

Adaptation in the Caribbean

**Climate Change in the Caribbean
2011: Puerto Rico and the U.S.
Virgin Islands**

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International and Regional Liaison Officer**

Caricom Climate Change Centre

The Caribbean Community Climate Change Centre

- Endorsed by the CARICOM Heads of Government in July 2002
- An intergovernmental specialized agency of CARICOM with an independent management that is guided by
 - The CARICOM Council of Trade and Economic Development (COTED) on policy matters.
 - A board of directors with responsibility for strategic planning.
 - A technical secretariat headed by an Executive Director with responsibility for tactical planning.
- The Centre is mandated to coordinate the regional response to climate change and its efforts to manage and adapt to its projected impacts.
- The Centre possesses full juridical personality.
- Financially independent



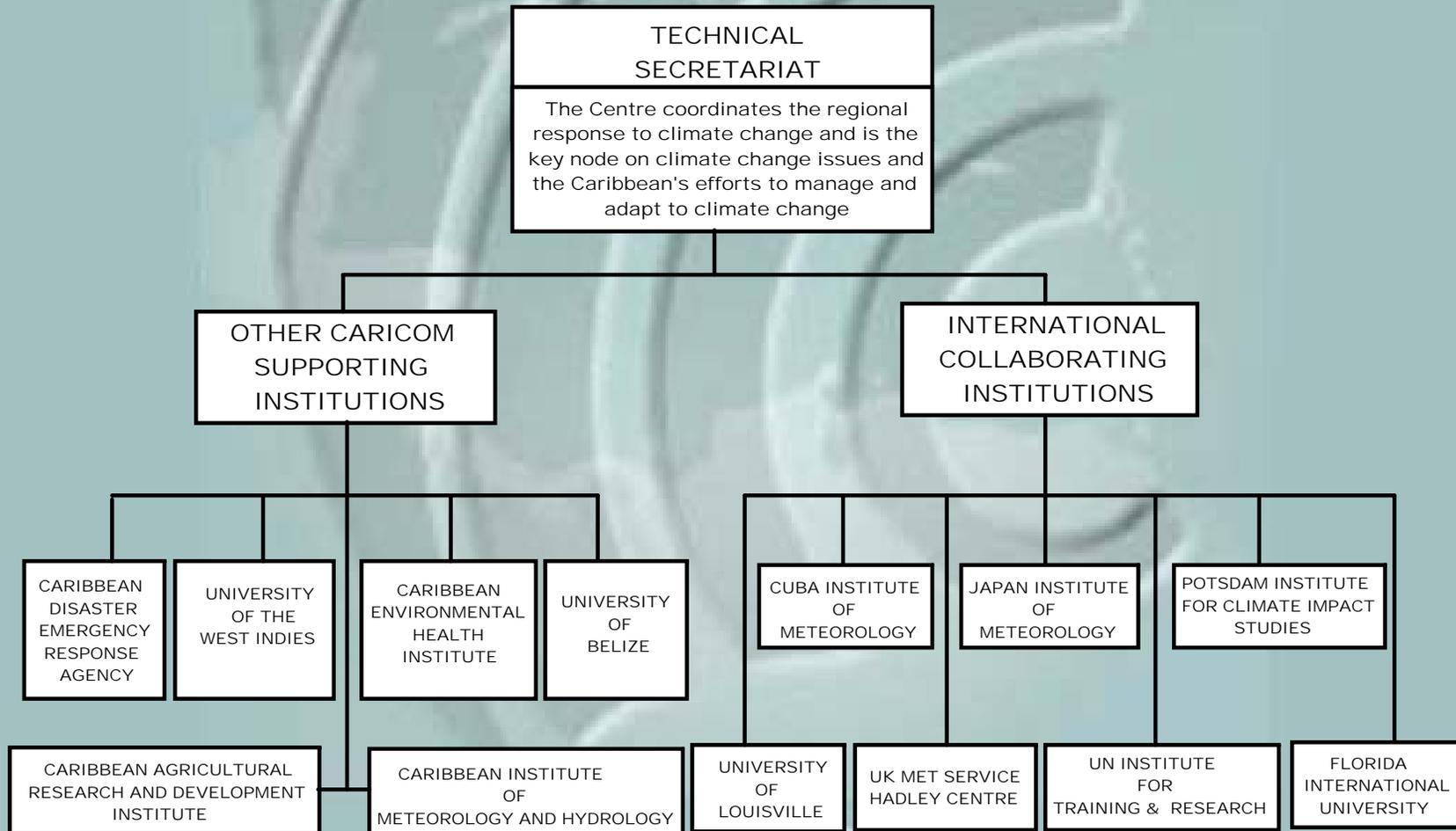
- ◆ Operational since January 2004
- ◆ Located in Belmopan, Belize

