

The Role of Data & Information Infrastructures in Supporting Climate Change Adaptation in Latin America & the Caribbean

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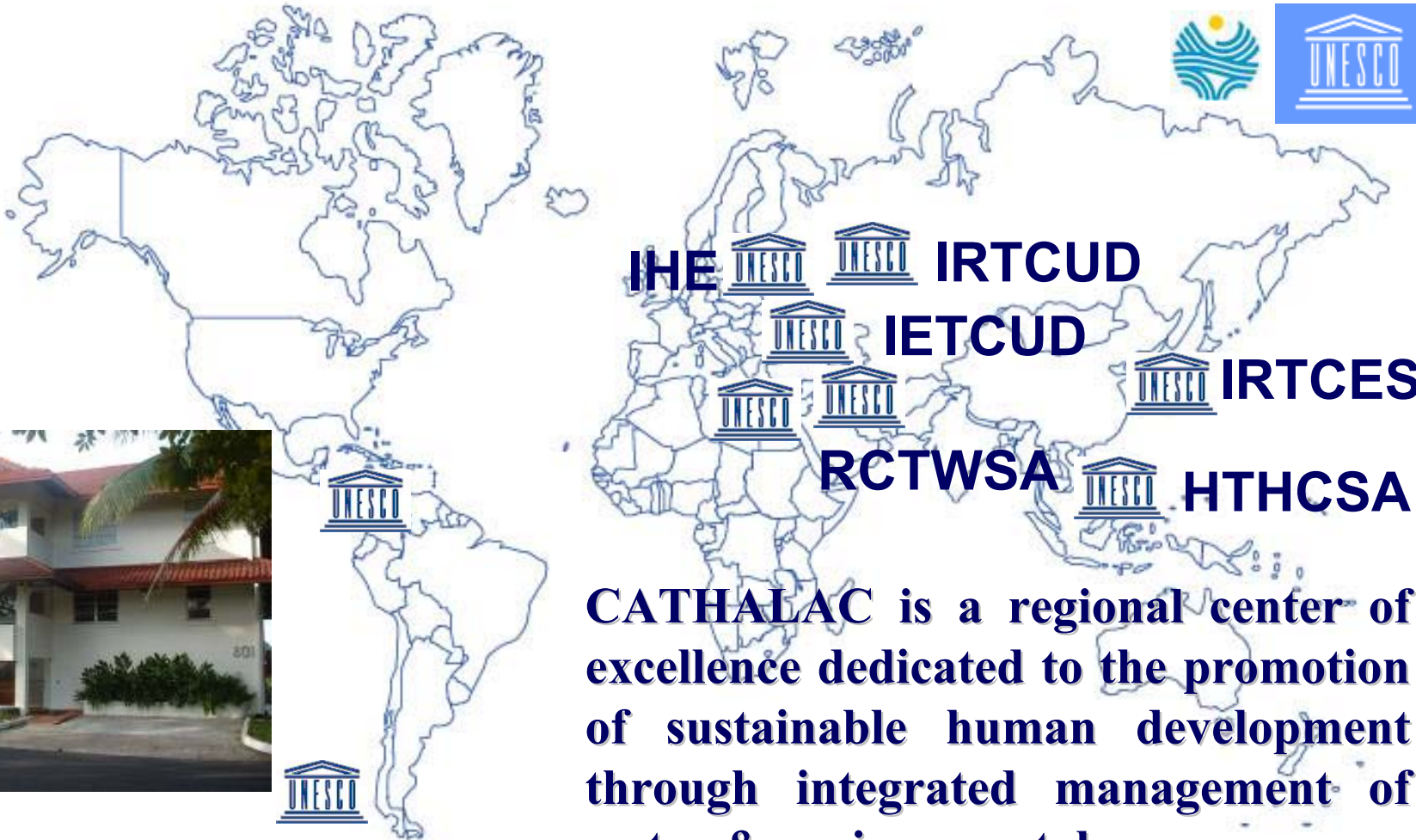


07.02.07





UNESCO-IHP Regional & International Centers of Excellence



CATHALAC is a regional center of excellence dedicated to the promotion of sustainable human development through integrated management of water & environmental resources.



Thesis

- Strengthening overall capacity in ‘environmental information’ (i.e. observations of the current state, and modeling and forecasting of future states) is crucial to climate change adaptation activities in developing nations, including SIDS.
- Such capacity-strengthening is, however, only a part of the overall climate change adaptation framework.



Capacity Building for Stage II Adaptation to Climate Change in Central America Mexico and Cuba



- **Participating Countries:** Cuba, Mexico, Guatemala, Honduras, El Salvador, Nicaragua, Costa Rica, and Panama
- **GEF Funding + Swiss Gov:** 3.2 M USD, (UNFCCC-NAI eligibility for Enabling Activities)
- **Duration:** 3 years (to March 2007)
- **Implementing Agency:** UNDP
- **Systems addressed:** Agriculture, Water Resources, Human Health, Forest, Livelihood, and Coastal Zones.



