

SERVIR-Africa

RCMRD/NASA SERVIR Activities

By. Dr. Tesfaye Korme (RCMRD)

DATE August 11, 2014
Addis Ababa – Ethiopia



USAID
FROM THE AMERICAN PEOPLE



ICIMOD



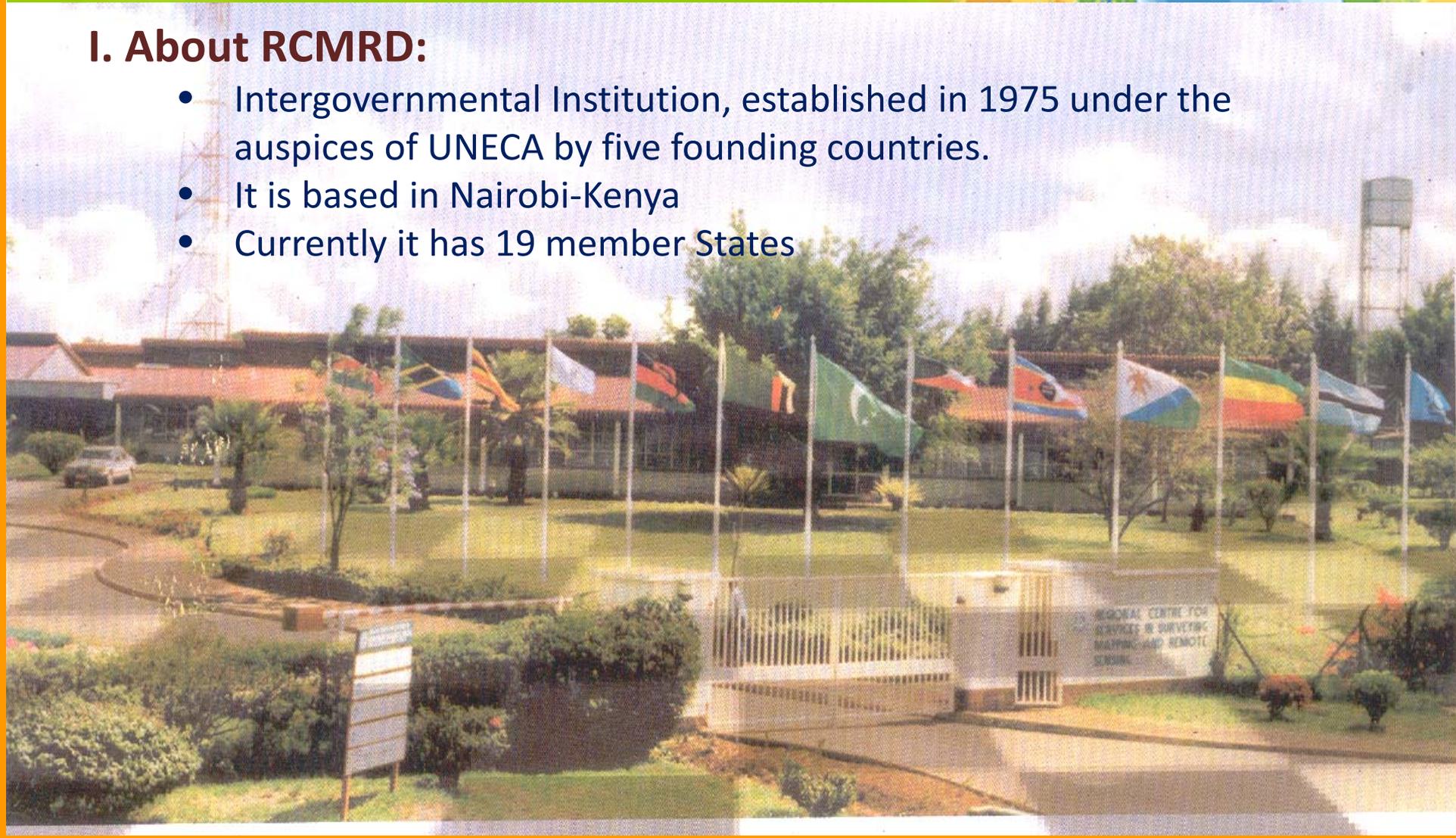
- I. About RCMRD**
- II. RCMRD Key Themes or Focus at present**
- III. SERVIR Africa Objectives and activities**
- IV. Current Status and major accomplishments**
- V. Conclusions**



Regional Centre for Mapping of Resources for Development {RCMRD}

I. About RCMRD:

- Intergovernmental Institution, established in 1975 under the auspices of UNECA by five founding countries.
- It is based in Nairobi-Kenya
- Currently it has 19 member States



A. RCMRD: member States, Mission and Vision



REGIONAL CENTRE FOR MAPPING OF RESOURCES FOR DEVELOPMENT



Our Vision

To be a premier Centre of Excellence in provision of Geo-information services.

Our Mission

To promote sustainable development through generation, application and dissemination of geo-information and allied ICT services and products in the Member States and beyond.

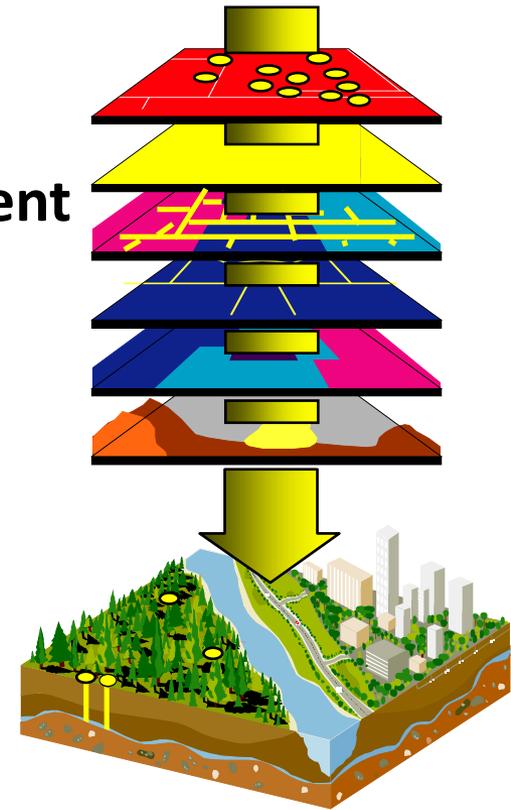


B. Functional Structure of RCMRD



Major Activities of RCMRD

- A. **Advisory services**
- B. **Training**
- C. **Servicing and Calibration of Mapping Equipment**
- D. **Project implementation**
- E. **Data and information Dissemination**
- F. **Research and Development**
- G. **Disaster Early Warning**



1. Advisory Services

- Development of National Policies and Strategies
- Geoinformation Standards,
- Project Proposal Development and Implementation Strategies



2. Training

i. Basic programmes

- Short -term Training,
- Post-Graduate Courses
- Workshops and Seminars

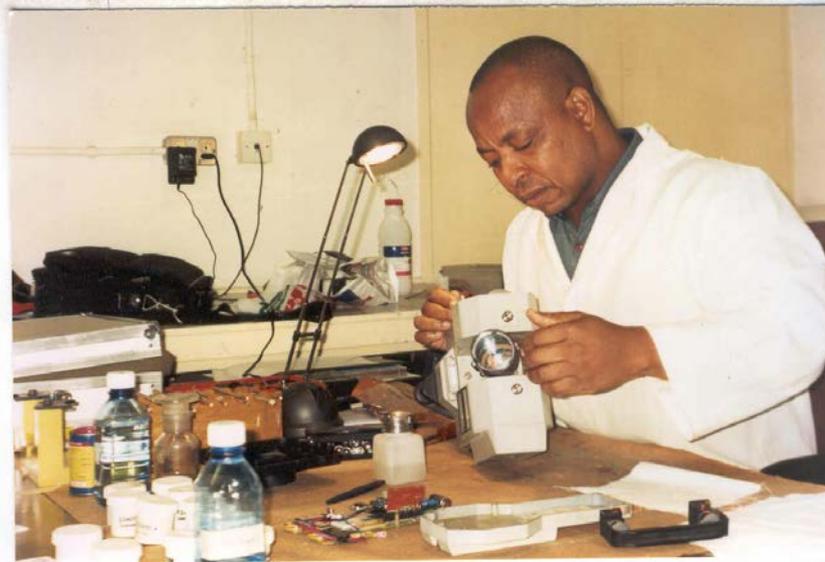


ii. Applied programmes

- Establishment of GNSS Geodetic networks
- Digital Topographic & Cadastral Databases
- Early warning and disaster management
- Water Resources Management
- Forestry mapping and inventory



