SIDS Workshop on Adaptation

Kingston, Jamaica, 5-7 February 2007

Impacts and Vulnerability studies in Cuba

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CITMA

INSMET

Presentation Outline

- Institutional arrangements
- Brief history on V&A in Cuba
- Some findings and results
- Recent work and activities

Institutional arrangements

Climate Change National Team

Cuba Government

Host Ministry

Science, Technology and Environment Coordination

Institute of Meteorology

Sectors

- **Energy, mine and chemistry industry**
- **Land Use**
- **Agriculture, forestry and sugar industry**
- **Foreign affairs**
- **Transport**
- **Fishing**
- **Construction**
- **Water resources**
- **Academic and research institutions**
- **Environmental NGOs**

Technical Teams

- **GHG Inventory**
- **Mitigation**
- **Vulnerability and Adaptation**

A Brief History

1991: **First scientific assessment of potential climate change impacts in Cuba (experts opinion);**

1995: **National Research Program on Global Changes was started;**

1997: **A scientific assessment on variations and changes in climate of Cuba was made;**

1999: **An assessment of impacts and adaptation to climate change was finished;**

2000: Cuba finish its First National Communication to UNFCCC.

More recent: CIDA-CCCF, CIDA-UNDP & GEF-UNDP, Second National Communication to UNFCCC

We need to answer the question Adapting to What?

- What kind of information do we need?
- Are we adapted to the current climate?
- What about the future climate in Cuba?
- Which level of detail do we need? (spatial and temporal)

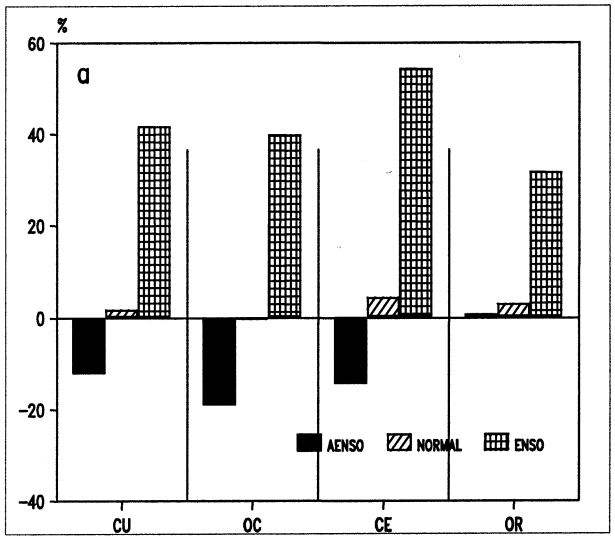
Priorities

- Improve the scientific capacity to understand climate variability and to produce better climate change scenarios
- Enhance the climate change research community
- Increase the capacity for Integrated Assessment approach and modeling
- Strengthening the research cooperation with the Caribbean

Main Research Focus

- Understand current climate variability is very important for the adaptation process
- Incorporate uncertainty instead of avoiding it
- Coastal zone, water resources, agriculture and human systems have been the main areas
- Assimilation and implementation of climate and biophysical models
- Integrated assessment approach and modeling

