

*SIDS, Climate Change and
Risk Reduction in the
Caribbean Region.*

Location/Geography

- Caribbean is located west of the Atlantic Ocean south of North America.
- Island states in the Caribbean are typified by topography which is either relatively flat or gently sloping such as the Bahamas, Turks and Caicos Islands and the Cayman Islands or hilly interior with relatively flat coastline such as Jamaica, St Lucia and Montserrat.





Vulnerability

- Topography
 - Relatively flat
 - Hilly Interior
- Geology
 - Caribbean Plate
 - Yellow Limestone Geology (Landslide)
- Location
 - Atlantic Hurricane Belt

Vulnerability

- **Fragile economies**
 - Tourism
 - Agriculture
 - In 2004 Hurricane Ivan resulted in damages which accounted for 200% GDP in Grenada and Cayman Islands and 8% in Jamaica
- **Small Island Developing States**
 - Home to the poorest country in the Western Hemisphere – HAITI
 - Significant number of poor dwell on marginal lands
 - Squatting





08/11/2005

Climate

- The climate is mainly tropical with the most important climatic influences being the North East Trade winds and the island's orographic features, (mainly the central ridge of mountains and hills).
- It can be broadly characterized as dry winter/wet summer with orography and elevation being significant modifiers on the sub regional scale.

Climate Change

- The climate of the Caribbean will be altered by global warming.
 - Intergovernmental Panel on Climate Change (IPCC) 4th assessment (IPCC, 2007).

Climate Change

- Temperature
 - Increase in Sea Surface Temperatures
 - Coral Bleaching
 - Human Health - Diseases
- Precipitation
 - Droughts
 - Storms
- Sea Level Rise
 - Consistent with the global mean (IPCC)



Hazard Implications of Climate Change

- **Increase in frequency and severity of hurricanes in the region**
 - 1978 –1988 –only 3 Category 4 & 5 hurricanes
 - Since 1988 –11 Category 4 & 5 hurricanes in the Caribbean
 - it is likely that some increase in tropical cyclone intensity will occur if the climate continues to warm. (WMO International Workshop on Tropical Cyclones, IWTC-6, San Jose, Costa Rica, November 2006)
- **Increase in severity of storm surges**

