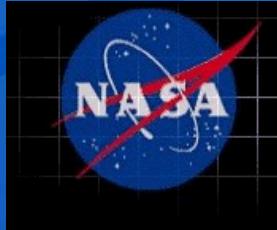


# Earth Observations and Mapping for Development



**Carrie Stokes**  
**Geospatial Information Technology Advisor**  
**USAID**





# Summary: SERVIR Services

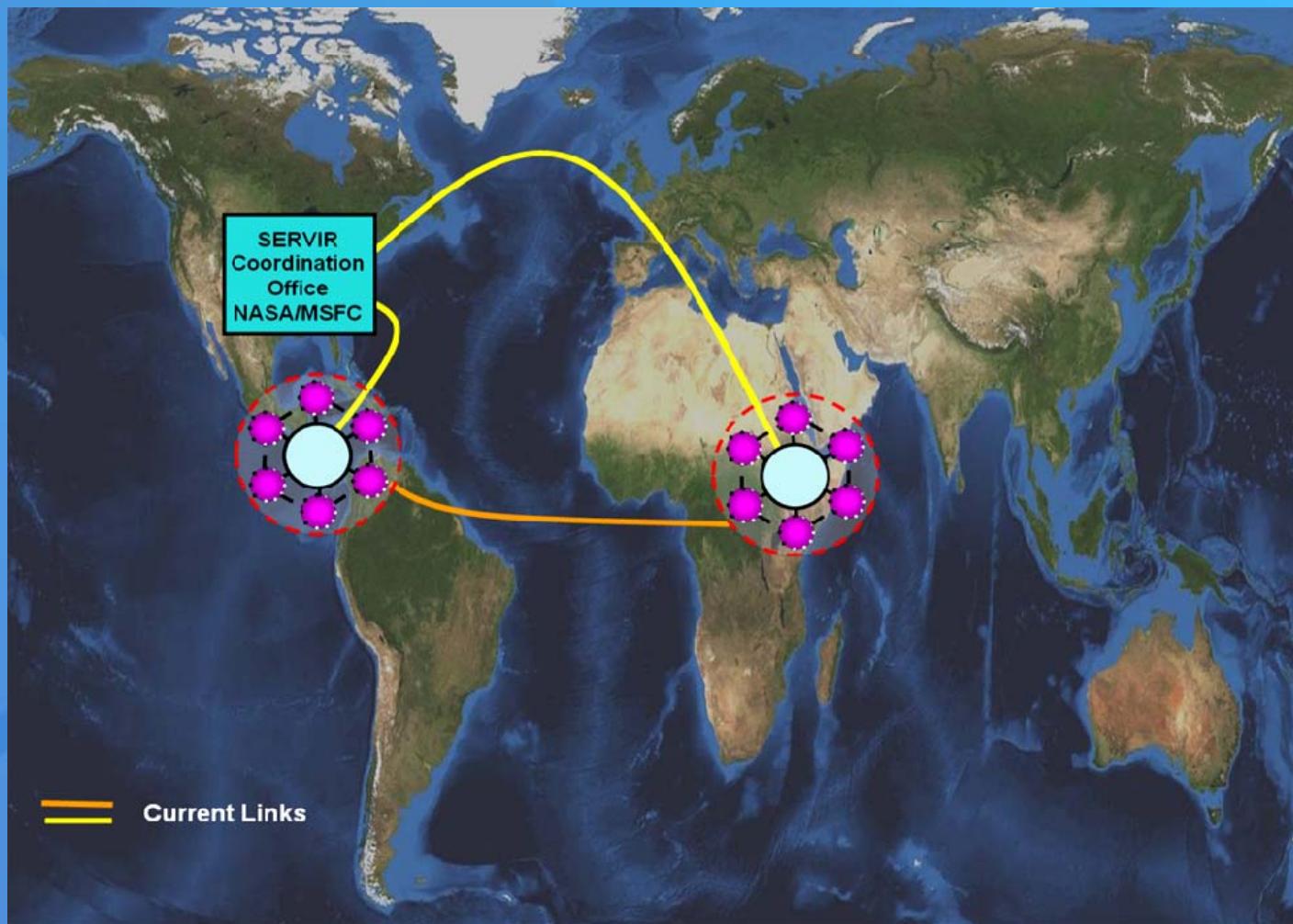
- Satellite data and models
- Common platform for decision-support products, data sets
- Geospatial technical support
- Web map hosting

- National and regional training
- Mirror (backup) of national systems
- Facilitates partnerships, collaboration, coordination
- Visualization & information dissemination



# SERVIR Regional Nodes & Coordination Office



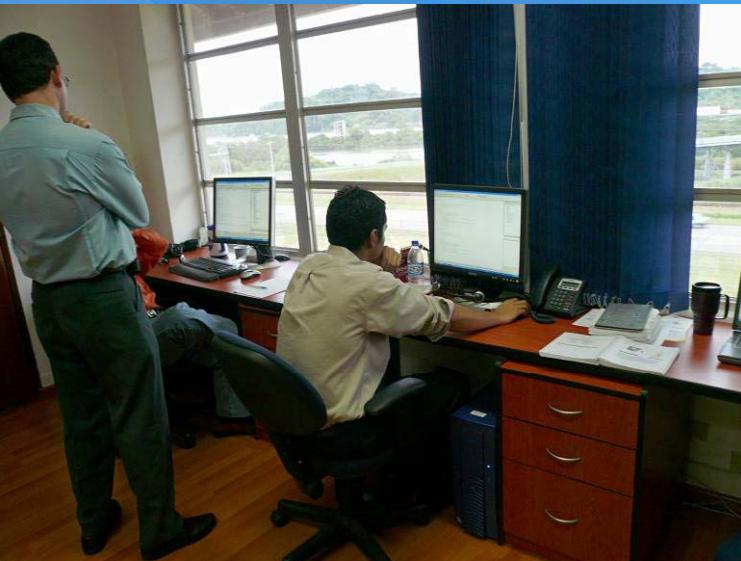
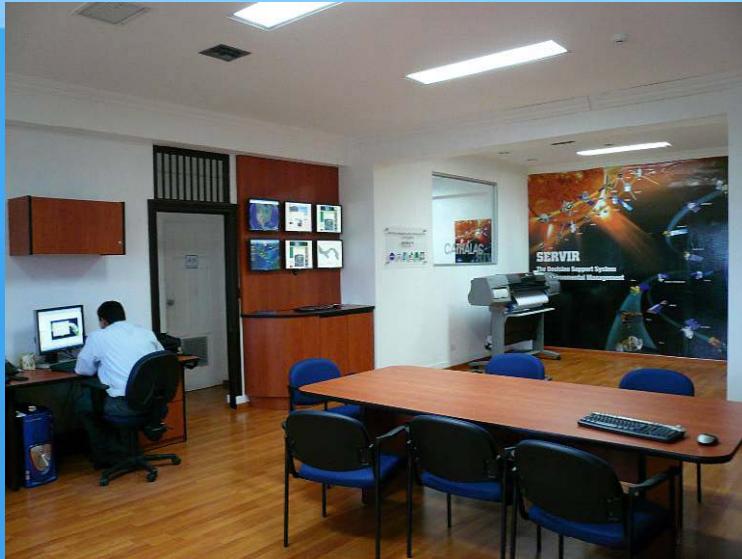


