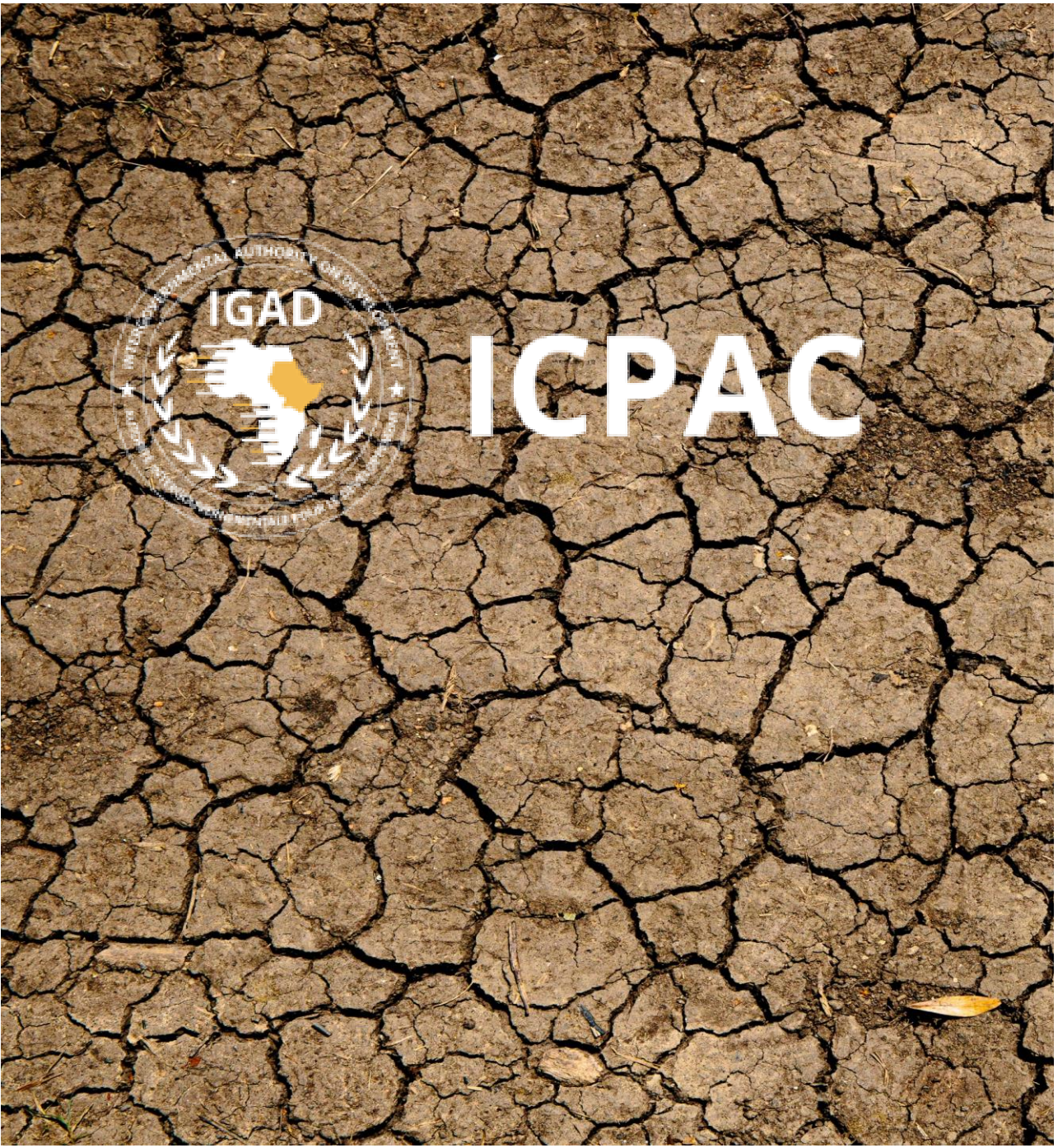


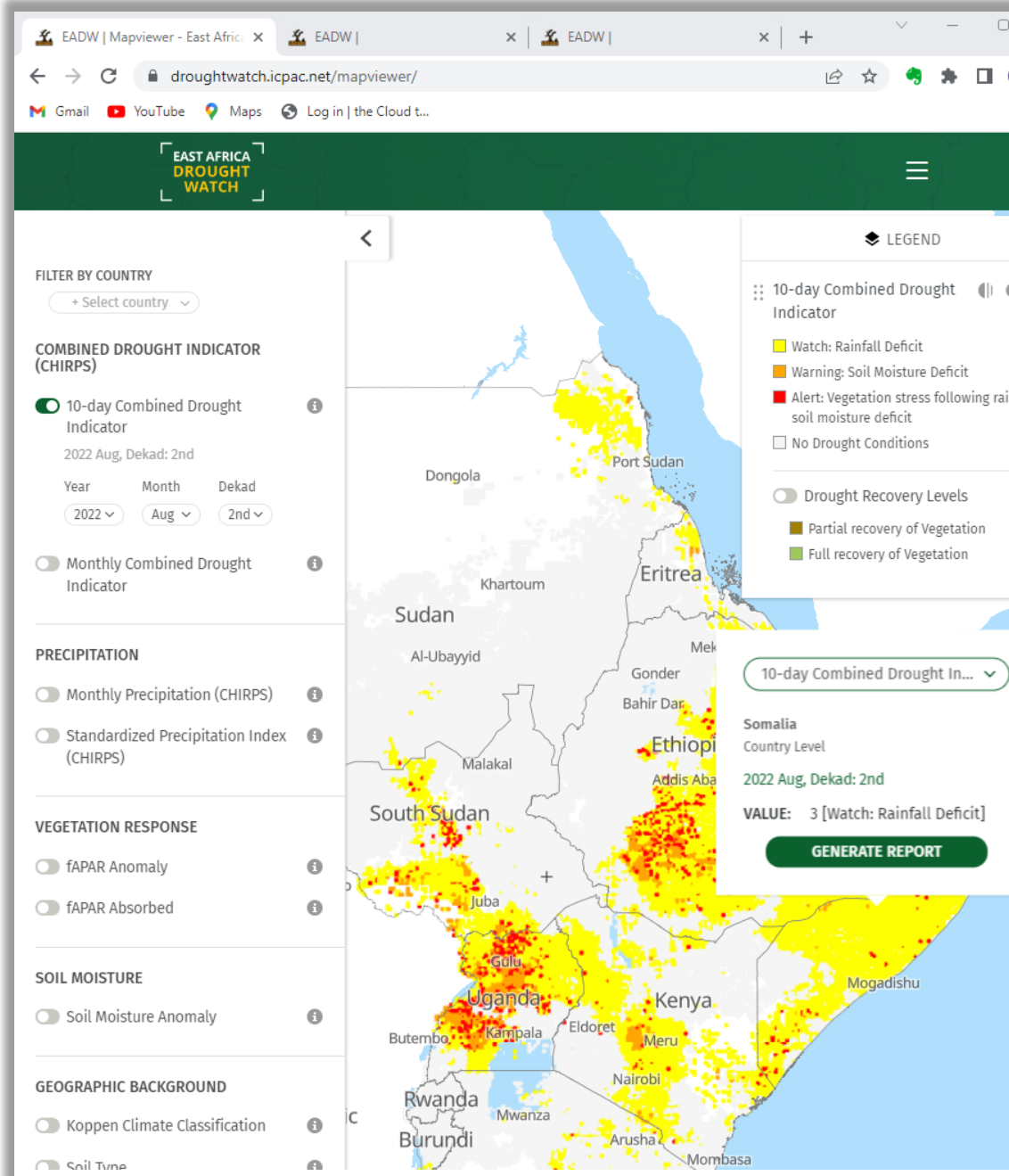
East Africa Drought Watch

Regional Drought Monitoring & Early Warning System

By Jason Kinyua

East Africa Drought Watch Overview

- Public online system for drought monitoring and early warning
- Provides **automatic 10-day warnings** for:
  - Developing and actual drought events
  - Recovery from drought conditions
- Developed jointly by **ICPAC** and the **Joint Research Centre (JRC)** of the European Commission.
- Hosted at the IGAD Disaster Operations Centre
  - IDOC: A state-of-the-art situation room tasked with providing regional multi-hazard monitoring and early warning