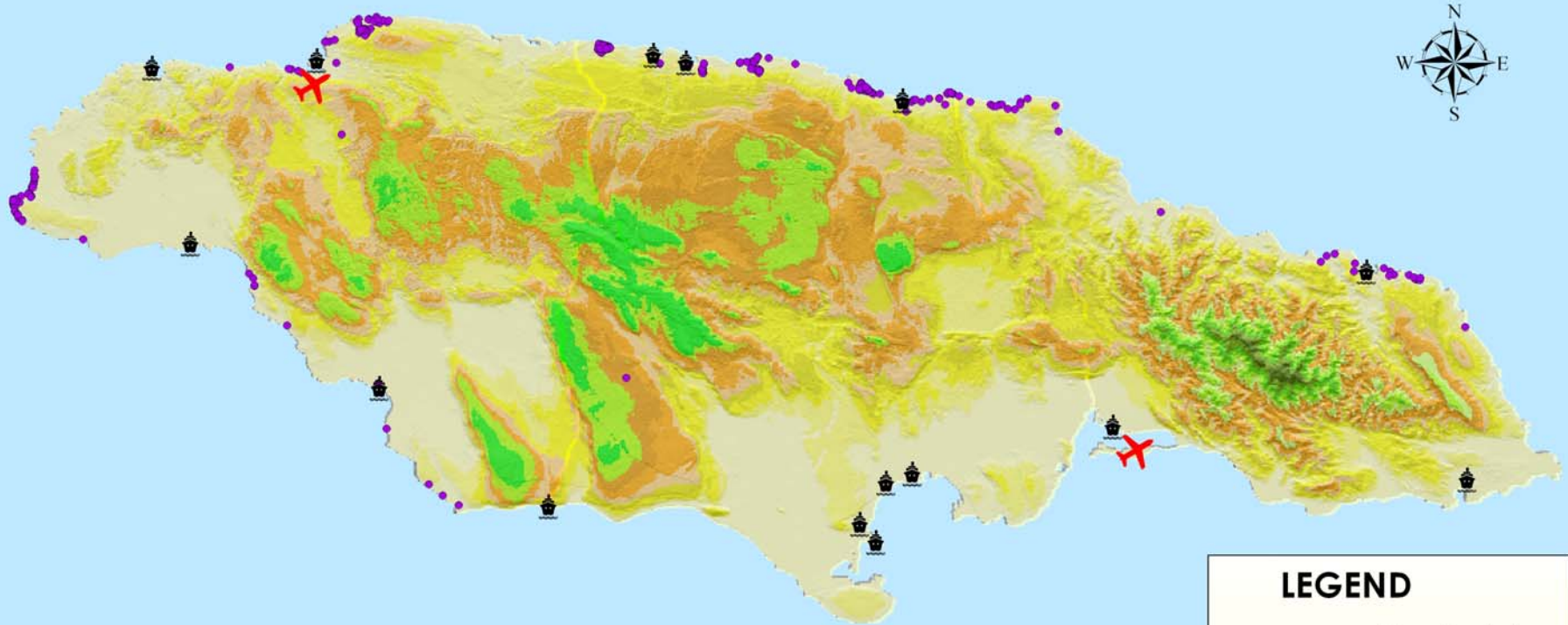
Hazard Implications of Climate Change

- **Increase in the frequency of drought events.**
 - Increase in bush fire occurrences
 - Result in.....
- **Increased intensity of inland flooding events**

Impact

- **Agriculture**
 - Significant employment sector
 - Accounts for second highest figures in damage assessment
- **Tourism**
 - Leading contributor to GDP in the region
 - Relies heavily on the coastline (beaches and coral reefs)
- **Infrastructure**
 - Accounts for highest figures in damage assessment

