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RCMRD

SERVIR  Eastern & Southern
AFRICA

Connecting Space to Village

SERVIR is helping countries in Eastern and Southern Africa Region use information provided by Earth observing satellites and geospatial technologies to improve environmental management and resilience to climate change.

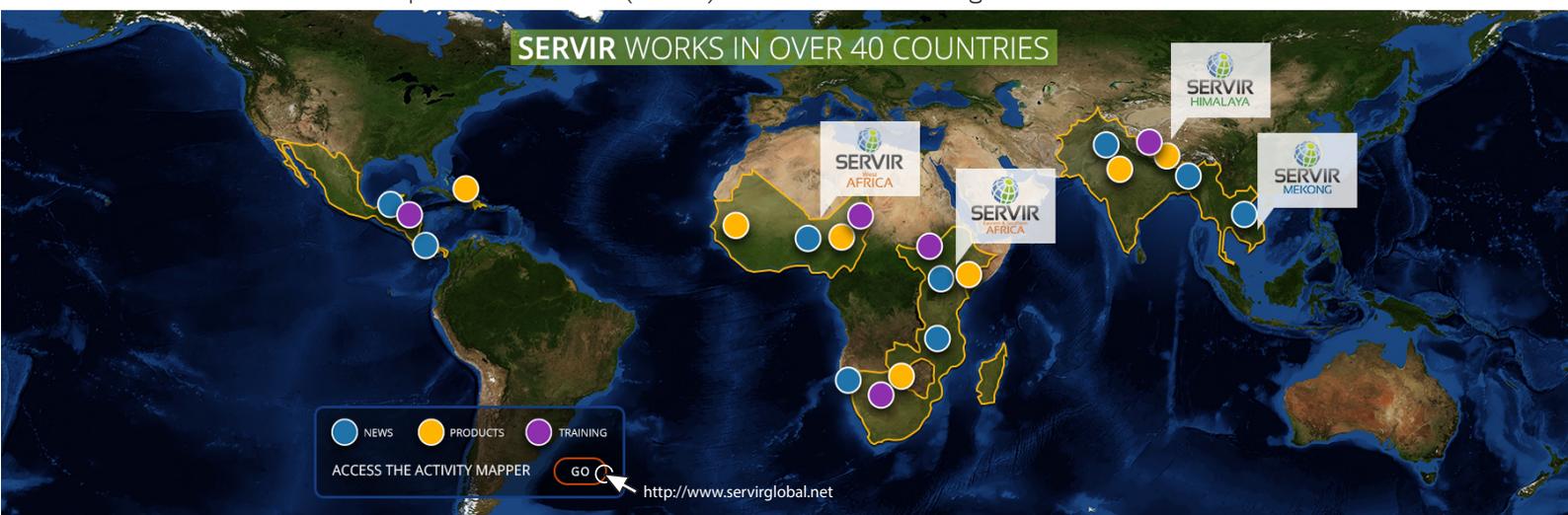


THE SERVIR PROGRAM

SERVIR is a joint initiative of USAID and NASA, working in partnership with leading regional organizations around the globe. SERVIR connects space to village by making geospatial information, including Earth observation data from satellites, Geographic Information Systems and predictive models useful for decision making in developing countries. The data, products, tools and information derived from SERVIR's work is making a difference in the following sectors: Agriculture and Food Security, Water and Water related Disasters, Land Cover Land Use Change and Ecosystems, and Weather and Climate.

SERVIR hubs include:

- 🌐 The Regional Centre for Mapping of Resources for Development (RCMRD) hosts SERVIR-Eastern and Southern Africa (SERVIR E&SA).
- 🌐 AGRHYMET Regional Centre hosts SERVIR-West Africa.
- 🌐 The International Centre for Integrated Mountain Development (ICIMOD) hosts SERVIR-Hindu Kush Himalaya.
- 🌐 The Asian Disaster Preparedness Center (ADPC) hosts SERVIR-Mekong.



SERVIR EASTERN AND SOUTHERN AFRICA

SERVIR E&SA joined the SERVIR Network in 2008. The SERVIR E&SA project is implemented by RCMRD. The project's goal is to increase the ability of African institutions to apply geospatial technologies to improve the resilience of the region to the impacts of climate change and ensure land use management reduces green house gas emissions.

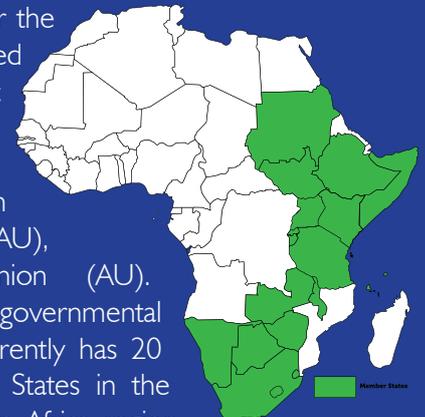
WHAT WE DO

- 🌐 **Improve the institutional capacity** of RCMRD and plan for sustainability of SERVIR E&SA.
- 🌐 **Build the capacity of analysts and decision makers** in all stakeholder groups to integrate geospatial data, including climate data and technologies into their analysis, policy, planning, management, and communications, access to existing and new data and information at national and regional levels.
- 🌐 **Raise awareness of and increase access to geospatial data and information** by improving management and access to existing and new data and information at national and regional levels.