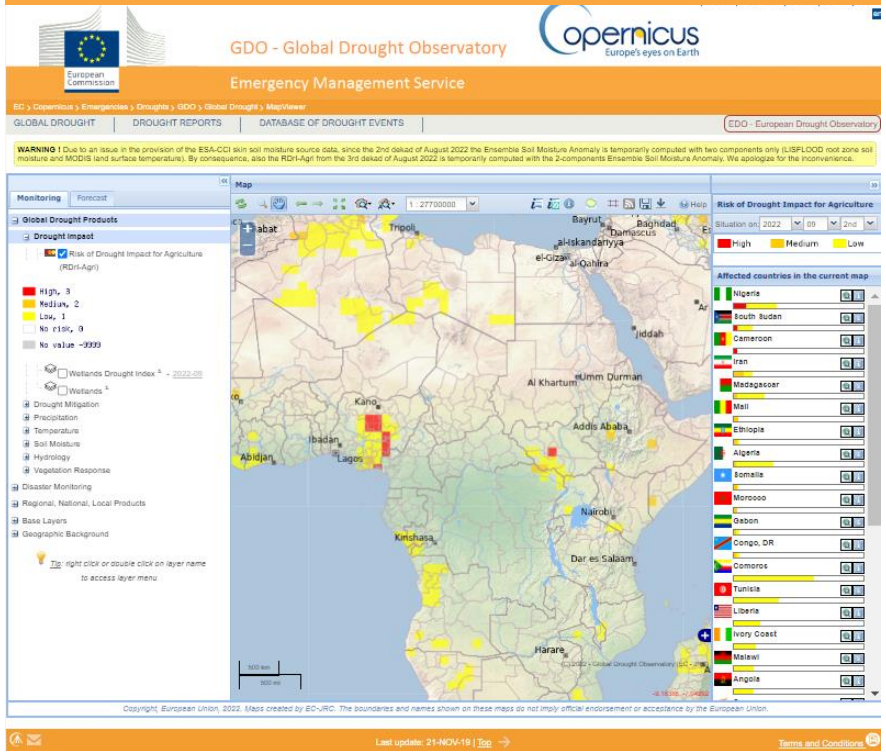


https://droughtwatch.icpac.net/

ICPAC

Adopt and Adapt Approach

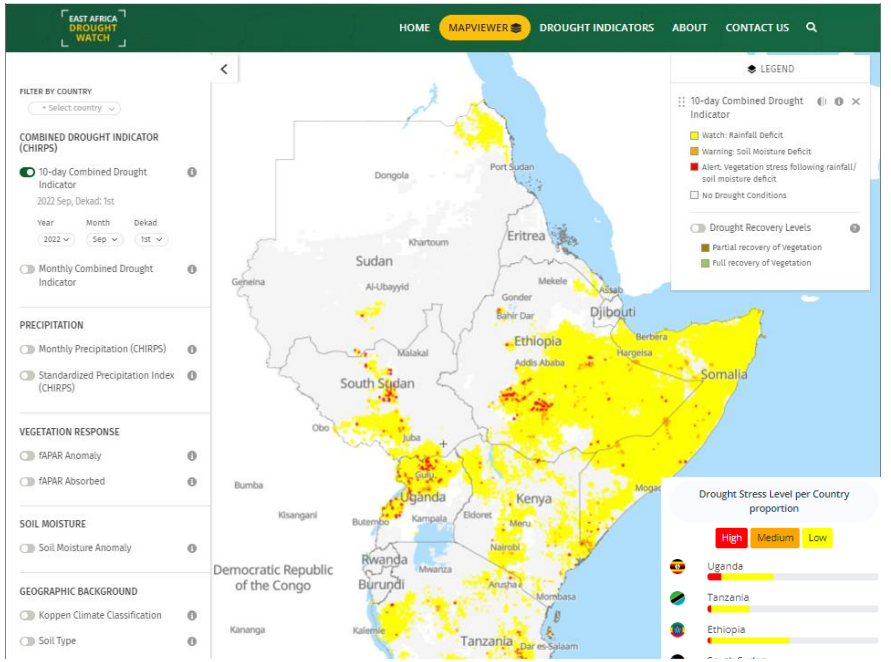
Global Drought Observatory



Global

Regional

East Africa Drought Watch



System Adaptation

- Interface
- Data
  - Rainfall data
  - Higher spatial resolution
- New products
  - Forecast
  - Monthly & seasonal
- New methodology
  - Drought events
  - Drought hotspots (long-term drought analysis)
- Integration of socio-economic indicators
- Analysis on user-defined boundaries

- Stakeholder engagement & capacity building
- Closely working with national institutions
  - Drought management authorities, Disaster coordination agencies
- Validation & user requirements
- Support institution workflows
  - Automation of processes
- Harmonization of Early Warning messaging

