

SERVIR: Connecting Space to Village

August 15, 2018

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RCMRD INTERNATIONAL CONFERENCE

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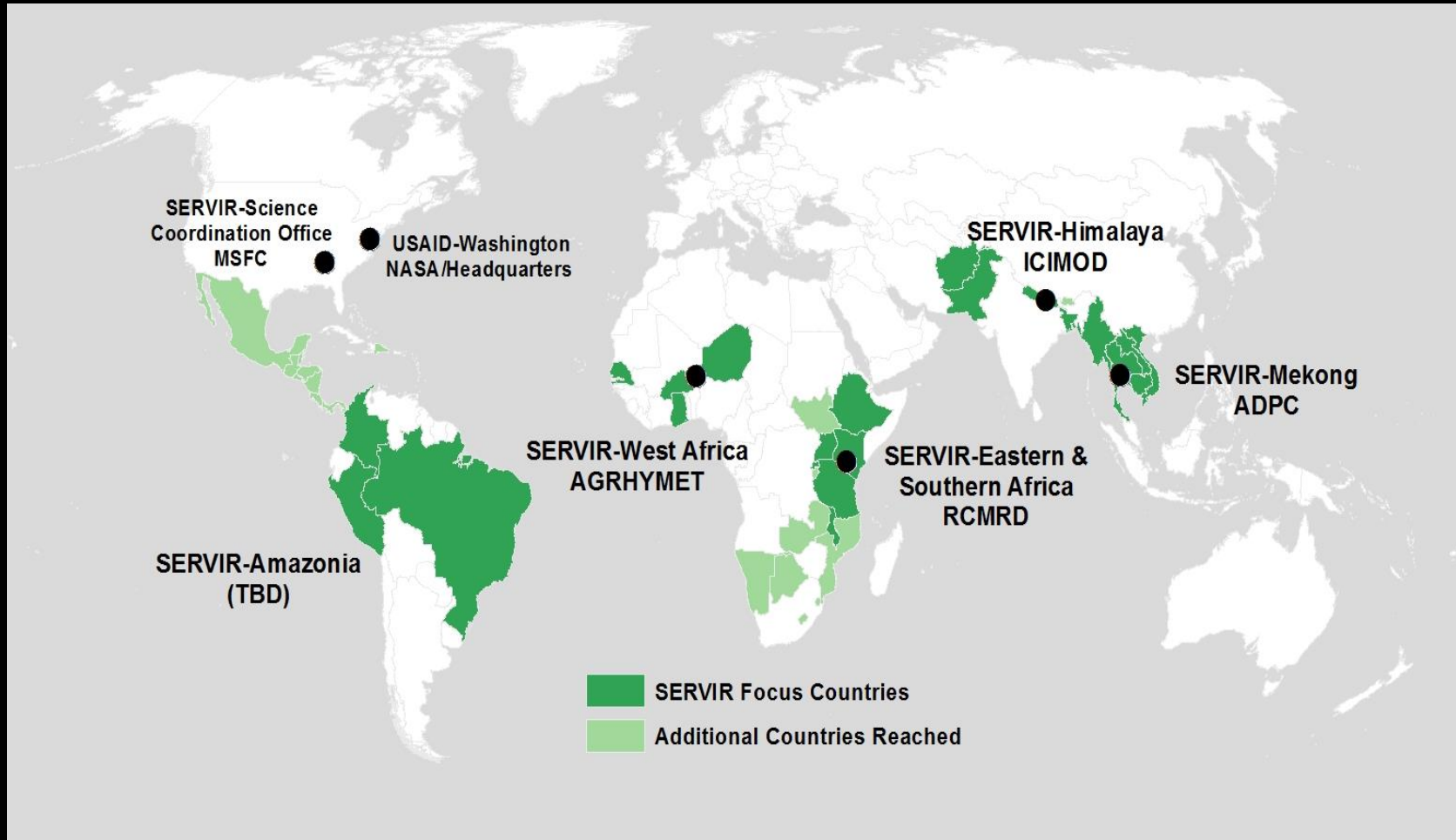


From space, we can view our planet in new ways.

SERVIR empowers people in developing countries to use that view for gaining knowledge and insights about their environments and adaptation to a changing climate.