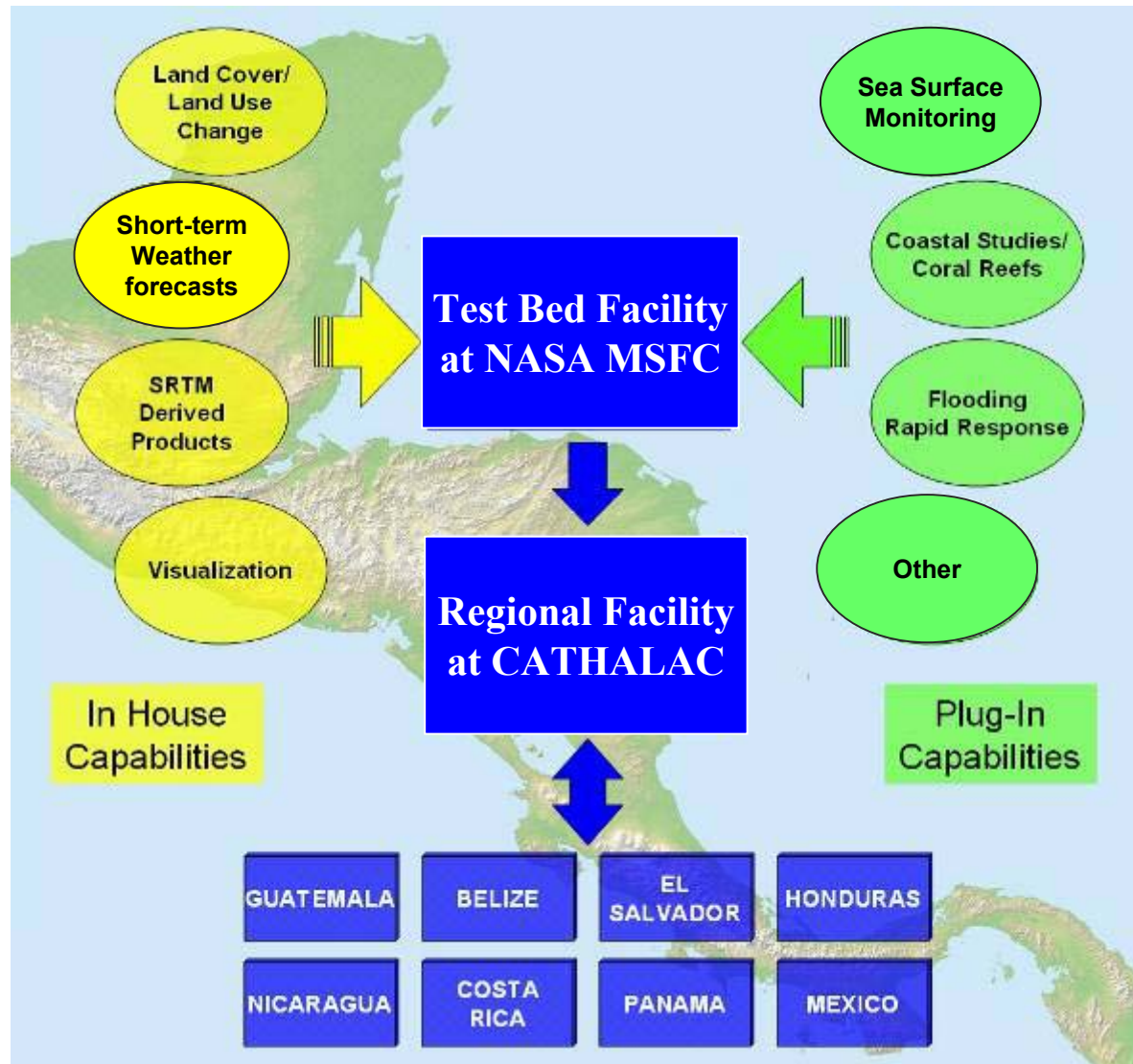
GEF





An open access, World Wide Web-accessible Mesoamerica-wide system for earth observation and forecasting, in the context of:

- Earth Observation Partnership of the Americas (EOPA)
- Global Earth Observation System of Systems (GEOSS)
- Mesoamerican Environmental Information System (SIAM)





SERVIR

The Mesoamerican Regional Visualization and Monitoring System

WED, FEB. 7, 2007

Español

English



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Dynamic Maps, Visualizations

Mesoamerica Today, Feb. 7, 2007

Go to [SERVIR Realtime Images](#)