Combined Drought Indicator - CDI

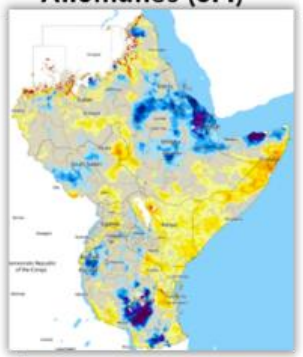
COMBINED DROUGHT INDICATOR

Combined Drought Indicator (CDI) for Agricultural Drought

Time = Current dekad

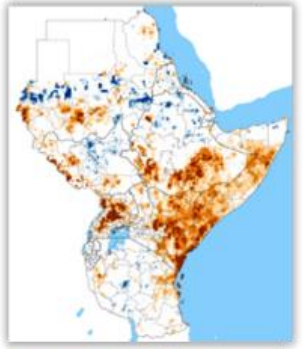
=

1 **Precipitation Anomalies (SPI)**



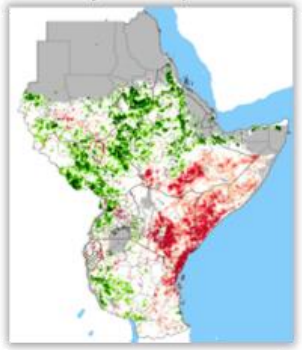
Time = Previous month

2 **Soil Moisture Anomalies**

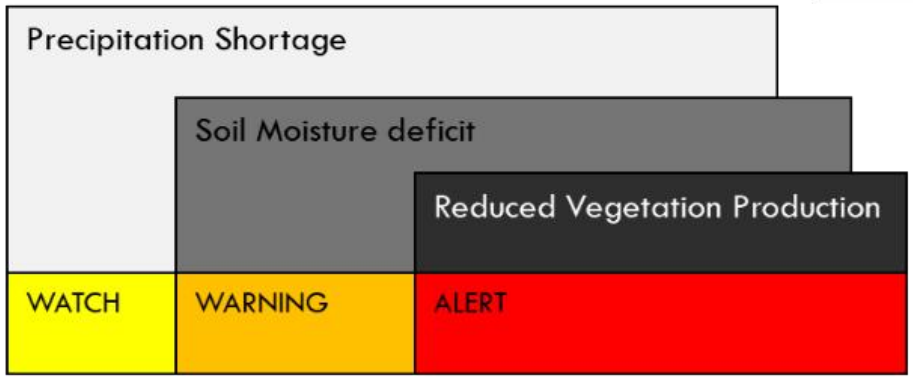


Time = Previous dekad

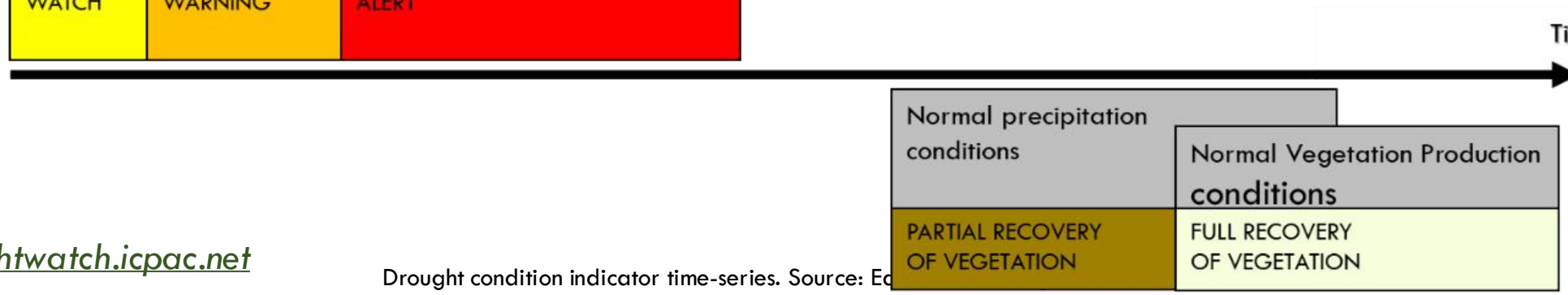
3 **Vegetation Anomalies (fAPAR)**



Time = Current dekad



- ✓ 3 levels of Drought categories: Watch, Warning, Alert
- ✓ 2 levels of Recovery categories: Partial Recovery, Full Recovery