# SERVIR @ CATHALAC in the City of Knowledge, Panama



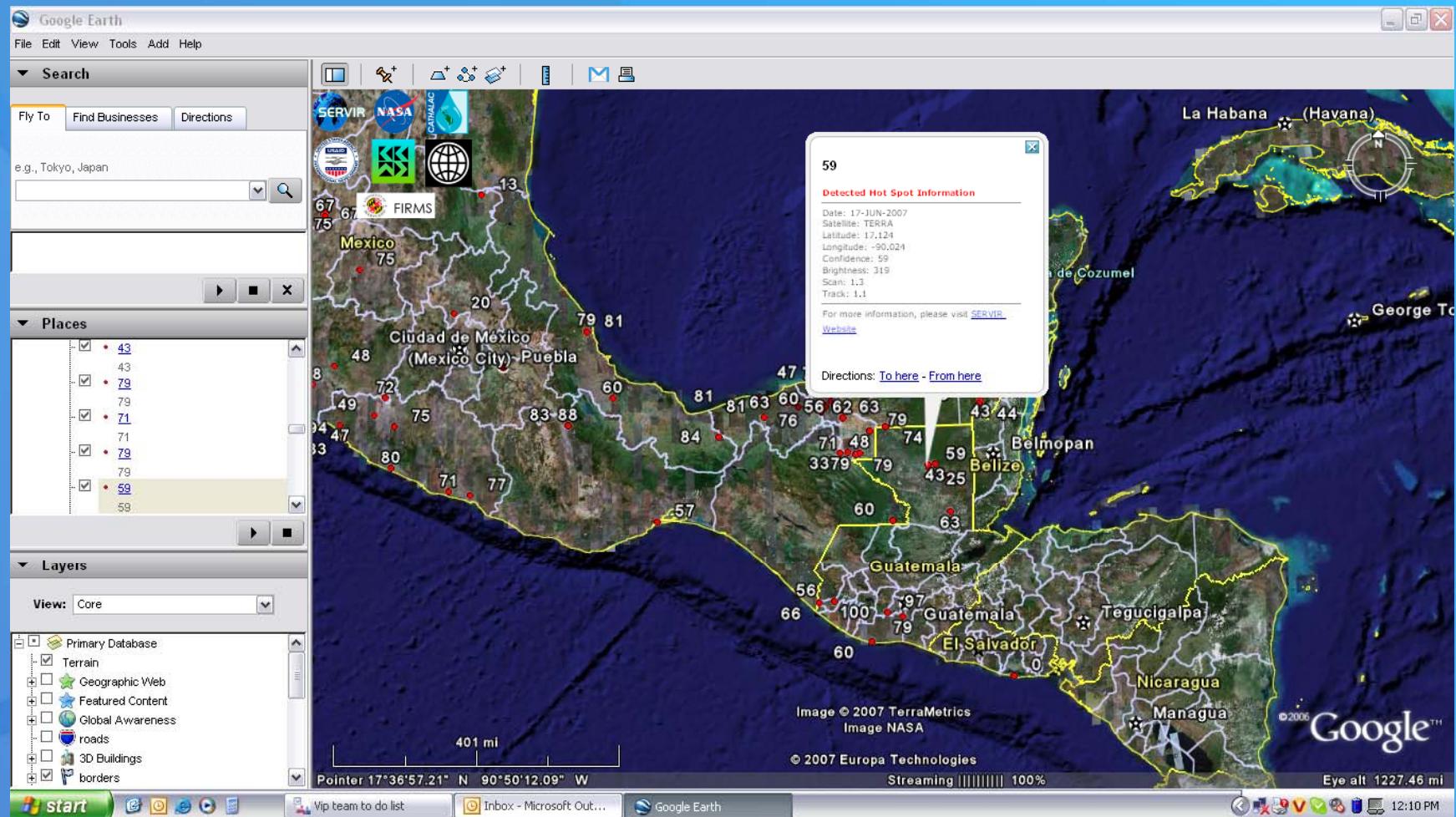


# Inside SERVIR Regional Node



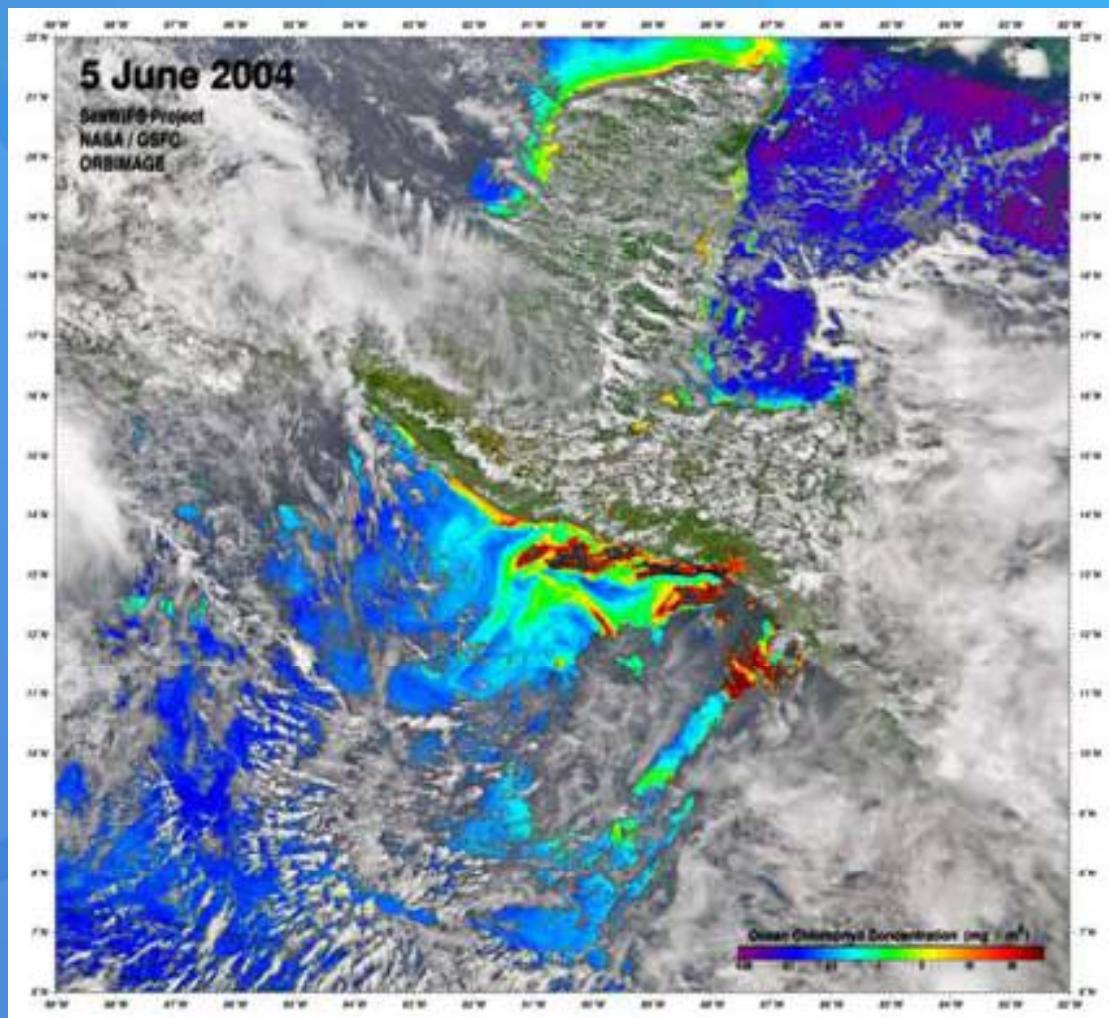


# Fire Monitoring



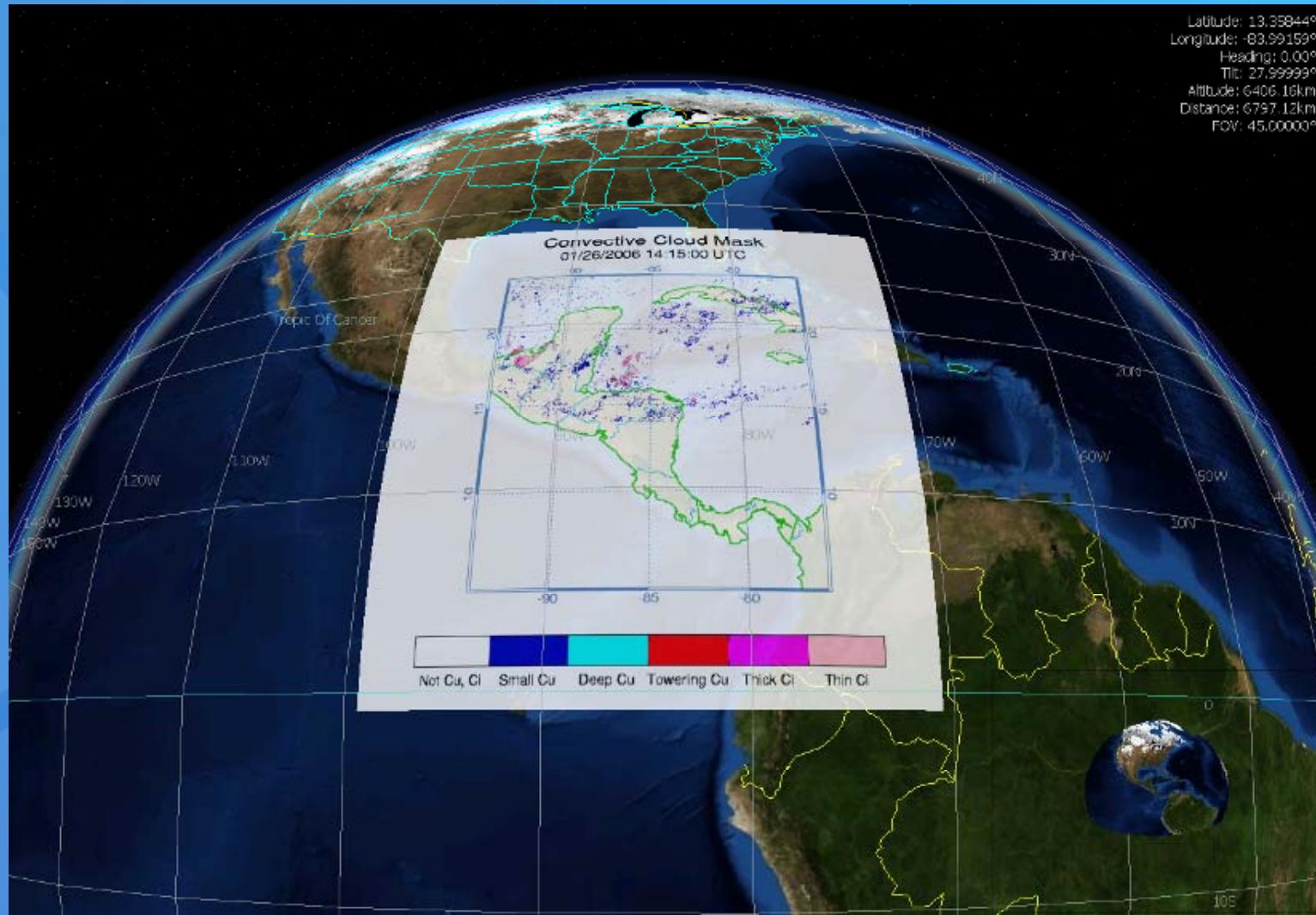


# Red Tide Monitoring - Algal Blooms



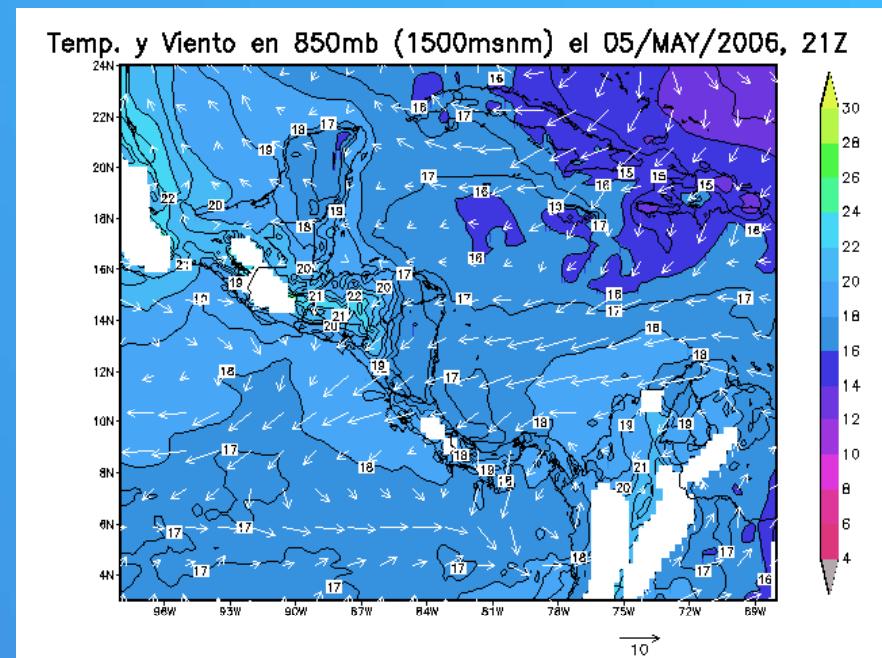
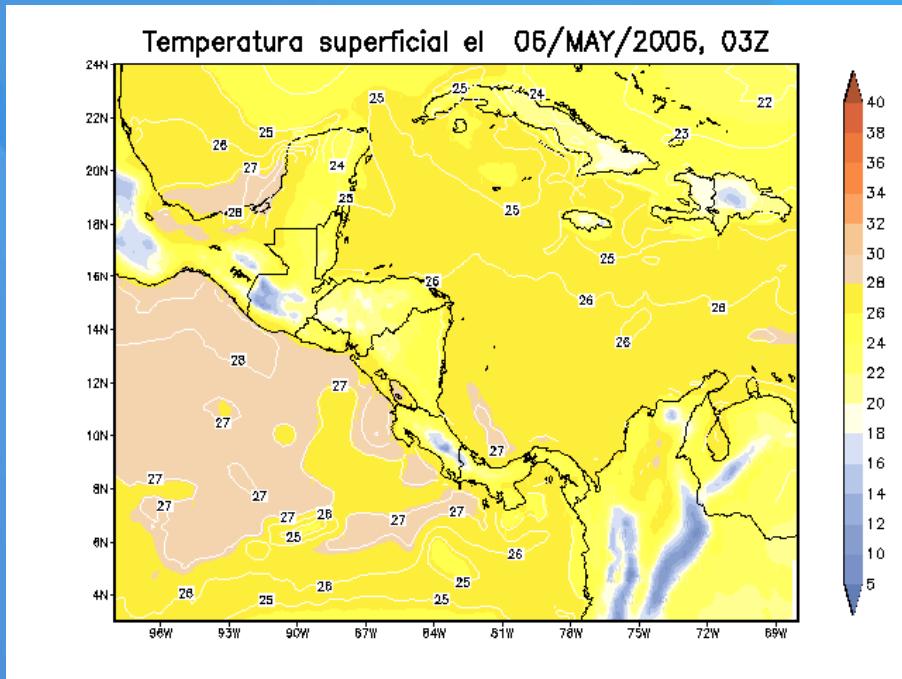