View GOES Images of A Specific Location

Make Your Own GOES Animations

Latest GOES image

weather.w3fc.nasa.gov

7 Feb 2007

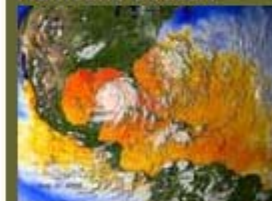
09:45 UTC



SERVIR Movies

Click images to view movies

First 21 Named Storms of 2005 Atlantic Hurricane Season

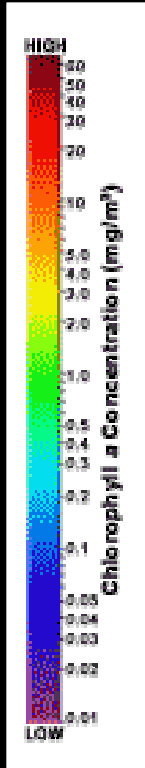
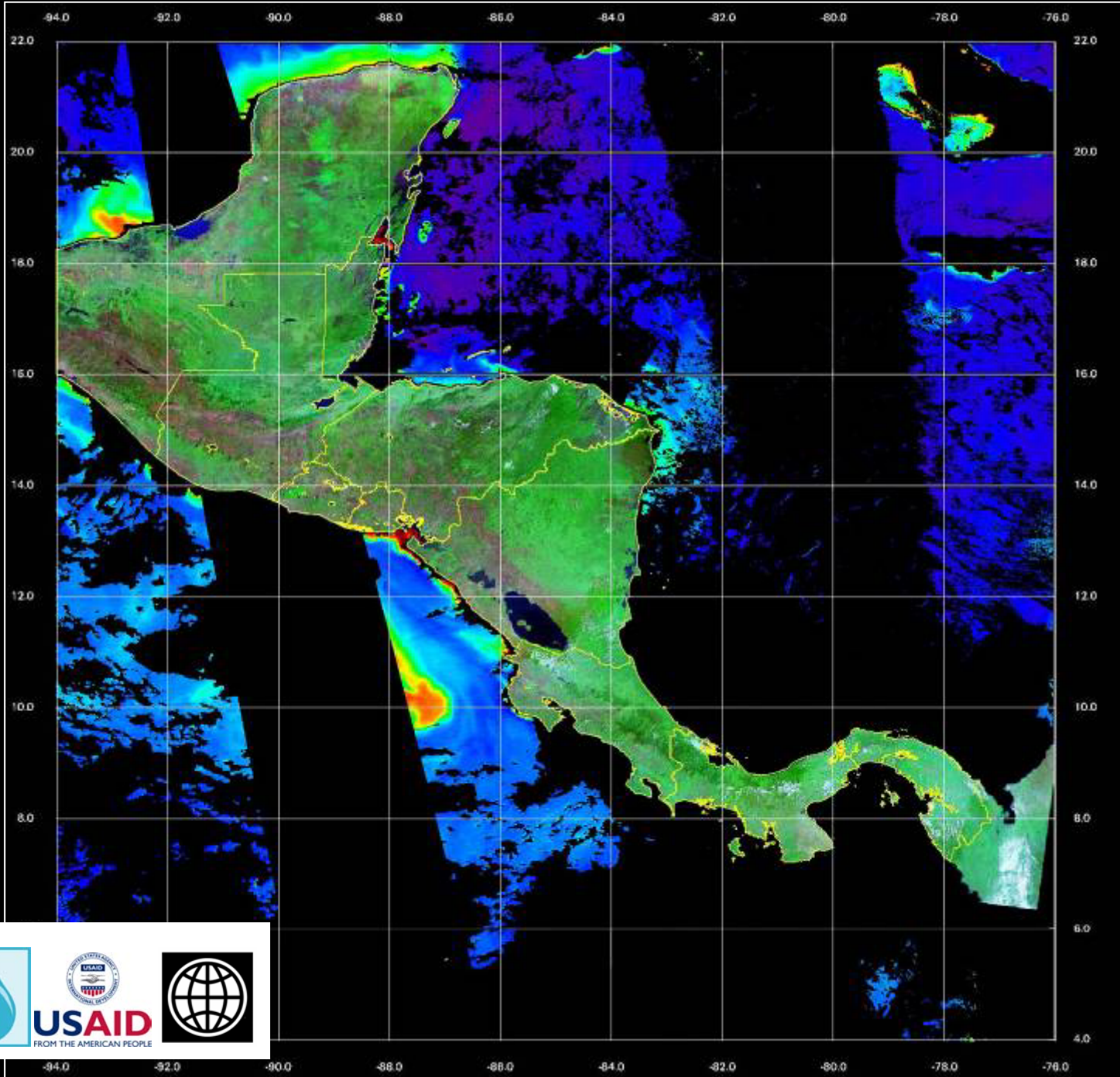


A Vision of the Future (18.2 MB)

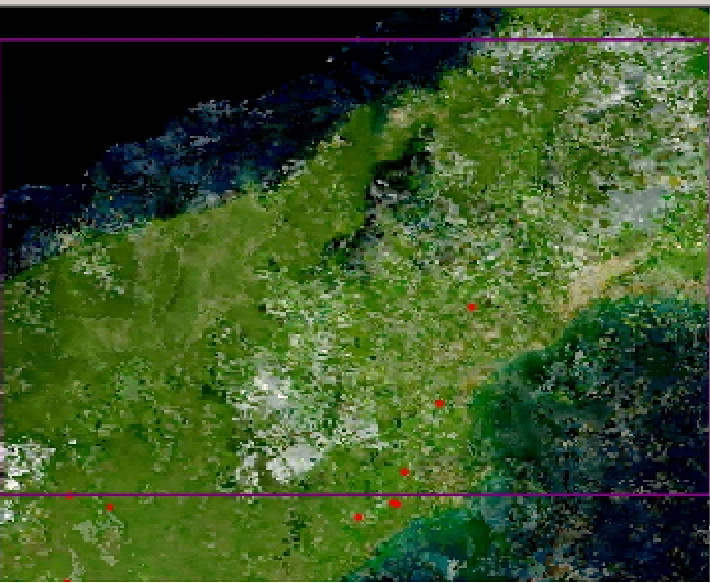


NASA Earth Science Applications





From: webfiremapper@hermes.geog.umd.edu Sent: Fri 4/7/2006 12:25 AM
 To: ec101280@u.washington.edu
 Cc:
 Subject: Web Fire Mapper - Alert: 4/7/2006 1:25:03 AM
 Attachments: test49.jgw (203 B)



Latitud	Longitud	BT	Scan	Track	Fecha	Hora	Sat	Conf
8.974	-79.74	325.8	1	1	2006-04-05	1550	T	72
8.78	-79.805	324.7	1	1	2006-04-05	1550	T	34
8.044	-79.878	325.9	1	1	2006-04-05	1550	T	42

El número de incendios activos detectados/procesados en su área de interés es: 3
 Región de Interés:
 BT= Temperature de brillo(Kelvin)

From: webfiremapper@hermes.geog.umd.edu Sent: Mon 7/3/2006 12:25 AM
 To: ec101280@u.washington.edu
 Cc:
 Subject: Web Fire Mapper - Alert: 7/3/2006 1:24:48 AM
 Attachments: test39.jgw

ALERTA DE INCENDIOS EN MESOAMÉRICA

SERVIR

Sistema de Monitoreo y Visualización para Mesoamérica

Latitud	Longitud	BT	Scan	Track	Fecha	Hora	Sat	Conf
17.958	-76.958	332.1	1.2	1.1	2006-07-01	1555	T	83
17.958	-76.947	319.7	1.2	1.1	2006-07-01	1555	T	0

El número de incendios activos detectados/procesados en su área de interés es: 2
 Región de Interés:





Environmental Visualization Tools

SERVIR Viz!