Understanding Climate variability

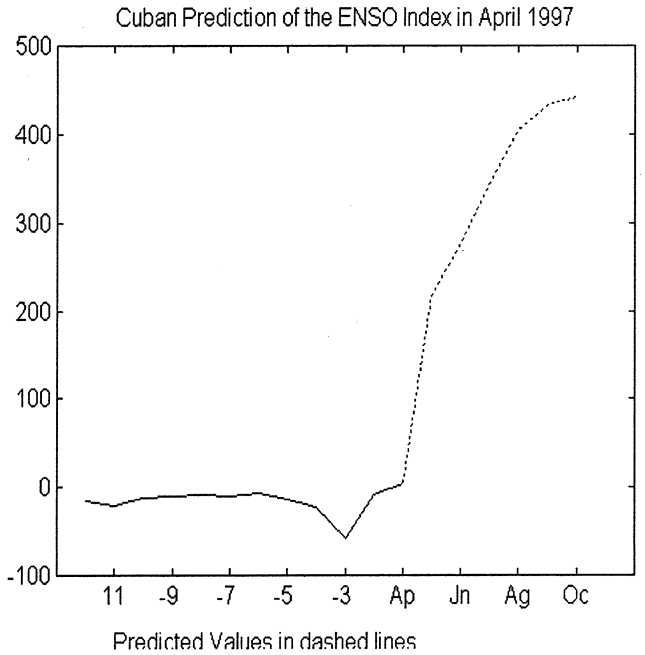


Main impacts

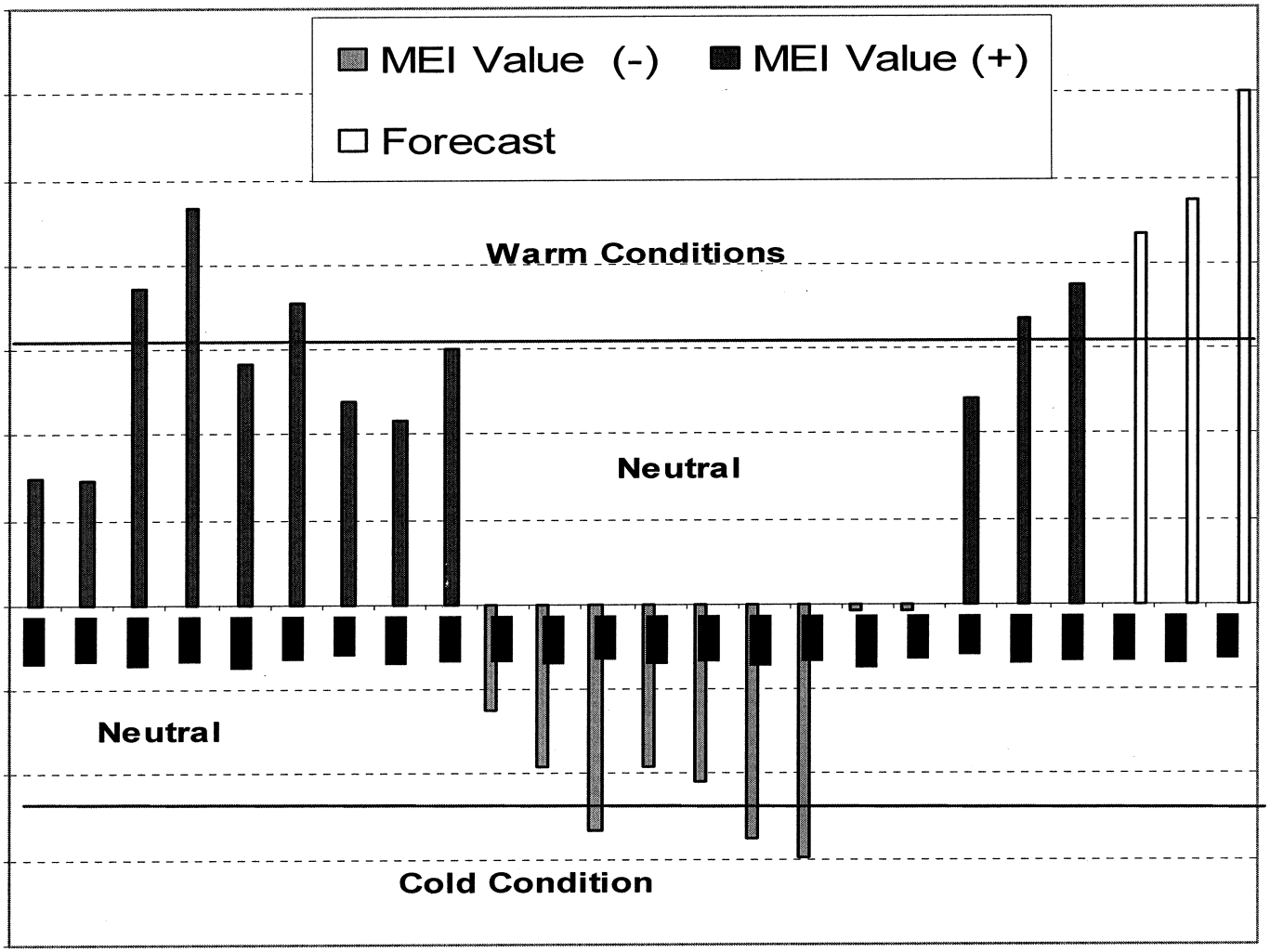
El Niño impact in Cuba is fundamentally determined by an increase in the winter rains and more frequent severe weather events like tornadoes, hail etc.

Response

- Increase the level of scientific development reached by Cuba, allowed efficient monitoring and assessments.
- Develop a Cuban prediction of El Niño.



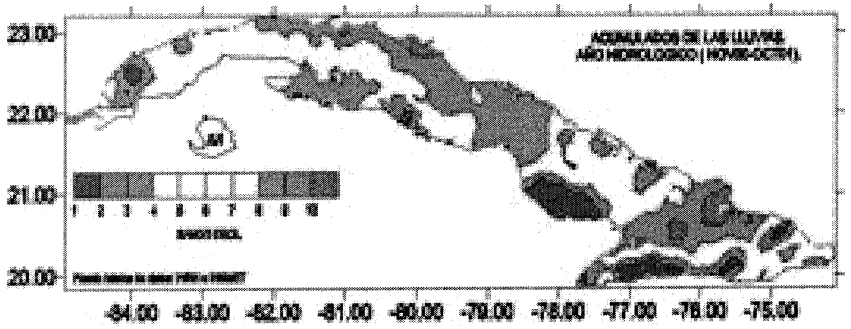
ENSO forecast using MEI index. Forecast period Oct- Dec/ 2006