# Weather Monitoring - Nowcasting



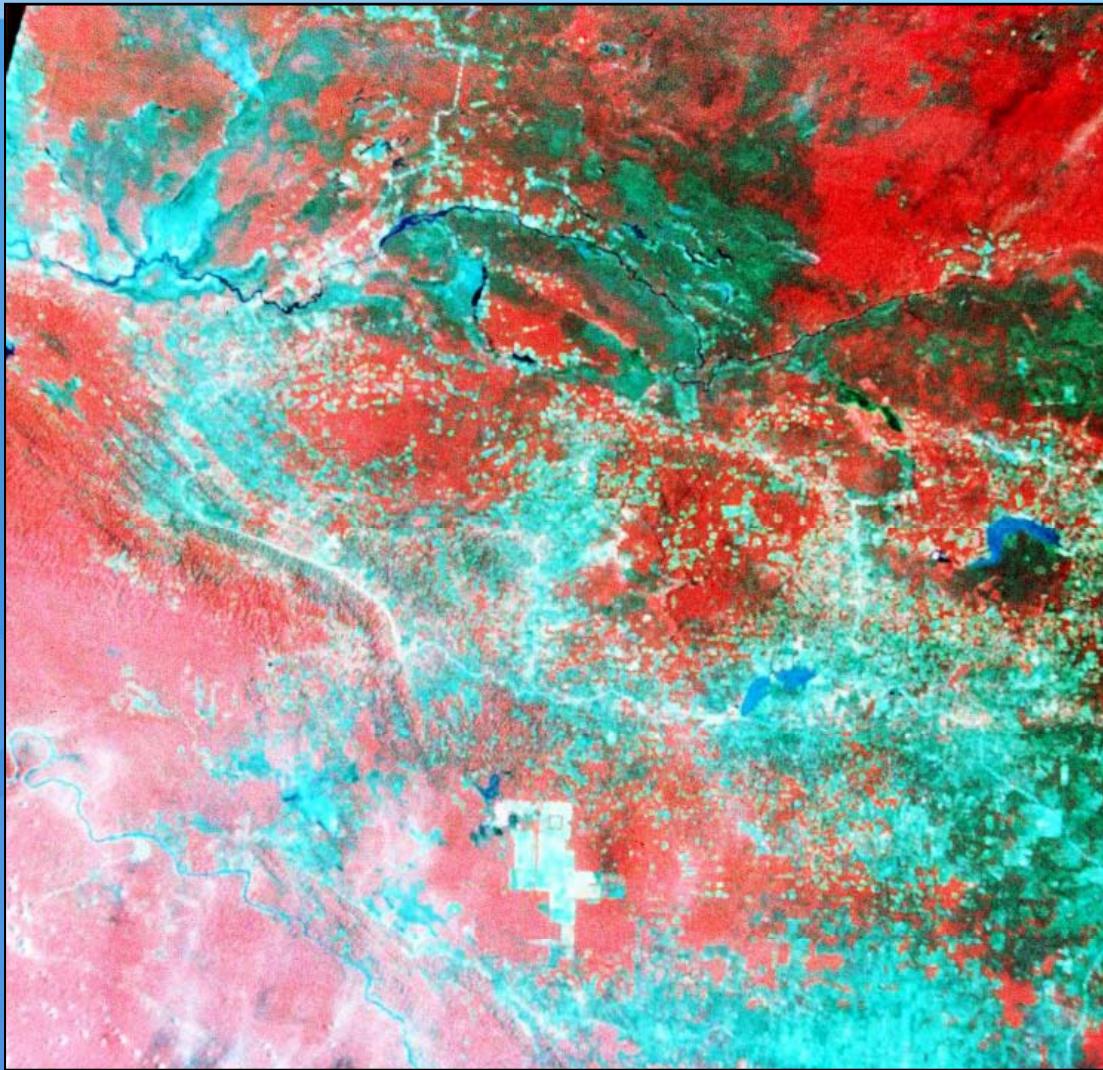


# Short Term Weather Prediction





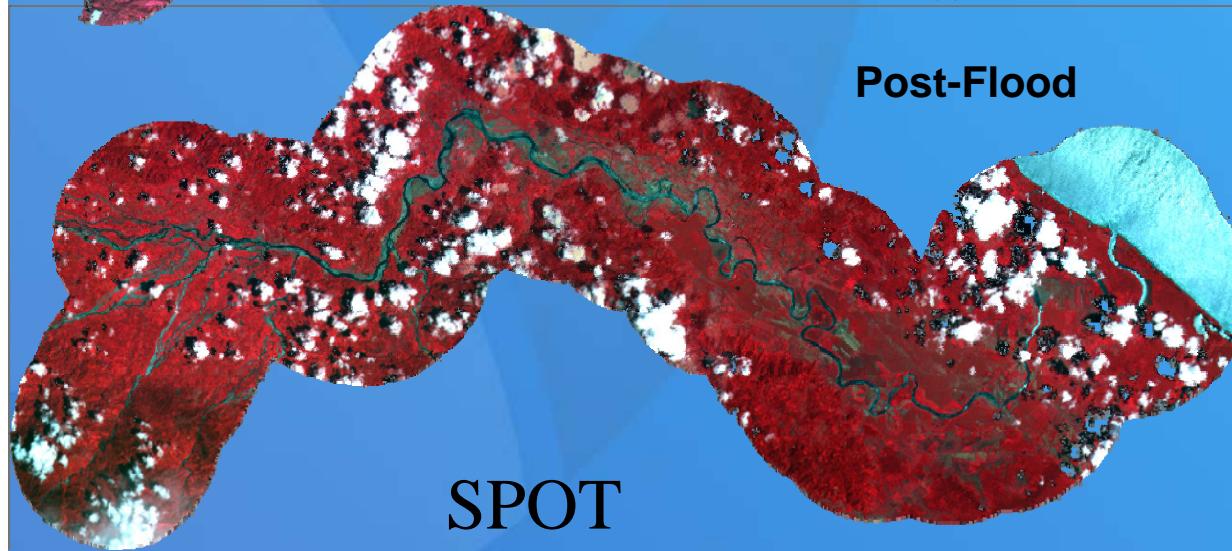
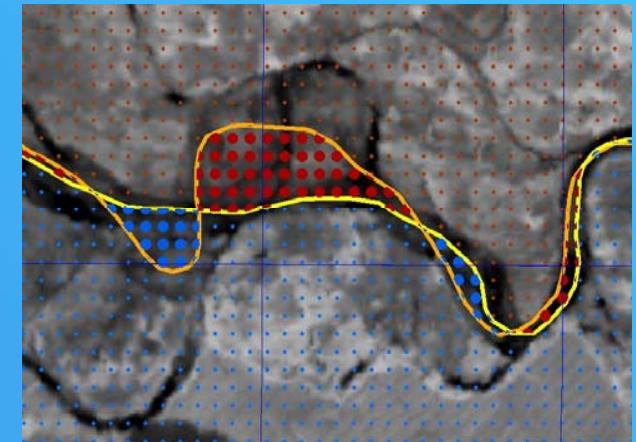
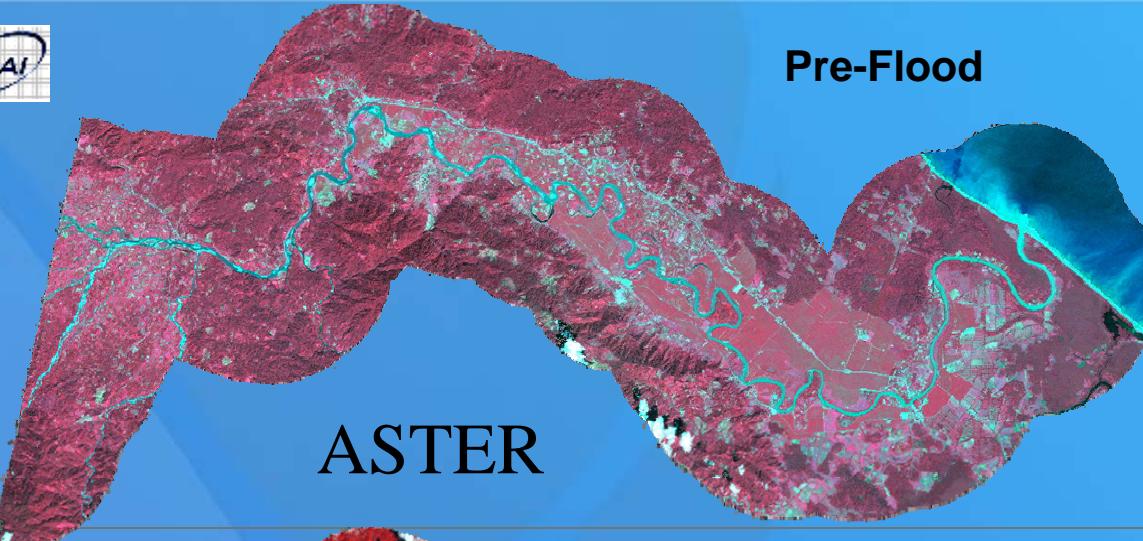
# Land Cover Change