File Edit View Tools Plug-Ins Help

WMS XY [Icons]

Layer Manager

- Stars 3D
- Images
- SERVIR Framework
- Mods
 - MODIS daily terra
 - MODIS daily aqua
- Nighttime
- Boundaries
- Demis Worldmap
- Reefs-at-Risk in the Caribbean
- Volcanoes
- Servir WMS Interface
- Earthquake Icons
- Image Overlay
- Historical Earthquake Icons
- Placemarks
- Atmosphere
- Grid Lines
- Placenames
- Add/Save Points
- Measure Tool
- Globe icon
- Compass rose

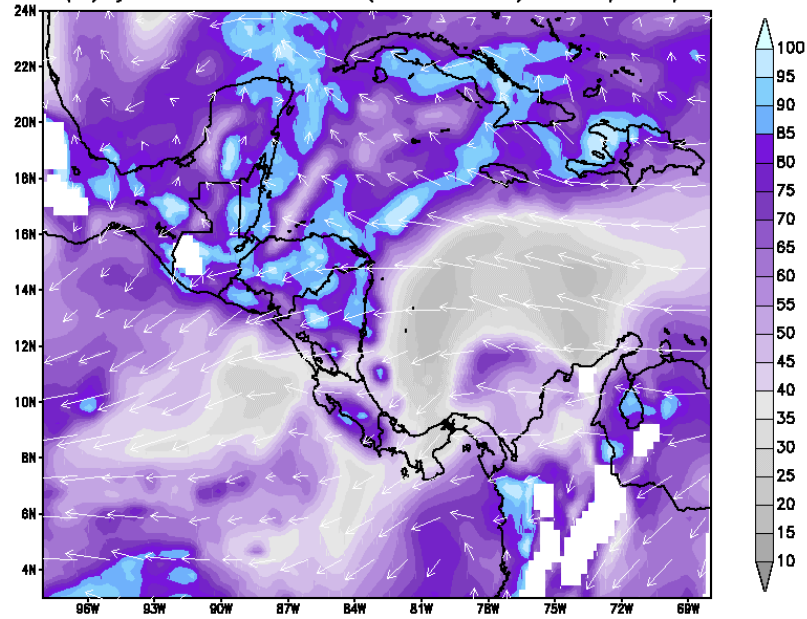
SERVIR Viz

[Map of the Caribbean region with a white crosshair]

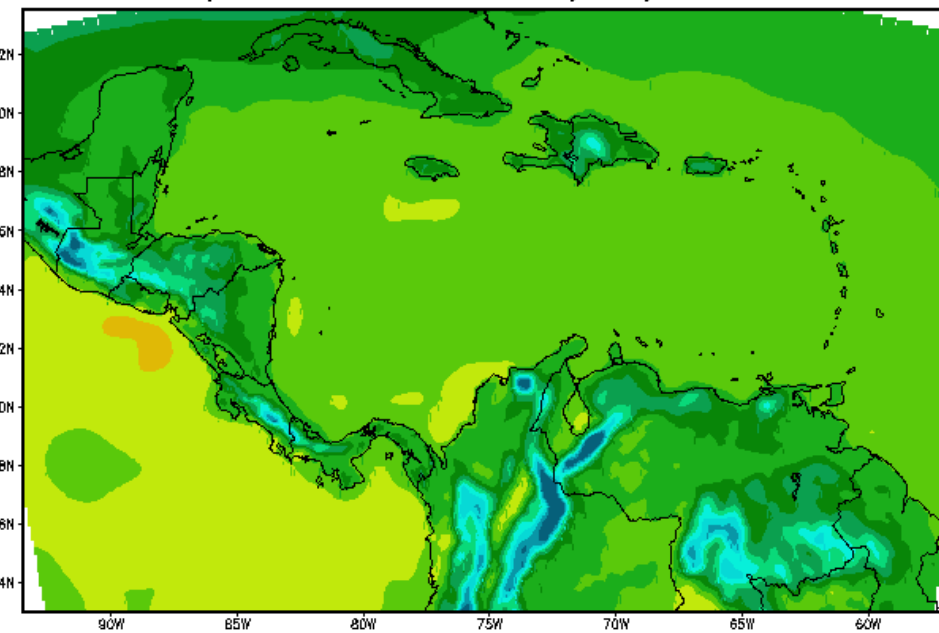
[Inset map showing a zoomed-in view of the selected area]



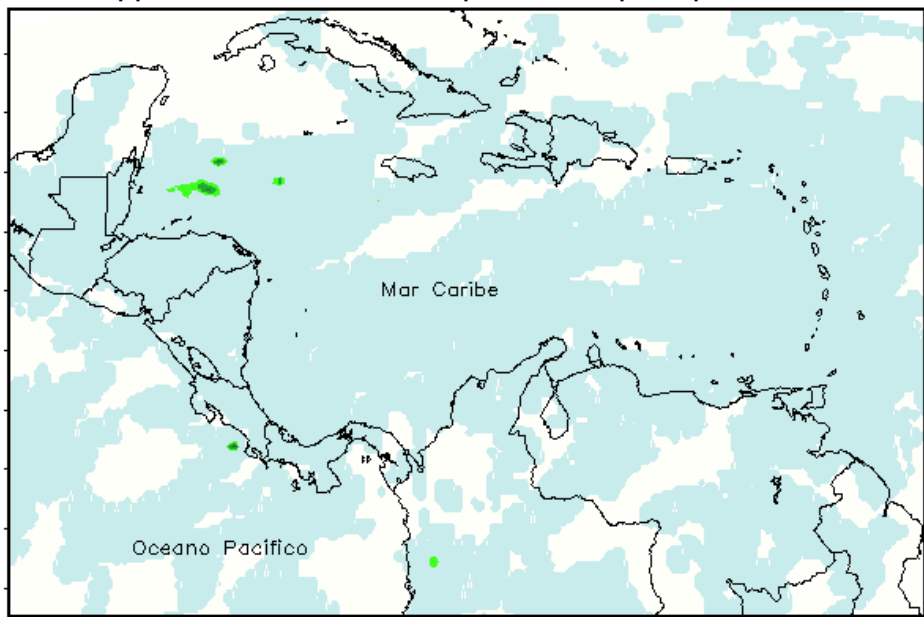
Humedad (%) y viento a 700mb (3000msnm) el 08/FEB/2006, 00Z



