WORLD METEOROLOGICAL ORGANIZATION

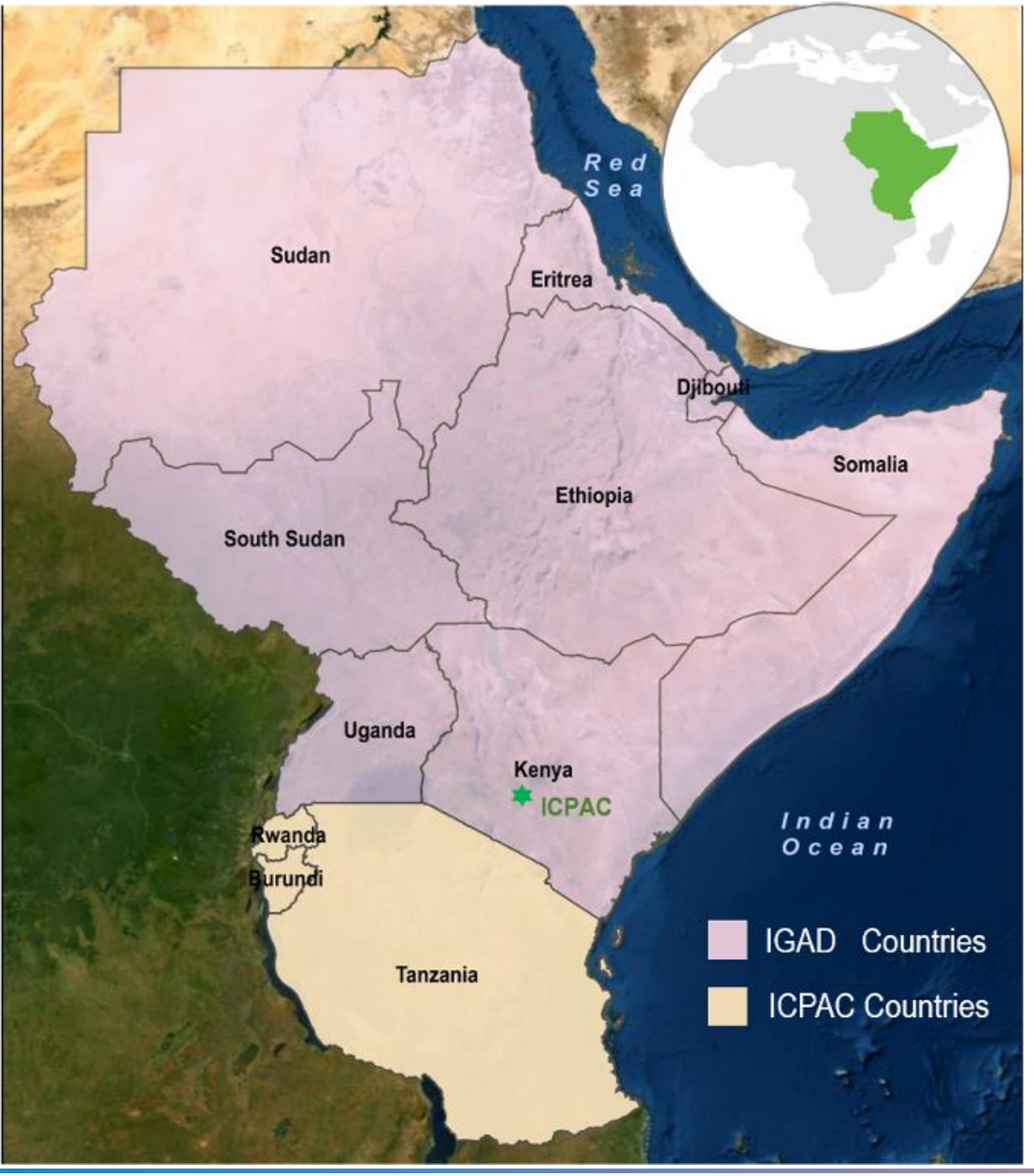
Global Water Partnership

APFM
ASSOCIATED PROGRAMME ON FLOOD MANAGEMENT

IDMP
INTEGRATED DROUGHT MANAGEMENT PROGRAMME

East Africa Drought Watch

Viola Otieno – EO scientist for EWS,
IGAD Climate Prediction and Applications Centre - ICPAC
24 October 2023