HOTELS, PORTS AND AIRPORTS



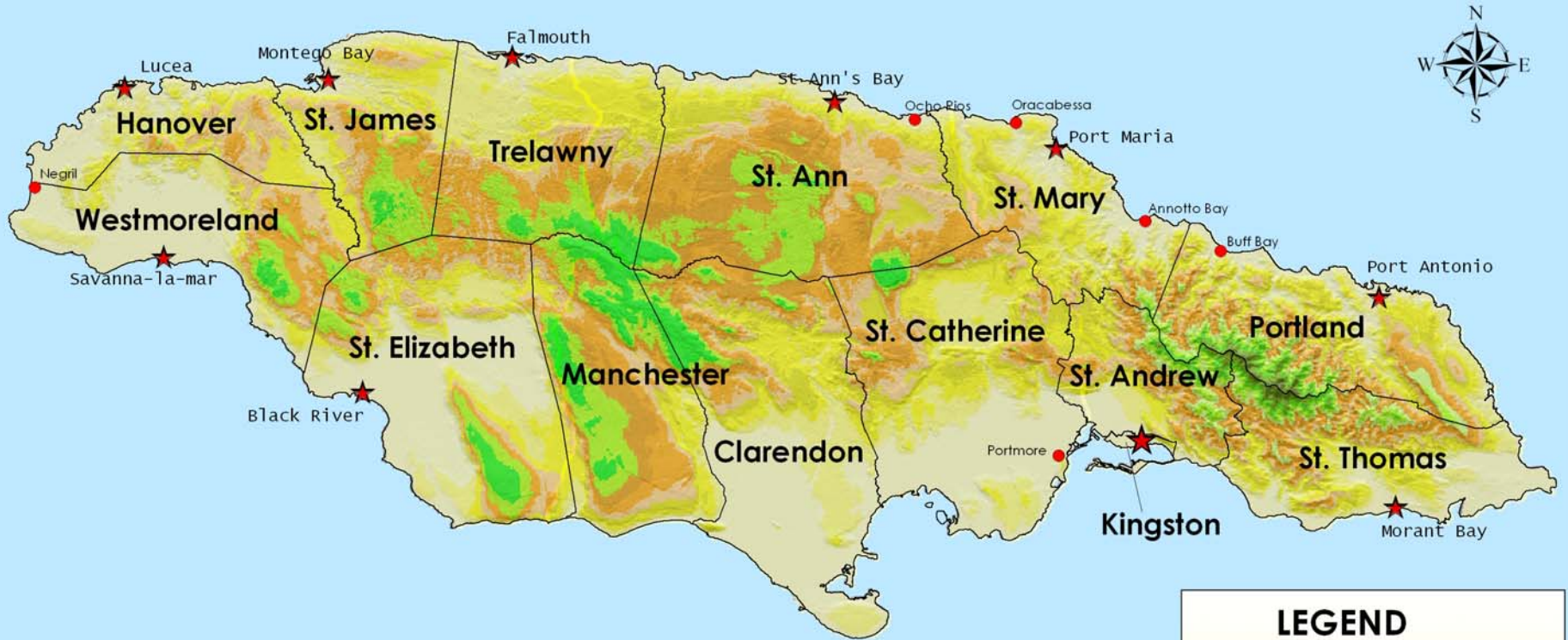
CARIBBEAN SEA

0 10 20 40 60 80 100 Kilometers

LEGEND

	Port		0 - 81
	Hotel		81 - 175
	Airport		175 - 273
			273 - 382
			382 - 505
			505 - 644
			644 - 797
			797 - 966
			966 - 1,159
			1,159 - 1,390
			1,390 - 1,688
			1,688 - 2,263

MAJOR TOWNS AND ELEVATION



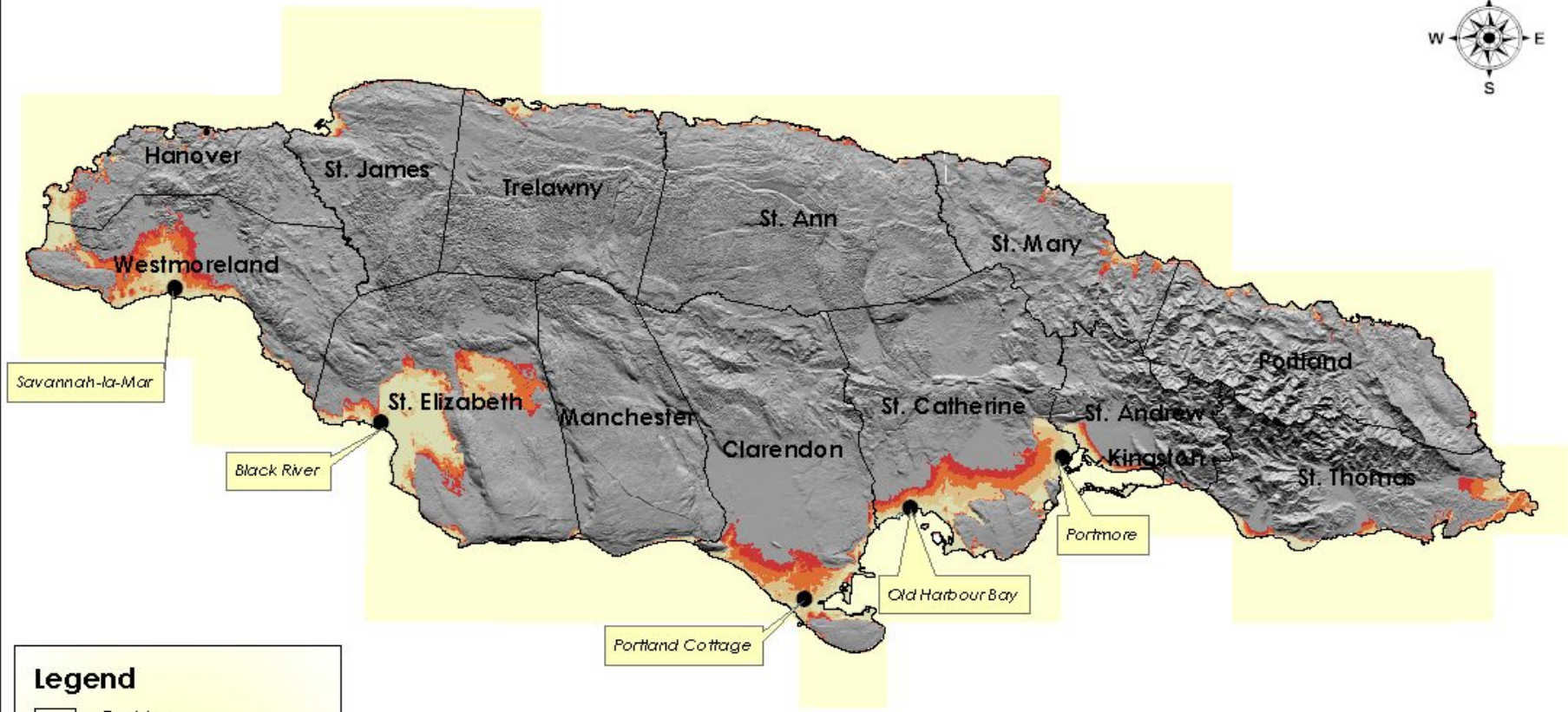
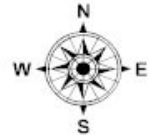
CARIBBEAN SEA