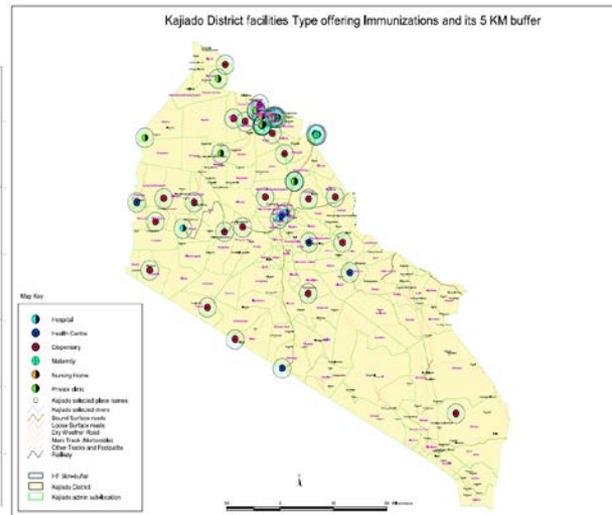
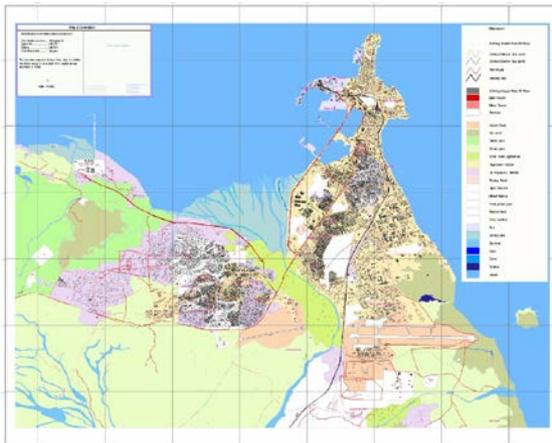
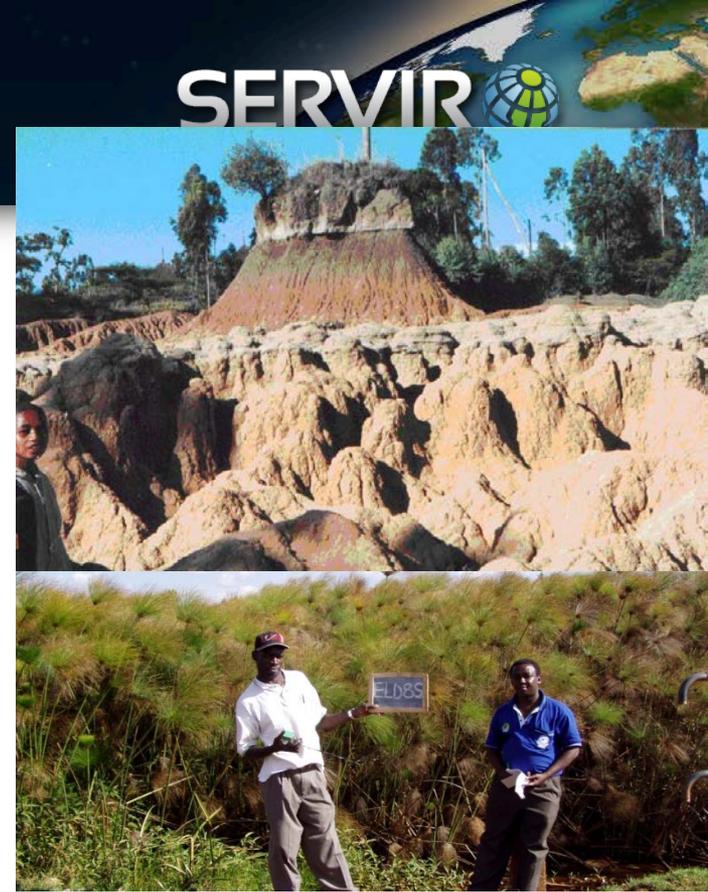
3. Maintenance and Calibration of Surveying and Mapping instruments



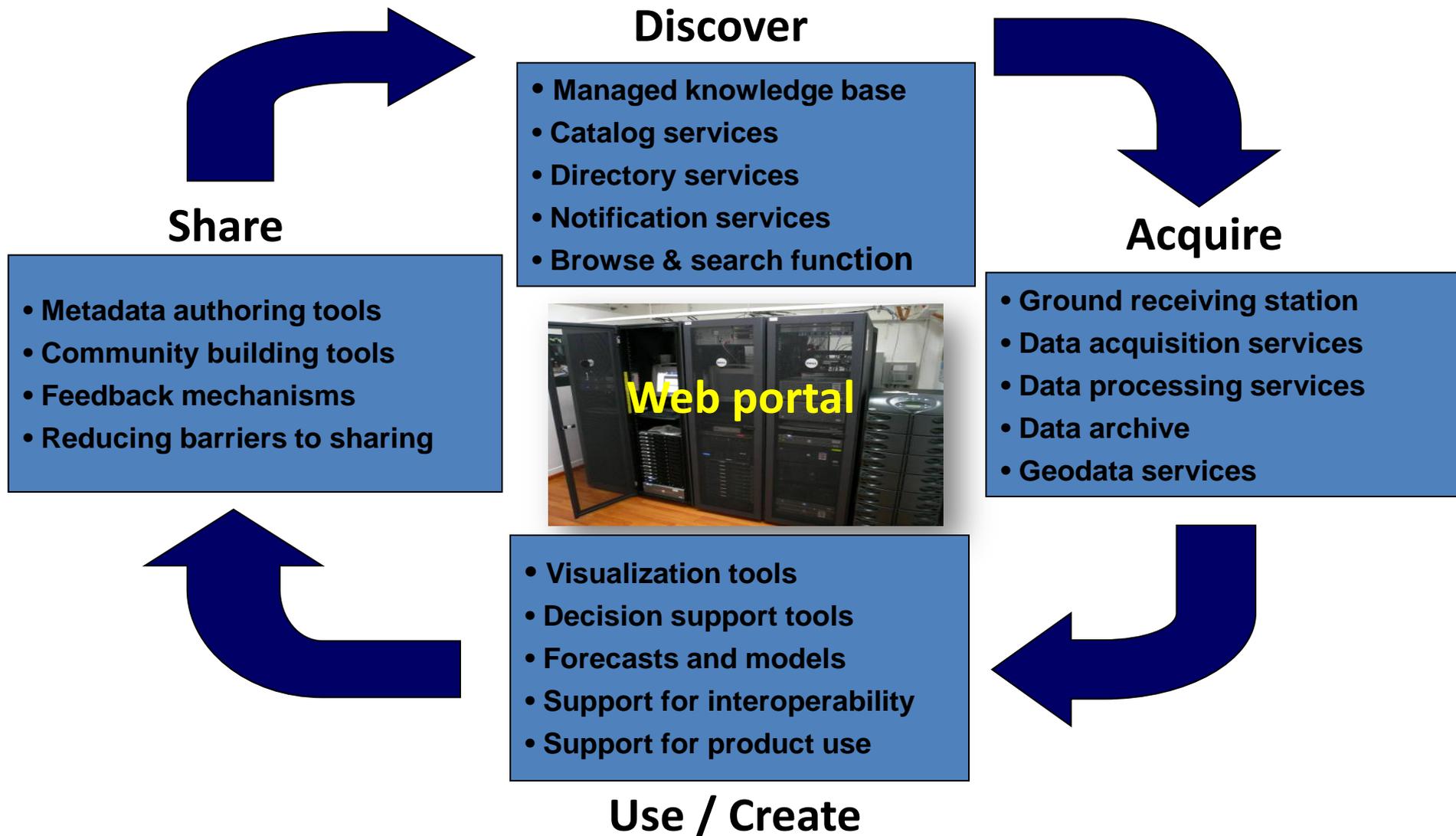
Member State	No. Of Instruments	Replacement Value Us \$
Namibia	24	143,300.00
Botswana	48	204,600.00
Uganda	4	Country
Malawi	23	160,000.00
Tanzania	32	240,400.00
Kenya	34	143,300.00
Total	177	1,011,600.00

4. Projects Implementation

- Environment
- Natural Resources Management
- Disaster Management
- Infrastructure and Service Provision
- Urban Mapping and Planning
- Good Governance