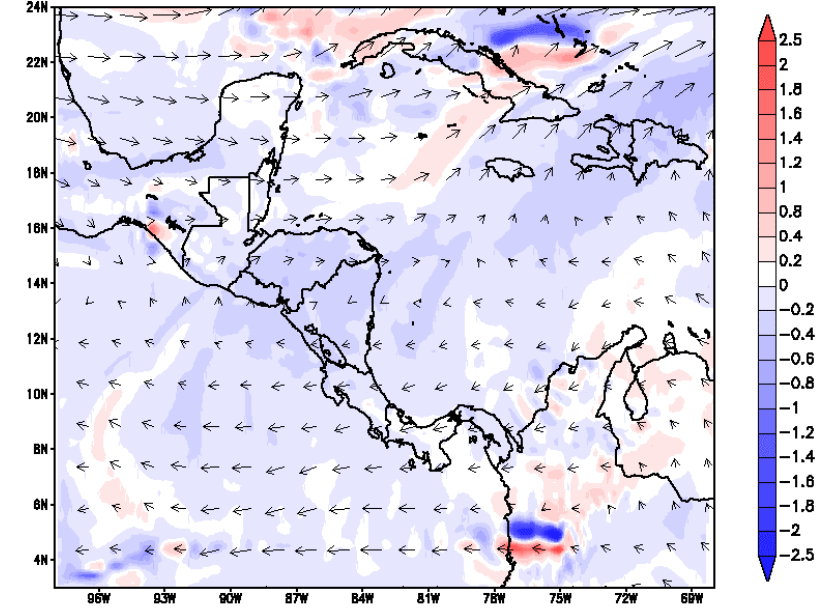
Temperatura del suelo el 08/FEB/2007, 05Z



lluvia p/ultimas 3hrs, valido para el 08/FEB/2007, 05UTC



Viento y Vorticidad en 500mb (5500msnm) 08/FEB/2006, 00Z



MMSv: CATHAL





- **11 dead / 1 missing**
- **4,530 persons affected in total**
- **1,290 left homeless / 264 homes completely destroyed / 879 houses partially damaged**
- **Bridges destroyed / extensive damage to the road network in affected areas**
- **Millions of dollars in lo\$\$e\$**



Climate > Predicted Climate Change (2005, 2010, 2015, 2025, 2050 & 2099)

NASA Earth Science Applications

Search this site [input field] Go



Product	Beginning Date	Ending Date	Data Source
Mixing ratio (2M)	Jun - Sep 2005	Jun-Sep 2099	Download Data
Temperature (2M)	Jun - Sep 2005	Jun-Sep 2099	Download Data
Upper level winds (10M)	Jun - Sep 2005	Jun-Sep 2099	Download Data
Vertical Winds (10M)	Jun - Sep 2005	Jun-Sep 2099	Download Data
Rain	Jun - Sep 2005	Jun-Sep 2099	Download Data
Rain difference	Jun - Sep 2005	Jun-Sep 2099	Download Data
Sea level pressure	Jun - Sep 2005	Jun-Sep 2099	Download Data
Soil moisture (10 cm)	Jun - Sep 2005	Jun-Sep 2099	Download Data
Soil moisture (40 cm)	Jun - Sep 2005	Jun-Sep 2099	Download Data
Soil moisture (100 cm)	Jun - Sep 2005	Jun-Sep 2099	Download Data
Soil moisture (200 cm)	Jun - Sep 2005	Jun-Sep 2099	Download Data
Surface temperature	Jun - Sep 2005	Jun-Sep 2099	Download Data
Surface temperature difference	Jun - Sep 2005	Jun-Sep 2099	Download Data