Members

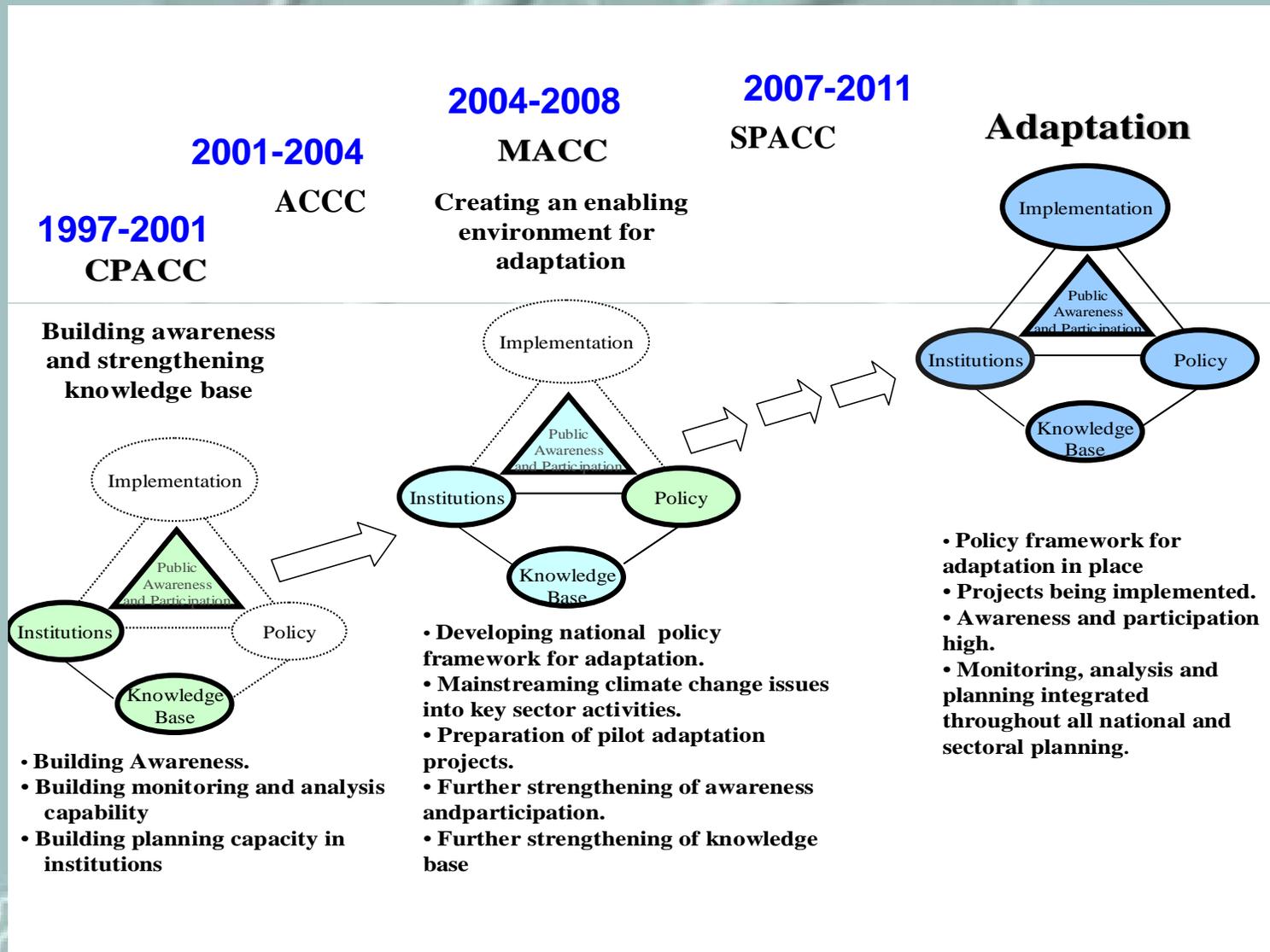


- Belize
- Dominica
- Grenada
- Guyana
- Haiti
- Jamaica
- Suriname
- Saint Lucia
- St. Kitts and Nevis
- St. Vincent & the Grenadines
- Trinidad and Tobago
- Antigua and Barbuda
- Bahamas
- Barbados

Functional Organogram



The Regional Response to Climate Change (1997 – 2011)



Caribbean Planning for Adaptation to Climate Change (CPACC) 1997 - 2001

- 1. Design and Installation of Sea-level and Climate Monitoring System**
- 2. Establishment of Databases and Information Systems**
- 3. Inventory of Coastal Resources and Uses**
- 4. Formulation of Policy Framework for Integrated Adaptation Planning and Management**
- 5. Coral Reef Monitoring for Climate Change Impacts**
- 6. Coastal Vulnerability Assessment**
- 7. Economic Valuation of Coastal and Marine Resources**
- 8. Formulation of Economic and Regulatory Proposals**
- 9. Preparation of St. Vincent and the Grenadines' First National Communication**

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Adapting to Climate Change in the Caribbean (ACCC) 2001 - 2004

- **Development and distribution of risk management guidelines for climate change adaptation decision making;**
- **Development of the business plan and establishment of the basis of financial self-sustainability for CCCCC;**
- **Development of a guide to assist practitioners in CARICOM countries to integrate climate change in the environmental impact assessment (EIA) process;**
- **Development of a draft regional public education and outreach (PEO) strategy;**
- **Dialogue established with the South Pacific Regional Environment Programme (SPREP) and the Pacific Islands Climate Change Assistance Programme (PICCAP) for collaboration on issues related to climate change;**
- **Successful launch of a Master's Programme in climate change at UWI**
- **Statistically downscaled climate scenarios development for Jamaica, Trinidad and Tobago, and Barbados;**
- **Staff training and development at the Caribbean Institute for Meteorology and Hydrology (CIMH) in climate trend analysis in order to strengthen climate change capacity;**
- **Implementation of pilot projects on adaptation studies in the water, health and agricultural sectors.**