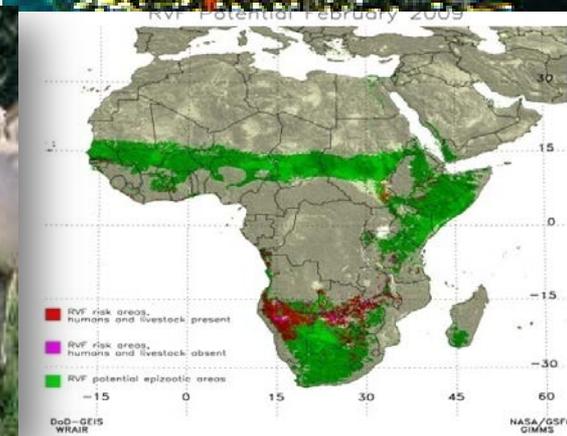
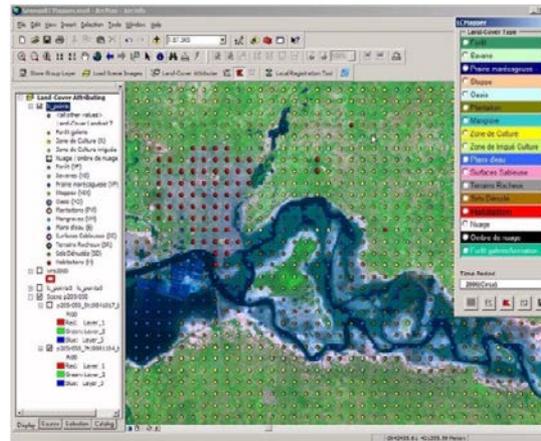


5. Data and Information Dissemination

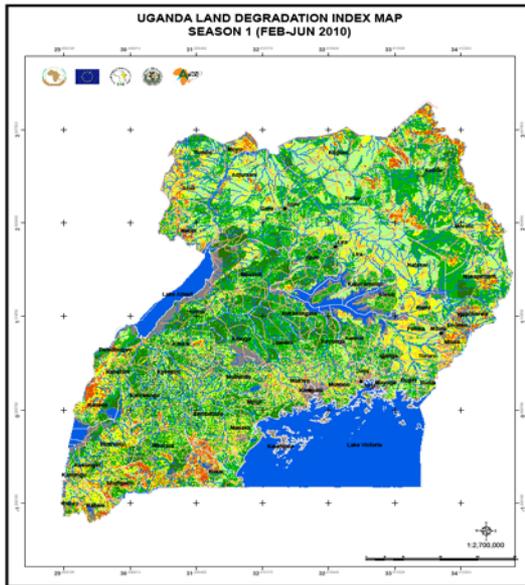
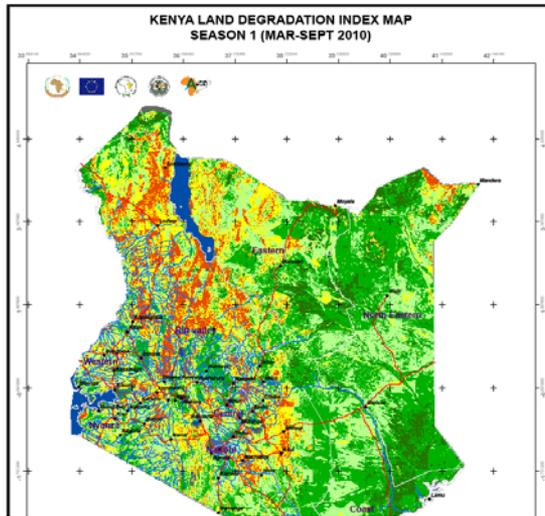


6. Research and Development

- Rapid Land Cover Mapping
- Crop Yield Estimation
- Water Quality Monitoring
- Rift Valley Fever Forecasting
- Tsetse Spread Prediction
- Coral Reef Bleach Monitoring



National LDIM Product and Bulletin



LEGEND

Data source: Aster GDEM

Scale: 1:2,700,000

Map Parameters: Datum: WGS84, Projection: UTM, Units: Meter

NOTE: The color legend has been derived based on urban generated products of land degradation. The legend is categorized into 5 levels of degradation based on the Land Degradation Index (LDI) score. The LDI score is calculated based on the Land Degradation Index (LDI) score. The LDI score is calculated based on the Land Degradation Index (LDI) score.

LAND DEGRADATION INDEX

- Very Low Degradation (Green)
- Low Degradation (Light Green)
- Medium Degradation (Yellow)
- High Degradation (Orange)
- Very High Degradation (Red)

Other features: Rivers, Admin Level 1, Water, Urban Extent.

African Monitoring of the Environment for Sustainable Development

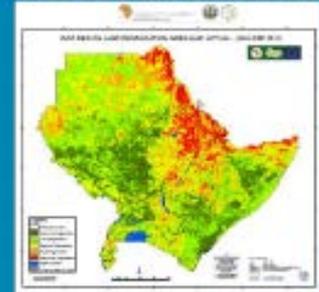


AMESD IGAD LAND DEGRADATION INDEX BULLETIN NO.2 - March 2011 - Sept. 2011

LAND DEGRADATION ASSESSMENT USING EARTH OBSERVATION DATA FOR IGAD REGION

LAND PRODUCTIVITY REDUCED AS A RESULT OF LAND DEGRADATION IN IGAD REGION, THREATENING LIVELIHOODS AND ECOSYSTEM SUSTAINABILITY.

Agricultural productivity and food security in IGAD region are being seriously threatened by the steady decline in soil fertility; this has increased the rate of land degradation in the region, especially in arid and semi-arid areas that are ecologically fragile. Highly variable and declining rainfall patterns exacerbate the ecological fragility of this region. Indiscriminate slashing, cutting and burning of natural vegetation have led to increased runoff causing soil erosion. Land degradation in the region can also be attributed to unsustainable agricultural practices and continued overstocking resulting in overgrazing of pastures. Increased human population pressure has also led to greater areas of land being opened up for cultivation and settlement.



In this issue

Current state of land degradation in the IGAD Region

Current state of land degradation in IGAD countries, Wet season 2011

Trend Analysis of Land degradation between 2010 and 2011



Land degradation index map for the period of May 2011 to October 2011



Op

Programme implemented by the African Union Commission



Field Validation

Ethiopia



Rwanda



Validation

Operation

Way forward

SERVIR-AFRICA

Aim

**Improve environmental management, disaster risk management
and resilience to climate change**

by

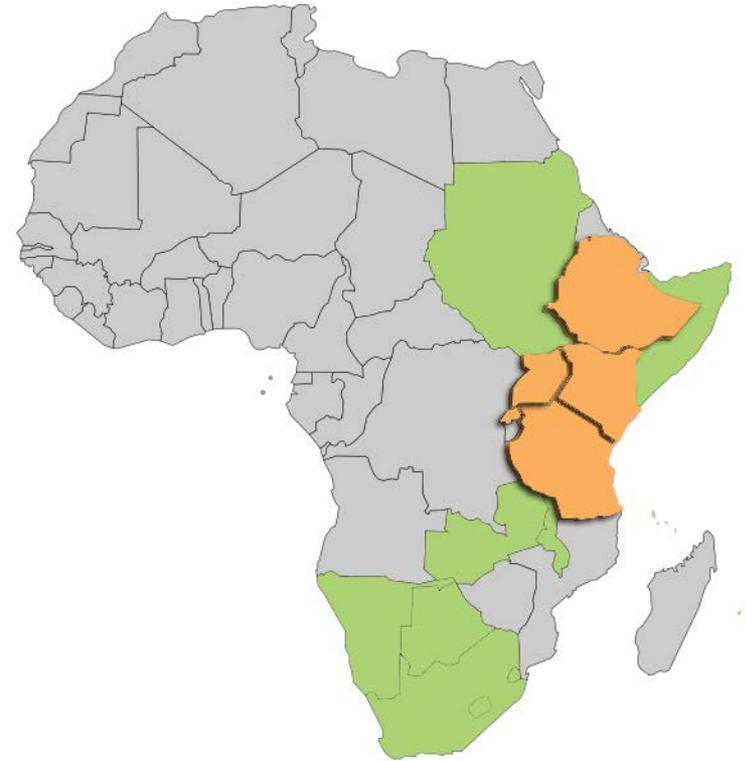
**Strengthening the capacity of governments and other key
stakeholders**

to

**Use earth observation information and geospatial technologies
into decision-making**

SERVIR-Africa: Phased Approach

- Phase 1 (2008-2011) focused on East Africa: Kenya, Tanzania, Uganda, Ethiopia, Rwanda
- Phase 2 (2011-2015) to expand to other member states



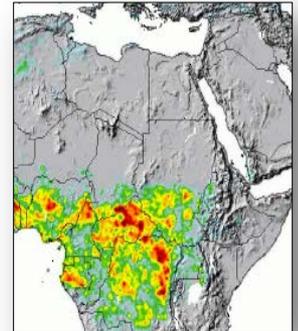
SERVIR-AFRICA Program

Demand

Needs assessments,
Capacity building, training
Outreach, Partnerships

Supply

One stop portal ,
Data, Models, Tools, Applications
Online Maps, Visualizations



Current Status

- Highlight of SERVIR-Africa achievements from the past year
 - Science Applications (tools, models, products):
 - CREST Model
 - GHG inventory LULUCF mapping in the Six Countries
 - Develop Frost products and made available to users in the Region
 - Support provided to development of Hazard Atlas and Maps for seven IGAD member Countries
 - Made available different satellite data including Landsat-8 data to different users in the Region



Current Status Cont...