We work with regional decision-makers to foster use of Earth observation satellite data, GIS, and predictive models for addressing water and land use, natural disasters, agricultural problems, biodiversity, and more.

These tools can improve the lives, livelihoods, safety, and future of people in communities around the world.



4

REGIONS

45

COUNTRIES

73

DECISION SUPPORT
PRODUCTS

260

INSTITUTIONS



27

COLLABORATIVE SCIENCE
ACTIVITIES

400

DECISION-MAKERS &
SCIENTISTS

3.5K

PEOPLE

2.5M

MAP REQUESTS

1. Agriculture and Food Security
2. Water and Water-Related Disasters
3. Land Cover and Land Use Change, and Ecosystems
4. Weather and Climate



The aim is to develop individual services that build the capacity of the regional hub organizations and their users in national governments to use Earth observations for improved environmental decision making.

1. Reach More Users with Demand-Driven Products and Services
2. Connect More Innovative and Appropriate Science to SERVIR
3. Expand SERVIR Networks through New Strategic Partnerships
4. Improve Sustainability of SERVIR at Multiple Levels



USAID and NASA Town Hall: Observing Earth From Space and How This Supports USAID Development Goals

Hub Status and Services



RCMRD



Services:

- Drought monitoring
- Frost forecasting
- Streamflow and flood forecasting
- Land cover mapping
- Vulnerability assessment

ICIMOD



Services:

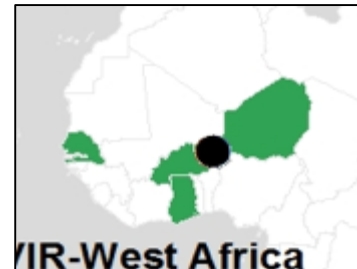
- Crop area estimation
- Drought assessments
- Land cover mapping, forest monitoring, and biomass estimation
- Flood early warning system

adpc



Services:

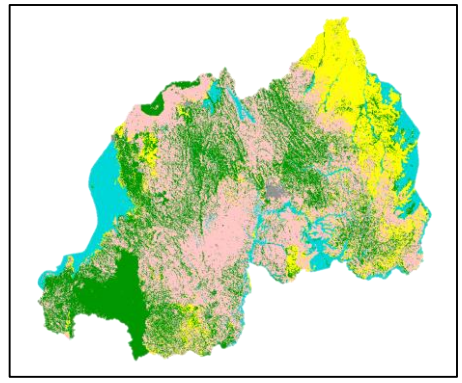
- Dam inundation mapping
- Virtual rain and stream gauge
- Regional land cover monitoring



Services:

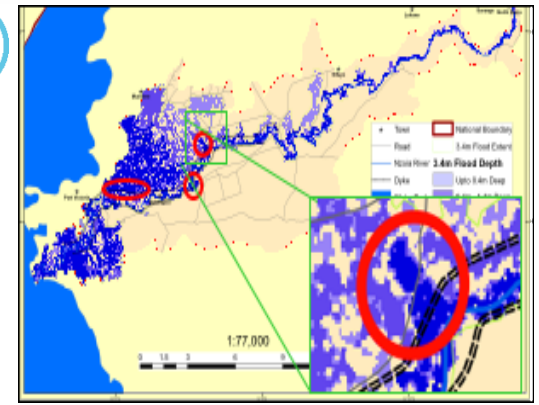
- Locust monitoring
- Surface water body mapping
- Groundwater assessments

Examples of Impact for SERVIR Service Areas



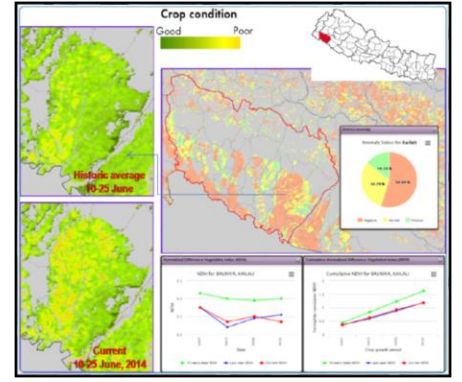
Land Cover Maps to Support Emissions Estimations

- Rwanda, Tanzania, Zambia, and Nepal are now using maps to implement actions to reduce or remove forest carbon emissions and protect forests.