Mainstreaming Adaptation to Climate Change (MACC) 2004 - 2009

- **Further Capacity Building**
- **Strengthen regional monitoring network: 11 tide gauges & AWSs, CORS stations, CREWS in Jamaica**
- **Climate Modelling**
 - **Downscaling (PRECIS)**
 - **Japanese Earth Simulator**
- **Pilot Vulnerability Assessments**
 - **Barbados – Tourism**
 - **Belize – Water Resources (Surface Water)**
 - **Guyana - Agriculture**
 - **Jamaica – Water Resources (Ground Water)**
- **Prepare adaptation strategies**
- **Prepare regional climate change strategy**
- **Coordinate the region in the climate change negotiation process**

Modeling Activities

- The GCM's resolution of 300 km cannot resolve the small islands of the Caribbean.
- The Centre is collaborating with other institutions in the use of downscaling regional models (25 & 50 km resolutions) to look at future climate scenarios.
- Collaborating Institutions include:
 - Hadley Centre
 - University of the West Indies
 - INSMET in Cuba
 - CATHALAC in Panama

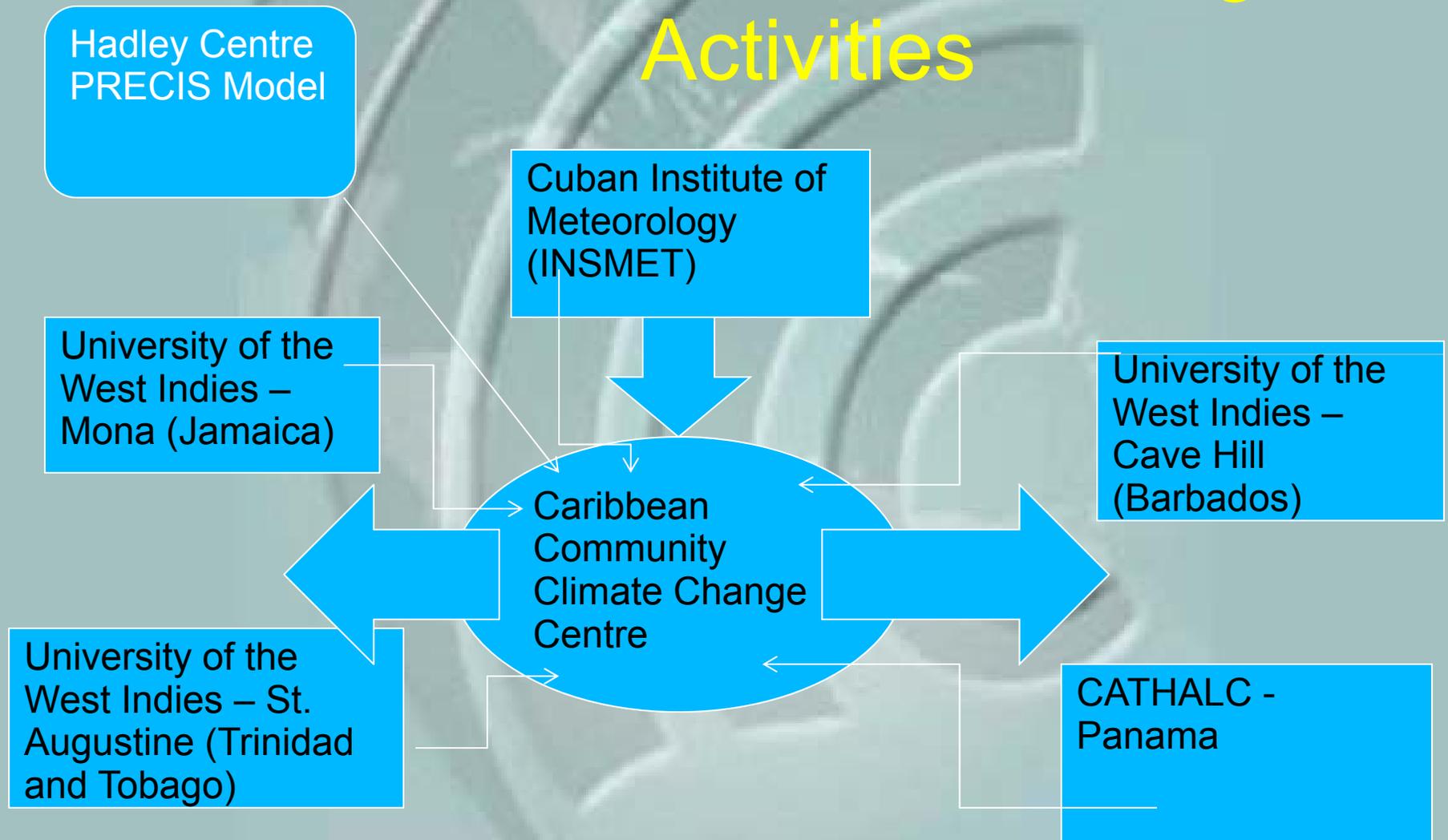
Belize: Sept 25-29, 2006



Cuba: Dec 4 – 10, 2006

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Network of Downscaling Activities