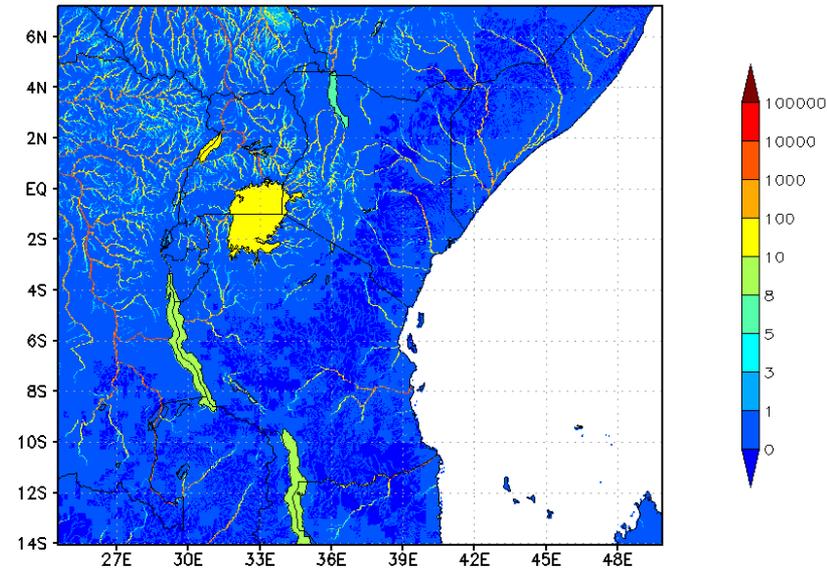
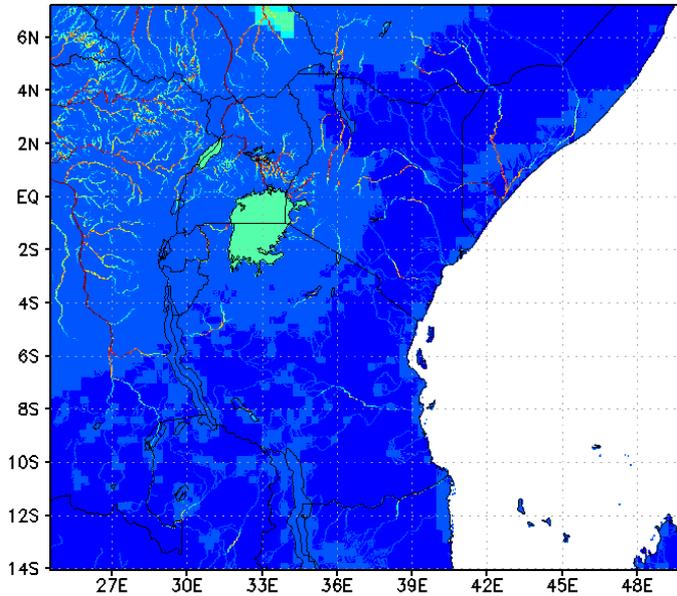
CREST Model

Runoff Depth using TRMM data

Stream flow using TRMM data

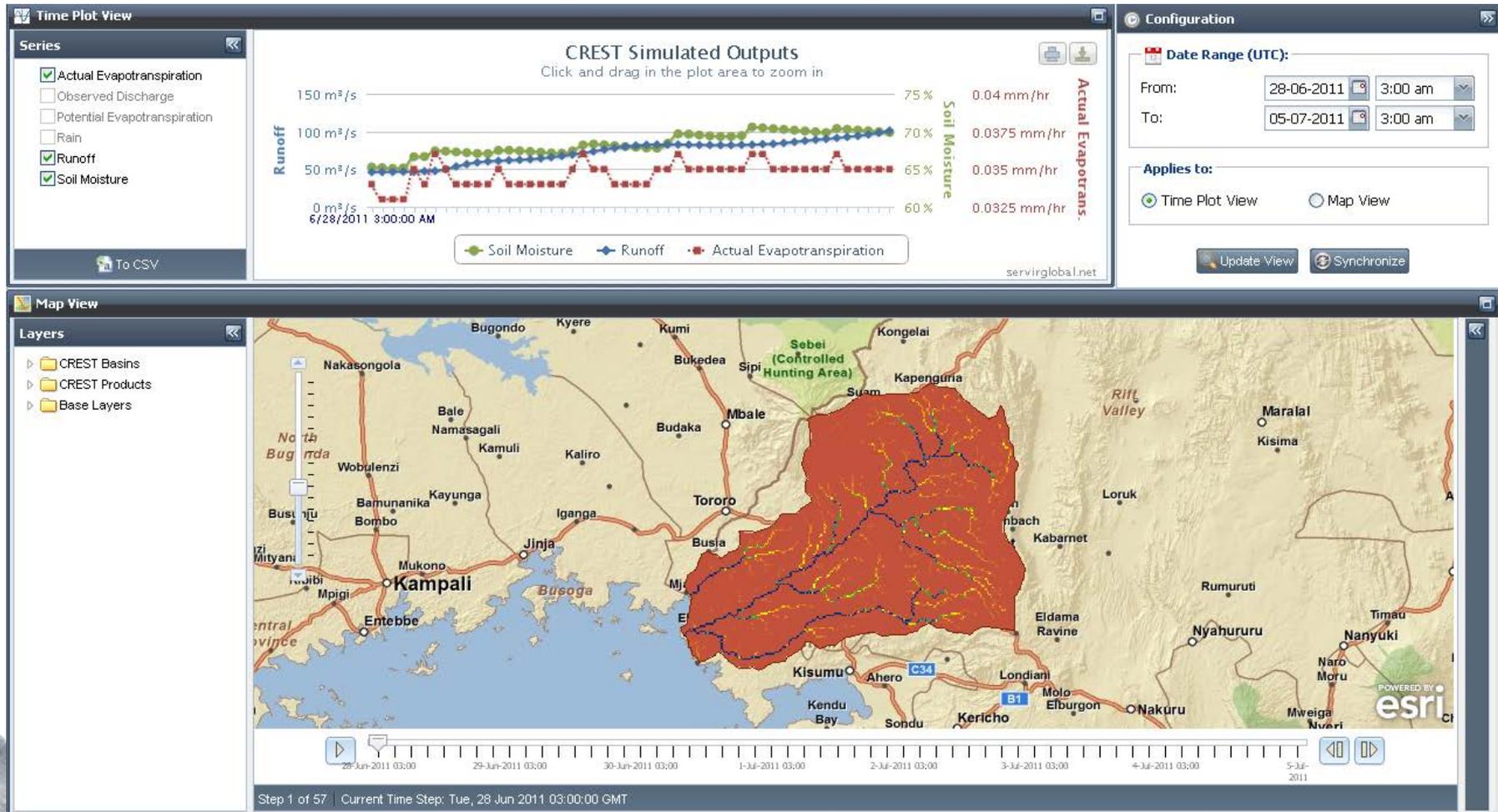
Latest 24h/3h Surface Runoff Depth (mm/h) 2011-07-04 03h

Latest 24h/3h Stream Flow (m³/s) 2011-07-04 03h



Current Status Cont...