- 🌐 **Create demand-driven user-tailored geospatial products and services** (such as decision support tools, applications, models, dissemination, and training) to get information to people who need it to address priority development issues.

ABOUT RCMRD

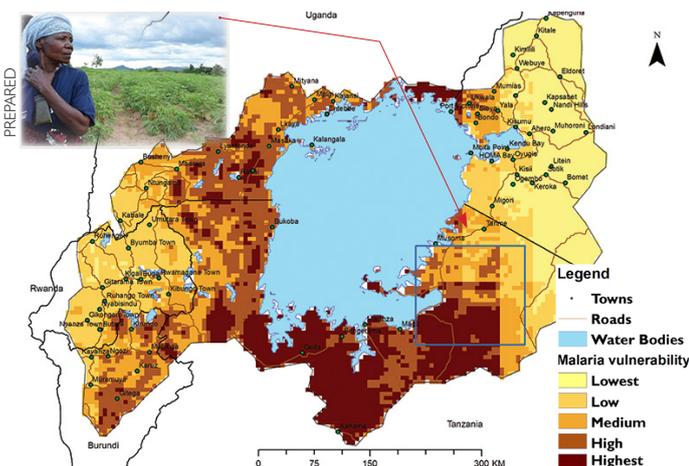
The Regional Centre for Mapping of Resources for Development (RCMRD) was established in Nairobi, Kenya in 1975 under the auspices of the United Nations Economic Commission for Africa (UNECA) and the then Organization of African Unity (OAU), today African Union (AU). RCMRD is an inter-governmental organization and currently has 20 contracting member States in the Eastern and Southern Africa region. RCMRD's mission is to promote sustainable development in the member States through generation, application and dissemination of geo-information and allied ICT technologies, products and services.



SERVIR E&SA IN ACTION

WEATHER & CLIMATE

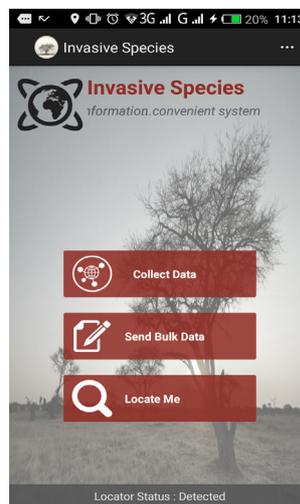
SERVIR E&SA is developing, testing and applying vulnerability mapping tools to support assessments of climate change vulnerabilities in key development areas: Water, biodiversity and ecosystems, agriculture and food security, health and energy. SERVIR E&SA is mapping historical and future climate change exposure and vulnerability in the East African Community (EAC) region to identify climate change vulnerable communities and help governments in setting up small pilot climate change adaptation projects in those communities. Through the coordination of the PREPARED project, SERVIR E&SA is supporting EAC design a Climate Change Adaptation Strategy for the Lake Victoria Basin (LVB). Elsewhere, SERVIR E&SA is working with the Northern Rangeland Trust (NRT) and Laikipia Wildlife Forum (LWF) to address emerging climate change adaptation issues in Northern Kenya rangelands, and contribute to conservation and landscape planning.



Products from vulnerability mapping are assisting governments identify vulnerable communities and set up small pilot climate change adaptation projects. Inset: Drought resistant cassava variety “Mkombozi” (Manihot esculenta) in Butiama District, Tanzania.

LAND COVER, LAND USE CHANGE & ECOSYSTEMS

SERVIR E&SA implemented a project on land cover mapping and capacity building for the development of Green House Gas (GHG) Inventories over a period of 3 years (2012-2015), across 9 countries (Botswana, Ethiopia, Lesotho, Malawi, Namibia, Rwanda, Tanzania, Uganda and Zambia). The land cover maps are important for compilation of GHG accounting reports for the United Nations Framework Convention on Climate Change (UNFCCC). In Zambia the maps have been used as baseline data to inform the National Forest Reference Emissions Level plan. Recently, SERVIR E&SA collaborated with the Food and Agriculture Organization (FAO) in Land Cover Land Use Forest Assessment, using Collect Earth



Main page of the Invasive Species App. The App is customized to include a list of local invasive plants present in the northern rangelands and take photos of the invasive species. The App can be used offline.

tool. A total of about 14,200 sample plots were assessed in the Eastern and Southern Africa region. Further, SERVIR E&SA has developed a mobile App to support NRT and LWF in collecting data on invasive plant species. The App is assisting the decision makers in the Northern Kenyan rangelands in tracking locations and sightings of invasive species (trees or shrubs) and the extensiveness of their effects. The data collected through this App is being used in mapping and modeling the current and future niches of the invasive species.