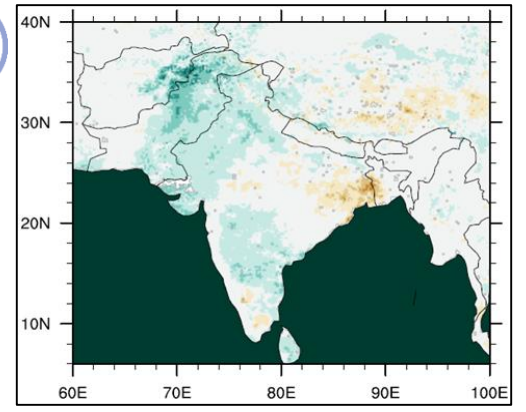
Flood Mapping Tool in Eastern & Southern Africa

- High-accuracy flood level scenario maps led to World Bank repairs of flood protection dikes in Kenya.



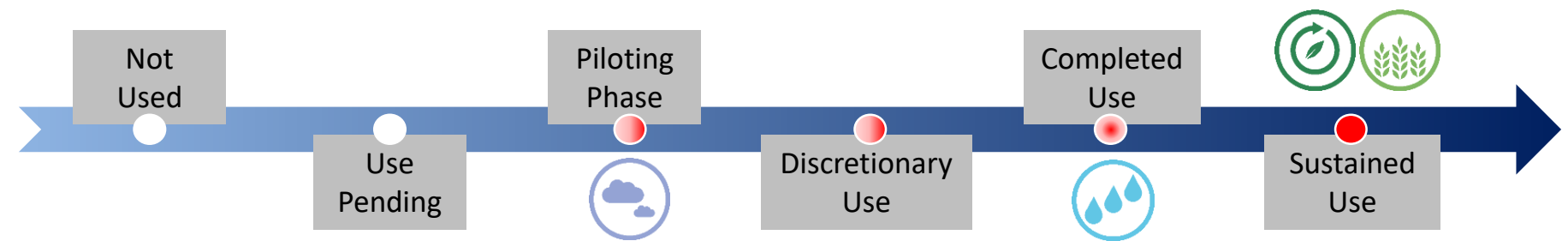
Satellite-Based Agriculture Drought Warning System

- Actively used by World Food Program to distribute food aid in western Nepal to avert food shortages.

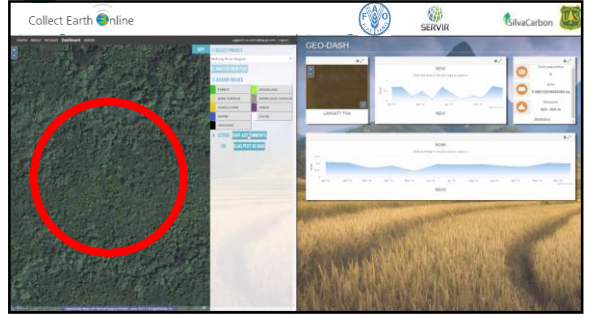


South Asia Land Data Assimilation System (SALDAS)

- Supports cross cutting decisions by water and agriculture sector in Nepal and Bangladesh.

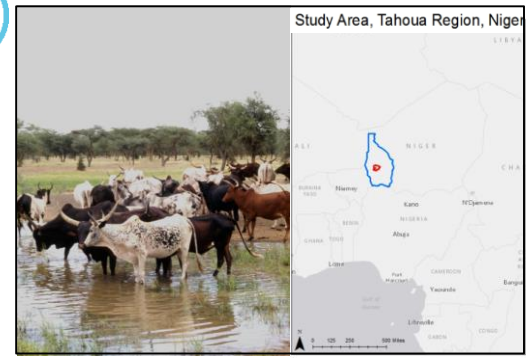


Major SERVIR activities Maturing Soon



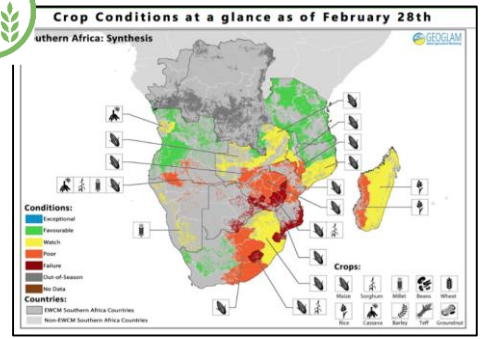
Collect Earth Online *Expected*

- Enabling a collaborative platform for collecting environmental data through the interpretation of Earth observation imagery for global forest resource assessments, disaster assessments, agriculture management, project monitoring and evaluation, and more