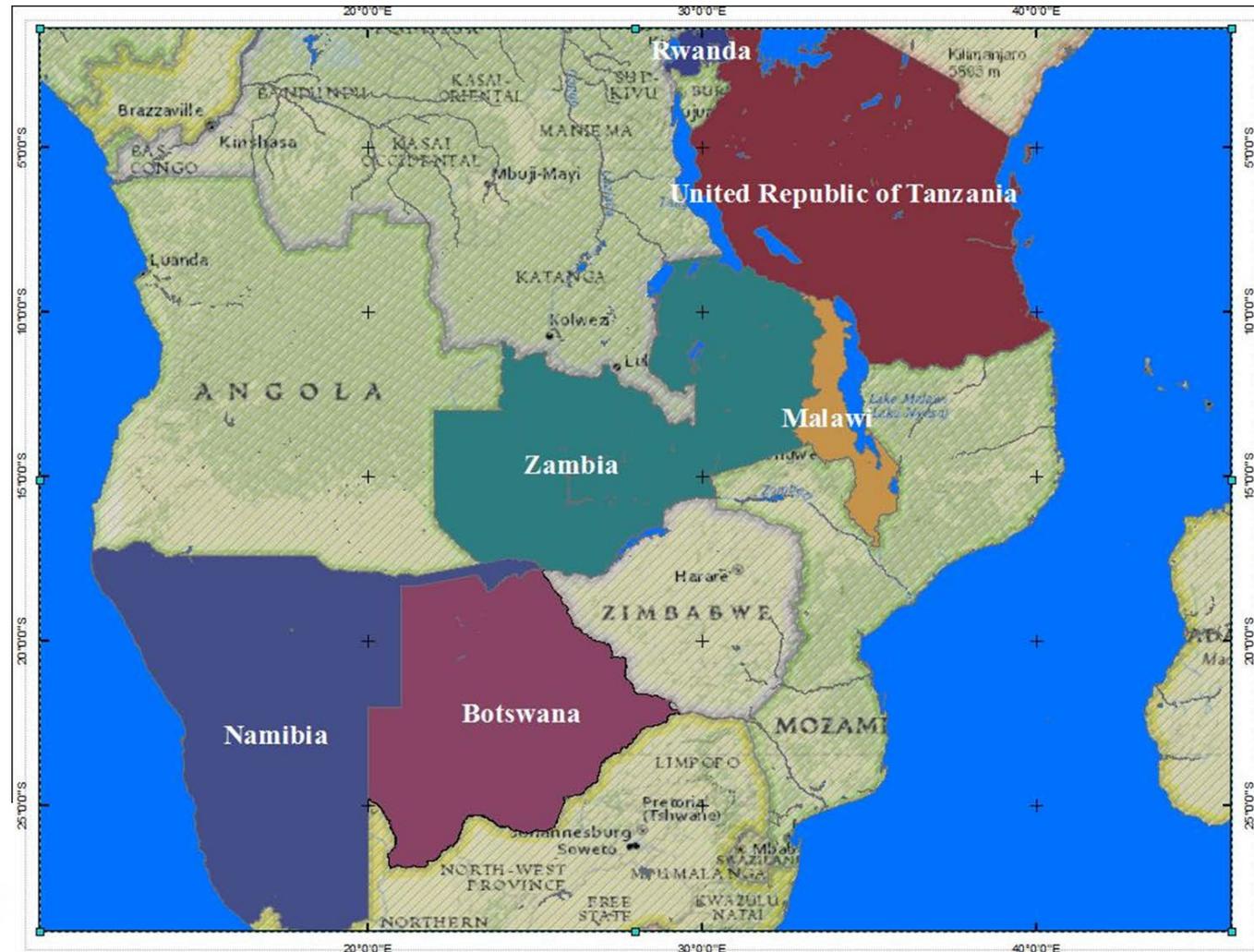
CREST Model



GHG inventory LULUCF mapping in the Six Countries

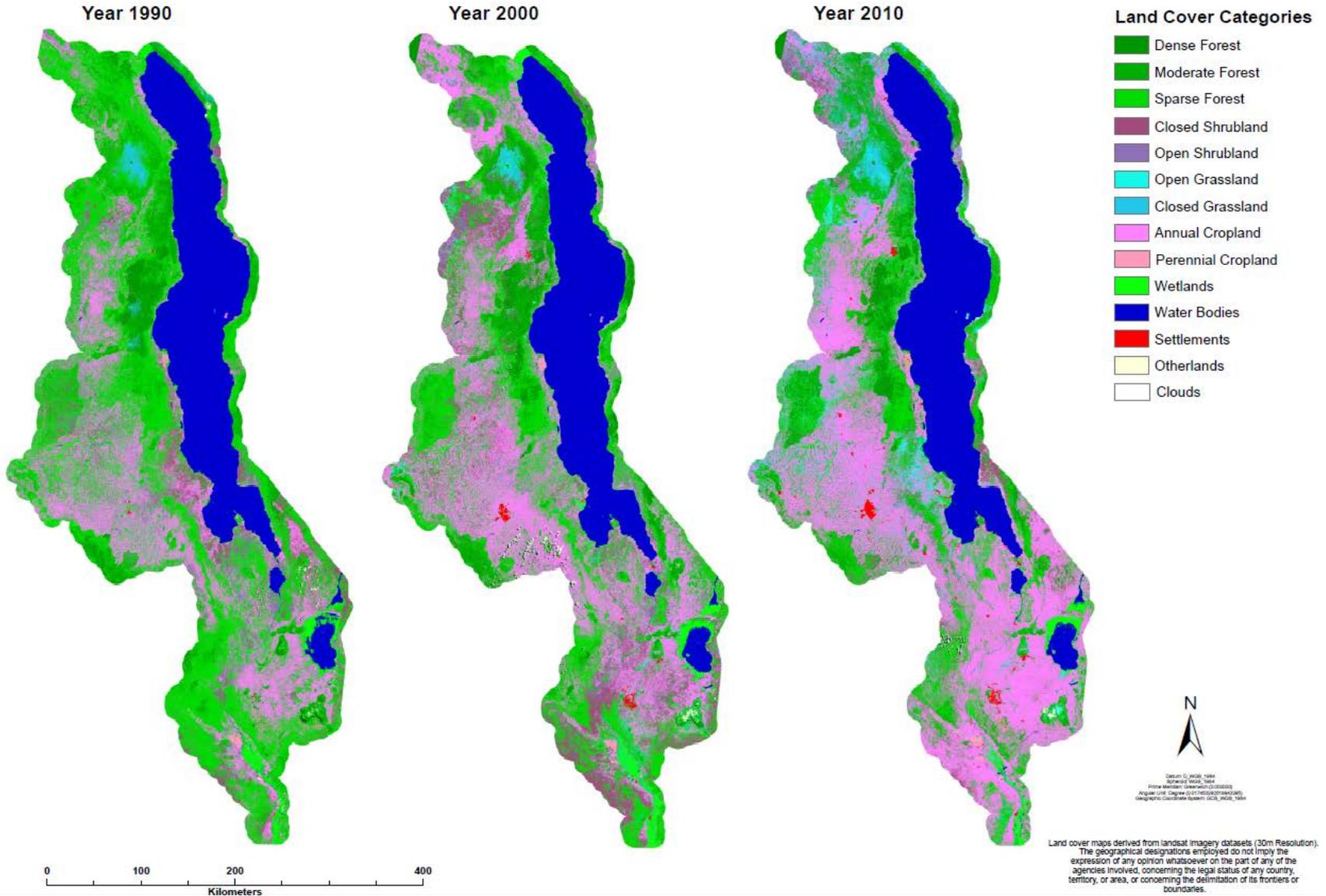
Countries
participating in the
project

1. *Malawi*
2. *Rwanda*
3. *Tanzania*
4. *Zambia*
5. *Namibia*
6. *Botswana*