More information >>

Climate > Cloud Climitology

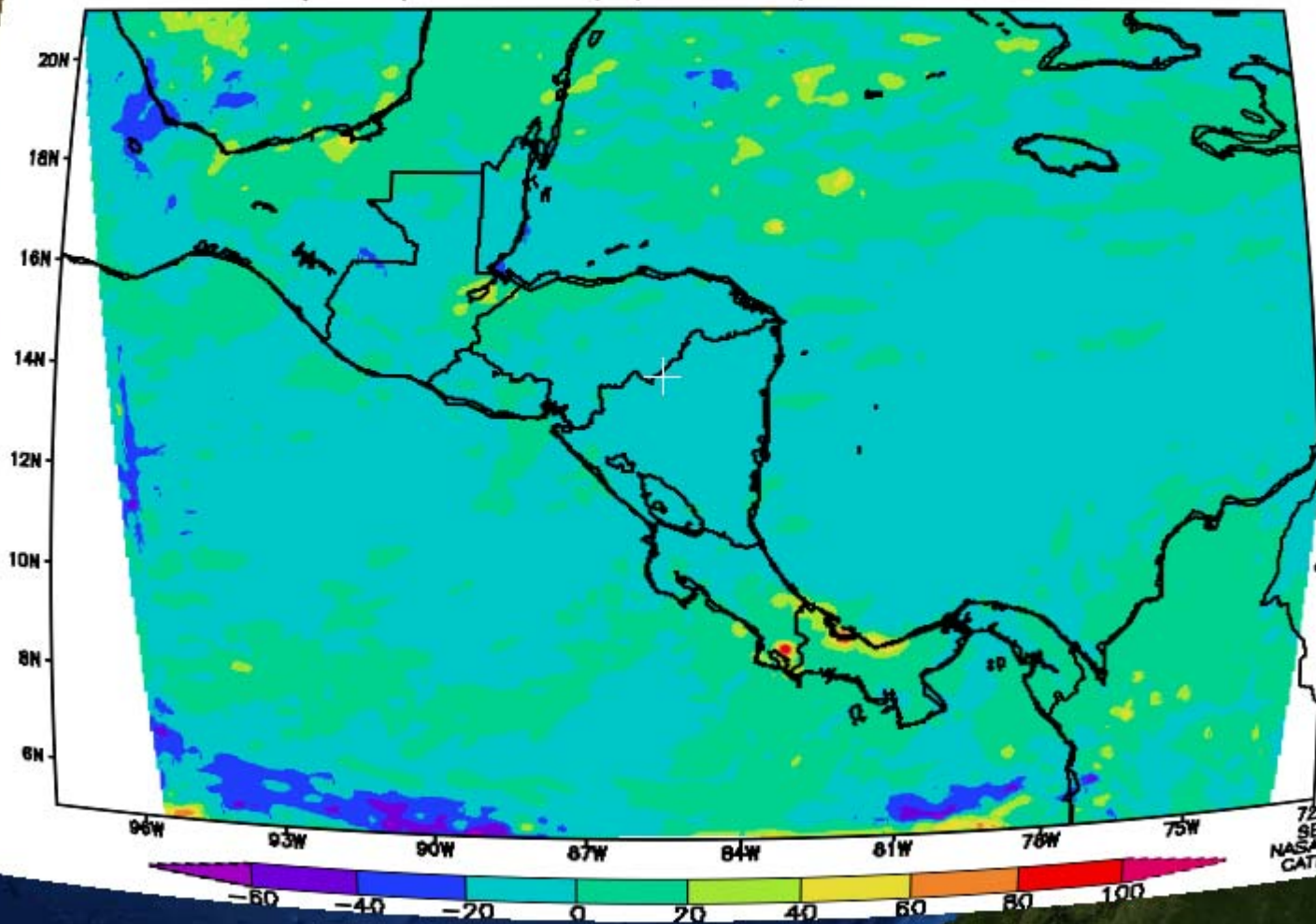
Site designed by ITSC
Privacy, Security, Notices

Product	Beginning Date	Ending Date	Data Source
Ten day composite	May 30, 1997	Dec. 30 2000	Download Data
Monthly composite	May 1997	December 2000	Download Data

More information >>



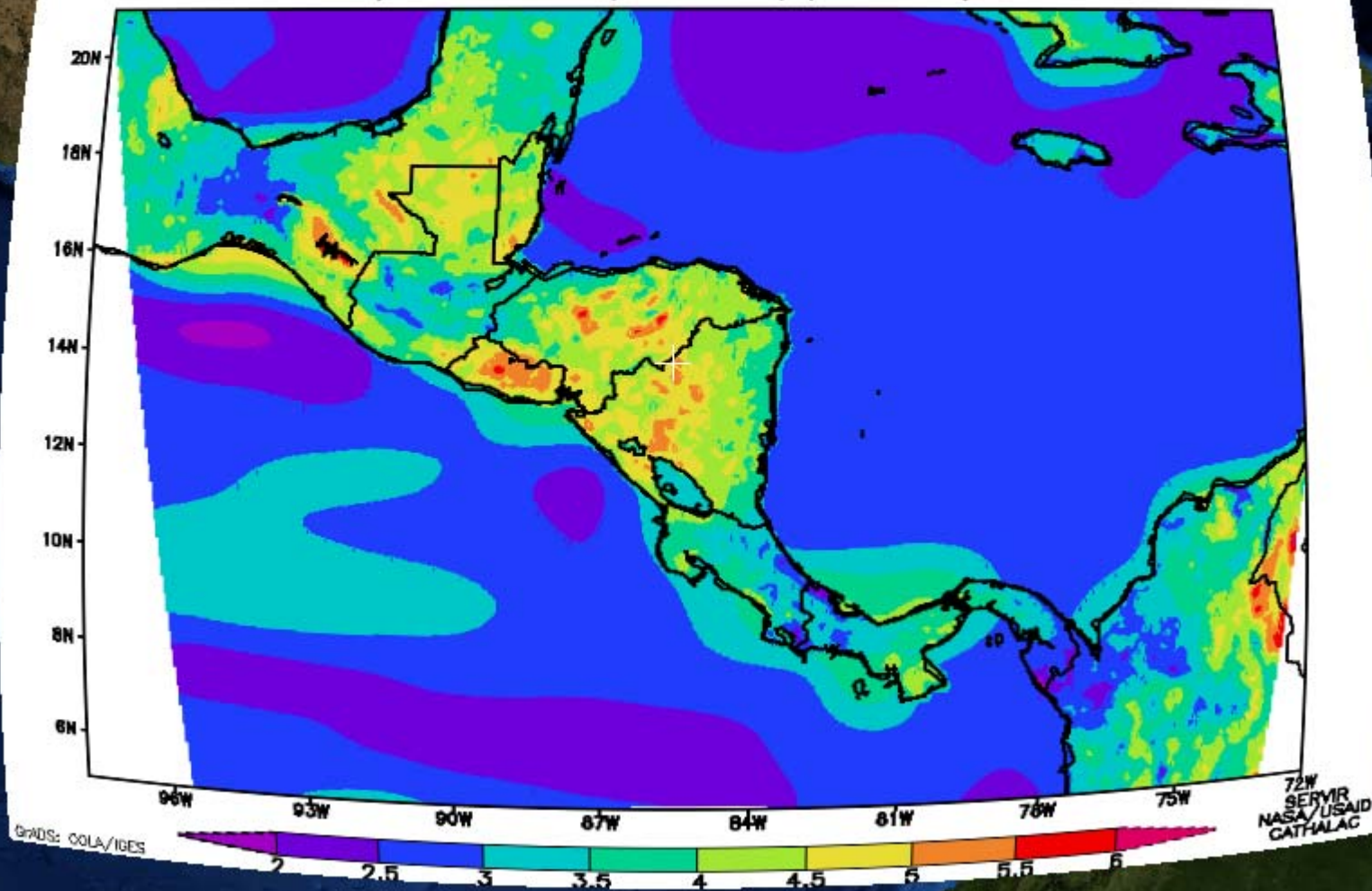
Diff. de precipitación (%) en septiembre, 2099-2005