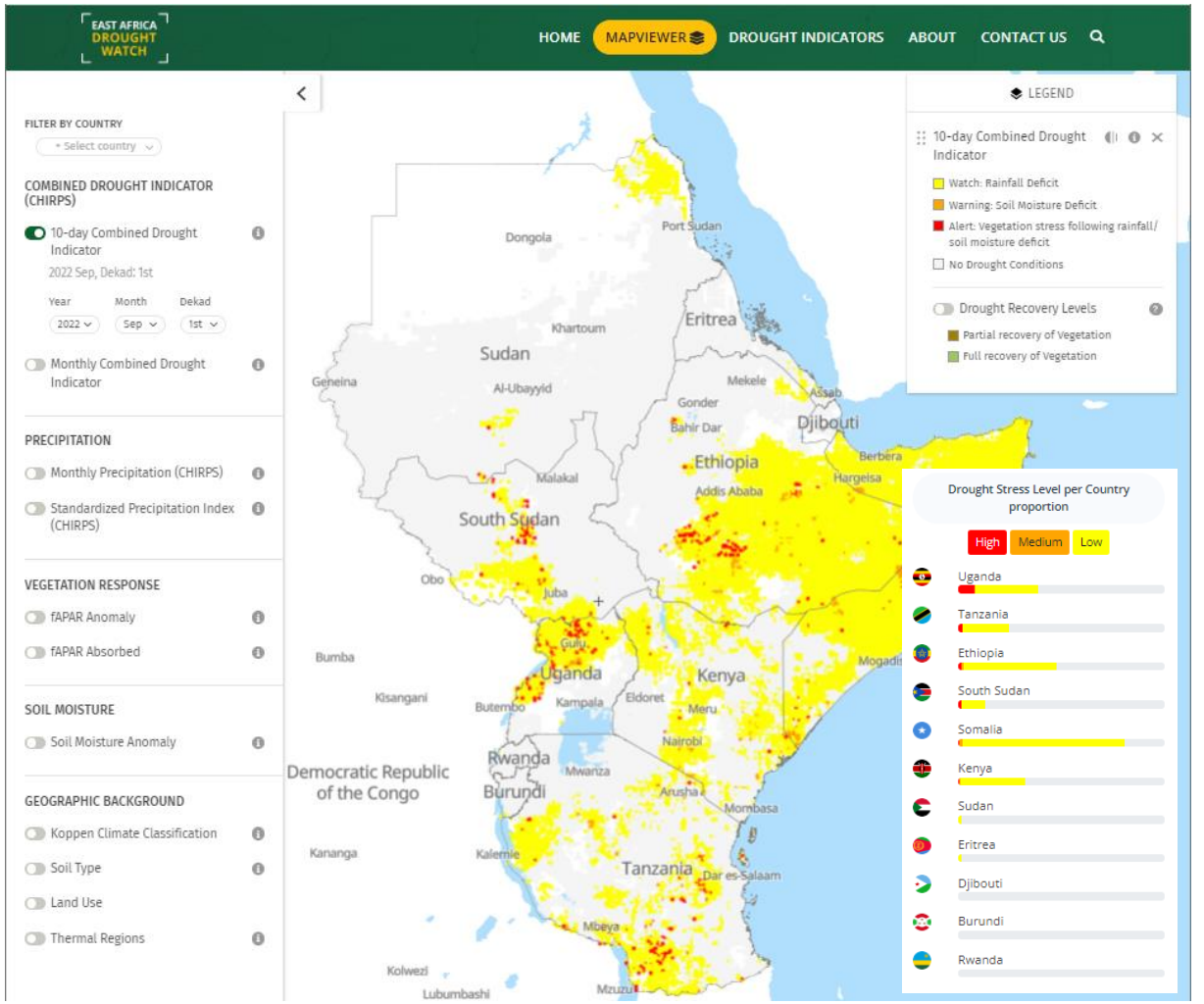
ICPAC

- IGAD Climate Prediction and Applications Centre, Nairobi – Kenya
- Specialized institution of IGAD
- Established in **1989** as the Drought Monitoring Centre (DMCN)- Nairobi
- **2007**, protocol establishing the Centre signed & name changed to IGAD Climate Prediction and Applications Centre
- **2017** – designated Regional Climate Centre(RCC) by WMO
- Member of AUC/NEPAD Network of Water Centers of Excellence
- ICPAC has an Observer Status with UNFCCC
- Provides climate services to 11 member states