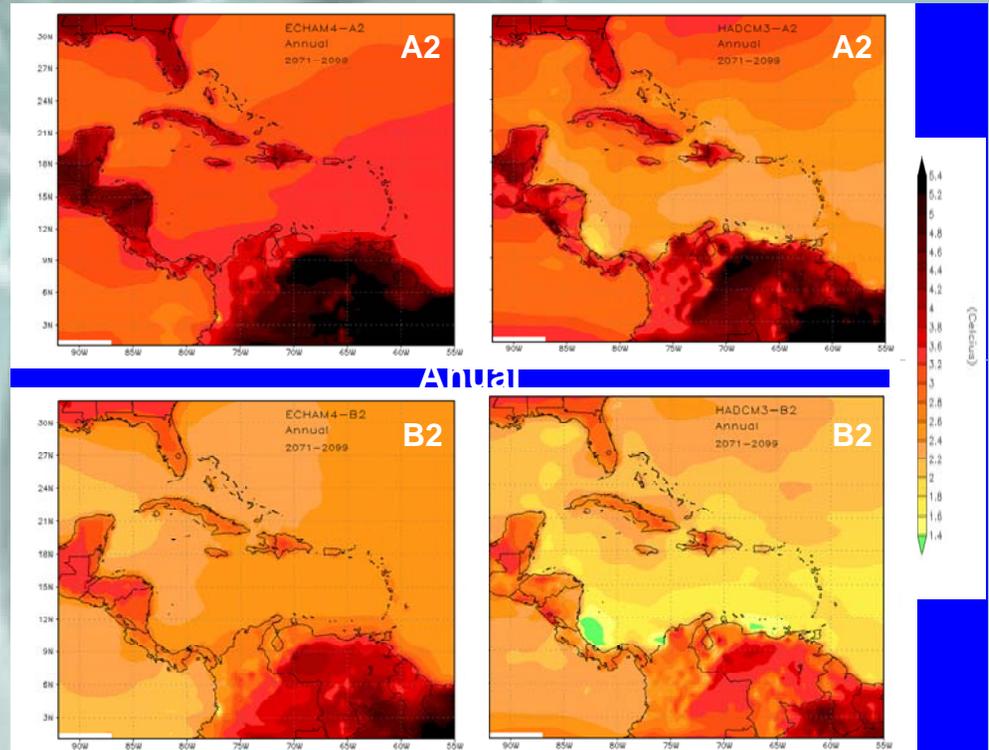
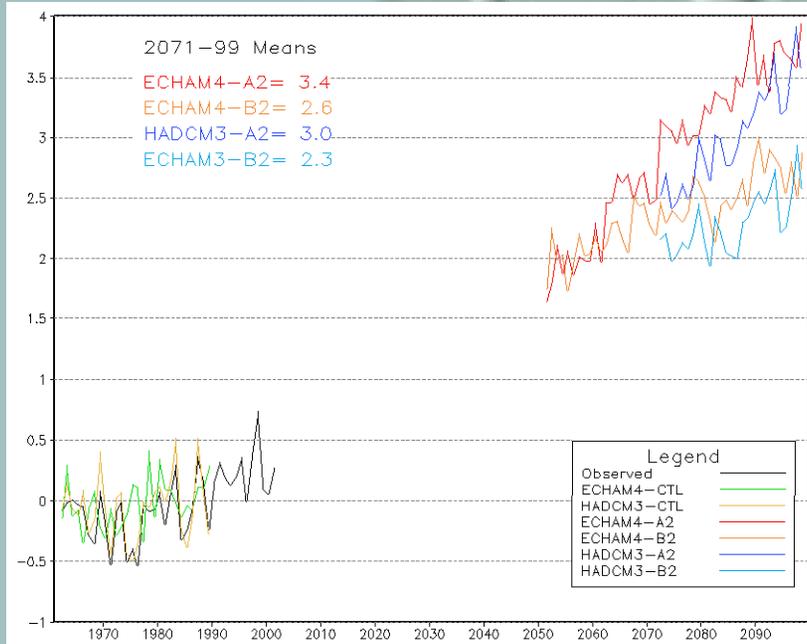
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Results...