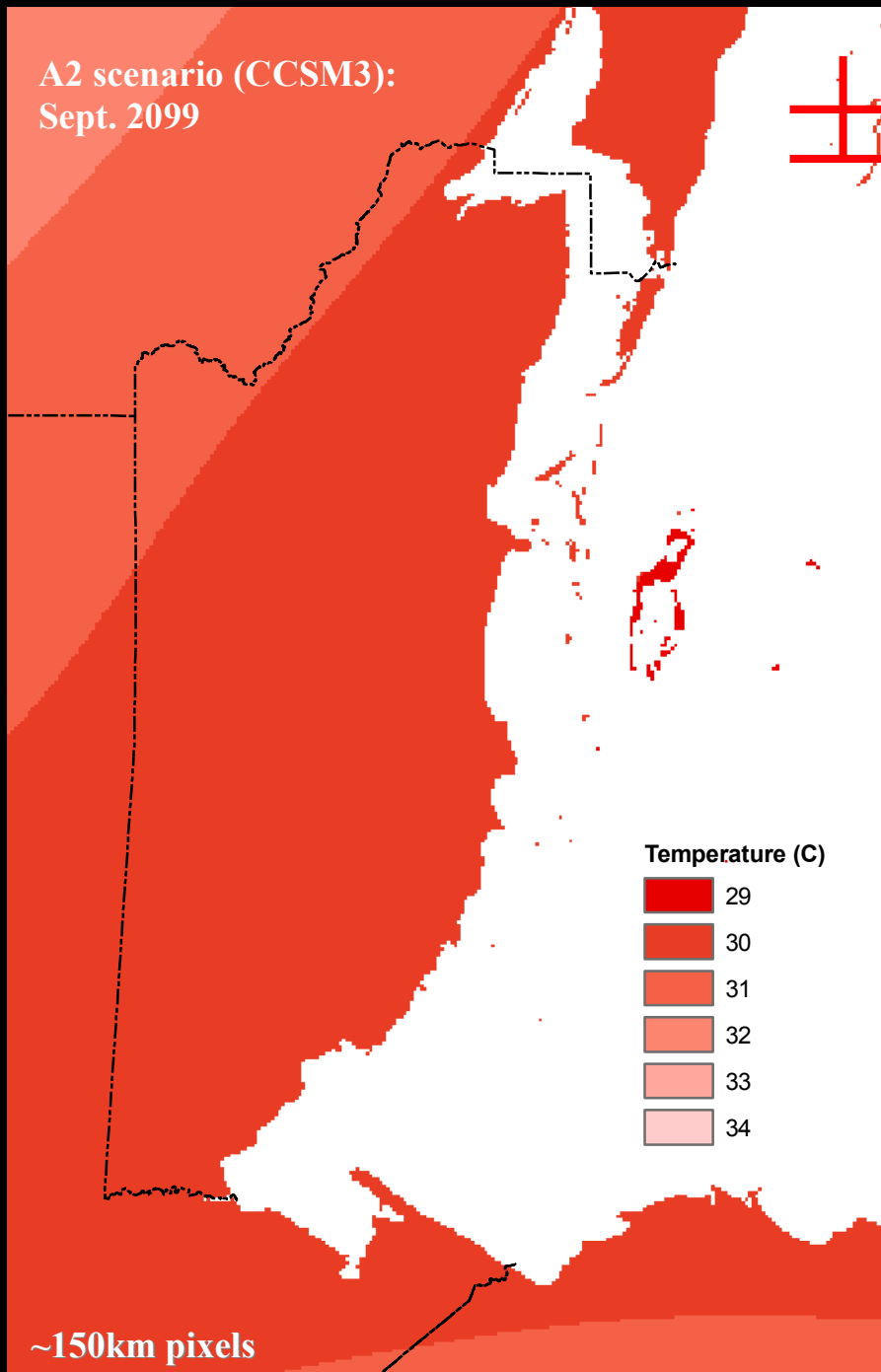
72W
SERVIR
NASA/USDA
CATHALAG



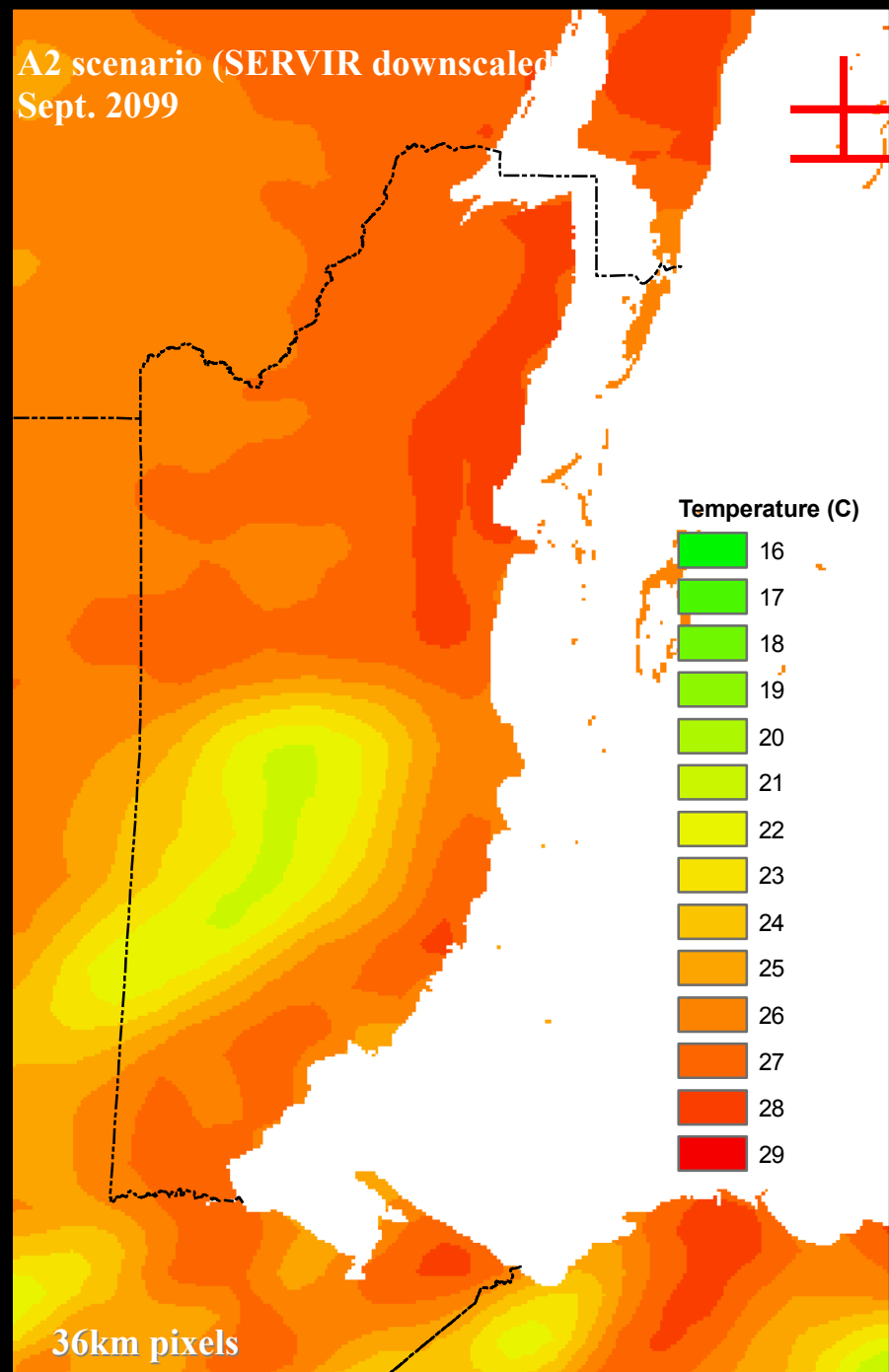
Diferencias en temperatura superficial(k) en septiembre, 2099-2005



A2 scenario (CCSM3):
Sept. 2099



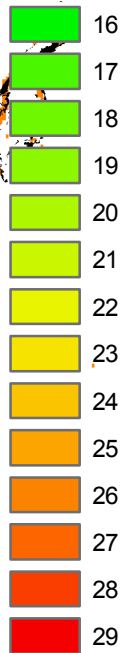
A2 scenario (SERVIR downscaled)
Sept. 2099



A2 scenario (SERVIR downscaled
Sept. 2099



Temperature (C)

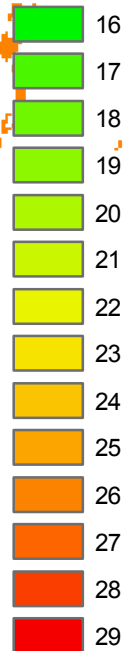


~150km pixels

A2 scenario (SERVIR downscaled
Sept. 2099



Temperature (C)



36km pixels

Mainstreaming Climate Indices and Weather Derivatives into Decision-Making for Adaptation to Climate Change in Central America, Mexico, and the Dominican Republic

- Supported by USAID's Global Development Alliance
- Implemented with USAID, NASA, UAH and nat'l climate change focal points from Mesoamerica / DR (through late 2008)
- Will strengthen regional capacity in use of EOS data in climate change adaptation



The Future of Decision Support



Regional Capacity Building

- **2nd Generation Environmental Decision Support and Information Sharing Tools in Support of the Mesoamerican Environmental Information System (Feb. 2007)**
- **Weather & Climate Visualization and Monitoring using SERVIR Viz (Jan. 2007)**
- **Remote Detection & Monitoring of Fires using Web Fire Mapper Technology (Jan. 2007)**