AGRICULTURE & FOOD SECURITY

Climate change, extreme weather events and population growth place considerable stress on agricultural productivity. SERVIR E&SA is developing a frost mapping and monitoring application which will produce 72hr forecasts to support frost management in Kenya's tea growing zones and supported the development of a Land Potential Knowledge System (LandPKS) which pre-assesses land's potential allowing for utilization of areas with maximum returns on investments. Further, SERVIR E&SA co-implements a Regional Hydrological Extremes Assessment System (RHEAS) to provide drought indicators and country level yields in Kenya and Tanzania. An agricultural crop mask to inform water balance modeling and change maps to help assess the impact of climate change in agricultural production zones in Kenya is under development in collaboration with FEWS NET and the Ministry of Agriculture and Livestock (MoALF).

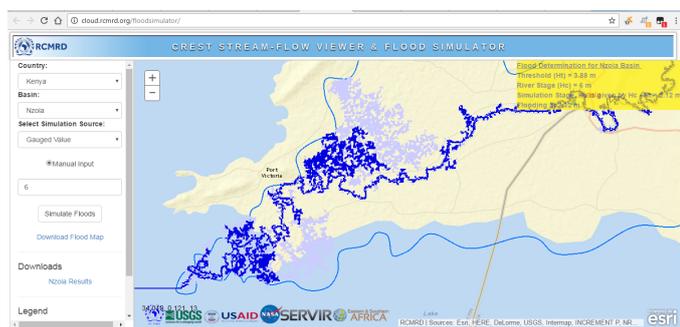
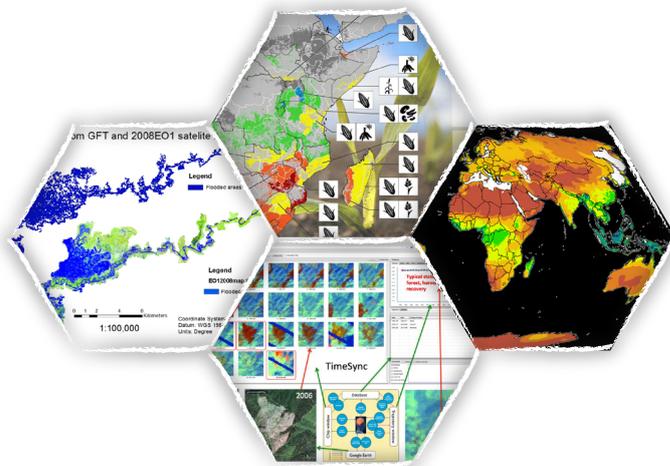


Testing the LandPKS App in the Northern Kenya rangelands.

WATER & WATER RELATED DISASTERS

Many countries in the region face severe water constraints associated with scarcity, in-accessibility and pollution. To inform decisions on water resources management and disaster management, timely information is required at both local and national scale. SERVIR E&SA is implementing tailor made products such as maps and online tools for monitoring water quantities for main river basins and water quality of inland lakes. This work is being expanded to other countries in the region with the aim of using data from multiple satellites to improve on information delivered. Other related activities include mapping surface water bodies in the ASAL areas to provide information on water availability which will support livelihoods of pastoral communities and flood monitoring.

- Forecasting and Communicating Water-Related Disasters in Africa.
- Supporting National Agricultural Monitoring for Food Security.
- Enhancing Eastern and Southern Africa climate services by increasing access to remote sensing and model datasets.



An online flood simulator tool for estimating flood extent for the Nzoia basin in Kenya.

APPLYING BEST AVAILABLE SCIENCE FOR DECISION MAKING

SERVIR E&SA has collaborated with some distinguished US scientists, through the SERVIR Applied Science Team (AST) program. The SERVIR-AST projects will work on the following topics:

- Enabling Local Monitoring of Landscape Change Across Eastern Africa.

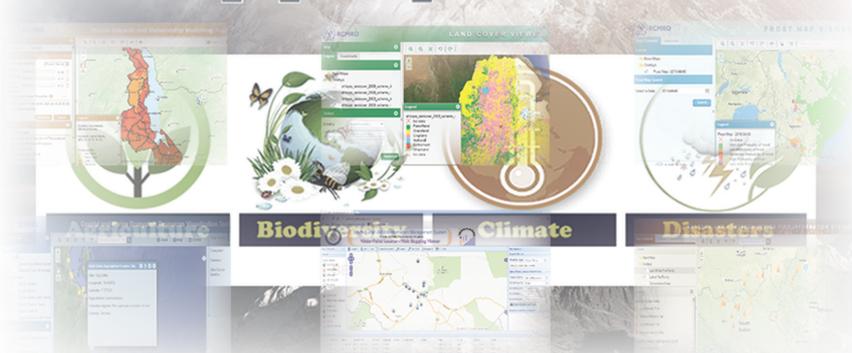
SERVIR E&SA MAKING A DIFFERENCE

SERVIR E&SA data, products and tools are being used for decision making in various societal benefit areas. Through small grants and capacity building, SERVIR E&SA is spurring innovation for improved decision making.



Left: Africa Flores (NASA) addresses grantees during a grants close-out workshop in Arusha, Tanzania. Right: A training session on hydrological modeling.

apps portal



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Kasarani Road, P.O. Box 632 Ruaraka, 00618, Nairobi Kenya | Tel: +254 20 2680748 | Cell: +254 723 786 161

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