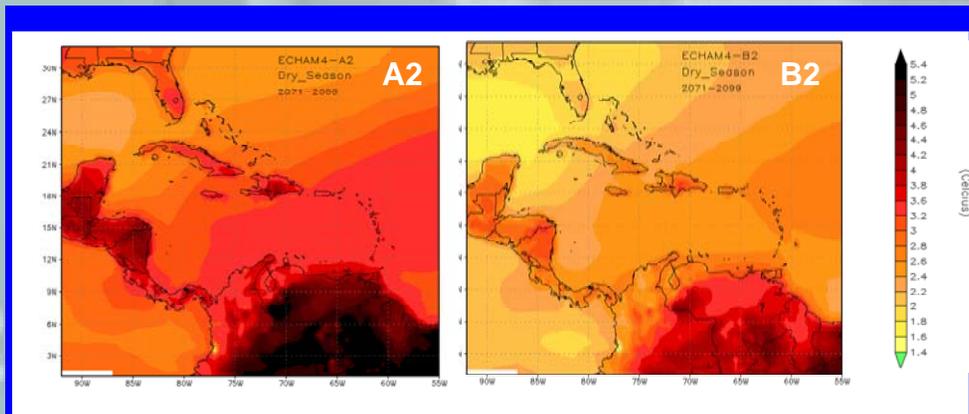
Temperature

ECHAM4

HadCM3



ECHAM4



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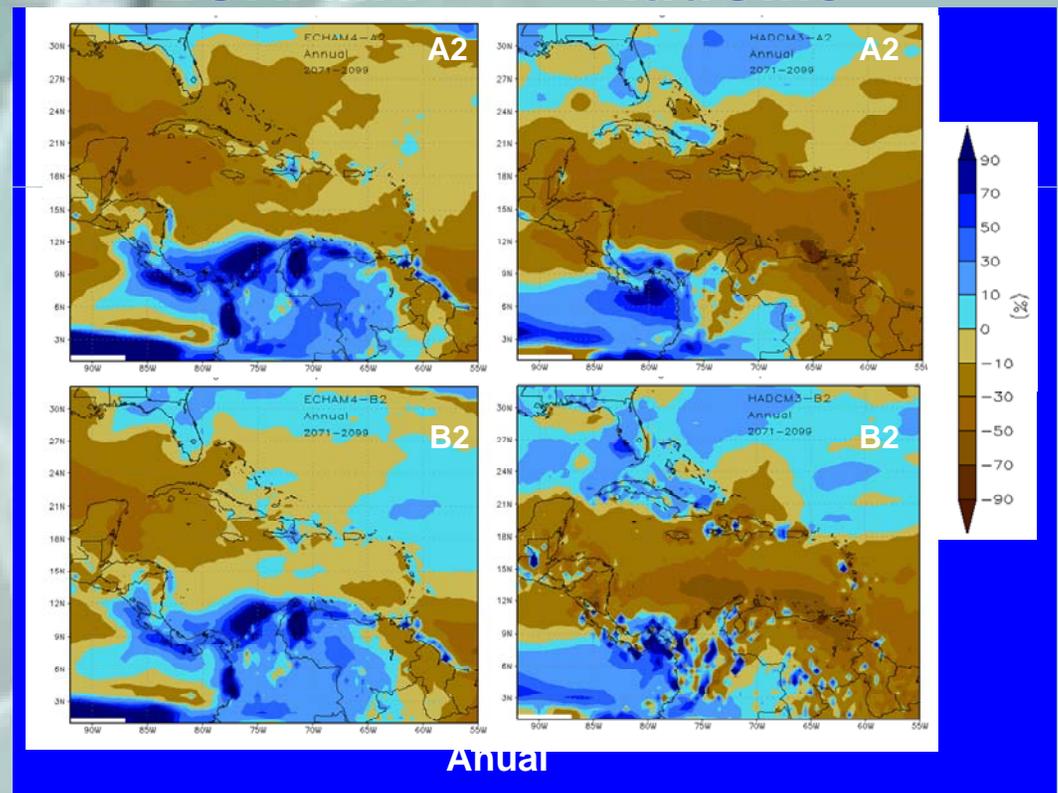
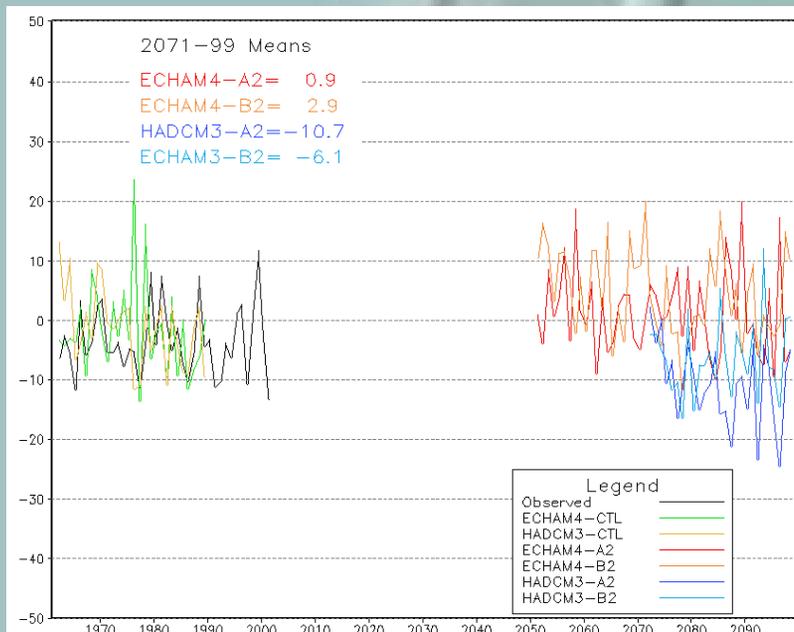
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Results...