LEGEND

		Elevation (m)
	Parish	0 - 81
	Capital	81 - 175
	Town	175 - 273
		273 - 382
		382 - 505
		505 - 644
		644 - 797
		797 - 966
		966 - 1,159
		1,159 - 1,390
		1,390 - 1,688
		1,688 - 2,263

MAP OF JAMAICA SHOWING ELEVATION



Legend

- Parishes
- Height Above Sea Level (m)
 - 0 - 5
 - 6 - 10
 - 11 - 15
 - 16 - 20
 - 21 - 2,263



REGIONAL RESPONSE



Caribbean Disaster Emergency Response Agency - CDERA

Comprehensive Disaster Management

- CDERA has facilitated the development and adoption of a Strategy of Comprehensive Disaster Management (CDM).
- The strategic objective is that the CDM is integrated into the development process of CDERA member states (16).

Caribbean Disaster Emergency Response Agency - CDERA

- The climate change, disaster management agenda is addressed through two of the five CDM Intermediate Results (IRs):
 - Preparedness Response and Mitigation Capacity is enhanced and integrated
 - Hazard information is incorporated into development planning and decision-making

Caribbean Community Climate Change Centre – CCCCC (2005)

- Centre is the key node for information on climate change issues and on the region's response to managing and adapting to climate change in the Caribbean.
- It is the official repository and clearing house for regional climate change data, providing climate change-related policy advice and guidelines to the Caribbean Community (CARICOM) Member States through the CARICOM Secretariat.

CCCCC

- The Centre is recognized by
 - the United Nations Framework Convention on Climate Change (UNFCCC),
 - the United Nations Environment Programme (UNEP),
 - International agencies as the focal point for climate change issues in the Caribbean.
 - United Nations Institute for Training and Research (UNITAR) as a Centre of Excellence.

Caribbean Planning for Adaptation to Climate Change (CPACC) project

- CPACC consisted of four regional projects and five pilot projects. The regional projects were:
 - Design and establishment of a sea level/climate monitoring network;
 - Establishment of databases and information systems;
 - Inventory of coastal resources; and
 - Use and formulation of initial adaptation policies.

CPACC

- The five pilot projects were:
 - Coral reef monitoring for climate change (Bahamas, Belize, and Jamaica);
 - Coastal vulnerability and risk assessment (Barbados, Guyana, and Grenada);
 - Economic valuation of coastal and marine resources (Dominica, Saint Lucia, and Trinidad and Tobago);
 - Formation of economic/regulatory proposals (Antigua and Barbuda, and St Kitts and Nevis); and
 - National communications (St Vincent and the Grenadines).



NATIONAL RESPONSE



National Response

- Integrate Disaster Information in Development Planning
 - National Disaster Office reviews development applications (Subdivision, EIA's, Building Application for select areas/developments)
 - Incorporated the use of GIS in Mitigation, Preparedness and Response (2005)
 - Ongoing training of planners in local authorities
- Continued training and empowerment of communities

National Response

- Improve Response and Damage Assessment Process
 - Incorporated use of GIS
 - International Charter (First Activation 2008)
 - Established National Emergency Response GIS Team (NERGIST).
 - Volunteer Group of GIS Professionals

National Response

- Integrate Disaster Management in Tourism Sector
 - Established Emergency Operation Centre (2004)
 - Developed Standards for Risk Maps for the Sector
- Integrate Disaster Management in Agricultural Sector
 - Establish Agriculture Disaster Risk Management Committee
 - FAO funded project to prepare Preparedness Plan for the Sector



Thank You