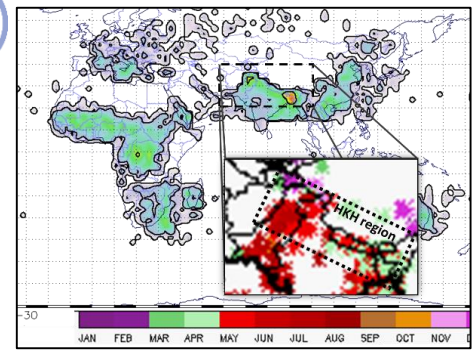
Ephemeral Water Body Identification

- Designing a service to rapidly identify and monitor small waterbodies, enabling agriculture extension agencies to provide improved water resource information to herders and farmers



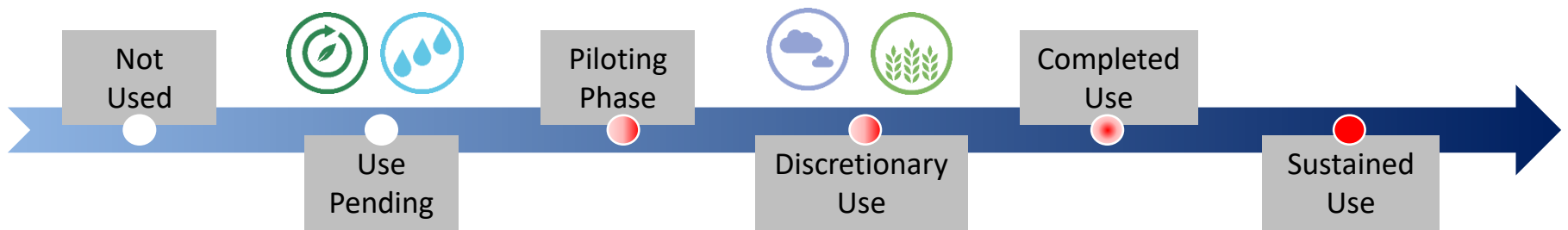
Developing a Regional Crop Monitor for Early Warning (GEOGLAM)

- Using ground observations and satellite data to improve agricultural assessments for food security interventions in East Africa