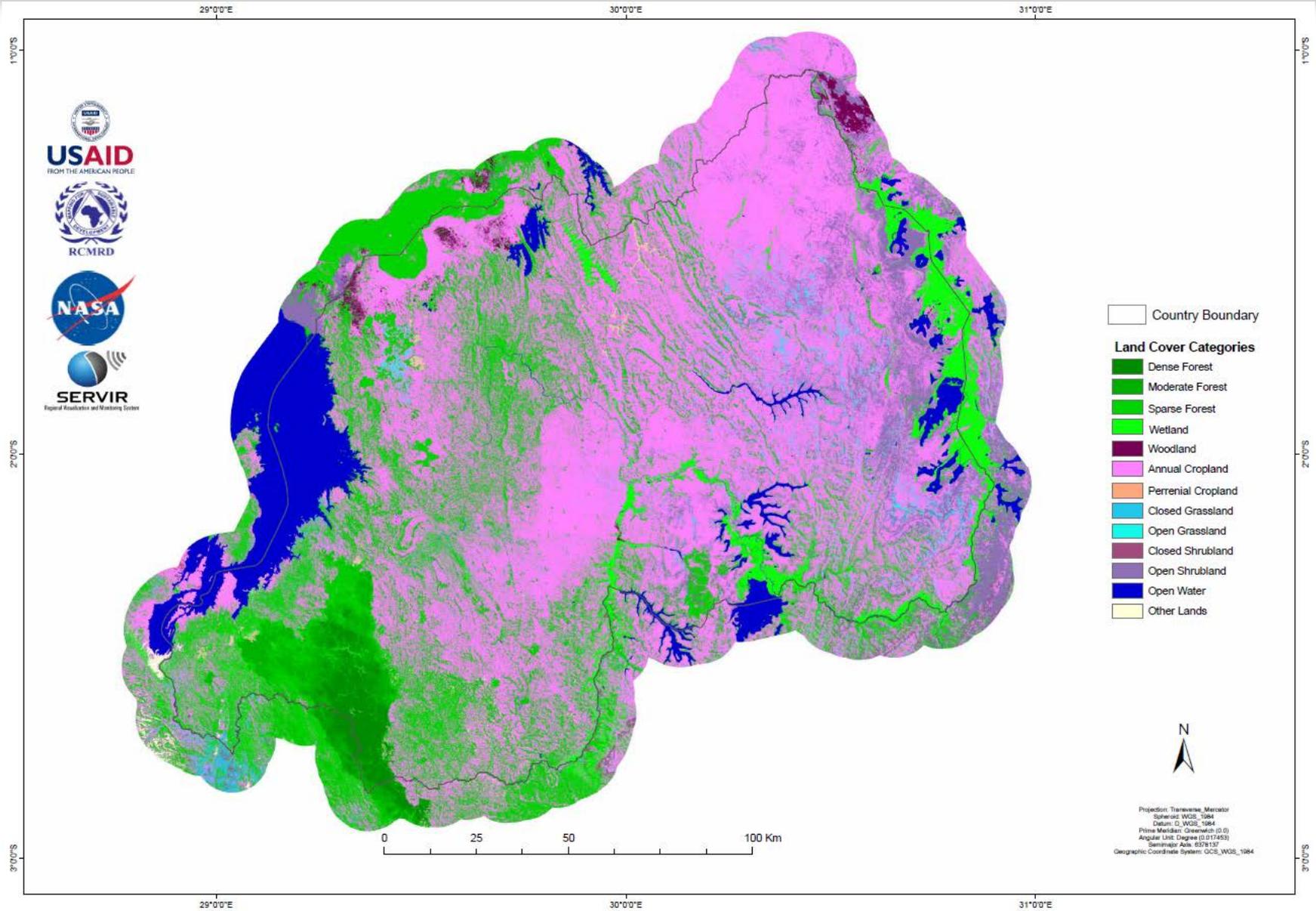


Malawi LULUCF

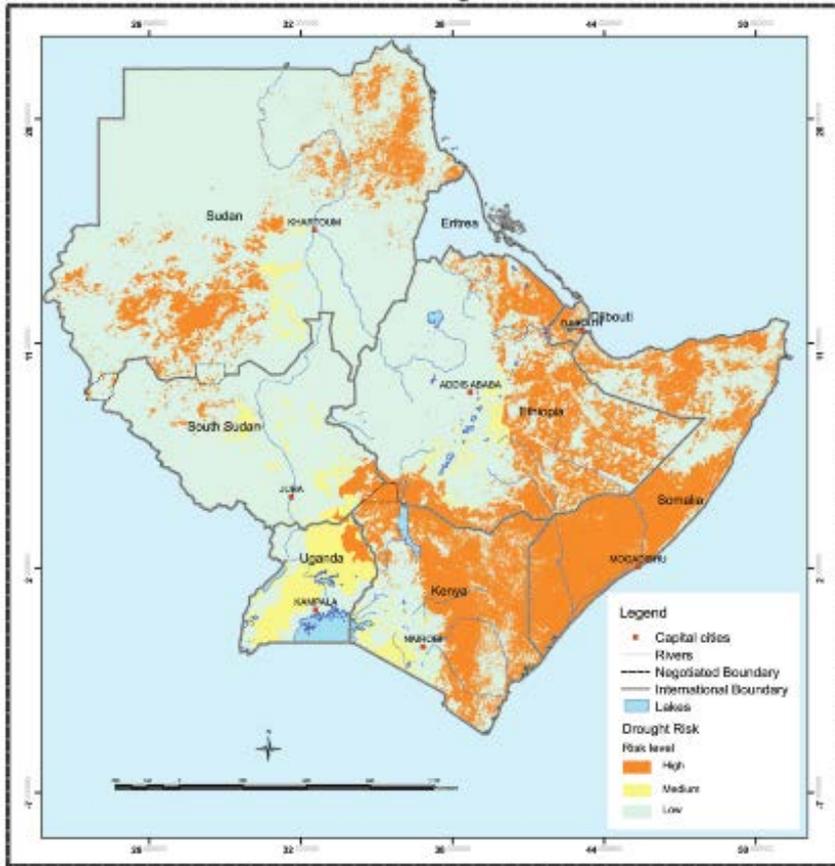
Malawi Land Cover Maps - Three Time Slices



Rwanda - LULUCF

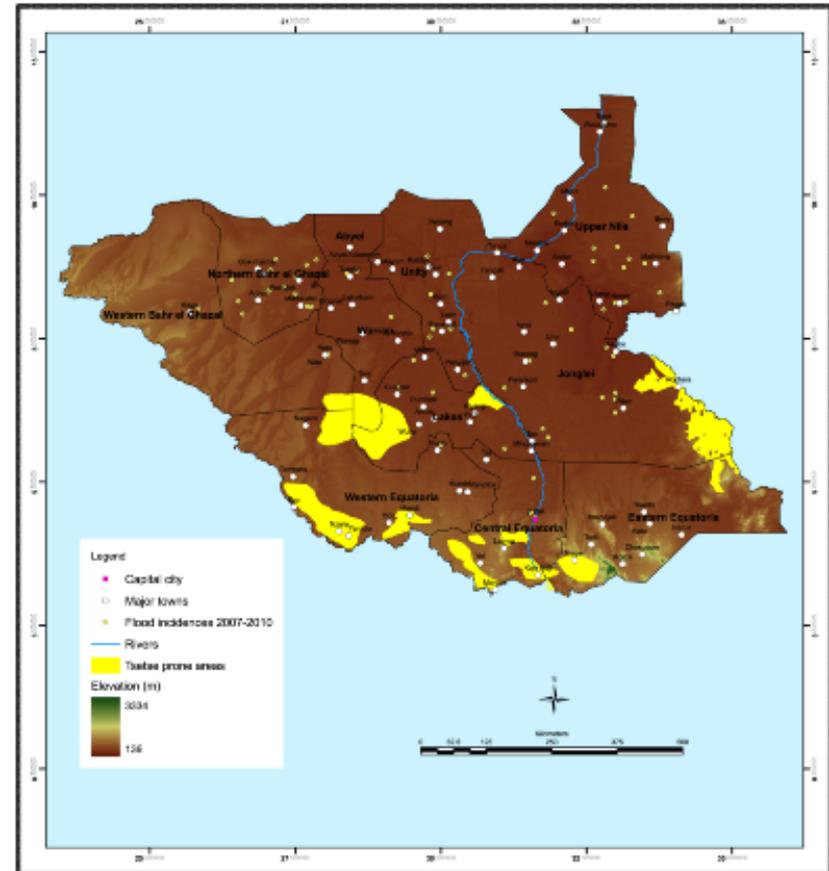


IGAD Hazard Atlas and Maps



Data sources: SPOT VGT NDVI and Member States DIME institutions.