Peten, Guatemala (1986-1995)



# International Boundary Disputes



**Red - Panamanian Land  
Now on Costa Rican Side  
of the Channel**  
**Blue - Costa Rican Land  
Now on Panamanian Side  
of the Channel**



# Air Quality Monitoring

**SERVIR**  [Español](#)

[INICIO](#) | [NOTICIAS](#) | [SERVIR BLOG](#) | [PORTAL DE DATOS](#) | [CALIDAD DEL AIRE](#) | [VISUALIZACIONES 3D](#) | [DOCUMENTOS](#) | [GALERÍA DE IMÁGENES](#) | [ACERCA DE SERVIR](#)

**Calidad del aire en Mesoamérica y el Caribe**

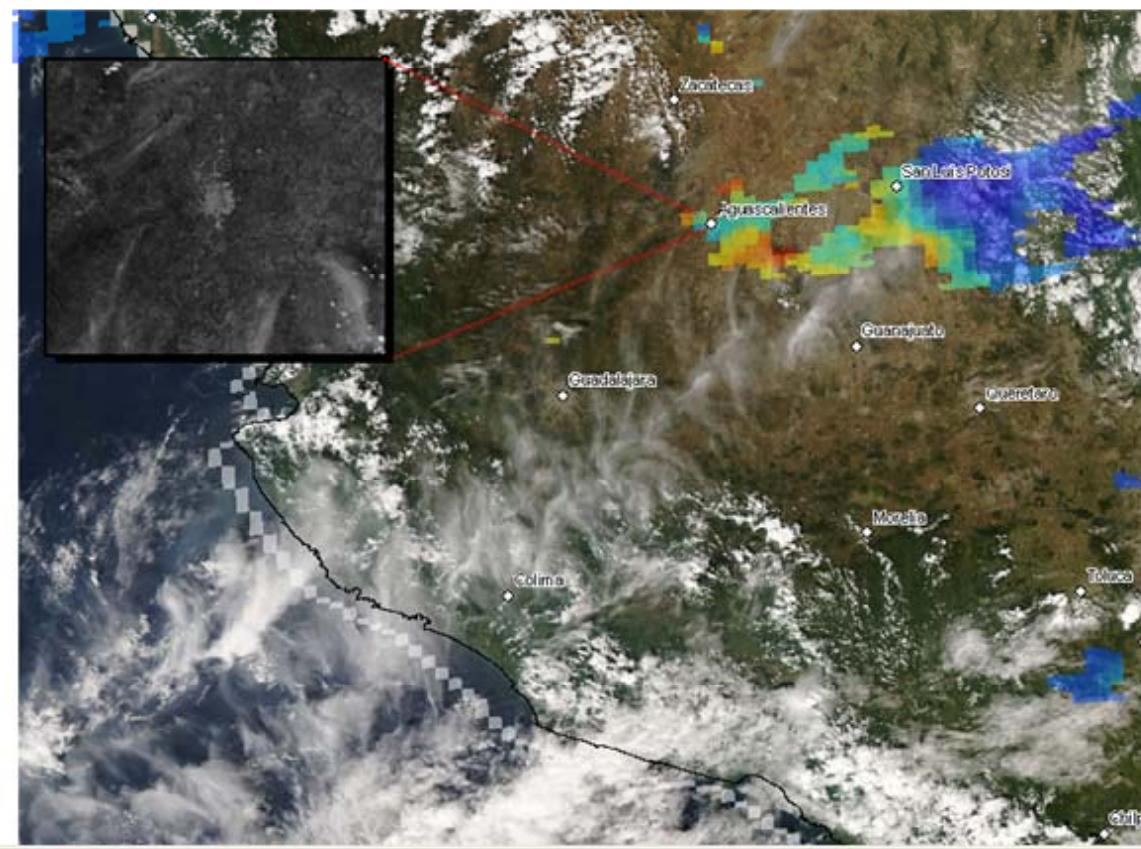


**Últimas Evaluaciones**

- Depresión Tropical 16
- Interpretación de imágenes de inundaciones en Haití
- Huracán Ike
- Huracán Hanna
- Huracán Gustav

**Comunidad**

Usuario   
clave   
 Recordarme  
  
[¿Recuperar clave?](#)  
[¿Quiere registrarse? Regístrate aquí!](#)



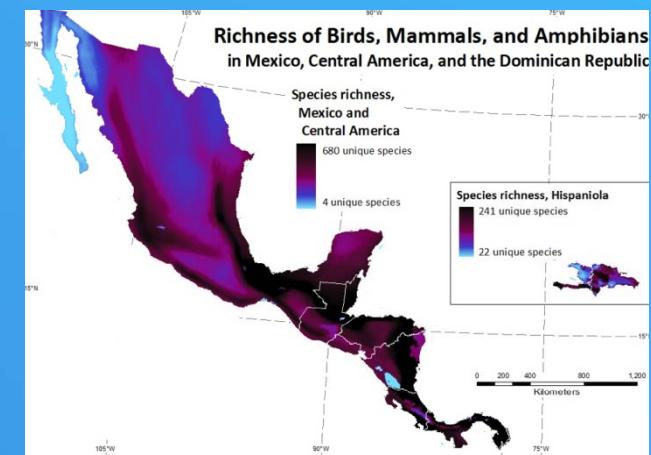
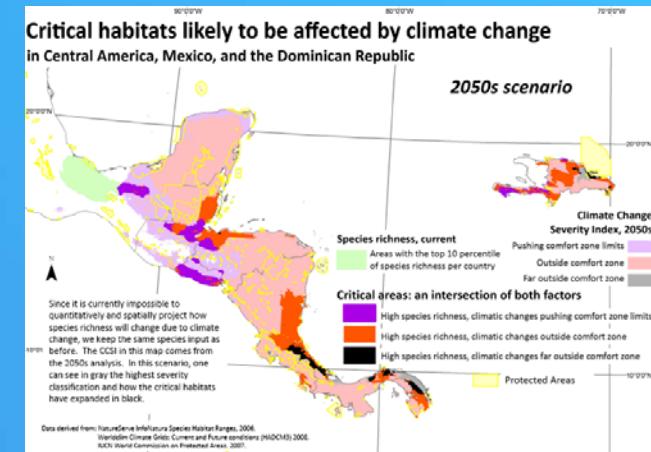


# Cloud Forest Monitoring





# Climate Change & Biodiversity Analysis



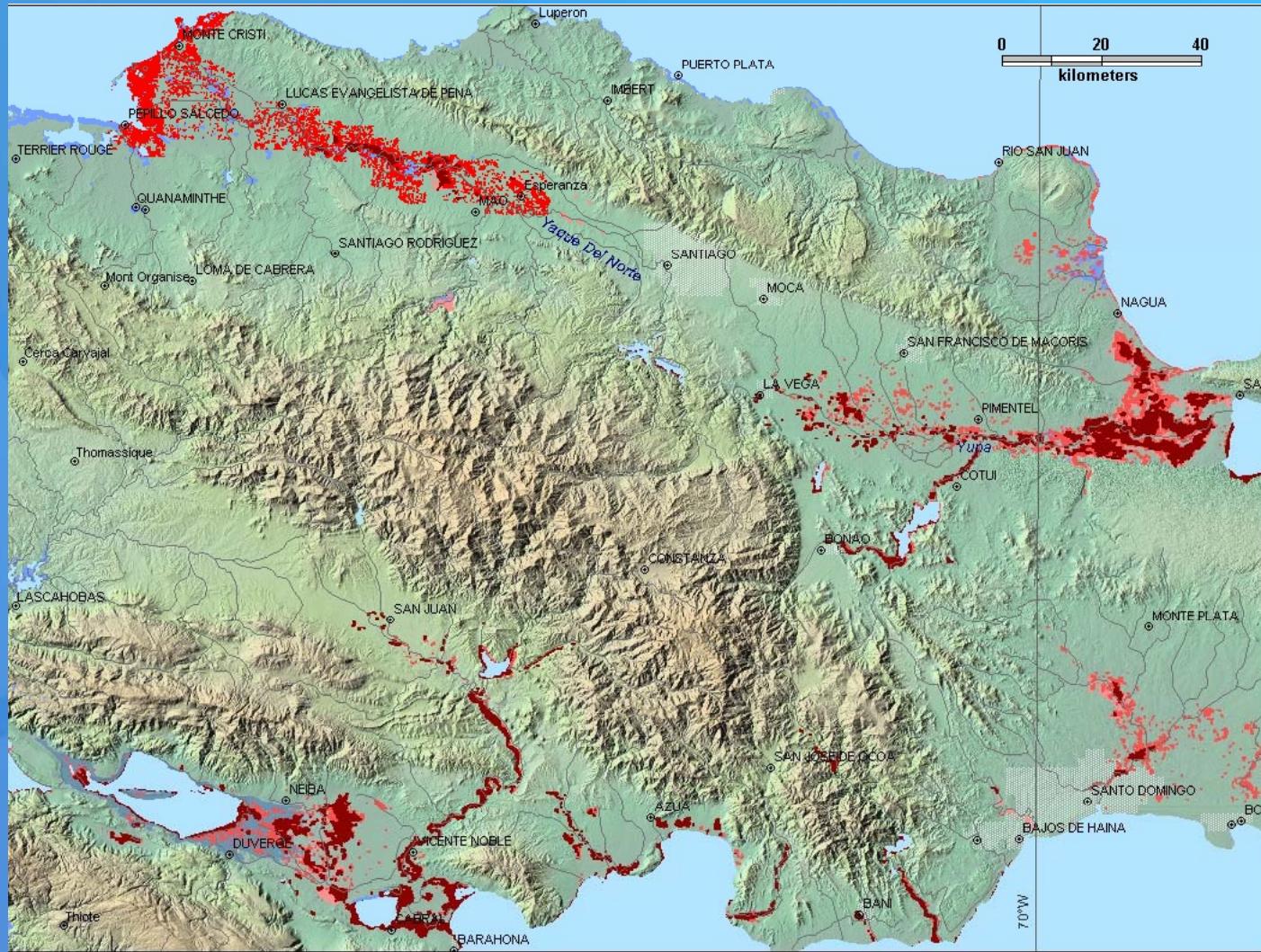


# SERVIR Disaster Response (2004-2008)

1. Red tide event – El Salvador (June 2004)
2. Panama City flooding – Panama (Sept 2004)
3. Rio Sixaola flooding – Costa Rica / Panama (Jan 2005)
4. Hurricane Stan – Guatemala, Mexico, ElSalvador (Oct 2005)
5. Colon Province flooding – Panama (Nov 2006)
6. Mountain Pine Ridge fire – Belize (May 2007)
7. Hurricane Dean – Mexico (Aug 2007)
8. Hurricane Felix – Nicaragua (Sept 2007)
9. Tropical Storm Noel – Dominican Republic (Oct 2007)
10. Tropical Storm Olga – Dominican Republic (Dec 2007)
11. Turrialba Volcano – Costa Rica (April 2008)
12. Tropical Storm Arthur – Belize (June 2008)
13. Hurricane Gustav – Haiti / Dominican Republic (August 2008)
14. Hurricane Hanna – Haiti (Sept. 2008)
15. Hurricane Gustav – Haiti (Sept. 2008)
16. Landslide in Huahua – Mexico (Oct 2008)
17. Tropical Depression16 (Oct/Nov 2008)
18. Floods in Panama (Nov. 2008)