- **Environmental Visualization & Fire Monitoring of the Soberania National Park (Nov. 2006)**
- **Introduction to Remote Sensing & Image Processing (Nov. 2006)**
- **Sensor Model Language & Sensor Web Technologies (Nov. 2006)**
- **Emerging 3D Environmental Visualization Technologies & Internet Mapping (Jan. 2006)**
- **2nd Regional Workshop on Remote Sensing and Image Processing for Land Cover, Land Use Change and Forestry and Carbon Modeling in Mesoamerica (Oct. 2005)**
- **2nd Regional Workshop on Climate & Weather Modeling in Mesoamerica (Oct. 2005)**
- **1st Regional Workshop on Remote Sensing & Image Processing for Land Cover, Land Use Change and Forestry and Carbon Modeling in Mesoamerica (July 2004)**
- **1st Regional Workshop on Climate & Weather Modeling in Mesoamerica (June 2004)**



Collaboration in a Larger Context

- **Ministerial Decision 11 of the XV Forum of Environmental Ministers of Latin America & the Caribbean (November 2005)**
- **MOU with CARICOM Climate Change Centre (April 2006)**
- **Ministerial Decision of the Iberoamerican Forum (September 2006)**
- **Global Development Alliance initiative with USAID (through September 2008)**



Points for Further Collaboration



- **Joint project development**
- **Joint research & development, e.g. further downscaling of climate scenarios**
- **Workshops & training activities**