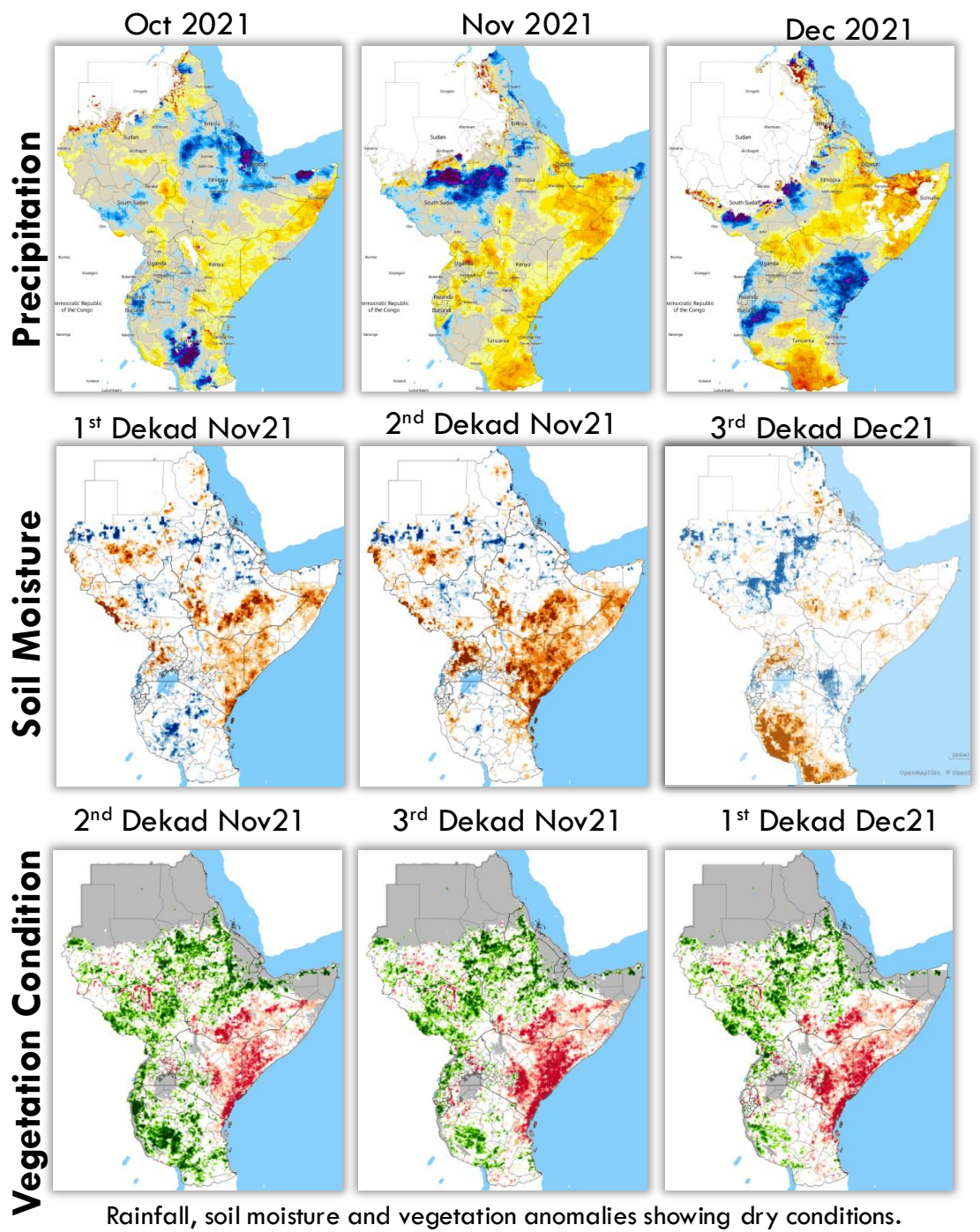


https://droughtwatch.icpac.net

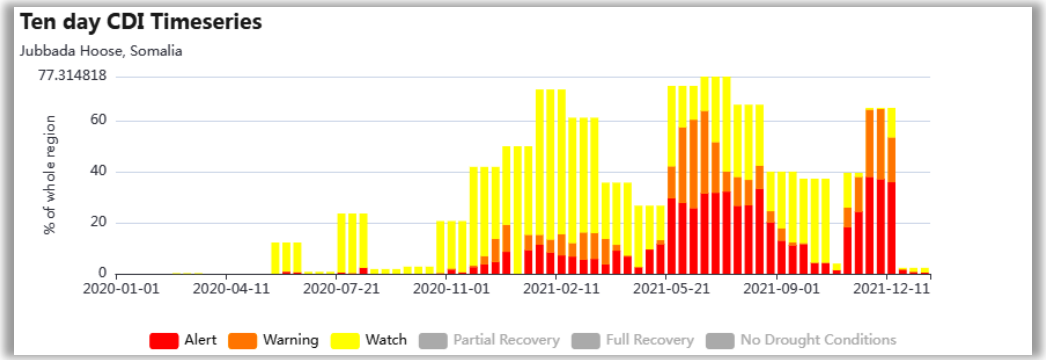
Drought condition indicator time-series. Source: Ec