Precipitation

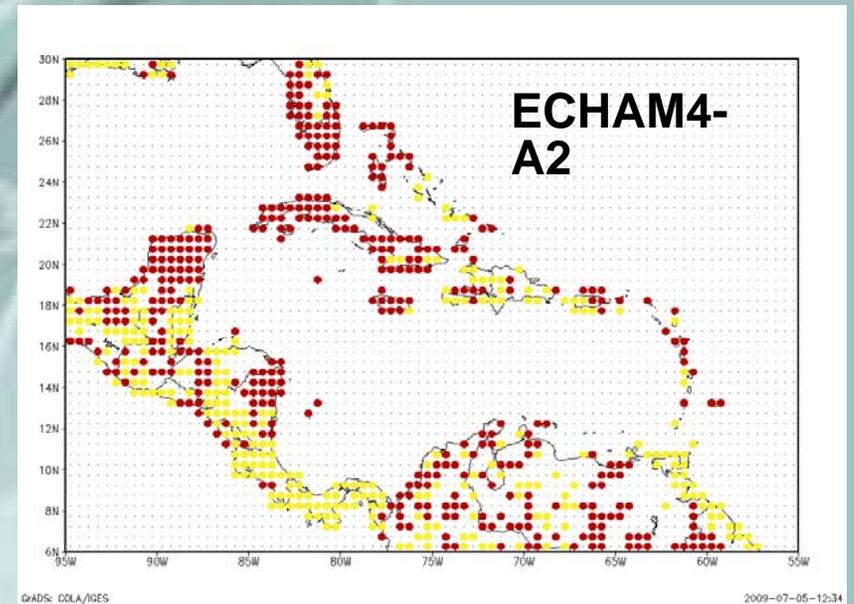
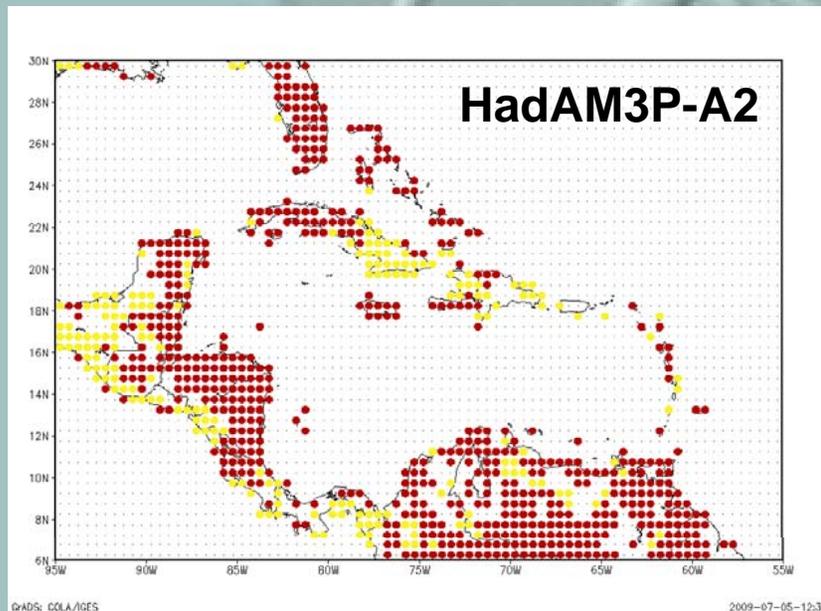
ECHAM4

HadCM3



Results examples from PRECIS II

Change in Meteorological Drought occurrence

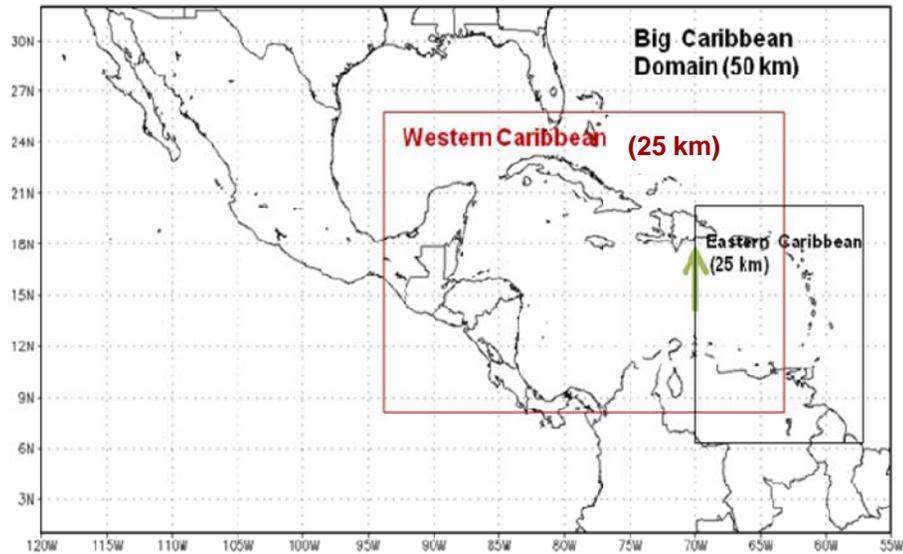


Red dots: Increase in the maximum consecutive number of seasons (may-oct or nov-apr) with rainfall lower than normal precipitation (~long term drought)

Yellow dots: Increase in the occurrence of an individual season with rainfall lower than normal precipitation (~short term drought)

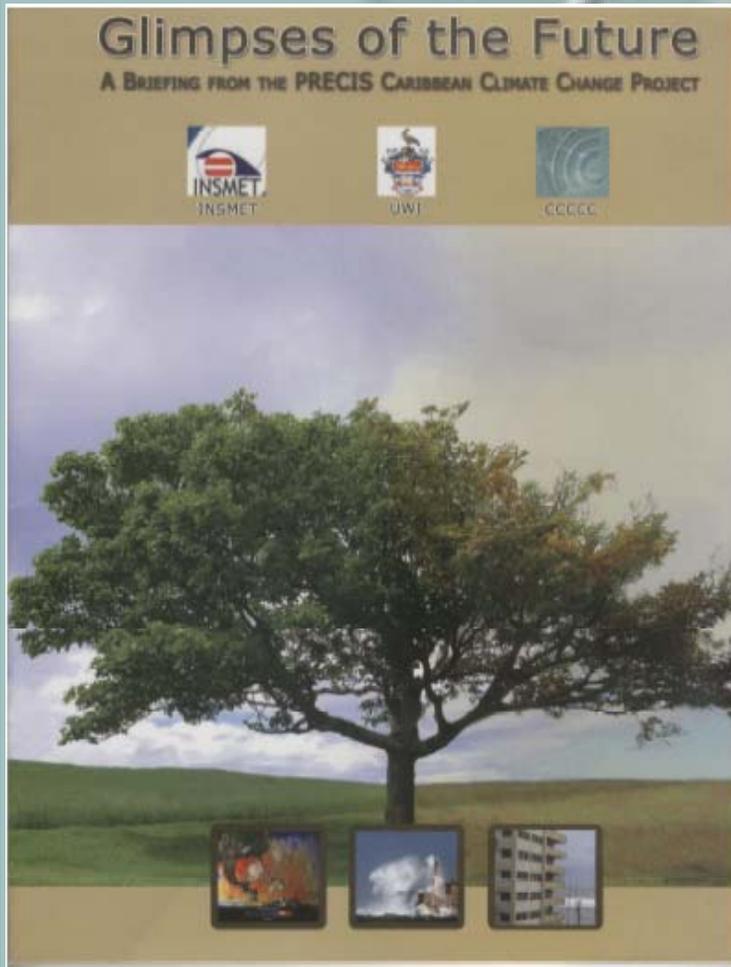
- These results indicate that short and long term drought will increase the water availability stress;
- These are preliminary results which have been under analysis for research publication. Further result are expected in short term as part of INSMET research project.