East Africa Drought Watch

- Public online system for drought monitoring and early warning
- **Uses Earth Observation and Weather information**
- 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 to improve response and disaster risk management
  - Covers 11 Eastern Africa countries; Burundi, Djibouti, Ethiopia, Eritrea, Kenya, Somalia, South Sudan, Sudan, Tanzania, Uganda

East Africa Drought Watch



https://droughtwatch.icpac.net/

INTEGRATED DROUGHT MANAGEMENT PROGRAMME

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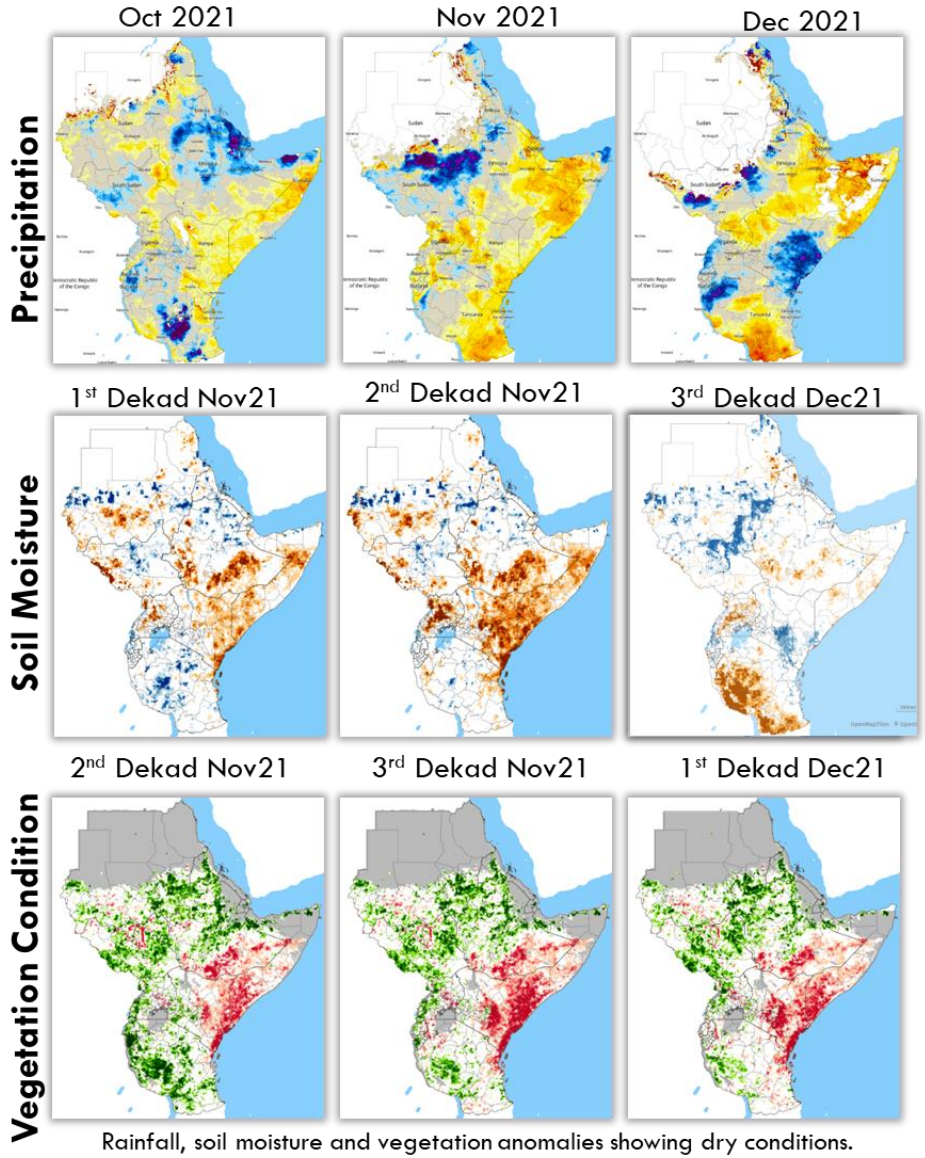
Drought Indicators