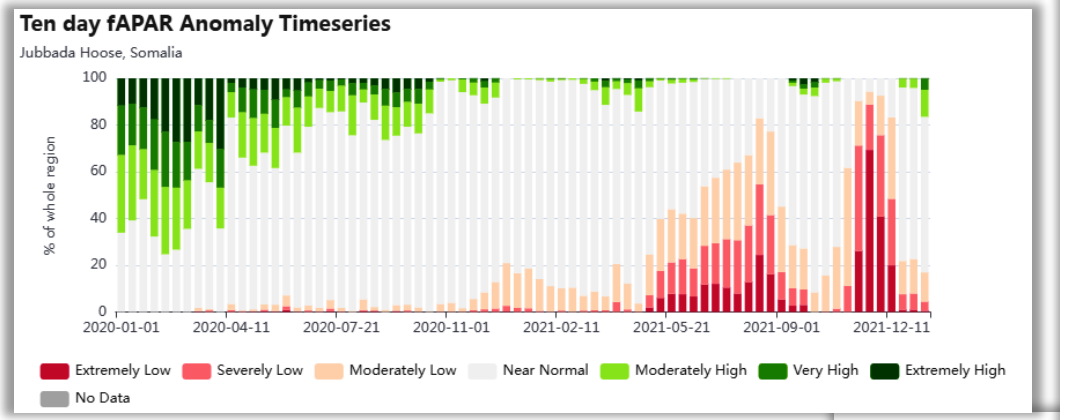
East Africa Drought Watch

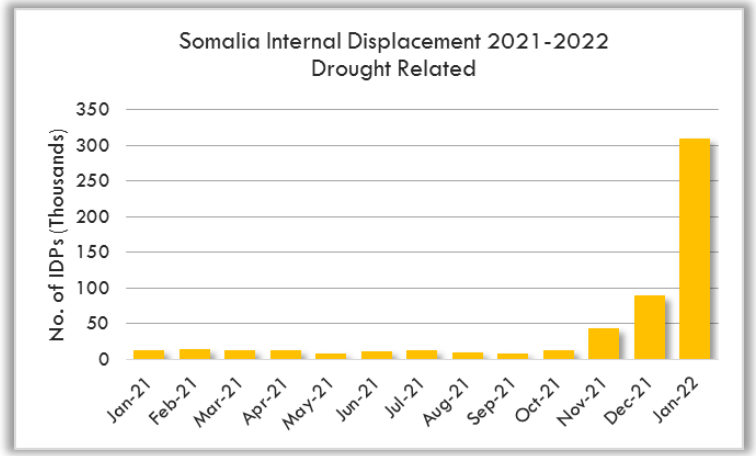
Convergence of Evidence

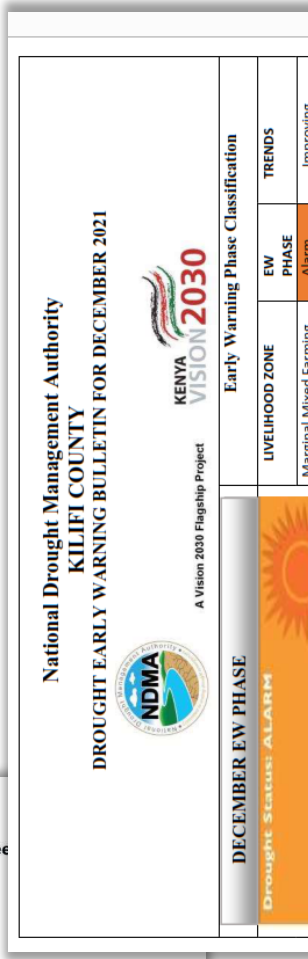


Rainfall, soil moisture and vegetation anomalies showing dry conditions.
Source: EADW