Experiments completed



No.	Driving conditions		Domain	Resolution	Period
	GHG Scenario	LBCs Data			
1		ERA15	Big Caribbean	50 km	1979-1983
2		ERA40	Big Caribbean	50 km	1979-1993
3		HadAM3 H	Big Caribbean	50 km	1961-1990
4	SRES A2	HadAM3 H	Big Caribbean	50 km	2071-2100
5	SRES B2	HadAM3 H	Big Caribbean	50 km	2071-2100
6	SRES A2	ECHAM4	Big Caribbean	50 km	1961-2100
7	SRES B2	ECHAM4	Big Caribbean	50 km	1961-2100
8	SRES A2	ECHAM4	Eastern Caribbean	25 km	1961-2100
9	SRES B2	ECHAM4	Eastern Caribbean	25 km	1961-2100
10	SRES A2	ECHAM4	Western Caribbean	25 km	1961-2100
11	SRES B2	ECHAM4	Western Caribbean	25 km	1961-2100

Sharing Results



Internet Explorer browser window showing the PRECIS Caribe website.

PRECIS Caribe

PROJECTING CLIMATE CHANGE IN THE CARIBBEAN USING THE REGIONAL MODEL HadCRM

Online Access to Caribbean Climate Change Scenarios

Español | English | Français

- » INTRODUCTION
- » ACCESS TO THE DATA
- » SCENARIO DESCRIPTIONS
- » REPORTS AND WORKSHOPS
- » OTHER LINKS
- » FAQ

Introduction

Welcome to PRECIS-CARIBE, the interactive Webpage for access to the results of the PRECIS Regional Climate Model runs for Central America, Mexico and the Caribbean. The site has been developed to facilitate online access to the climate change scenarios developed by the Cuban Meteorological Institute utilizing PRECIS.

PRECIS Caribe

PROJECTING CLIMATE CHANGE IN THE CARIBBEAN USING THE REGIONAL MODEL HadCRM

Online Access to Caribbean Climate Change Scenarios

Español | English | Français

Enter the coordinates of the desired area
Longitude (110W a 60W) | Latitud (5N a 33N)

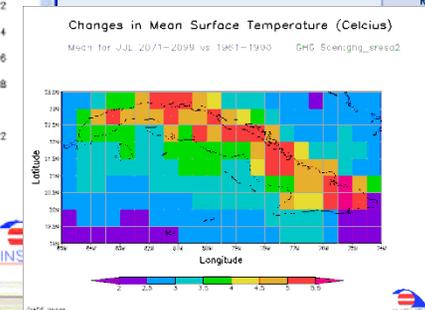
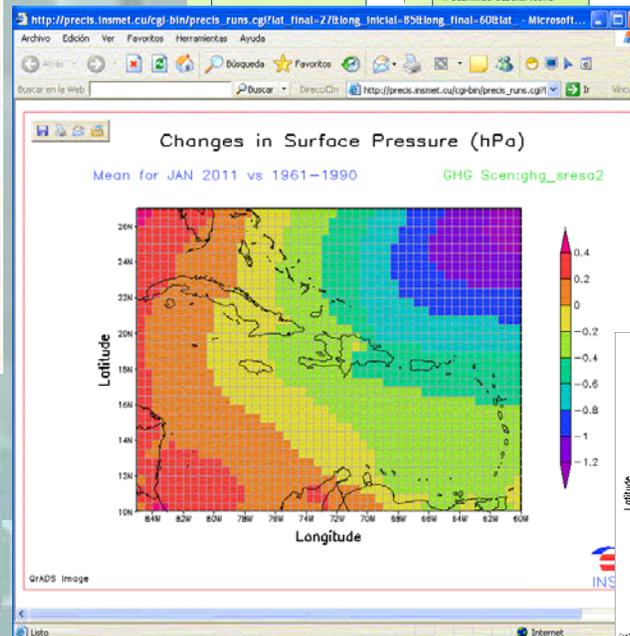
GHG scenario: A2 | Month: 1 | Year: 2011

Variable: Surface pressure (hPa) | Level: Surface

Type of graph: Isopleths

SEND

RESET



PRECIS Acceso en línea
<http://precis.insmet.cu/Precis-Caribe.htm>
Email: precis.insmet@insmet.cu