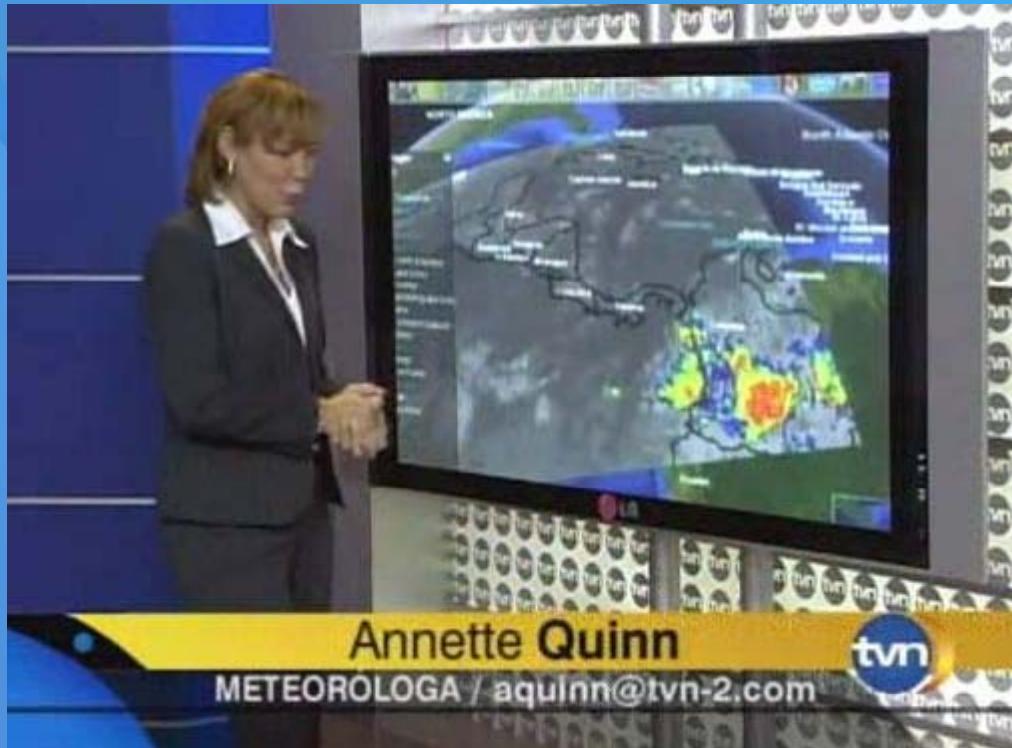


# Flood Mapping: Tropical Storm Noel





# SERVIR Product Dissemination





## Where did NASA and NOAA satellite data go last weekend? Thanks to USAID and CATHALAC... To the desk of the President of Panama!

PANAMA CITY, Panama – For those in the field of satellite data management, an often unanswered question is what really happens to the data that's generated. Well, last weekend that question was answered when the head of state of one of Latin America's leading nations – Panama – tapped **NASA** and **NOAA** data for disaster response. On Saturday, November 29, 2008, His Excellency Martin Torrijos, the President of the Republic of Panama paid a visit to the Panama City-based **Water Center for the Humid Tropics of Latin America and the Caribbean (CATHALAC)** to help plan a course of action regarding catastrophic floods which had been affecting the nation for the previous week.

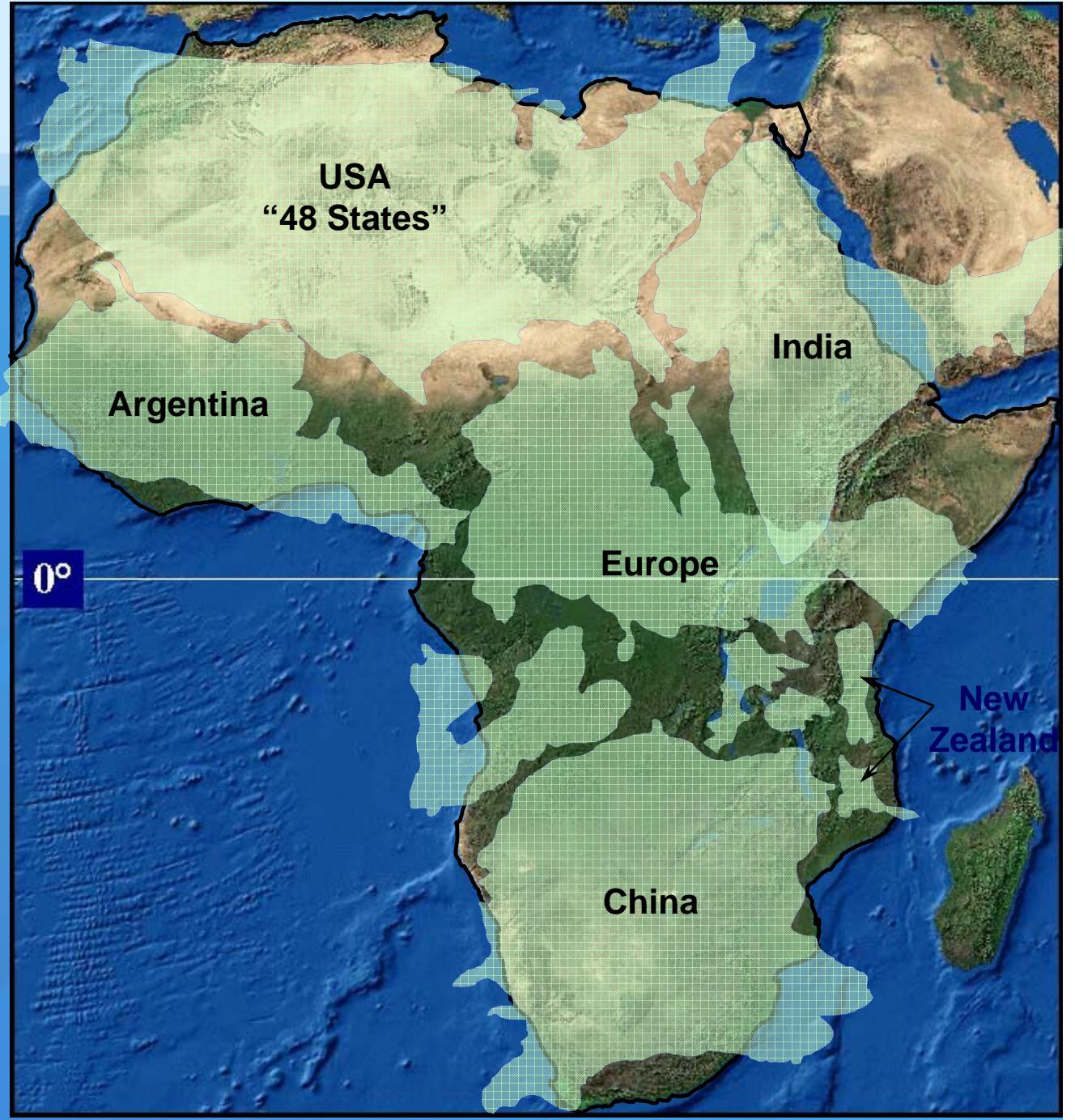




## SERVIR in Africa:

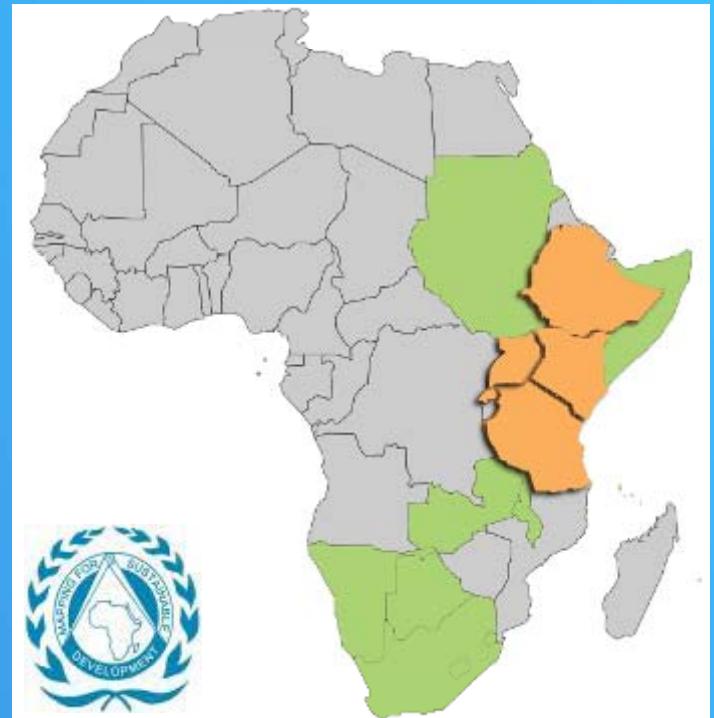
Large geographic scope

Limited bandwidth





# SERVIR-Africa



Phase 1 countries (orange)  
RCMRD member states (green)

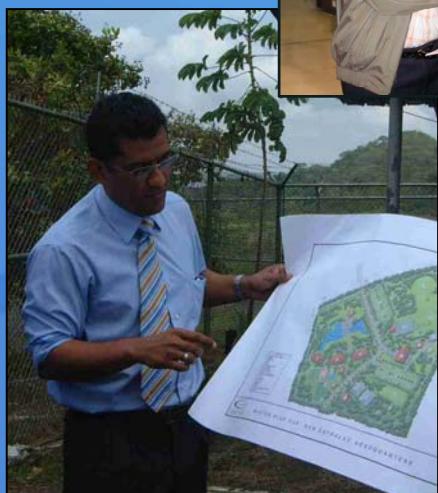
Dedication: November 21, 2008 at RCMRD in Nairobi, Kenya



