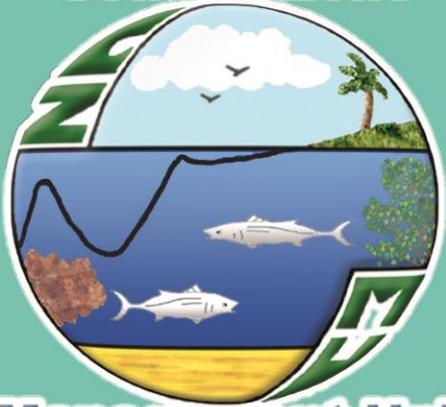
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Coastal Zone



Management Unit BARBADOS

Caribbean Regional Headquarters
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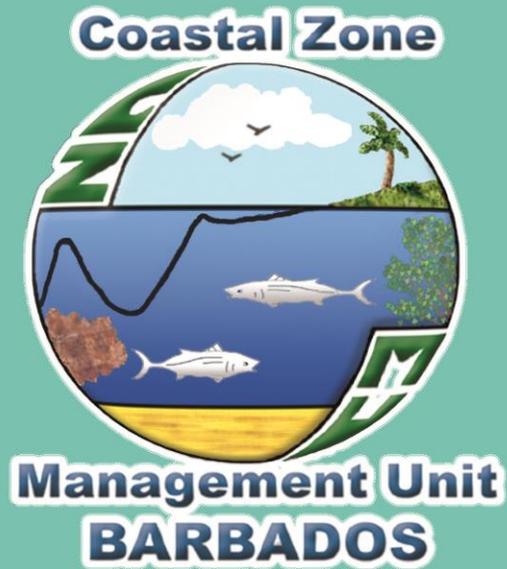
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Protecting and enhancing the livelihoods, environments and economies of the Caribbean Basin



Centre for Resource Management and Environmental Studies





“The most intriguing location of any small island is its coastal zone. This transitional strip of land contains some of the most productive and valuable habitats of the biosphere. It has multiple resources, resource users, varying levels of development and in essence is fundamental to the very existence of a small island. Barbados is no exception in this regard, especially with its highly varied coastline of unique geological formation”

THE COASTAL ZONE MANAGEMENT UNIT (CZMU), BARBADOS

An aerial photograph of a tropical coastline. On the left, there is a lush green island with a dark, winding path or road. To the right, the ocean is dominated by a large, circular storm system with a bright yellow center, surrounded by concentric rings of white and blue clouds. The overall scene is dramatic and highlights the potential for coastal hazards.

Development Planning for Coastal Hazards

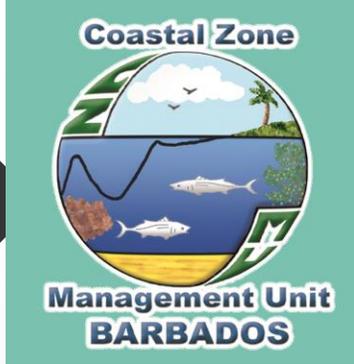
Coastal Zone Management Unit
Barbados Meteorological Services
Barbados Building Standards
Authority
Central Emergency Relief



Flood Hazard Mapping in Barbados

- DELCAN Atlantic Coast Study
- 1:100yr storm model
 - Wave runup
 - Contour map elevations
- Disruption of services and commerce
 - Banking
 - Utilities

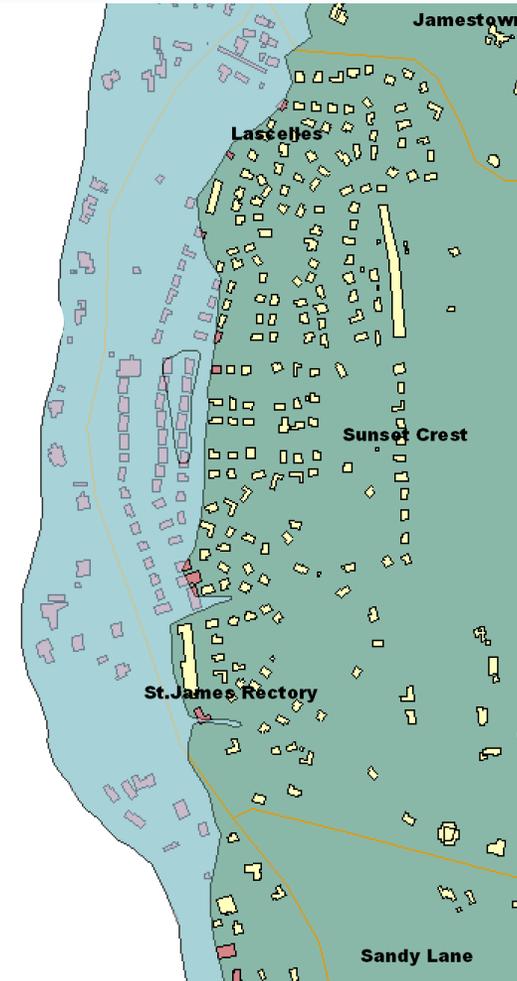




Flood Hazard Mapping in Barbados

► Flood Model Results

- 6,000 residences along the west and south coasts
- 70% of west coast hotels
- Emergency Shelters
 - St. Lawrence Church
 - St. Christopher's School
 - Payne's Bay Methodist Church
- Police Stations
 - Worthing Police Station
 - Central Police Station
 - Hometown Police Station