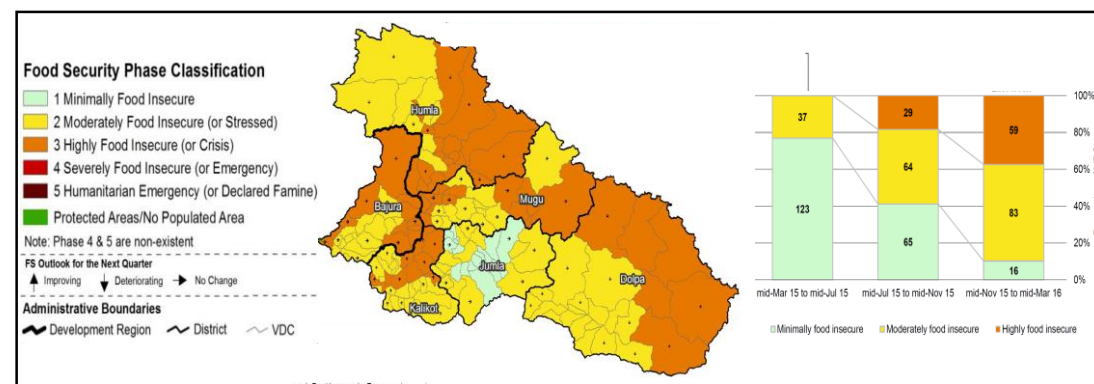
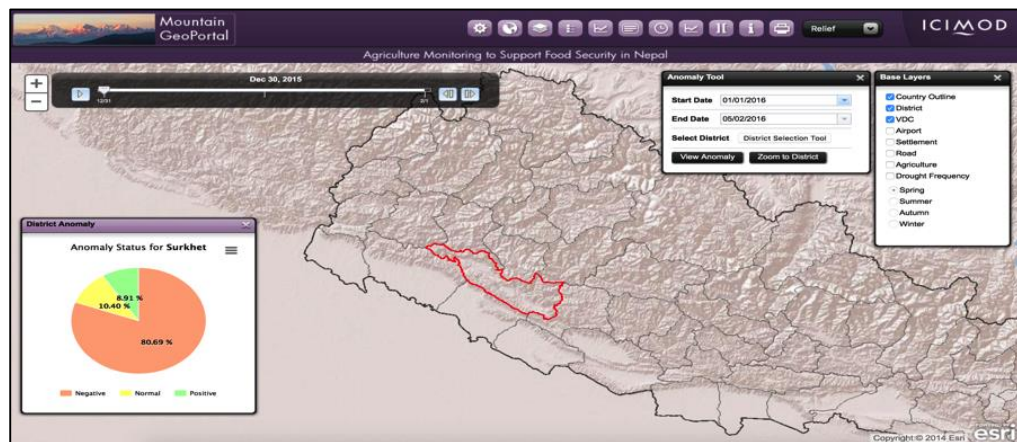
Monitoring and Forecasting Intense Thunderstorms

- Bringing the latest national weather service ensemble thunderstorm prediction systems to facilitate well-informed assessment and notification of high-impact thunderstorm events in the HKH region



Regional Drought Monitoring in Himalayas

- Nepal's Ministry of Agriculture and Development (MoAD) and SERVIR-Himalaya co-developed an Agricultural Drought Monitoring Tool that estimates forecast of drought onset. The Tool is tailored through collaboration with the University of Nebraska, Lincoln, home of US Drought Monitor and the SERVIR-AST led South Asia Land Data Assimilation System, installed at and run by the SERVIR hub in Nepal.
- The World Food Program used data from this tool to identify the worst affected areas in Western Nepal, and distributed \$1M worth of emergency food aid to affected areas.
- A similar effort is underway in Bangladesh, where SERVIR is collaborating with the Bangladesh Agricultural Research Centre (BARC).

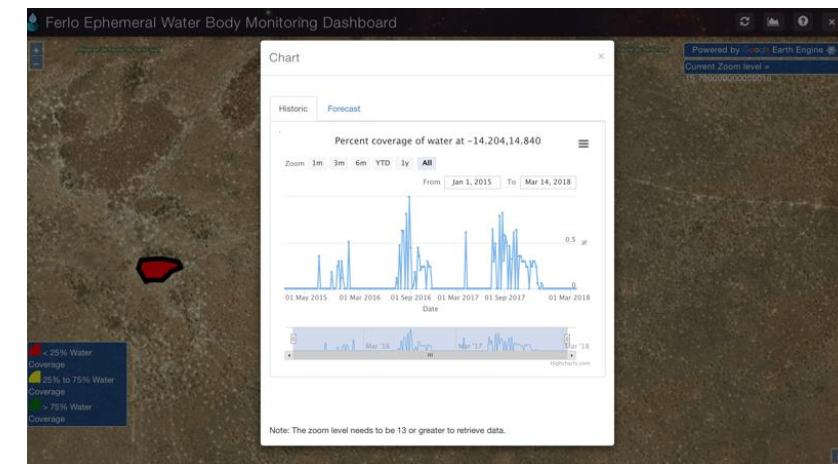


SERVIR-Himalaya Agriculture Drought Monitoring Tool showing vegetation anomaly in Surkhet District in western Nepal

Finding Water for Pastoralists in Senegal

Pastoralists in Farlo region of Senegal are always in search of small water bodies for their livestock. Veterinarians Without Borders has developed a mobile-based system to keep in touch with the pastoralists, but they lack the latest information about the water availability in the small water bodies across the region.