# ‘South-South’ Collaboration

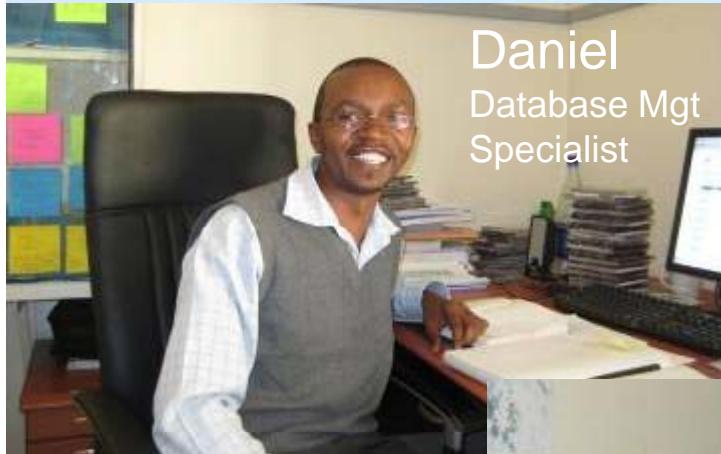


- RCMRD travels to CATHALAC to observe Panama operations
- CATHALAC travels to RCMRD to configure hardware
- Both centers exchange ideas, share experience





# RCMRD SERVIR-Africa Team



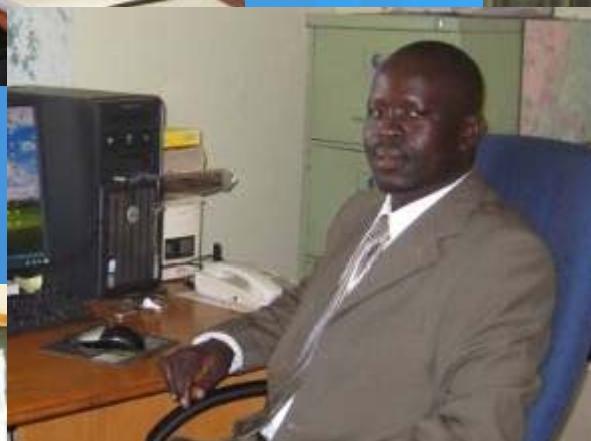
**Daniel**  
Database Mgt  
Specialist



**Erick**  
Remote  
Sensing  
Specialist



**Tesfaye**  
Project Lead at RCMRD



**Lawrence**  
RCMRD  
Database  
Manager



**Catherine**  
Remote  
Sensing  
Analyst



**Wafula**  
IT System  
Administrator



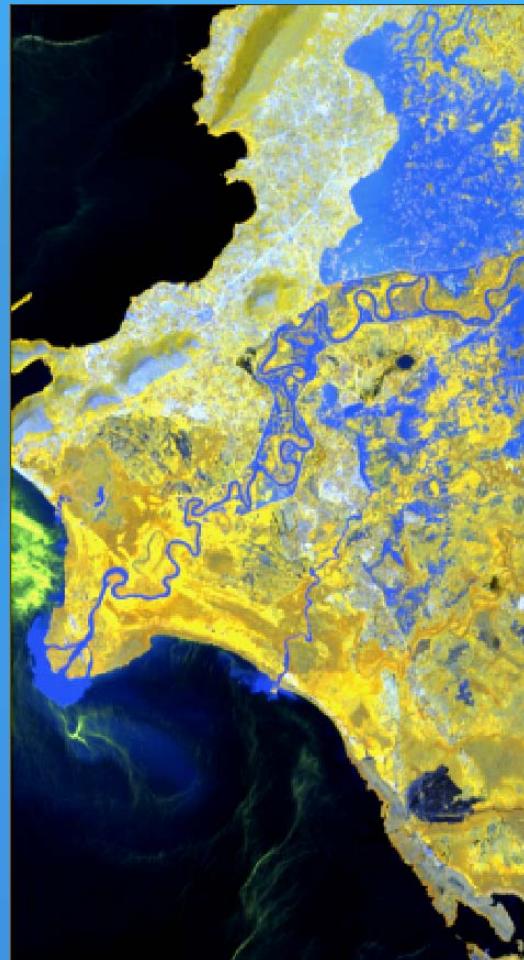
**John**  
Web services  
Specialist



# New Access to Satellite Data



August 23, 2008



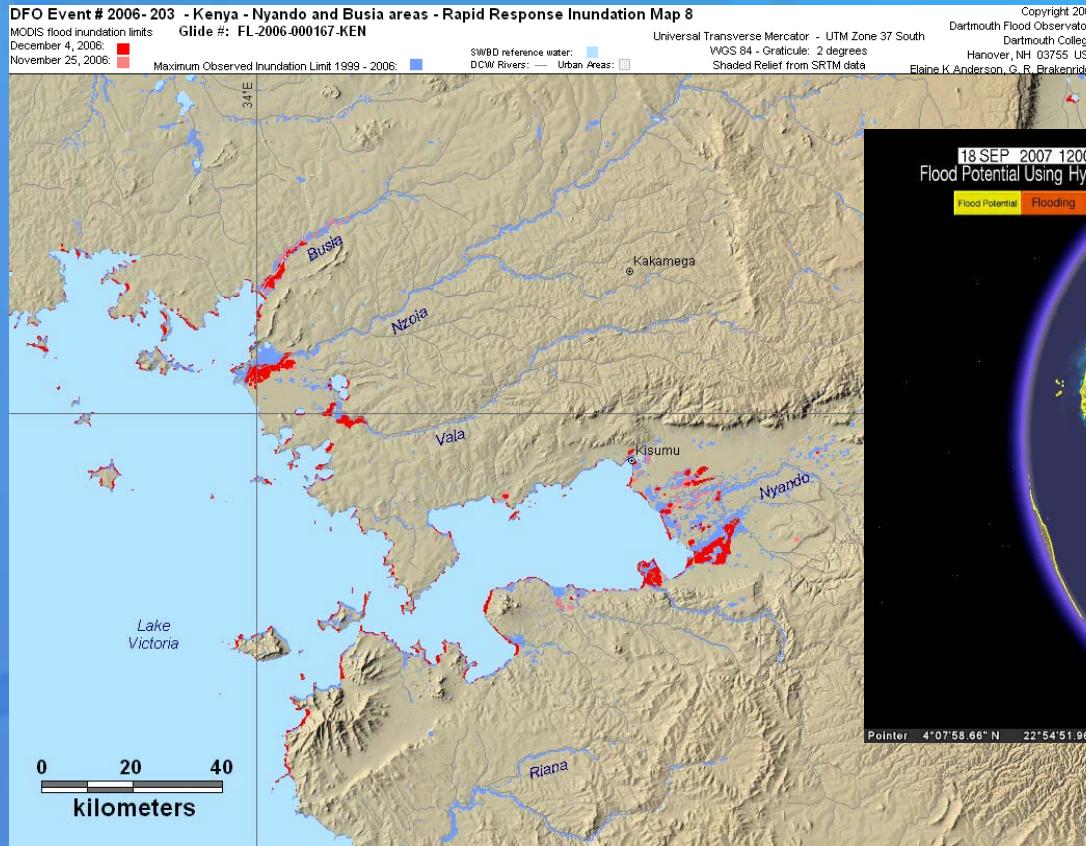
November 13, 2008





# Flood Risk-Mapping

- Identification of flood potential/flooded areas using satellite data
- Distribution of near real time products