- Three indicators:
  - Precipitation anomalies
  - Soil moisture anomalies
  - Vegetation anomalies
- Standardised Precipitation Index (SPI)
  - SPI-1, SPI-3, SPI-9/SPI-12
  - Source: CHIRPS
- Soil moisture anomaly
  - Source: LISFlood model
- Vegetation anomaly
  - Source: MODIS/VIIRs
- **Combined Drought Indicator**

  {SPI, soil moisture, vegetation anomalies}

Convergence of Evidence

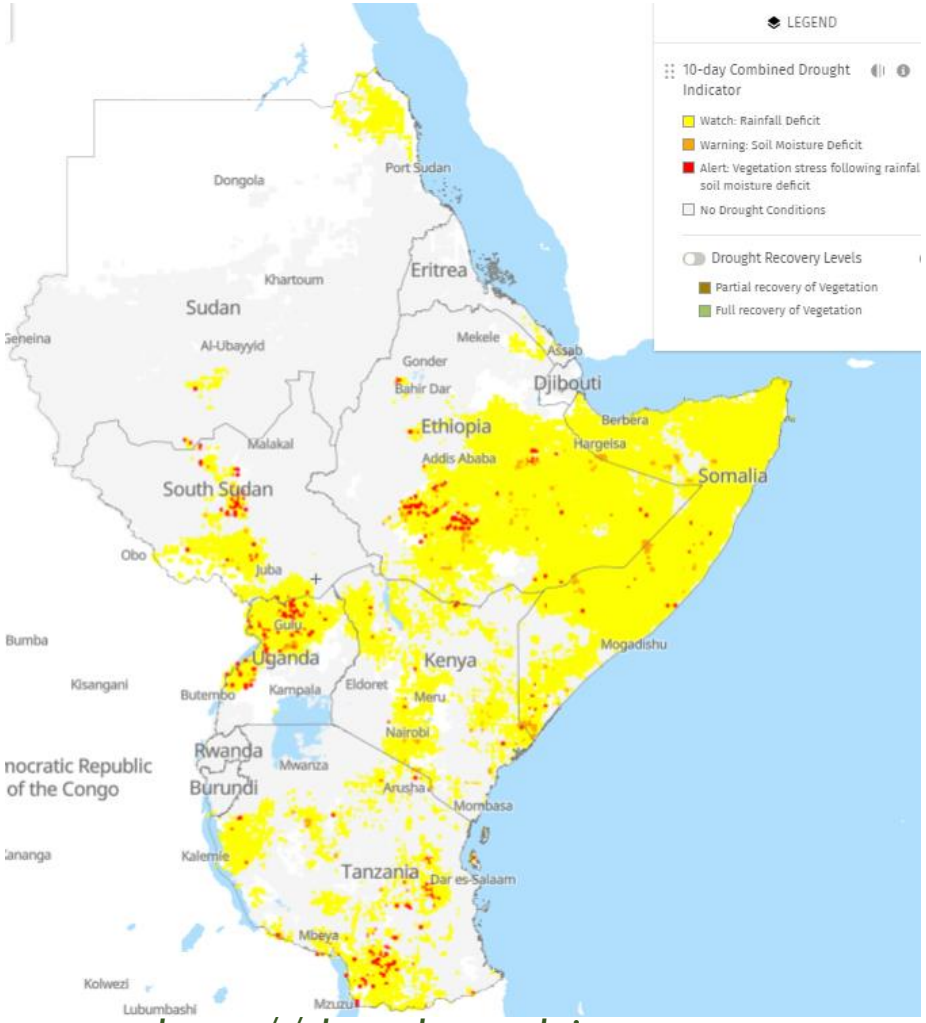


Rainfall, soil moisture and vegetation anomalies showing dry conditions.
Source: EADW

Combined Drought Indicator (CDI)

The Combined Drought Indicator (CDI) identifies areas with the potential to suffer agricultural drought, areas where the vegetation is already affected by drought conditions, and areas in the process of recovery to normal conditions after a drought episode.