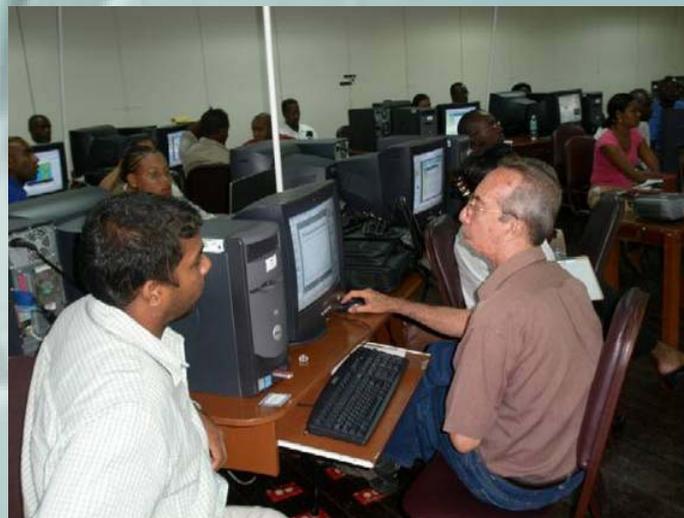
Workshops

Workshop on Use of Biophysical Models for Climate Impact Studies in Agriculture

- Objective: Train agricultural professional staff of CARDI
- Funded by UNITAR

- Funded by Commonwealth Secretariat, FAO & UNDP's Caribbean Risk Management Initiative (CRMI)

Topics: Biophysical principles, GCMs, PRECIS/HADCM3, MagicC/Scengen, WOFOST (4.1&7.1.2), DSSAT



- Facilitated by staff from INSMET (Cuba)

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Special Programme for Adaptation Climate Change (SPACC) 2007 - 2011

Supports efforts by three island states (Dominica, St. Lucia, and St. Vincent and the Grenadines) to *implement specific pilot adaptation measures addressing the impacts of climate change on biodiversity and land degradation*; thus achieving a high level of integration between these Conventions at a practical field level.

- 1. Identify, prioritize and evaluate, and design appropriate options and measures that would address biodiversity and land degradation at the community level.**
- 2. Support implementation of selected adaptation measures (on a pilot basis) in seven sites in participating countries to enhance the resilience of insular ecosystems under threat from climate change and land degradation**
- 3 .Develop National Sustainable Development Strategy (1 country) which integrates climate change, biodiversity conservation, and land degradation management within national development planning framework.**

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PROCESS FOR DEVELOPING “CLIMATE PROOF” BUILDING CODES FOR SAINT LUCIA

Revision of Hurricane Wind Speed Information developed by Professor Curry et al (Georgia Tech University) by the consultants, International Codes Council (ICC). The hurricane studies developed by Curry et al considered the impact of climate change on the intensity and frequency of hurricane in the Saint Lucia area.

Technical translation of the Curry et al study into wind speed adjustment factor for critical buildings by Dr. Peter Vickery, wind expert, working for ICC. An increase in design wind speed of 15% was computed.

Development of engineering guidelines by ICC Consultant, Tony Gibbs, based on computed wind speed design.

Incorporation of the Engineering Guidelines by the Saint Lucia government into its building codes presently in draft form.

Re-design of the planned retrofitting of the Marchand Community Centre in Castries, incorporating the new engineering guidelines. The Marchand Centre serves as a hurricane shelter for residents in that area and as a telecommunication center for the Saint Lucia National Emergency Management Organization (NEMO).

SPACC Achievement

Castries, Saint Lucia

- **Workshop in Castries – Engineering Guidelines**
- **Impact of Climate Change – Increased frequency and strength of tropical cyclones**
- **Adaptation – Development of hurricane wind speed adjustment information and new engineering guidelines for Saint Lucia**



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East Caribbean Financial Holding Co
Parent Company of:
Bank of Saint Lucia Limited
Bank of Saint Lucia Interna
ECFH Global Investment S
EC Global Insurance Comp
Mortgage Finance Comp
Property Holding & Develo

SPACC Achievement

Vieux Fort, Saint Lucia

- **Impact of Climate Change**
 - **Reduced availability of fresh water**
- **Adaptation – Installation of Water Conservation System at the Coconut Bay Resort (2nd largest consumer of water in the Vieux Fort area) – DESIGN BEING FINALIZED**



SPACC Achievement Bequia, St.Vincent and the Grenadines



Impact of Climate Change – Availability of Fresh Water

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SPACC Achievement Bequia, St Vincent and the Grenadines

- **Adaptation Measure Identified – Installation of a SWRO potable water system powered by renewable energy in Paget Farms area of Bequia**

SPACC Achievement

Morne Diablotin and Morne Trois Pitons, Dominica

- **Technical Forum (October 2009) of local, regional and international experts familiar with the two National Parks identified 3 set of activities:**
 - **1) Revise Management Plan and Buffer Zones for both parks considering climate change impacts**
 - **2) Improve data collection and monitoring in the Parks – Identify and install climate equipment in the parks**
 - **3) Provide alternate livelihood for the neighbouring communities – irrigation, greenhouses**

ENHANCING CAPACITY FOR ADAPTATION TO CLIMATE CHANGE (ECACC) PROJECT 2007 - 2010

- **British Overseas Territories: Anguilla, British Virgin Islands, Cayman Islands, Montserrat, Turks and Caicos**
- **Development and implementation of Public education and outreach (PEO) programmes**
- **Enhance national capacities to undertake environmental monitoring, vulnerability and risk assessments in key environment and socio-economic sectors**
- **Development and implementation of national climate change strategies and action plans**
- **Development of effective mechanisms for sharing information and experience**

Contact Information

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