SERVIR-West Africa has developed a satellite data-based tool in collaboration with Veterinarians Without Borders. The tool examines the latest satellite data to delineate the available water extent in these small water bodies that can be communicated to the pastoralists in the region.

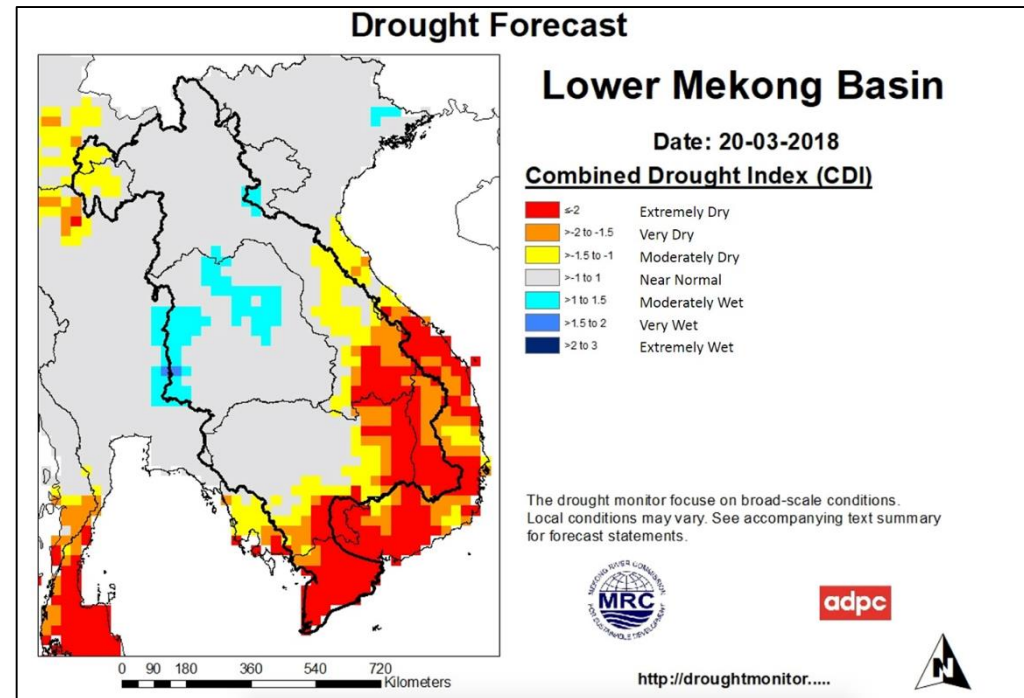


Monitoring and Forecasting Drought in Mekong

The Mekong River Commission drought management team regularly uses SERVIR Mekong's drought nowcast and forecast service to advise country line agencies on irrigation decisions and water availability. Previously, MRC had a gap in developing accurate drought indices, which has been addressed through co-development of this service and associated capacity strengthening. This service is based on the latest satellite assimilation techniques to integrate soil moisture and rainfall data.