Colour	Level	Classification description
	Watch	A relevant precipitation deficit is observed
	Warning	The above precipitation deficit is accompanied by soil moisture deficit
	Alert	The above two conditions are accompanied by a negative anomaly of vegetation growth
	Partial recovery	When after a drought episode, the meteorologivcal conditions are recovered to normal but the vegetation conditions are yet to recover
	Full recovery of vegetation	When after a drought episode both the meteorological and vegetation conditions have recovered to normal
	No drought conditions	



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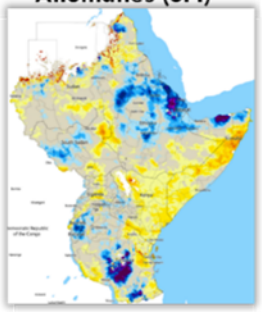
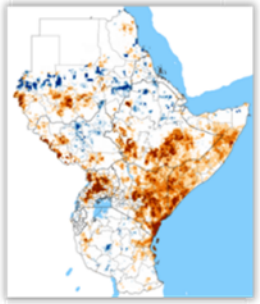
Combined Drought Indicator (CDI)

Combined Drought Indicator (CDI) for Agricultural Drought =

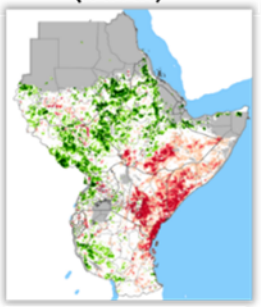
1 **Precipitation Anomalies (SPI)**

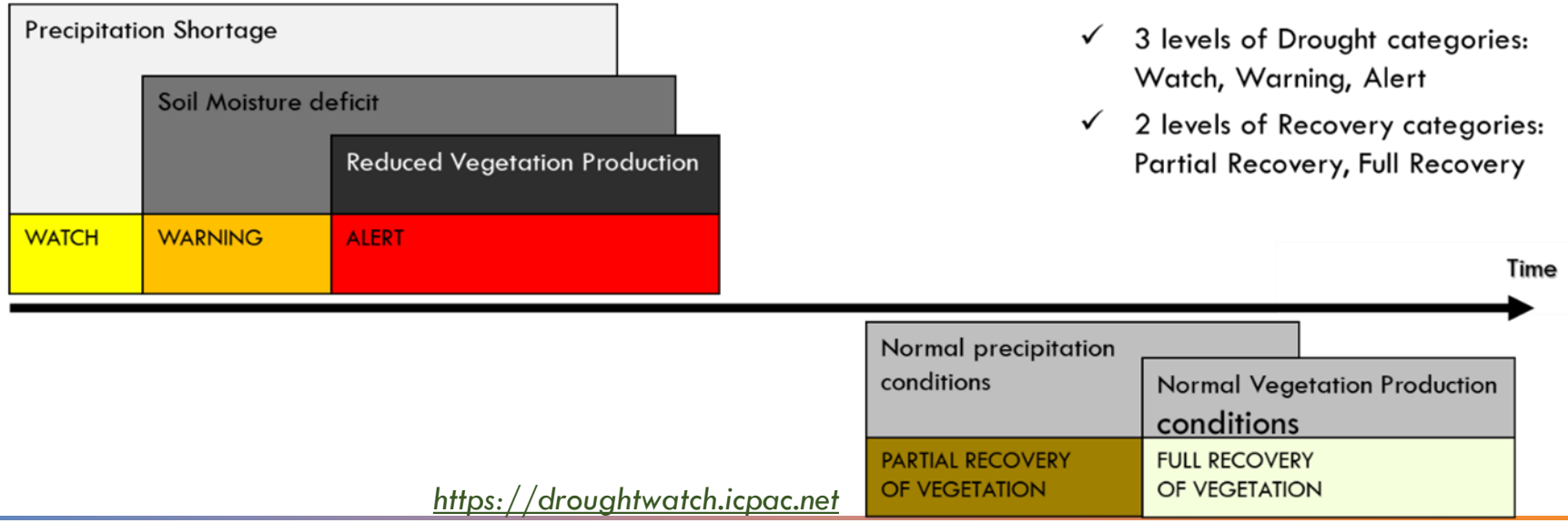


2 **Soil Moisture Anomalies**



3 **Vegetation Anomalies (fAPAR)**





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

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Products: Periodic Bulletins & Reports