Climate - Health Group.
PNCT Project-Cuba

Understanding climate variability

Assessing the meteorological drought



vertical velocity influence on drought intensification

200 hPa -12 km

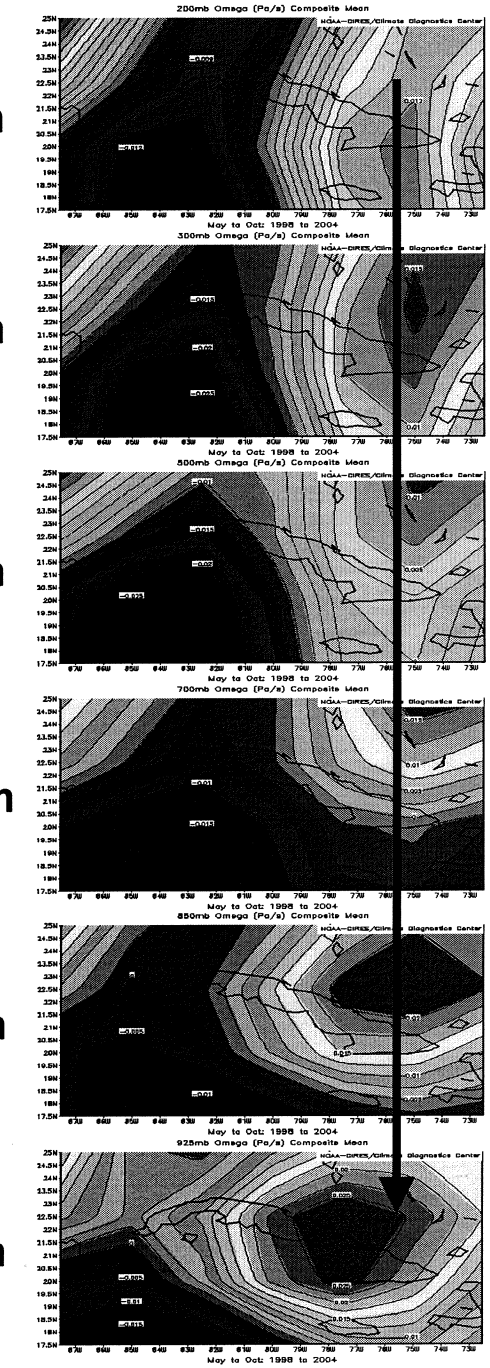
300 hPa - 9 km

500 hPa - 5 km

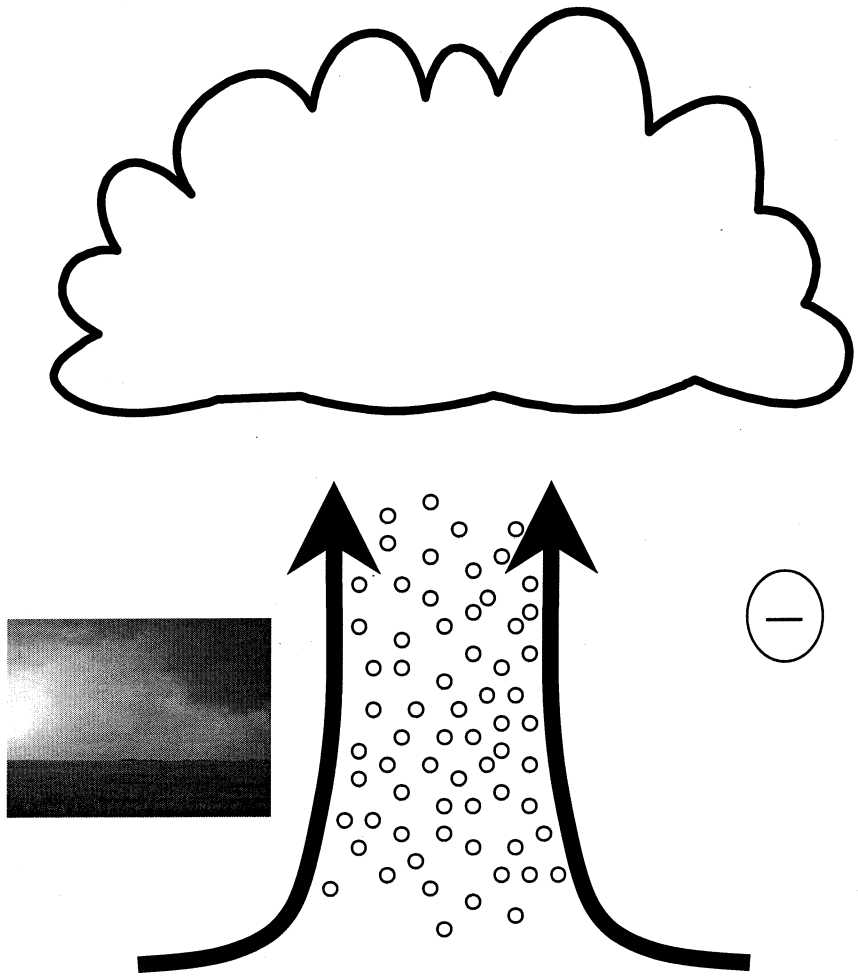
700 hPa - 3 km

850 hPa - 1.5 km

925 hPa - 800 m

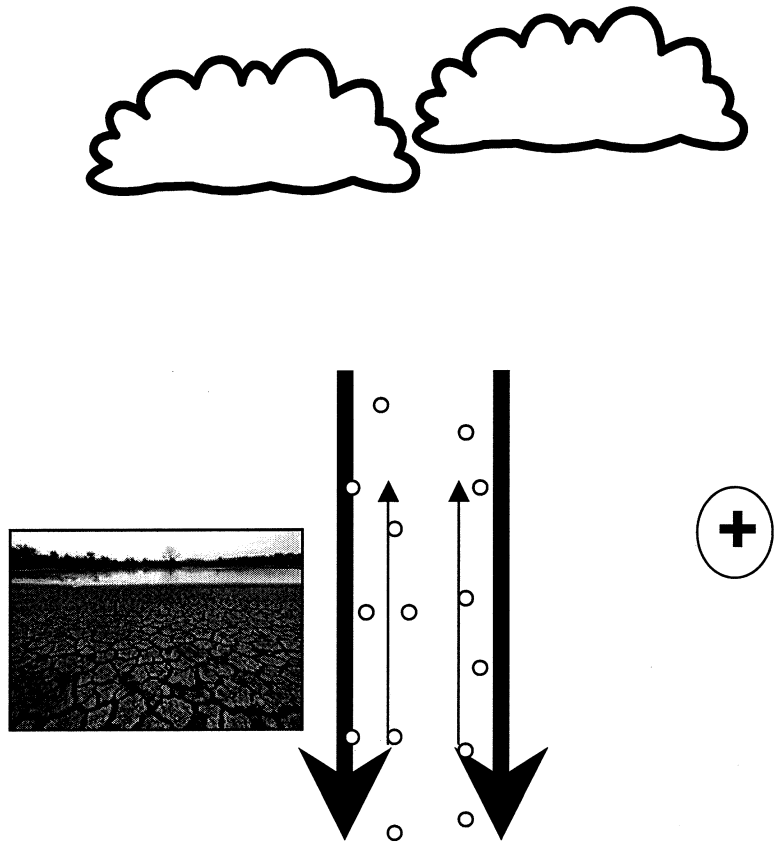


UPWARD



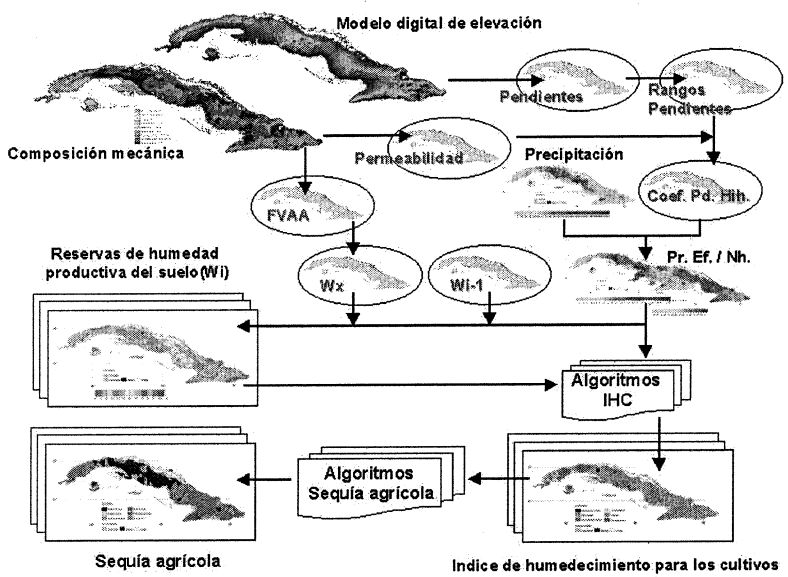