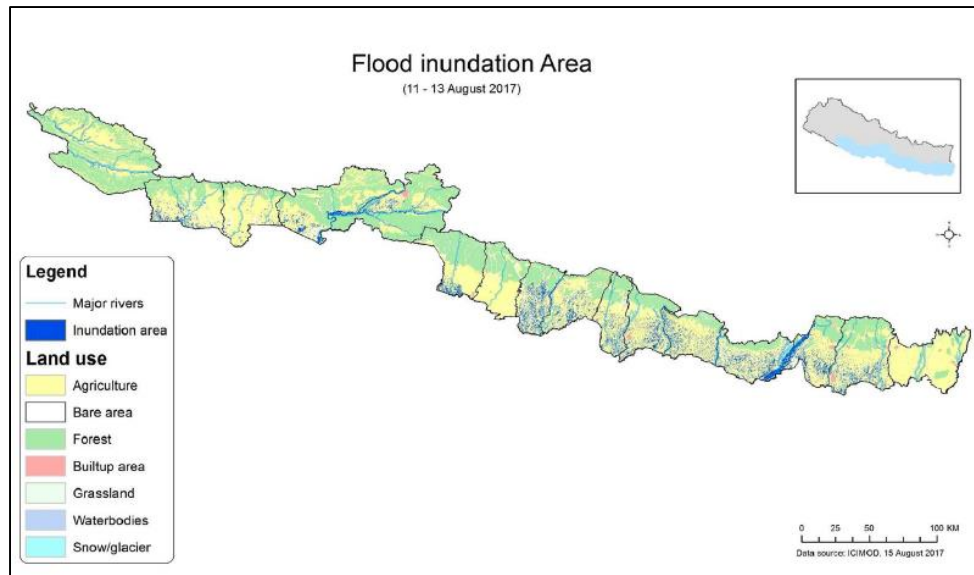
Severe drought in Mekong Region



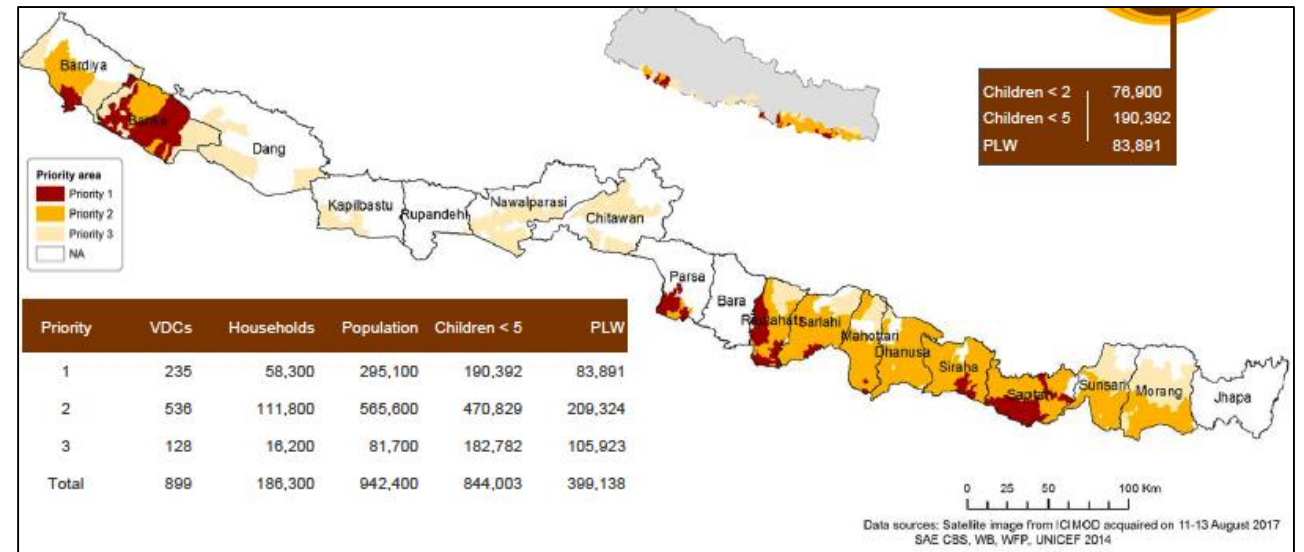
Mekong River Commission drought forecast portal

Prioritizing Post-Flood Food Security Relief in Nepal

When the mountainous South Asia region was hit by one of the worst flooding events in 15 years, the Nepal Food Security and Monitoring System (NeKSAP) used SERVIR’s satellite-based flood inundation area products, together with their field and socioeconomic data, to prioritize food assistance for 300,000 people in the low lying Terai region. This resulted in a strong collaboration with the World Food Programme and led to their humanitarian response in the region.



Flood inundation areas defined by SERVIR-HKH using ESA Copernicus Sentinel-1 data



Priority areas for humanitarian response as defined by Nepali government, based on SERVIR-HKH satellite analysis and NeKSAP data.

The collaborative work by WFP and ICIMOD in Nepal mixes the comparative strengths of WFP’s on-the-ground food security monitoring with ICIMOD’s remote sensing and GIS capacities. This paid off by guiding decisions for humanitarian response to the 2016 drought and 2017 floods there.