East Africa Drought Watch

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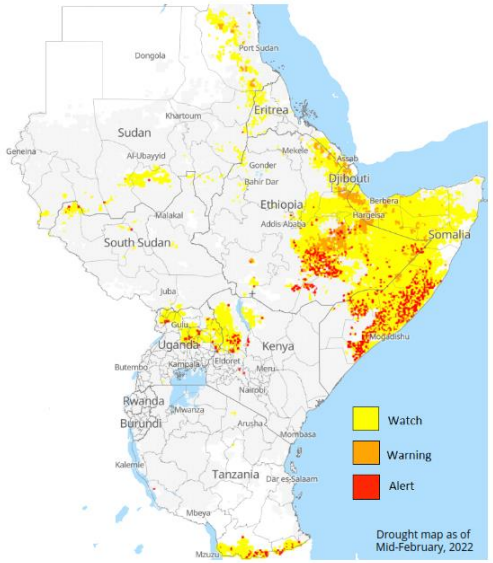
Disaster Operation Centre - Drought Update

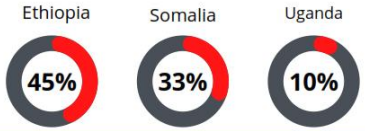
March 29, 2022

- 5,290,883 Estimated population affected
- No Data Deaths
- 6,071,110 Displaced population
- 29,632,601 Food insecure people
- 2,900,000 Estimated number of dead livestock & wildlife
- USD 849M Humanitarian response needed



Most affected countries:

In percentage of the population



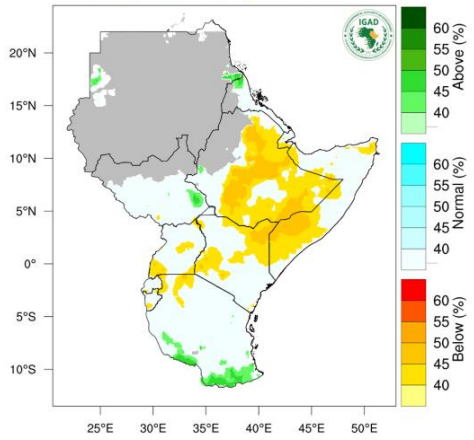
Key messages

- Eastern Africa faces serious food insecurity with over 29M people in need of humanitarian assistance.
- The ongoing drought is particularly acute in Ethiopia, Kenya, and Somalia.
- Sharp increase in the number of drought-induced IDPs in Somalia since November 2021.
- Ethiopia: traceability regulations prevent meat exporters from reaching European and North American markets.

Forecast and warning

- Ethiopia, Kenya, and Somalia: 12 to 15M people likely to face high levels of food insecurity until May 2022.
- Somalia: 1 to 1.4M people may be displaced in the next 6 months.
- Updated forecast for March to May (MAM) 2022 season: drier than normal conditions in most of the eastern parts of the region, covering Eritrea, most of Ethiopia, western South Sudan, isolated places in Uganda, eastern and north-eastern Kenya, parts of southern Somalia, and north-eastern Tanzania.

Rainfall Forecast for April 2022



Advisory

- Urgent call for immediate and coordinated humanitarian action to save lives, livelihoods, and build resilience.
- Interventions include: food and water supply, cash payouts, and livestock off-setting.
- Humanitarian actors should advocate for no-regret approaches.

Data/Infor Sources: IGAD-Member States/ICPALD/FSNWG/ /UNHCR/OCHA East Africa Drought Watch: https://droughtwatch.icpac.net Contact: disaster-risk-management@igad.int

IGAD
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DROUGHT IN SOMALIA 2020/2022 (August Update)

Causes – Trends – Impacts and Current Status

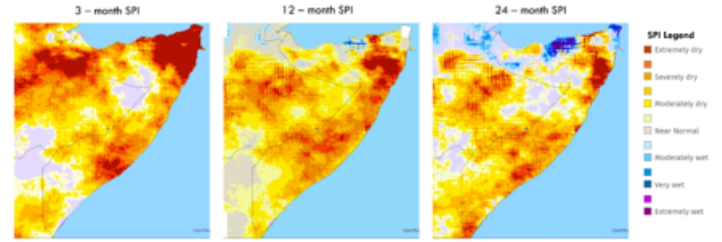
1. Cause

The current drought and subsequent impacts are attributed to complex interplay between biophysical factors such as climate variability and Climate Change impacts to the global pandemic (COVID-19) and ecosystem degradation and disruption of food supply chains and conflicts creating compounding risks and cascading impacts.