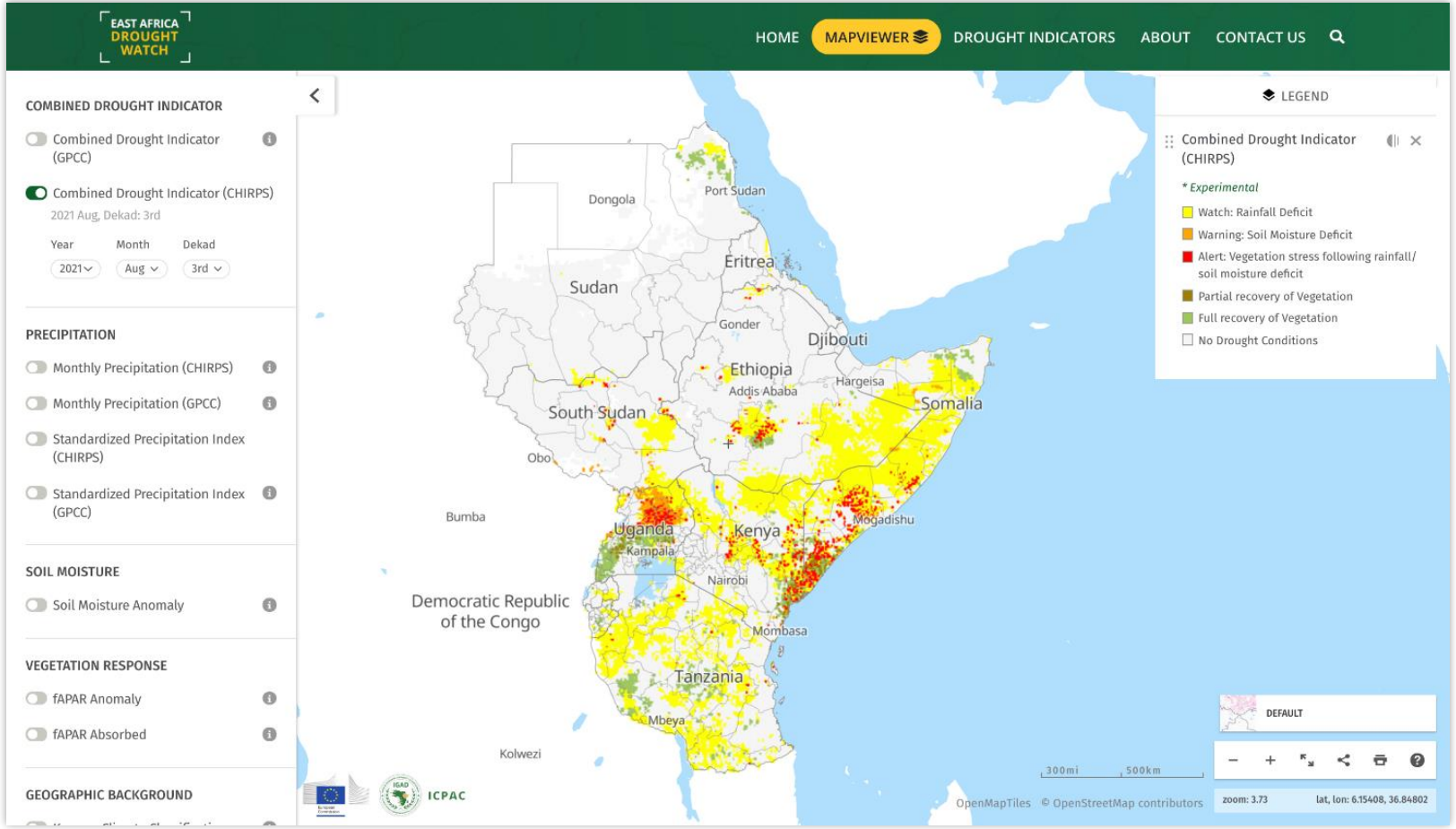






WHAT CAN YOU DO WITH THE SYSTEM?

East Africa Drought Watch



- Automatic report generation
- Visualization of raster layers for selected weather and biophysical indicators and anomalies
- Downloadable maps and graphs (png)
- Background layers and opacity bars facilitate image interpretation
- Use Political, Hydroshed, protected area or user defined boundary for analysis
- All time series is available

Combined Drought Index (CDI) -
10day CDI

SPI (CHIRPS)	
1 month	12 month
3 month	24 month
6 month	48 month
9 month	

Vegetation indicators VIIRS/MODIS	Soil Moist. Indicators LISFlood model
10day fAPAR	10d SM anomaly
10d fAPAR Anomaly	

Modis/VIIRS, CHIRPS, LISflood model

ICPAC

Moving Forward

Lessons learnt

- User engagement is key
- Workflow integration
- Need for capacity enhancement
  - Technical
  - Infrastructure
- National regulatory frameworks
- Harmonised EW messaging

Future developments

- Downscaling to the national level
- Continuous scientific research
  - Regional drought characterization
  - Improve forecast (lead-time, skill)
- Improved system functionality and analysis (user needs assessments)
- Early Warning to actions
  - Anticipatory action (mainstreaming & scaling) *cash transfer
  - Integrate thresholds and triggers
- Leverage emerging technologies

Partnerships & Collaboration

Thank You

ICPAC