FAVORABLE

DOWNWARD



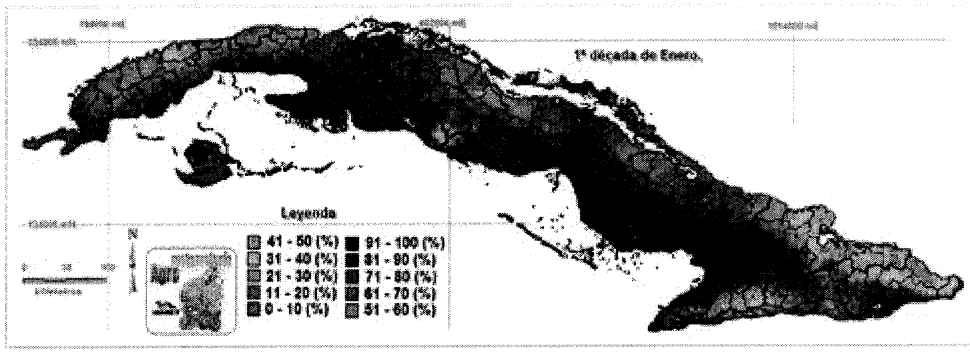
UNFAVORAVLE

Understanding climate variability

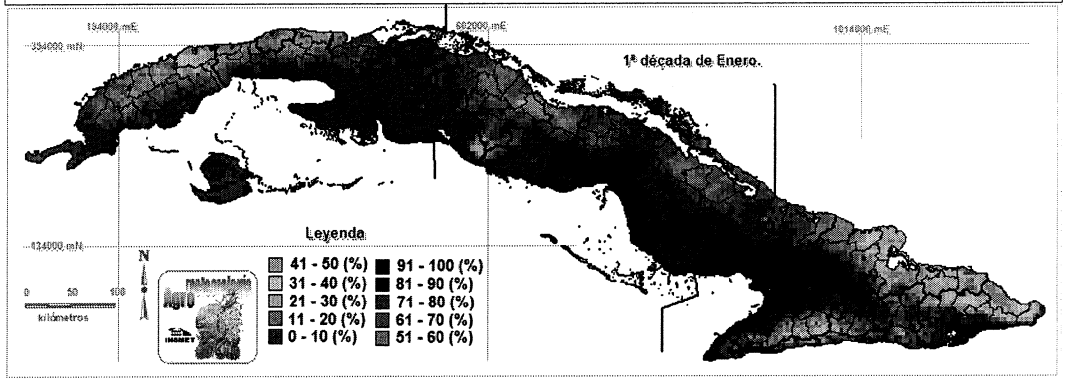


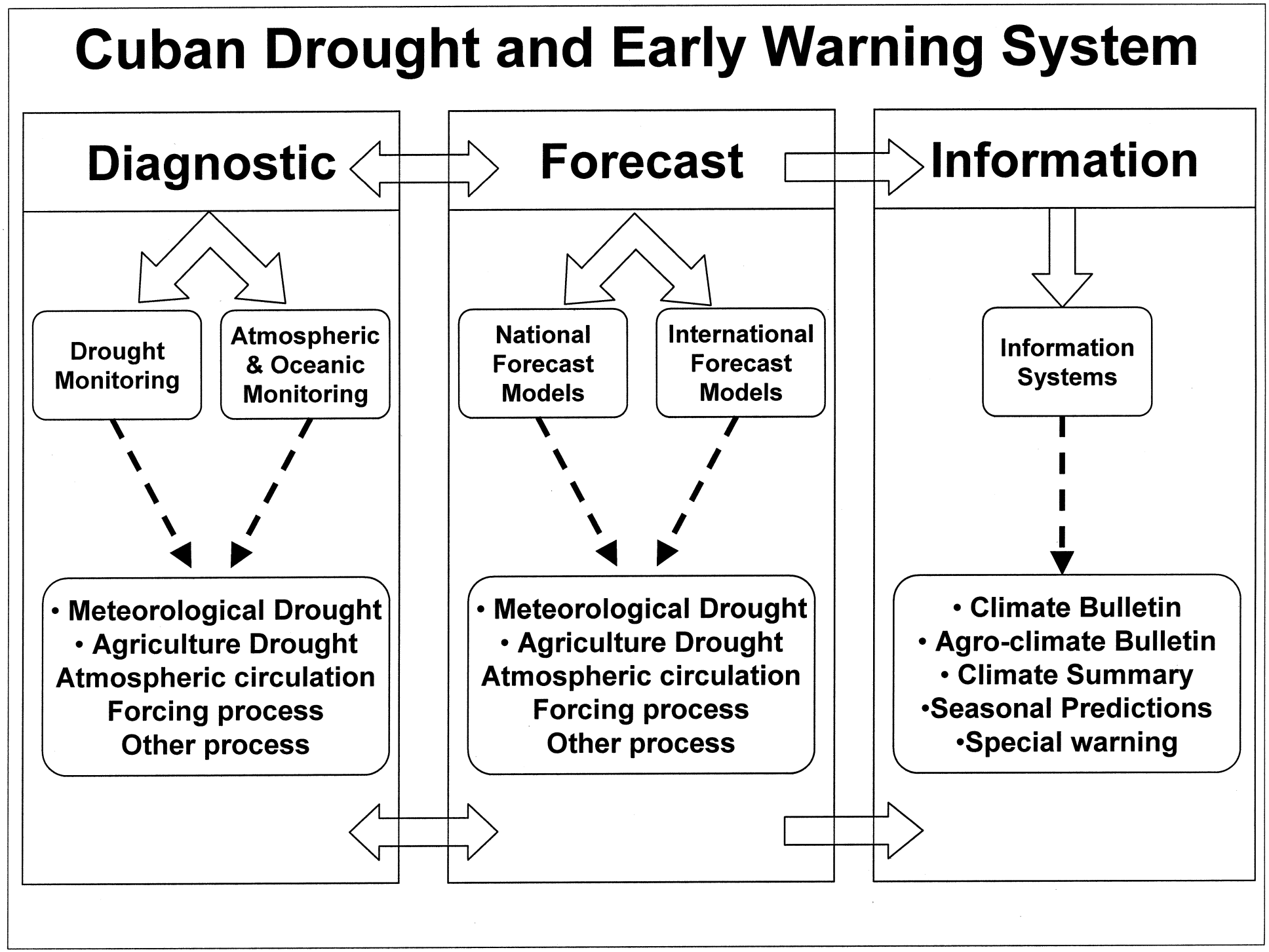
Flux diagram for the assessment

Assessing the agro meteorological drought

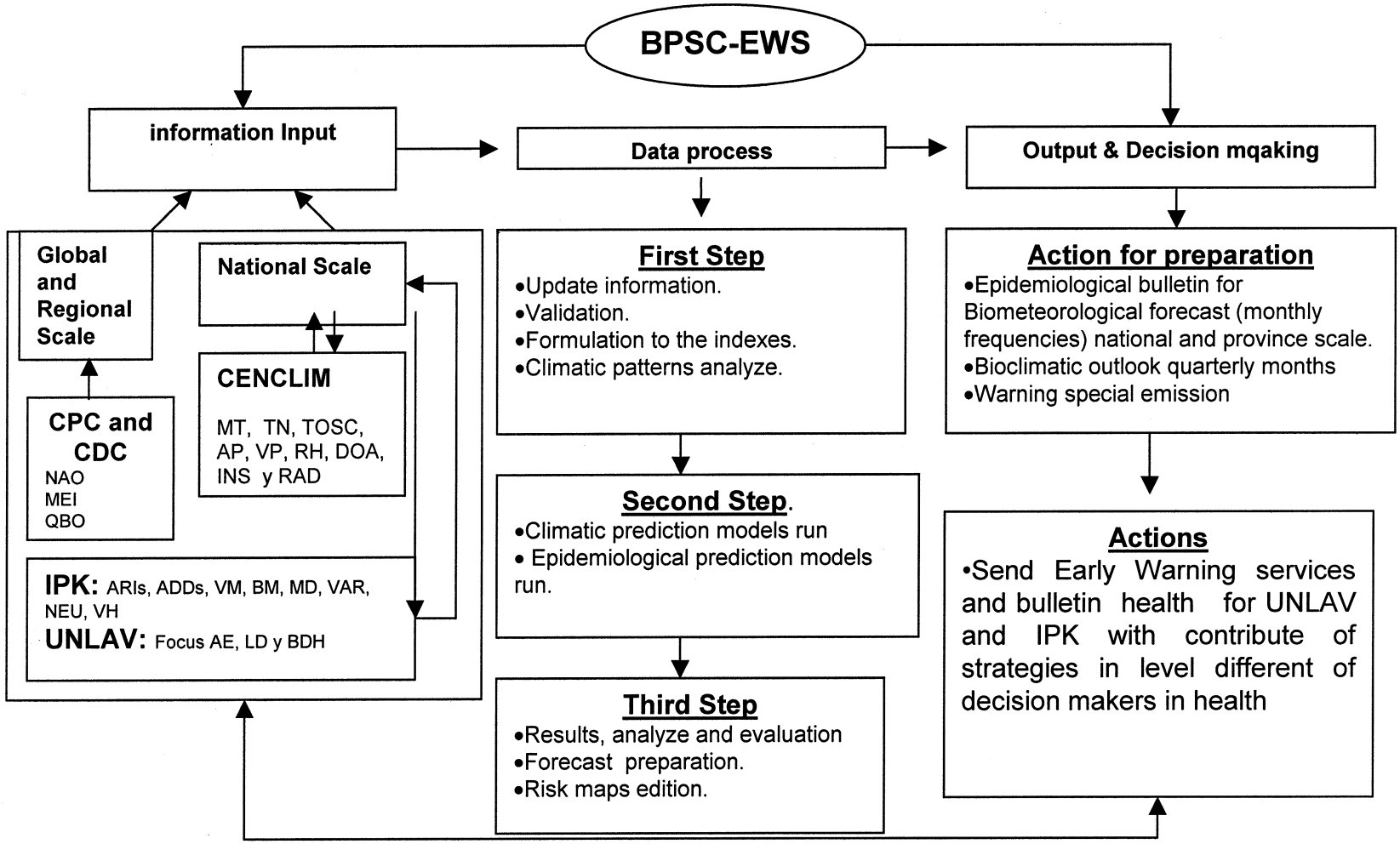


Agro meteorological drought probability for the first 10 days period of January




Cuban Drought and Early Warning System
Diagnostic
Forecast
Information
Drought Monitoring
Atmospheric & Oceanic Monitoring
National Forecast Models
International Forecast Models
Information Systems
• Meteorological Drought
• Agriculture Drought
Atmospheric circulation
Forcing process
Other process
• Meteorological Drought
• Agriculture Drought
Atmospheric circulation
Forcing process
Other process
• Climate Bulletin
• Agro-climate Bulletin
• Climate Summary
•Seasonal Predictions
•Special warning