Date parameters: Coordinate system: WGS 1984

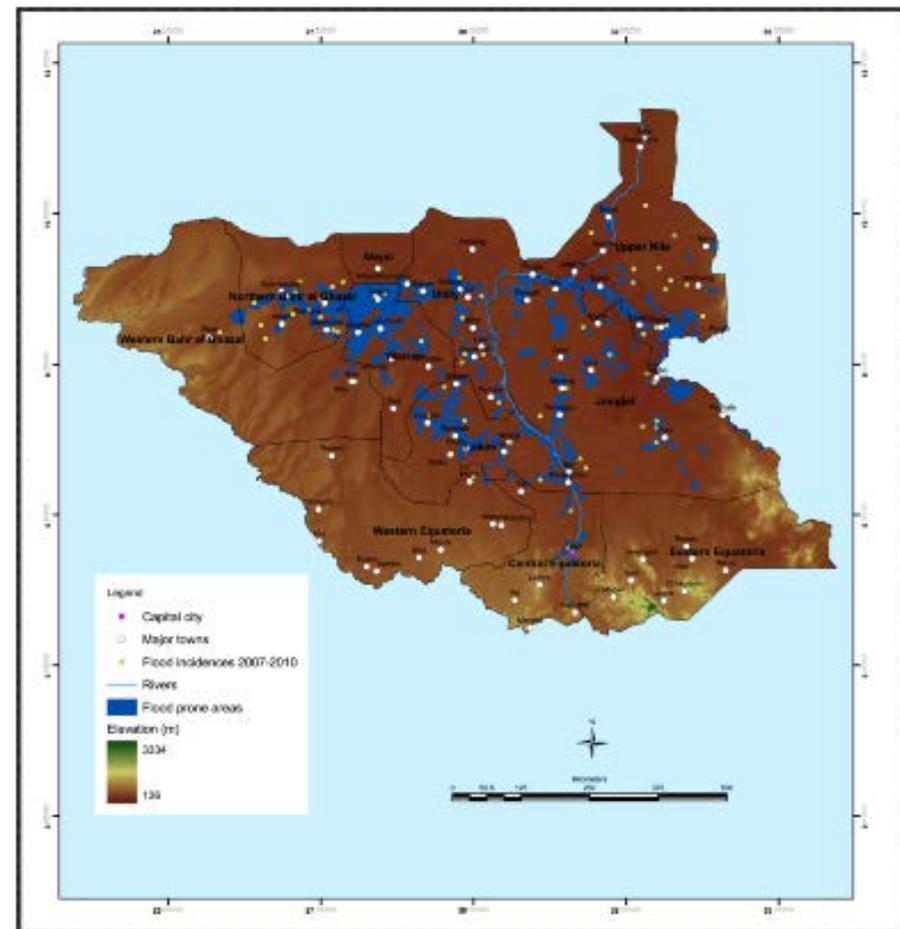


Data sources: Ministry of Humanitarian Affairs and Disaster Management and Ministry of Animal Resources and Fisheries

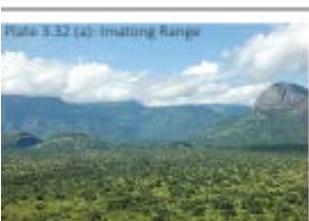
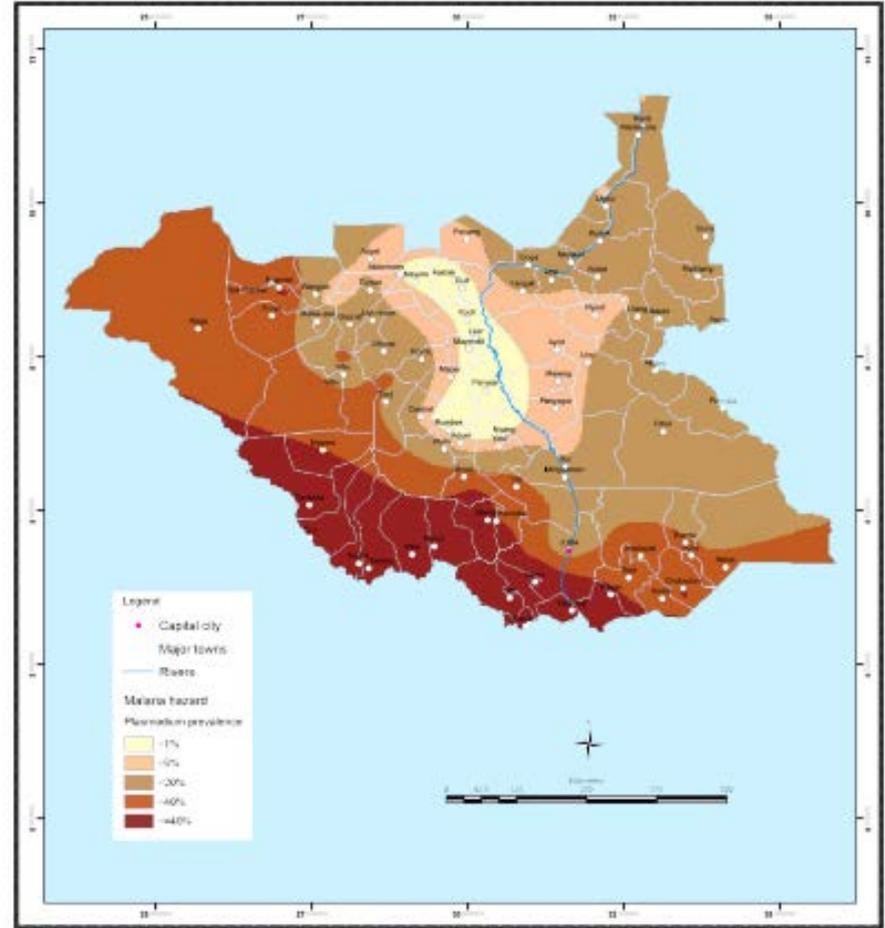
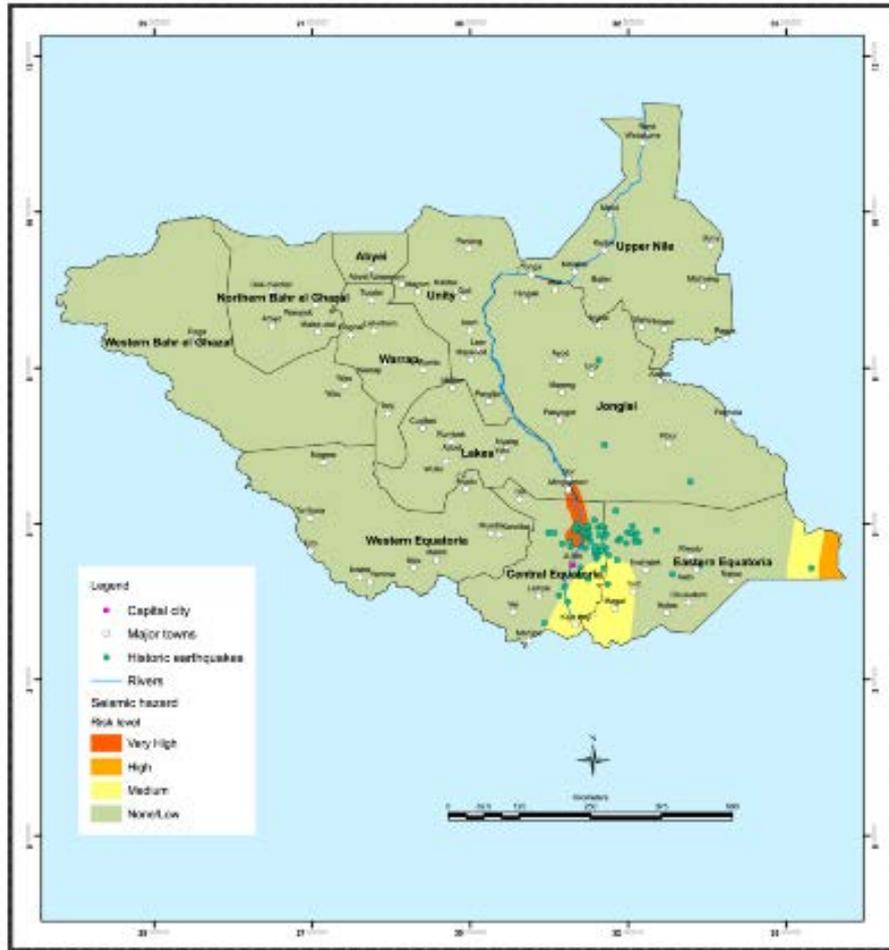
Date parameters: Coordinate System: WGS 1984



Drought and flooding Risk Maps



Seismic and Malaria Risk Maps



Accomplishments cont...