Applicant's Handbook and Guide to Coastal Planning in Barbados

COASTAL ZONE MANAGEMENT UNIT
MINISTRY OF ENVIRONMENT, WATER RESOURCES AND DRAINAGE
March 2001



TOWN PLANNING APPLICATIONS

The Town and Country Development Planning Office (TCDPO)

The (TCDPO) is the sole government agency responsible for processing all planning applications in Barbados and granting permission for these applications

For some applications, technical expertise not available at the TCDPO is required in order to make an informed and just assessment. Hence the applications may be referred by the TCDPO to the appropriate government department(s) for technical recommendations.

The Coastal Zone Management Unit (CZMU) is one such department to which applications may be referred. Applications are referred to the CZMU when the site chosen for development falls within the coastal zone management area.

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INTASAVE
Caribbean

Working together in a changing climate



Multilateral Investment Fund
Member of the IDB Group

Community Adaptation Plan

ANDROS, THE BAHAMAS | 2015

Prepared by The CARIBSAVE Partnership with funding from
The Multilateral Investment Fund of the Inter-American Development Bank
(IDB/MIF)





INTASAVE
Caribbean

Working together in a changing climate



Multilateral Investment Fund
Member of the IDB Group

Community Adaptation Plan

PORT ANTONIO, JAMAICA | 2015

Prepared by The CARIBSAVE Partnership with funding from
The Multilateral Investment Fund of the Inter-American Development Bank
(IDB/MIF)





Community Adaptation Plan

PLACENCIA VILLAGE, BELIZE | 2015

Prepared by The CARIBSAVE Partnership with funding from
The Multilateral Investment Fund of the Inter-American Development Bank
(IDB/MIF)





Working together in a changing climate

INTASAVE
Caribbean



Community Adaptation Plan

HOLETOWN-WESTON, BARBADOS | 2015

Prepared by The CARIBSAVE Partnership with funding from
The Multilateral Investment Fund of the Inter-American Development Bank
(IDB/MIF)





Community Adaptation Plan

OISTINS, BARBADOS | 2015

Prepared by The CARIBSAVE Partnership with funding from
The Multilateral Investment Fund of the Inter-American Development Bank
(IDB/MIF)



Caribbean Climate Change Risk Atlas (CCCRA)

The Climate Change Risk Atlas is where the best climate science and thinking from communities come together to enable a region prepare for the future. It is a comprehensive guide to the threats climate change poses to **15 Caribbean countries** and what they can do about them

During three years, some of the **world's leading researchers in climate, physical and social sciences** plotted the path of coming change and assessed the vulnerability of the region's people, environment and infrastructure. The team worked with **regional experts and institutions**, particularly the **University of the West Indies and the Caribbean Community Climate Change Centre (CCCCC)** and applied various state-of-the-art, high-resolution climate models to estimate the most likely changes across the region. The project also used advanced mapping and survey techniques to identify where storm surges would hit or what infrastructure would be submerged by the projected rise in sea level.

Caribbean Climate Change Risk Atlas (CCCRA)

Hundreds of meetings were held with **residents, businesses** and **decision-makers** to build up a picture of the **social and economic consequences** of the projected changes, adding an essential practical outlook and **community knowledge** to the project. When the consultations were done, the researchers had a much better idea of what the priorities would be for each community

A critical goal of the consultation phase was to "**democratise**" **climate change science**. Through film, clear data maps and animation, the team brought the message home to individuals, explaining what changes, for example, increases in water temperature, were likely to mean for them

At **each stage** of the project, vital information surfacing from the study was **shared with key ministries and policymakers** in each country, underscoring the fact that climate change affects not only the environment but the economy, society, the physical landscape and national finances

The result of the project is an accessible, **science-based, practical guide** that lets the general public and specialists alike compare and contrast their present and future risks.