Bioclimatic Prediction System of Cuba - Early Warning System

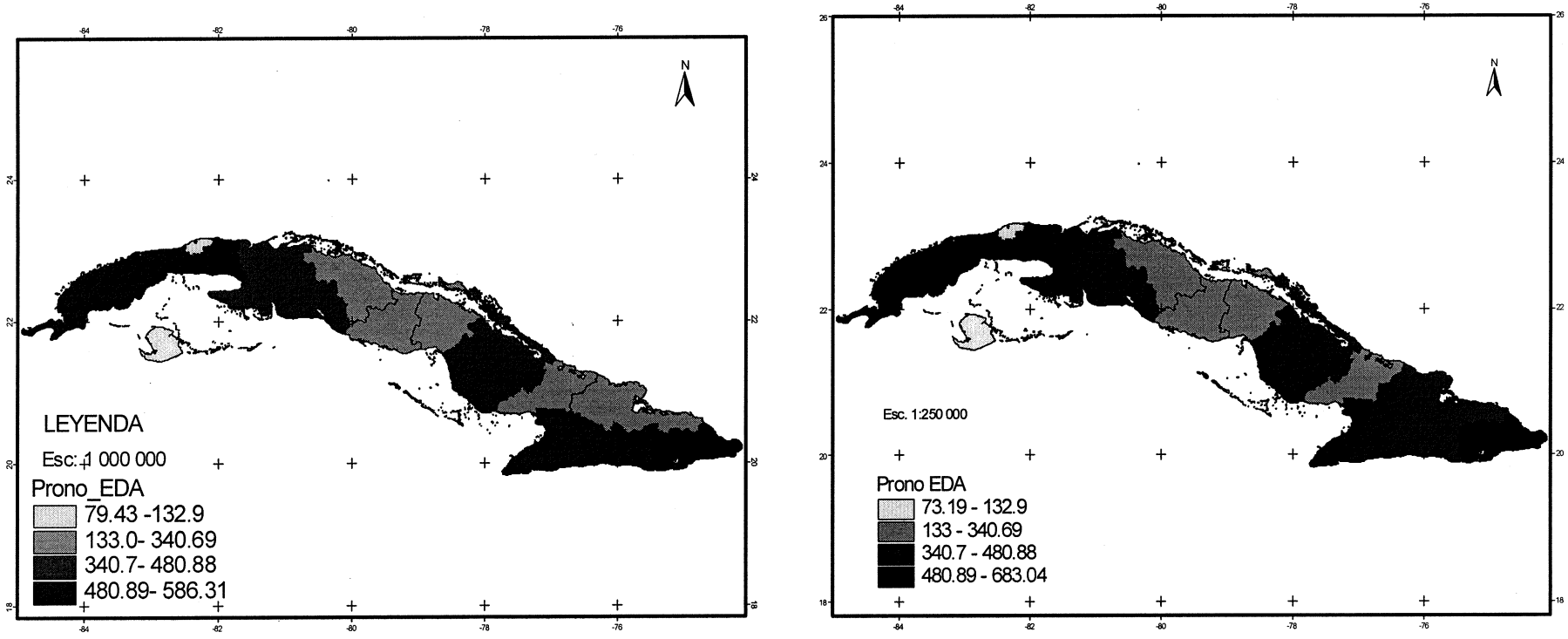


Diseases included in Early Warning System of Cuba.

Diseases	
Included	Acute diarrhoeal diseases
	Viral hepatitis
	Acute respiratory infections
	Varicella (chicken pox)
	Meningococcal diseases
	Bacterial meningitis
	Meningitis by *Streptococcus pneumoniae*
	Viral meningitis
	Malaria
	Dengue
Not included	Yellow fever
	Leishmaniasis
	Lectospira