Data

SERVIR-Africa Geodata Portal

Login Register Help About Feedba

HOME SEARCH BROWSE

[Details](#) [Review](#) [Relationships](#) [Preview](#)

Plants Observation Density Count

URL:

Embed:

SERVIR Biodiversity Maps

Links About Help

Species Attribute Search

Birds Fish Plants

Search Clear Results

Map Contents

- Species Occurrence
 - Fish
 - Plants
 - Reptiles
 - Birds
- Species Evenness (Observation Density)
 - Amphibians

Layers Legend

Navigation: Previous Extent Next Extent Zoom Box Pan Visible Extent Quick Zoom

Longitude: 4023346.2147 Latitude: 20790.8717

Copyright © 2012 SERVIR. All rights reserved. | RCMRD | National Museums of Kenya |

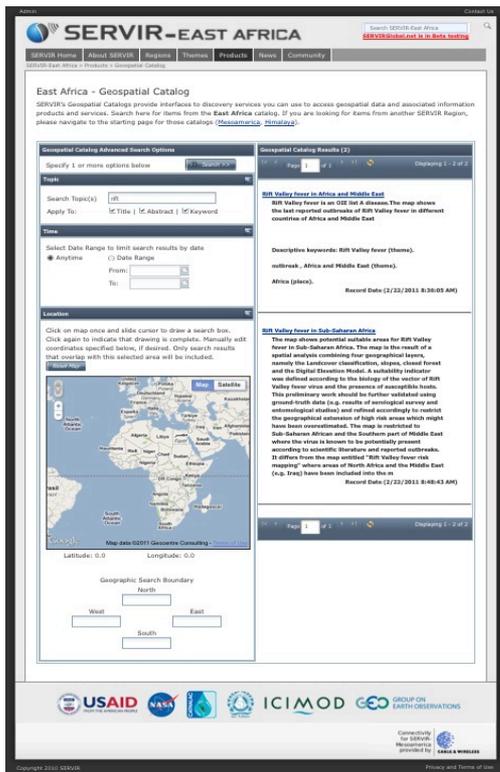
Plants Observation Density Count

This Gridded data set represents density count of different plants species observations present in approximately 50km (0.45 decimal degrees) pixels. This data set has been derived from species occurrence records, digitized from the National Museums of Ken...

[Open Preview](#) [Details](#) [Metadata](#)

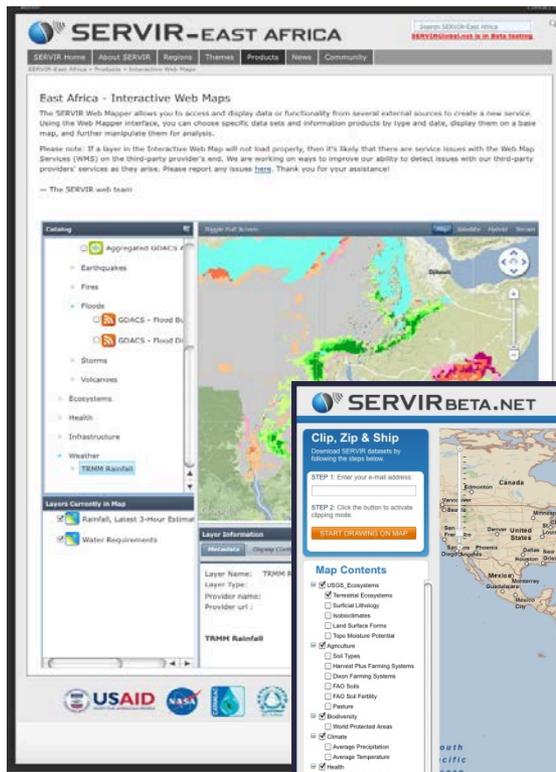
SERVIR WEB-PORTAL: One Stop

Data catalogue



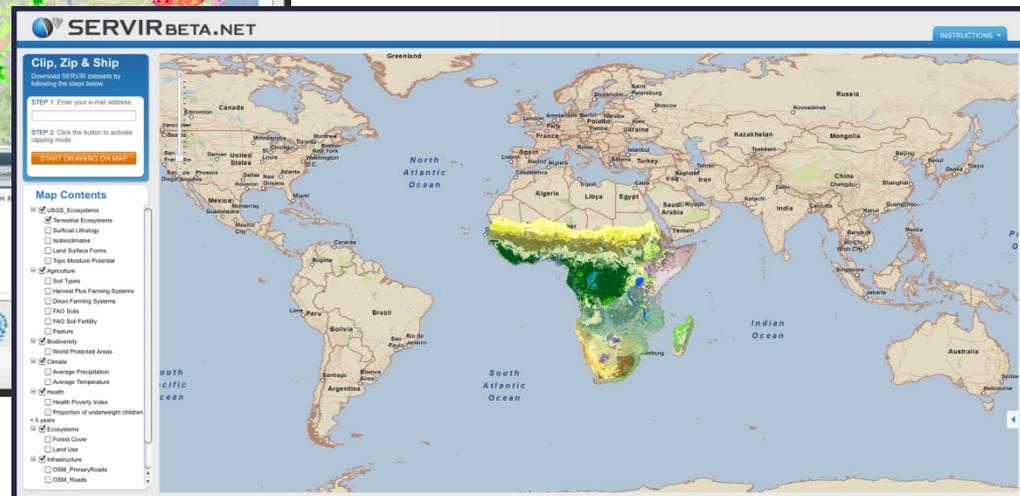
The screenshot shows the 'SERVIR-EAST AFRICA' Geospatial Catalog. It features a search bar with the text 'SERVIR-EAST AFRICA' and a search button. Below the search bar, there are several sections: 'Geospatial Catalog Search Options' with fields for 'Topic', 'Date Range', and 'Location'; 'Geospatial Catalog Results (2)' showing search results for 'Rift Valley Fever in Africa and Middle East' and 'Rift Valley Fever in Sub-Saharan Africa'; and a 'Map' section with a map of Africa and a search box. The footer includes logos for USAID, NASA, ICIMOD, and GEO Group on Earth Observations.

Webmapper



The screenshot shows the 'SERVIR-EAST AFRICA' Interactive Web Maps interface. It features a search bar with the text 'SERVIR-EAST AFRICA' and a search button. Below the search bar, there are several sections: 'East Africa - Interactive Web Maps' with a description of the tool; 'Layers Currently in Map' showing 'Rainfall, Latest 3-Hour Estimal' and 'Water Requirements'; and a 'Map' section with a map of Africa and a search box. The footer includes logos for USAID, NASA, and other partners.

Custom applications
like Clip, Zip, Ship tool



The screenshot shows the 'SERVIR BETA.NET' 'Clip, Zip & Ship' tool interface. It features a search bar with the text 'SERVIR BETA.NET' and a search button. Below the search bar, there are several sections: 'Clip, Zip & Ship' with instructions for using the tool; 'Map Contents' with a list of layers including 'USGS Ecosystems', 'Remote Ecosystems', 'Soil Types', 'Harvest Plus Farming Systems', 'Open Farming Systems', 'FAO Soils', 'FAO Soil Fertility', 'Pattern', 'Biodiversity', 'World Protected Areas', 'Climate', 'Average Precipitation', 'Average Temperature', 'Health', 'Health Poverty Index', 'Proportion of underweight children', 'Less than 5 years', 'Ecosystems', 'Forest Cover', 'Land Use', 'Infrastructure', 'OSM Permeability', and 'OSM Roads'; and a 'Map' section with a world map and a search box. The footer includes logos for USAID, NASA, and other partners.

Accomplishments

Workshop and trainings

- IRI-, health applications
- GHG national workshops and trainings
- CREST model training in Rwanda
- National Geoinformation Committee workshop in Rwanda



SERVIR-Africa Partnership

Project/ theme	US partners	Regional partners	Other
General Science applications and capacity building	NASA Roses	JK and Nbo Universities, UDSM, Makerere Ugn etc.	CGIAR, ITC, JRC GEO, other
CREST	NASA, Univ Oklahoma, USGS	Kenya Met Dept, Water depts in RCMRD memb sts.	
Biodiversity	Missouri Botanical Garden	National Museums Kenya, African Cons Centre, KWS, Regional Biodiv Orgs.	York Univ.
Ecosystems	USGS	Several regional univs	IALE
Drought	FEWSnet, Univ Maryland, USDA	ICPAC , Min Agric, etc	Worldbank, ISDR, GFMS, UNSpider
Coral reefs	NOAA	KEFRI, UDSM, Pwani Univ, WCS, KWS, Marine Parks, CORDIOEA	UNEP, WIO
GHG	NASA, EPA, UNFCCC, ICF	Min Environm. 6 countries, Universities, NGO's	FAO, CIAT, ILRI

Thank You,
Asante Sana,



SERVIR 