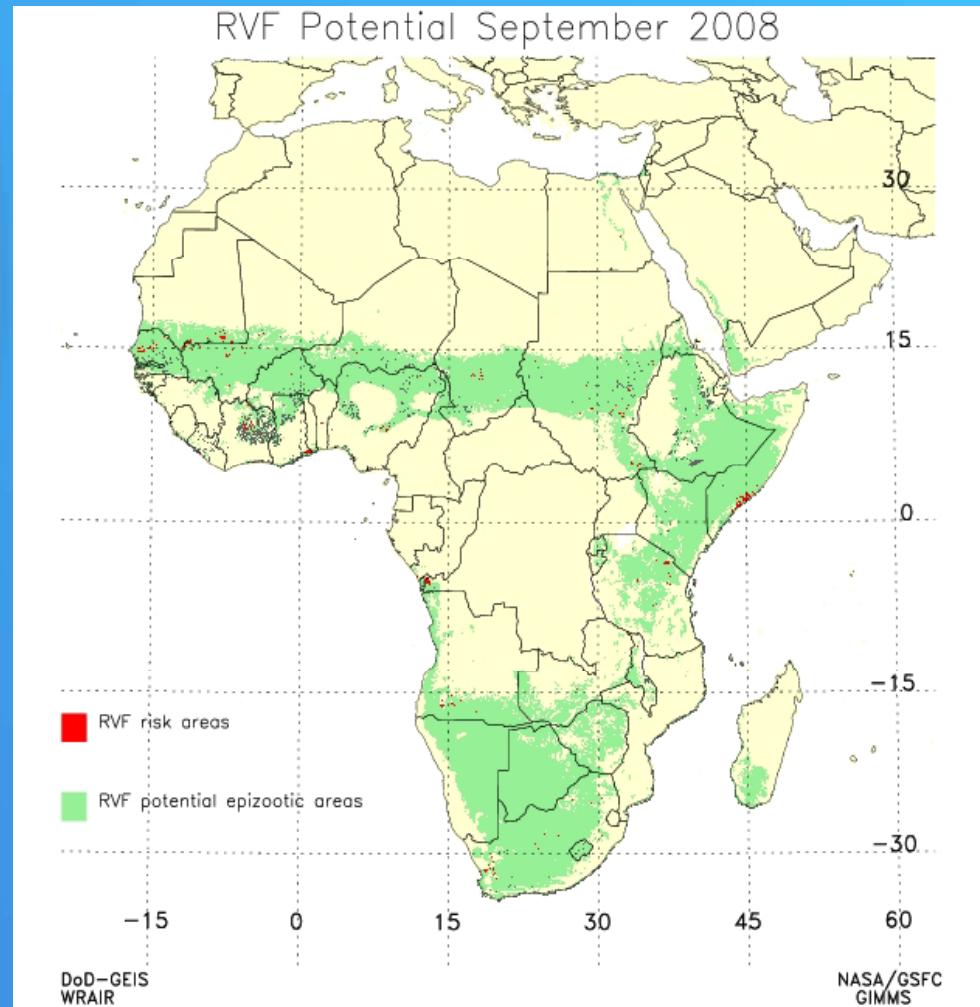




# Rift Valley Fever Prediction Modelling

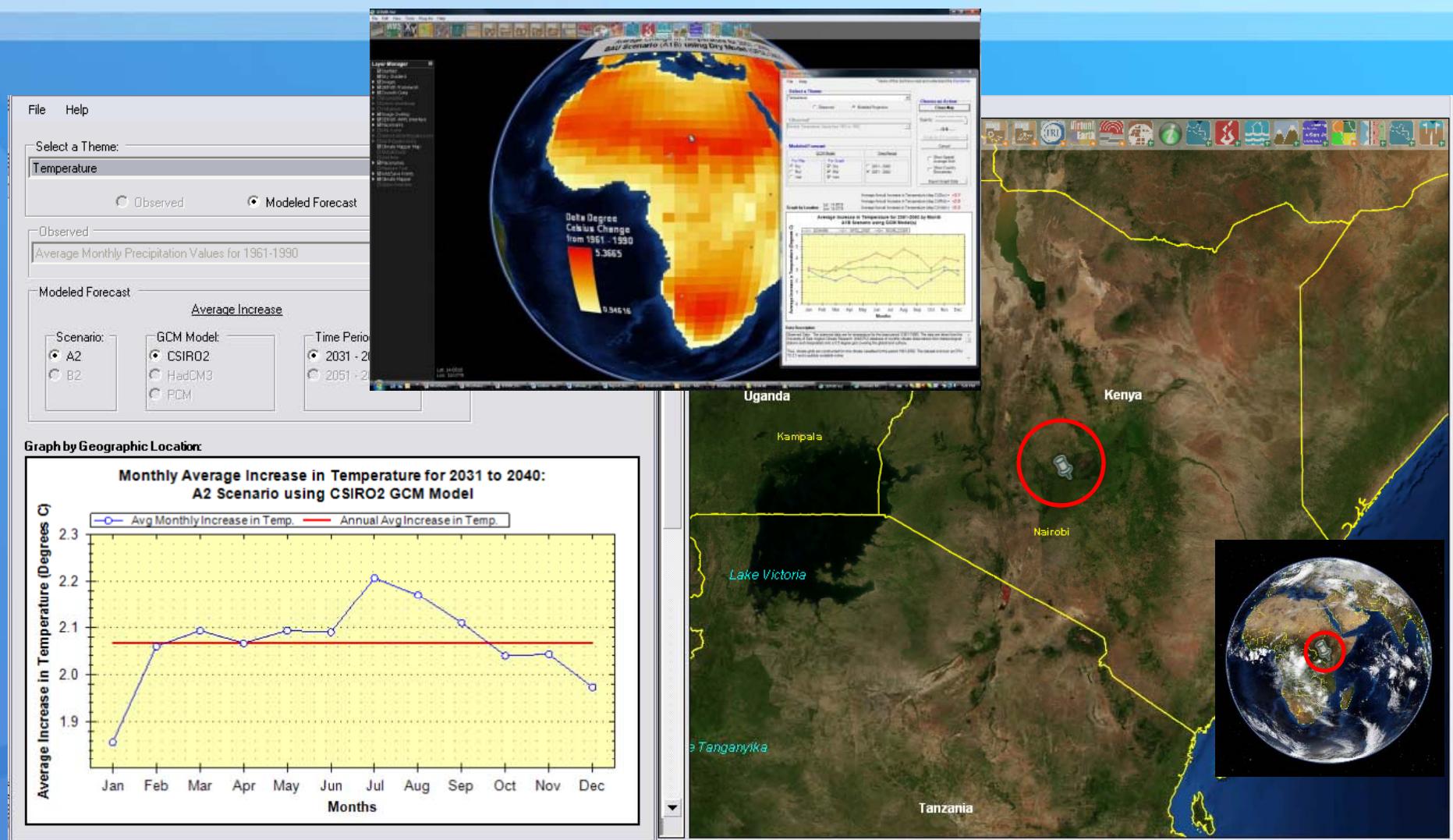
## Rift Valley Fever Risk Map

(livestock and human disease transmitted by mosquito)



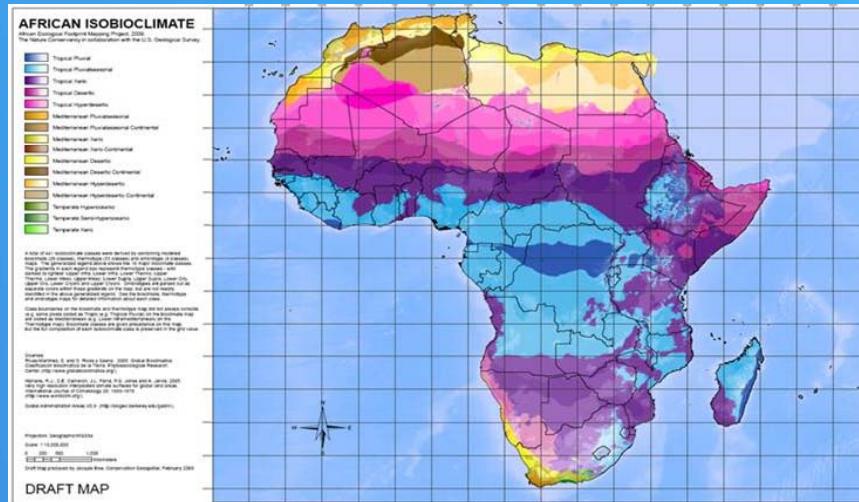
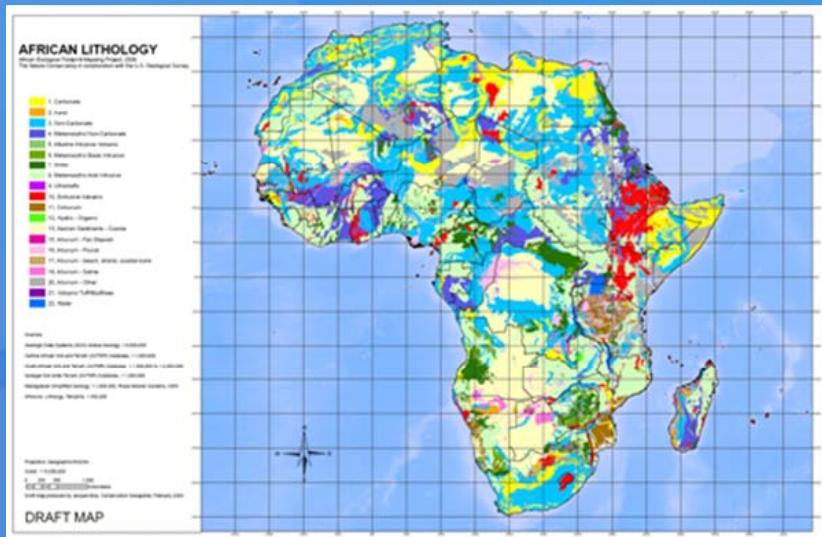
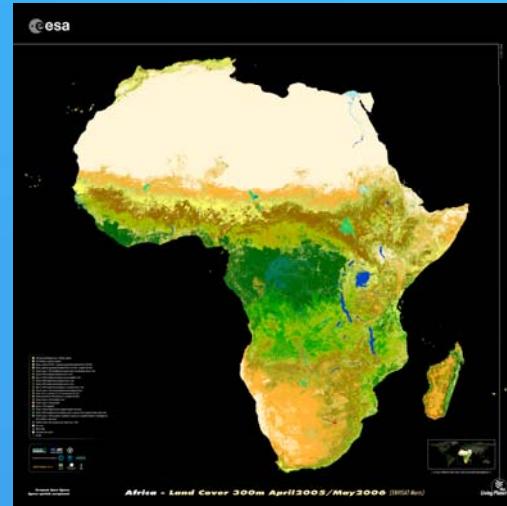
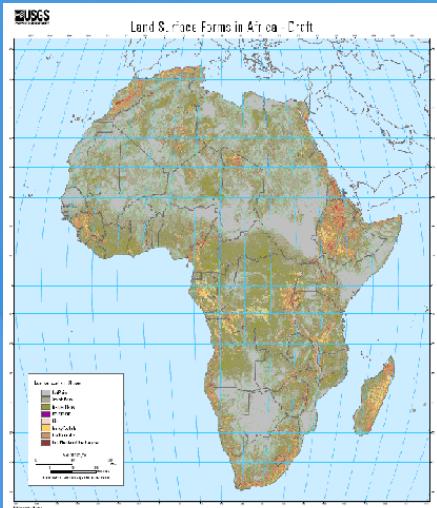


# Mapping Climate Projections





# Ecosystem Mapping





# Biodiversity Monitoring

Coral reef monitoring & biodiversity decision-support tool





# Training

**Metadata & web services development training**

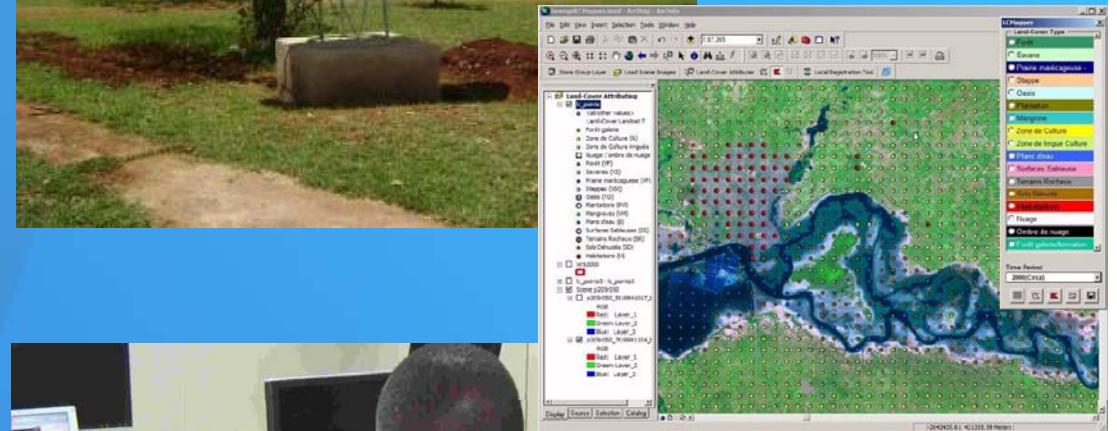
**Regional workshops**

**Flood mapping course**

**Rapid land cover mapping course**

**GEONETCast installation and training**

**University-based SERVIR-Africa module**





# SERVIR-Africa Portal

**SERVIR AFRICA - Home - Windows Internet Explorer**  
http://www.servir.net/africa/ SERVIR AFRICA - Home

**SERVIR**

HOME DATA & SERVICES TOOLS & MODELS LIBRARY COMMUNITY ABOUT US

**The SERVIR-Africa website is under development.**

Over the next few weeks, we will continue to add new content and functionality. Please check back soon, or [sign up](#) to receive notification of changes.