Climate - Health Group.
Cuba

Observed and predicted ADDs values

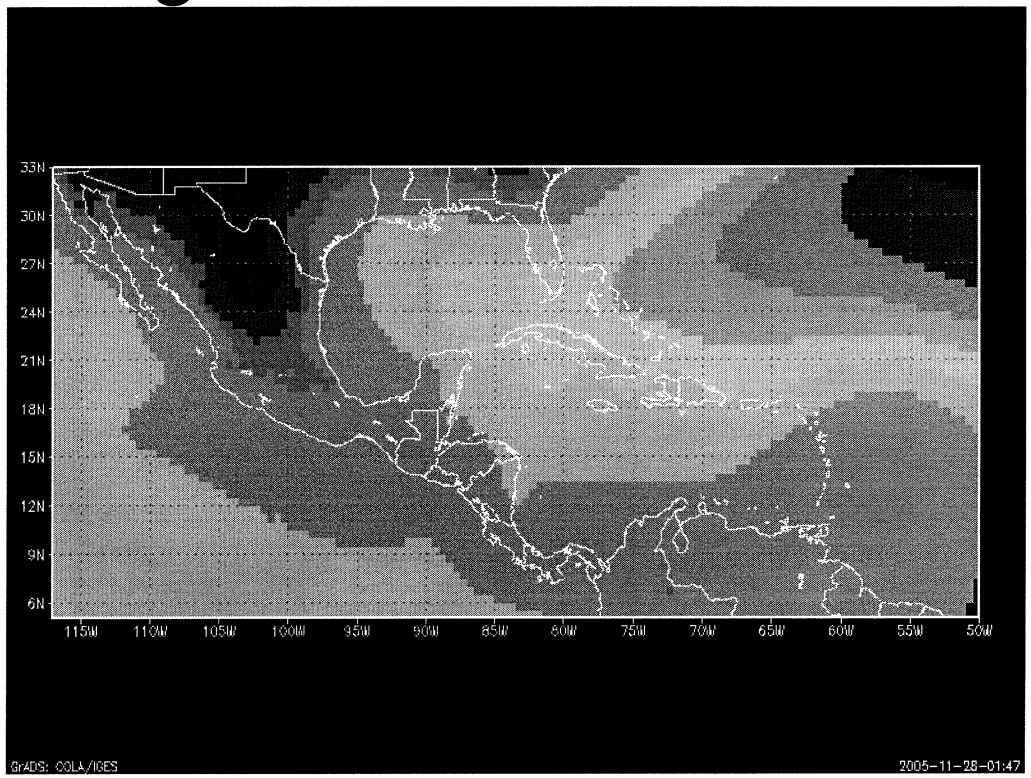


Source: Ortíz, et al., 2005. Available http://www.ipk.sld.cu/bolepid/2005e.htm

Recent work and activities

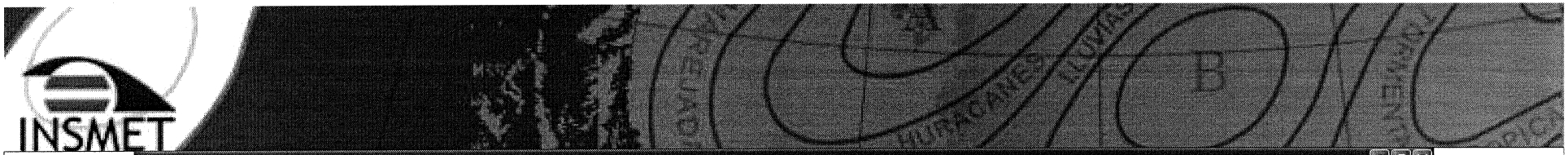
Regional Climate Modeling

PRECIS System
Assimilation start in 2003



PRECIS assimilation in the Caribbean is a south-south/north-south collaboration process.

We are also assimilated and use RegCM and MM5 Regional Models to make climate simulations



Pagina Principal - Microsoft Internet Explorer

Archivo Edición Ver Favoritos Herramientas Ayuda

Atrás Búsqueda Favoritos

Buscar en la Web Buscar Dirección http://precis.insmet.cu/Precis-Caribe.htm Ir Vínculos

PRECIS - CARIBE

Proyectando el Cambio Climático en el Caribe con el Modelo Climático Regional HadRCM

Acceso en línea a Escenarios de Cambio Climático para el Caribe

- Introducción.
- Acceso a los Datos.
- Descripción de escenarios.
- Reportes y Workshops.
- Otros Enlaces.
- Preguntas Frecuentes.

Introducción

Bienvenido a PRECIS-CARIBE, la página Web interactiva de acceso a los resultados actuales de las corridas del Modelo Climático Regional PRECIS para la región de Centroamérica, México y el Caribe. La página ha sido concebida para facilitar el acceso en línea a los escenarios de cambio climático desarrollados por el Instituto de Meteorología de Cuba, a partir de las corridas de PRECIS.

PRECIS (**Pro**vinding **RE**gional **C**limates for **I**mpacts **S**tudies), es un sistema de modelado climático regional basado en PC y fue desarrollado por el Hadley Center de la Oficina de Meteorología de Reino Unido, para facilitar su empleo en los países no anexo I de la Convención Marco de las Naciones Unidas sobre Cambio Climático.

Los resultados disponibles mediante esta página Web representan una contribución del Instituto de Meteorología de Cuba a las actividades que se desarrollan en la región para evaluar los impactos del cambio climático e identificar medidas de adaptación. Esta contribución contó con el apoyo financiero del Proyecto PNUD-CIDA "Desarrollo y adaptación al Cambio Climático", el Proyecto GEF-PNUD RLA/01/G31 "Fomento de las Capacidades para la Etapa II de Adaptación al Cambio Climático en Centroamérica, México y Cuba, conocido también como ACCII.

Mención especial debe hacerse a Geoff Jenkins, Richard Jones, Ruth Taylor, David Hassell and David Hein del Hadley Center por haber facilitado el entrenamiento y apoyo posterior en la asimilación y empleo de PRECIS.

Esperamos que esta página sea de utilidad para sus propósitos. Apreciamos mucho la retroalimentación, así que si usted tiene cualquier comentario, sugerencia o desea mayor información, puede escribir a precis.caribe@insmet.cu

Contribución del Instituto de Meteorología de Cuba con el apoyo del Proyecto GEF-PNUD RLA-/01/G31

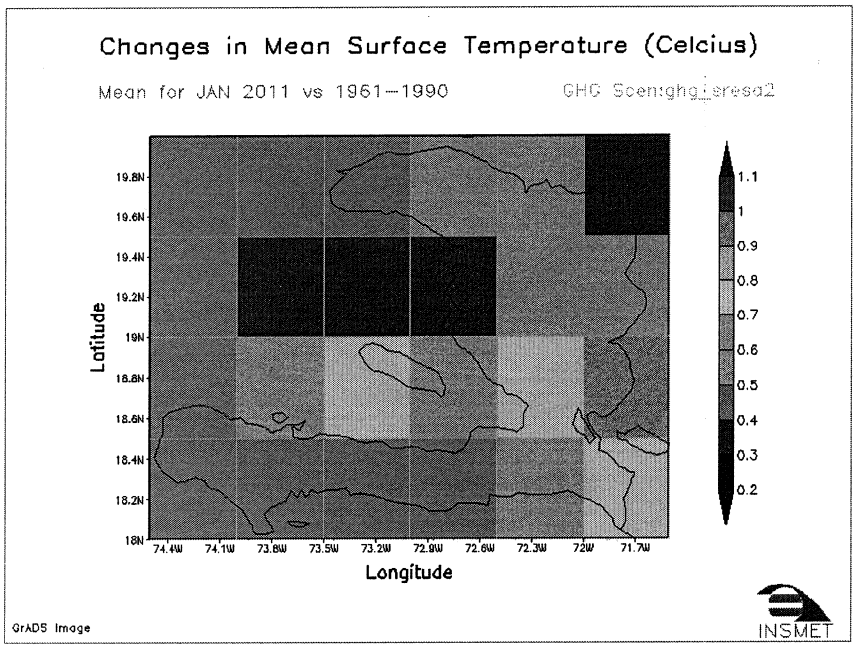
Se reconoce también la contribución y apoyo del Centro Hadley del Reino Unido