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- The Climate Studies Group, Department of Physics, University of the West Indies, Mona Campus
 - The Meteorological Institute of the Republic of Cuba (INSMET)
 - Anton de Kom University of Suriname
 - The University of Waterloo
 - The Institute for Gender and Development Studies, University of the West Indies, Mona Campus
 - The Health Research Resource Unit, Faculty of Medical Science, University of the West Indies, Mona Campus
 - The Jamaica Ministry of Agriculture and Fisheries
 - The Ministry of Energy and Mining
 - The Ministry of Health
 - The Ministry of Housing, Transport, Water and Works
 - The Ministry of Water and Housing
 - The National Environment and Planning Agency
 - The Office of Disaster Preparedness and Emergency Management
 - The Petroleum Corporation of Jamaica
 - The Social Development Commission, Portland office
 - The Water Resources Authority
 - Environmental Management Division / Office of the Prime Minister
 - Meteorological Services of Jamaica
 - Rose Hall Development Limited



Centre for Resource Management and Environmental Studies

The Centre for Resource Management and Environmental Studies (CERMES) promotes and facilitates sustainable development in the Caribbean and beyond. CERMES has a strong focus on tropical island environmental management and its mission is to make a significant contribution to sustainable development in the Caribbean region. CERMES is a department within the Faculty of Science and Technology on the UWI Cave Hill Campus in Barbados

Research and Outreach- Current Activities



Socio-economic Monitoring for Coastal Management (SocMon)



Water-aCCSIS is a regional initiative that is contributing to the improvement of water management and climate change adaptation of Caribbean states and the development of adaptive management strategies

Research and Outreach- Current Activities



Lion Fish mitigation

Please visit the [Barbados-Lion Fish Community](#) Facebook page for more information



Conset Bay Pilot Project



Future of Reefs in a Changing Environment

Research and Outreach- Completed Activities



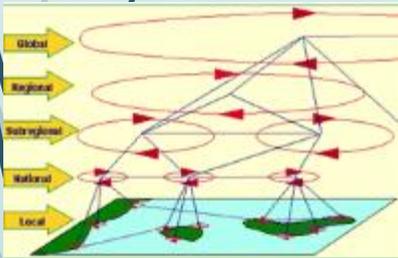
**Too BIG To
IGNORE**

Global Partnership for Small-Scale Fisheries Research

Too Big to Ignore (TBTI) is a global research network and knowledge mobilization partnership on small scale fisheries (SSF).



The Community-based Coral Reef Monitoring and Management Project (the Folkestone Marine reserve)



LME Governance - The Large Marine Ecosystem (LME) Governance Framework is based on linked policy cycles at multiple levels, from local to international.

Several top world scientists on sustainability issues are from the Caribbean

- Prof. Anthony Chen (Atmospheric physics, UWI Mona Campus, Jamaica)

Lead Author of '2007: Regional Climate Projections' (Chapter Eleven) in the WG1 report of the IPCC. Awarded with the 2007 Nobel Prize

- Prof. Leonard Nurse (Environmental science, UWI Cave Hill Campus, Barbados)

Coordinating Lead Author of 'Small Islands' (Chapter Sixteen) of the WG2 report of the IPCC. Awarded with the 2007 Nobel Prize

- Prof. John Agard (Environmental science, UWI St. Augustine Campus, Trinidad and Tobago)

Lead Author in the WG2 report of the IPCC. Awarded with the 2007 Nobel Prize

Final Notes

- Caribbean SIDS have accumulated a knowledge stock and a set of tested practices which are relevant for broadening the application of sustainability science.
- Institutional assets and multi-stakeholders networks in Caribbean SIDS are considerably more robust and extended than what might be commonly assumed (community, national, sub-regional, regional, and international levels)
- Caribbean SIDS have attained a well-developed North-South collaboration on sustainability science, specially with North America and with several European countries
- Caribbean SIDS still present a large potential for South-South collaboration on sustainability science, in particular in relation to Pacific SIDS and SIDS from Africa, Indian Ocean, Mediterranean and South China Sea (AIMS)
- The experience of Caribbean SIDS contains valuable lessons in relation to the importance of communication for advancing sustainability science
- Case studies related to sustainability science in Caribbean SIDS may inform the preparation of the Guidelines of the project, specially in relation to linkages with SDG16 *“Promote peaceful and inclusive societies for sustainable development, provide access to justice for all and build effective, accountable and inclusive institutions at all levels”*



THANK **YOU** FOR **YOUR** ATTENTION!

Agriculture and Tourism in Jamaica

Agriculture and **tourism** are the old and the new of the Jamaican economy and have two crucial features in common: they're both critical sources of income for the island and they are both on the front line of **climate change**.

Researchers found that because tourism and agriculture are integral to the **livelihoods** of tens of thousands of Jamaicans, they are also central to any effort to adapt to climate change. However, the sectors differ in several key ways: tourism contributes about 5.8 percent of gross domestic product and directly **employs** around 80,000 people, whereas farming makes a similar contribution to the economy but employs many more people – about 230,000, most of whom are the poorest in the country

The study also concluded that an understanding of the different roles men and women play in Jamaica is essential to any plans for the future. Labour is often defined along **gender lines**, exposing women and men to different risks and opportunities.

Temperatures are already on the rise in Jamaica and **rainfall** is varying from year to year. It's a dynamic set of factors that will influence agriculture and tourism in disparate ways but in similar amounts – capitalising on this is the best survival strategy on offer.