**Coming Soon - Online Map Tools**

Featured Map Viewer 2D Viewer 3D

Title: Latest 1 Day Rain Accumulation from TRMM More info...  
Source: NASA GSFC TRMM Project  
Date: Ongoing - daily production



**SERVIR Mission**

*Enabling the use of Earth observations and predictive models for timely decision making to benefit society*

**Latest SERVIR News**

- Use of TRMM satellite rainfall data for flood models
- SERVIR-Africa team members to attend AAPSE 2008
- NASA EO-1 data acquisition for flood monitoring East Africa
- SERVIR-Africa team member to participate in 8th EUWETSAT African User Forum
- MODIS Flood Maps & MODIS data subsets available in near real time

**Latest Community News**

- 1st phase of African Agricultural Data Rescue Initiative (AADRI) underway
- November 08 SCI-Africa newsletter (Vol. 7, No. 11)
- Call for participation - International Workshop of Experts on Global Environmental Change
- October 08 issue of G4LR project newsletter (Vol. 8, No. 4)
- African Geodetic Reference Frame (AFREF) newsletter (No. 2, September 2008)



# Geospatial ‘one-stop’ discovery

The screenshot shows the Egyptian Geography Network (EGN) website, featuring a map of Nigeria. The map is a satellite view with various geographical features and place names labeled. A sidebar on the left provides options for selecting map layers, including Nigeria\_AE\_POI, Nigeria\_All\_Railway, Nigeria\_All\_Airports, Nigeria\_Street\_Level, Nigeria\_All\_Towns, Nigeria\_All\_Roads, Nigeria\_Bulding\_Area, Nigeria\_All\_Rivers, Nigeria\_All\_Waters, Nigeria\_All\_States, and Nigeria\_Boundary. The map itself is overlaid with green and yellow shaded areas, likely representing different administrative regions or data layers. The interface includes a search bar, a sidebar with map layers, and a footer with navigation links.



# Data Sharing

Established in 1975, the Regional Centre for Mapping of Resources for Development (RCMRD) is a long-standing focal point for building capacity in surveying and mapping, remote sensing, geographic information systems, and natural resources assessment and management. The Center is an intergovernmental organization established under the aegis of the United Nations Economic Commission for Africa (ECA) and the Organization of African Union (OAU), now renamed to African Union (AU). It is supported by its 15 contracting member states: Botswana, Comoros, Ethiopia, Kenya, Lesotho, Malawi, Mauritius, Namibia, Somalia, South Africa, Sudan, Swaziland, Tanzania, Uganda, and Zambia.

With approximately 50 staff members, the Center trains 400-500 people per year. It also implements projects on behalf of its member States and development partners (see projects in Google Maps). The Center currently has an antenna to receive data and derived products from the Advanced Synthetic Aperture Radar (ASAR) and the Medium Resolution Imaging Spectrometer (MERIS) sensors, and plans are underway to install a [GEOEYE](#) antenna to receive additional earth observation products. The Center has been active in spatial data infrastructure development in Africa through its contributions to initiatives such as the [African Geodetic Reference Frame \(AGRF\)](#), [Mapping Africa for Africa \(MAfA\)](#), and [G4Africa](#).

**1.4.10**

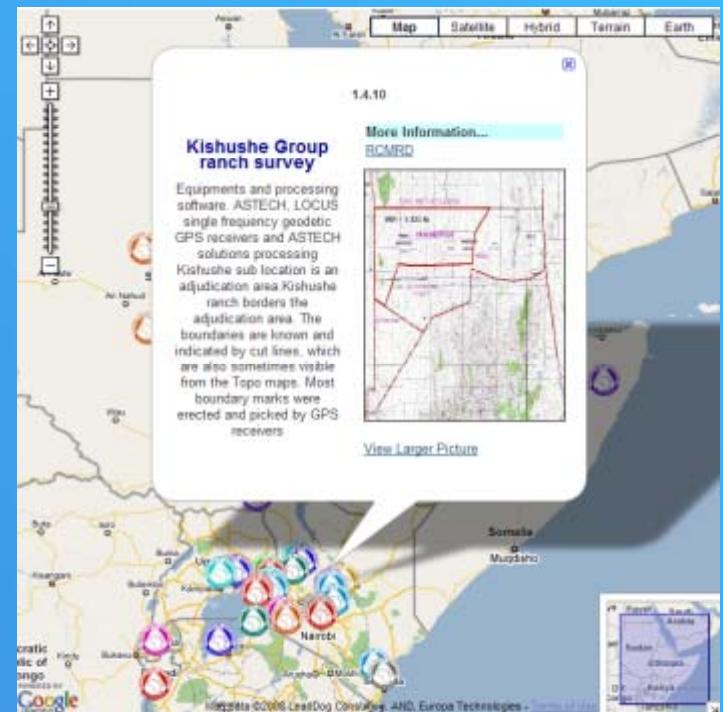
**Kishushe Group ranch survey**

More Information... RCMRD

Equipments and processing software, ASTECH, LOCUS single frequency geodetic GPS receivers and ASTECH solutions processing Kishushe sub location is an adjudication area. Kishushe ranch borders the adjudication area. The boundaries are known and indicated by cut lines, which are also sometimes visible from the Topo maps. Most boundary marks were erected and picked by GPS receivers.

[View Larger Picture](#)

Mapping projects previously conducted by RCMRD





# Integrated Search

**Search Results**

Search Keyword: nairobi

Any words  All words  Exact phrase

Ordering: Newest first

Search Keyword nairobi  
Total 12 results found. Search for [nairobi] with Google

Results 1 - 12 of 12 [30]

1. [Malaria Atlas Website - pinpointing likely malaria outbreaks](#)  
(COMMUNITY RESOURCE REGISTRY:ROOT DIRECTORY / DATA & SERVICES / DATA - DOWNLOADABLE)
2. [Nairobi Convention Clearinghouse and Information System](#)  
(COMMUNITY RESOURCE REGISTRY:ROOT DIRECTORY / DATA & SERVICES / CATALOG SERVICES)
3. [TOPOGRAPHIC MAP \(1:50,000 SCALE\) OF KENYA \(SHEET NUMBER: 148-4 SHEET NAME: NAIROBI\)](#)  
(SERVIR DATA PORTAL)
4. [TOPOGRAPHIC MAP \(1:250,000 SCALE\) OF KENYA](#)  
(SERVIR DATA PORTAL)
5. [Google launches Kenya online map](#)  
(COMMUNITY RESOURCE REGISTRY:ROOT DIRECTORY / DATA & SERVICES / DATA - DOWNLOADABLE)
6. [Roads database development from ASTER data](#)  
(SERVIR AFRICA ACTIVITIES/TECHNICAL SUPPORT)  
...n Systems Group in Addis Ababa and the Regional development, with supplementary fundin...
7. [Planning meeting at RCMRD](#)  
(SERVIR PROGRAM/SERVIR NEWS)  
SERVIR-Africa implementing partners met in Nairobi as far as possible. Various approaches to staffin
8. [RCMRD RS/GIS Specialists visit NASA Goddard Sp](#)  
(SERVIR PROGRAM/SERVIR NEWS)  
...ello, technical experts at the Regional Center for Ma Center in Greenbelt, MD on April 23-25, 2008...

Powerful search capability to find previously inaccessible information (search by location, date, data type)



# Geospatial Diaspora

SERVIR AFRICA - Empty Page - Windows Internet Explorer  
http://www.servir.net/africa/index.php?option=com\_content&task=view&id=107&Itemid=50

SERVIR AFRICA - Empty Page

**SERVIR**

HOME DATA & SERVICES TOOLS & MODELS LIBRARY COMMUNITY ABOUT US

Community Home How To Contribute Community Resource Registry Community Blog Geospatial Diaspora

Home > Community > Geospatial Diaspora

Register Search Map Satellite Hybrid

Location of Interest Research Interest Person's Name

Imagery ©2009 TerraMetrics, NASA. Map data ©2009 Europa Technologies - Terms of Use

SERVIR AFRICA - Empty Page - Windows Internet Explorer  
http://www.servir.net/africa/index.php?option=com\_content&task=view&id=107&Itemid=50

SERVIR AFRICA - Empty Page

**SERVIR**

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Community Home How To Contribute Community Resource Registry Community Blog Geospatial Diaspora

Home > Community > Geospatial Diaspora

Register Search Map Satellite Hybrid

Location of Interest: Kenya

Search Close

Asaph Anyamba	United States	asaph.anyamba-1@nasa.gov
Francis Koti	United States	fkoti@usa.edu
Moses Gome	Germany	moses.gome@igd.fraunhofer.de
Calestous Juma	United States	calestous_juma@harvard.edu
Monica Lengoboni	Netherlands	lengoboni@itc.nl
Labas MacOpioyo	Ethiopia	lmacopioyo@ciar.org
Jennifer Karoi Mutiga	Netherlands	mutiga@itc.nl
Shadrack Ngome	Netherlands	ngome@itc.nl
Vincent de Paul Ondate	United States	vincent.ondate@sdsstate.edu
Tony Oyama	United States	tjoyama@ut.edu

Imagery ©2009 TerraMetrics, NASA. Map data ©2009 Europa Technologies - Terms of Use

Location of Interest: Kenya

Search Close

**Search Results:**

**Asaph Anyamba**  
Institute: NASA Goddard Space Flight Center  
Country of Origin: Kenya  
Country of Residence: United States  
City of Residence: Greenbelt, MD  
Email: asaph.anyamba-1@nasa.gov  
Alt Email:  
Area of interest: Climate Indicators, Drought Precipitation Indices, Human Dimensions, Human Health, Land Surface, Land Use/Land Cover  
Locations of interest: Kenya  
Languages:

<< Back



# SERVIR Collaborators

## Implementing Organizations



## Gov't Ministries



## US Government



## Other Space Agencies



## NGOs/Non-Profits



## Universities Institutes Associations



## Business/Industry



## International Organizations:





[www.servir.net](http://www.servir.net)



**USAID**  
FROM THE AMERICAN PEOPLE

## SERVIR-AFRICA

Regional Visualization and Monitoring System