Listo Internet

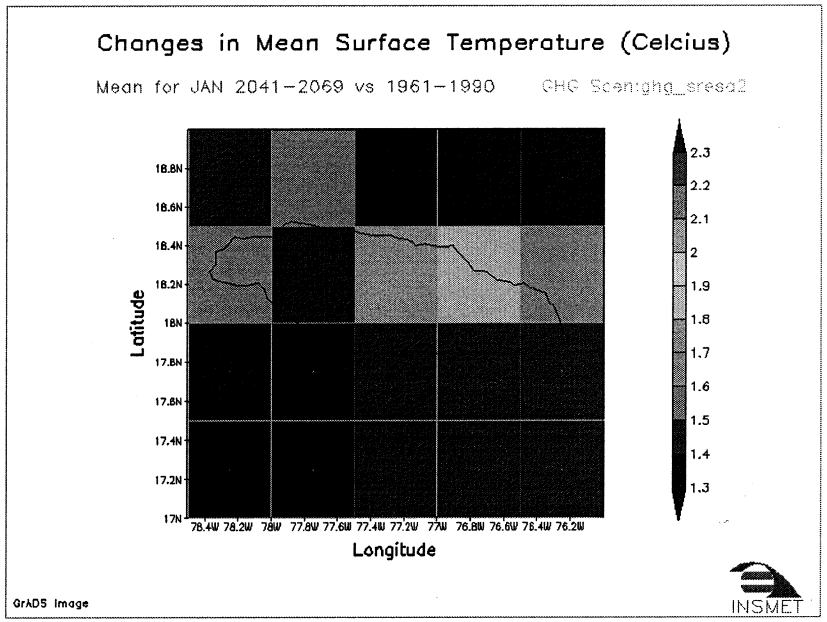
CLIMATE PROJECTIONS

Examples for small island countries

Grid results over Haiti



Grid results over Jamaica



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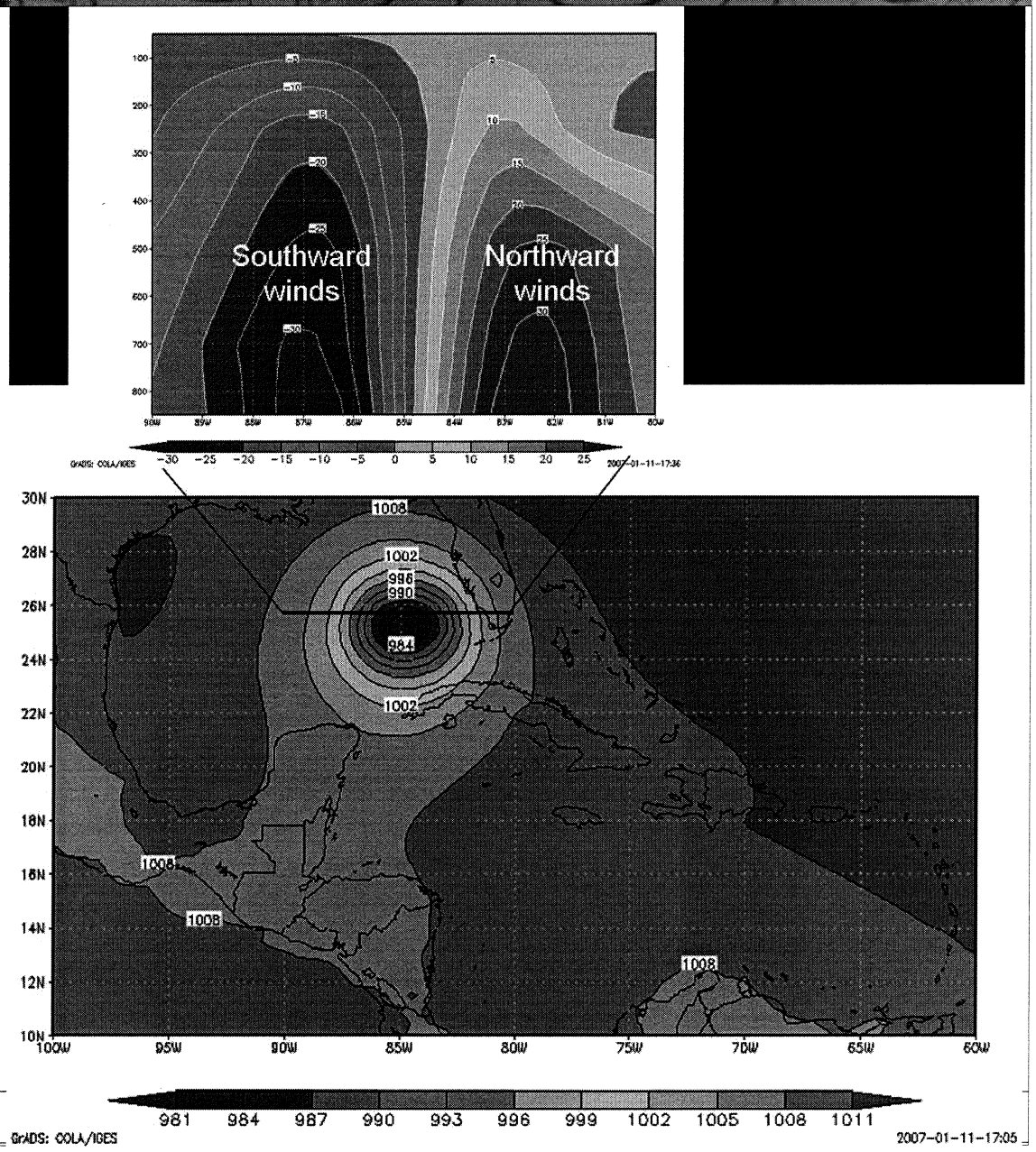
CLIMATE PROJECTIONS

A Hurricane Example



MM5 and WRF models