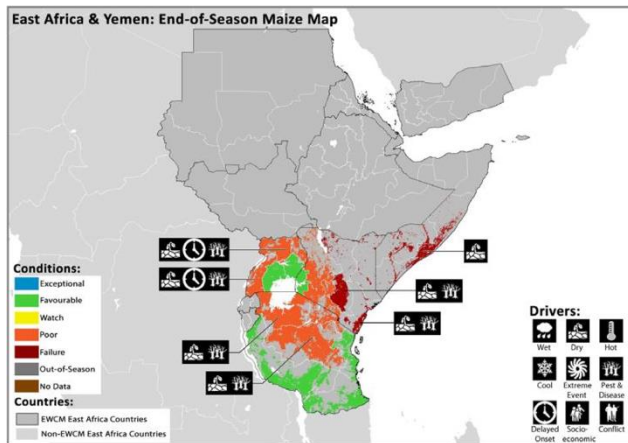
Kurt Burja

Policy Officer, World Food Programme

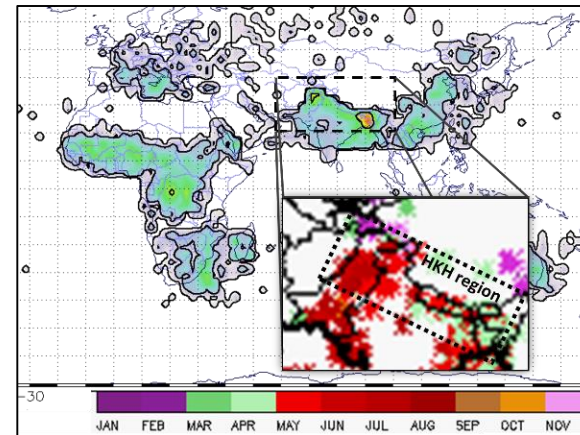
Replicable Solutions & Hubs Helping Hubs



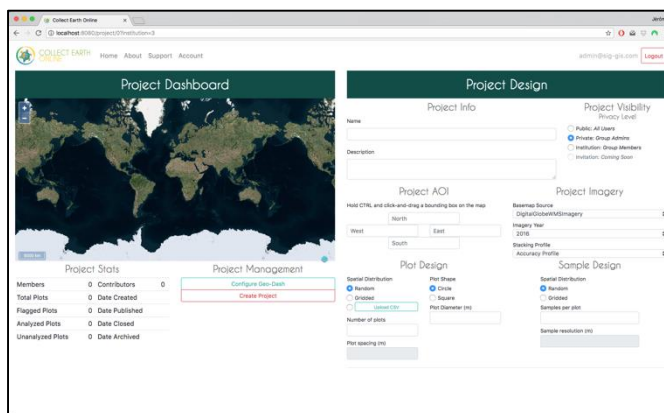
GeoGLAM Crop Monitor was created for individual countries and is being expanded to the Greater Horn of Africa through SERVIR



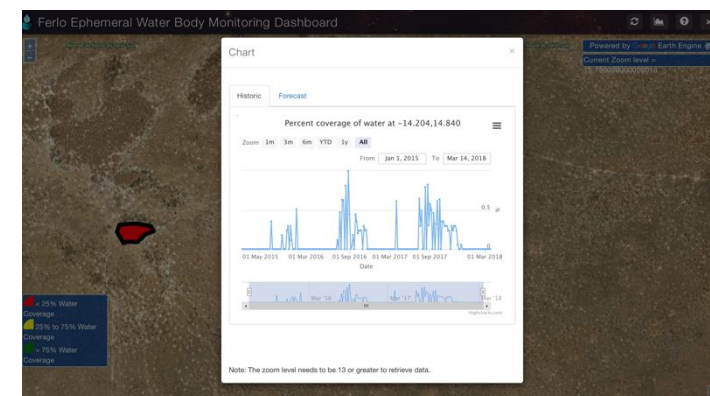
Thunderstorm monitoring and forecasting was created for SERVIR-HKH region and has been expanded to the Mekong region



Collect Earth was created by FAO, Mapcha was created by SERVIR-Mekong. Joining efforts, Collect Earth Online is being expanded as a global service.



SERVIR-West Africa's small water body mapping service for pastoralists is being expanded in East Africa





SERVIR



Connecting space to village

www.servirglobal.net