There were early indications of below normal rains starting from July 2020 (Figure 3) and early warnings have been issued since then every start of the main season by ICPAC. The main challenge in the ongoing drought is lack of early action, CHC[1] analysis of response to the drought indicate there were two critical points in the timeline when early action would have been triggered in Somalia to avert the devastating impacts of the drought.

Despite isolated rains received in July, the drought conditions continue to persist across most parts of Somalia with the situation expected to worsen considerably over the upcoming October-December rainfall season based on the seasonal forecast issued by ICPAC during the GHACOF 61.

Drought Trends in Somalia



Precipitation anomaly maps over Somalia as of June 2022 showing prolonged drought conditions persisting over 24 months period

Figure 1 SPI maps showing rainfall anomalies over 3, 12 and 24 months. Most parts of Somalia have been severely dry to extremely dry over extended periods of time (Source: FAO/W)

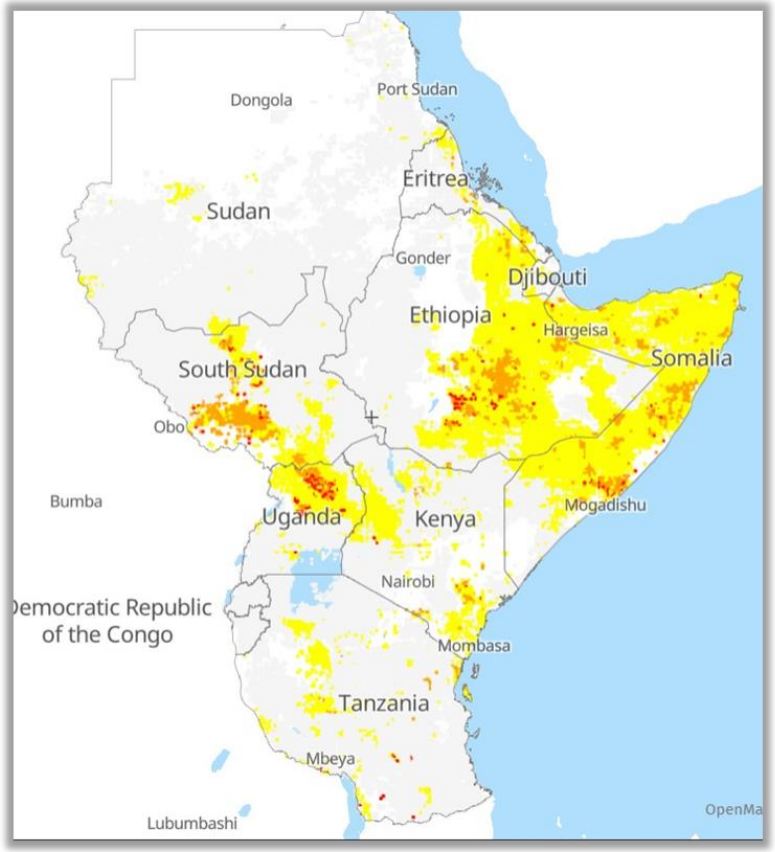
Even in the absence of other factors, a fifth consecutive failed rainfall season would likely be sufficient to induce starvation and in some cases famine for a sizable portion of the population. It is important to keep in mind that in drought of 2010–2011, several livelihood groups were driven into famine by just two significant failed rainfall seasons. The 2022 Gu season failure had the highest deficit I history and it is anticipated that the 2022 Devr season failure will be as terrible or worse Figure 2. If the devr

East Africa Drought Watch

Products: Regional Analysis – Transboundary

Regional Overview of Drought Conditions (3rd Dekad Jun 2022)

Regional Overview of Drought Conditions (3rd Dekad Jun 2022)



Low: Rainfall deficit

Moderate: Soil moisture deficit

Severe: Vegetation Stress following rainfall/soil moisture deficit

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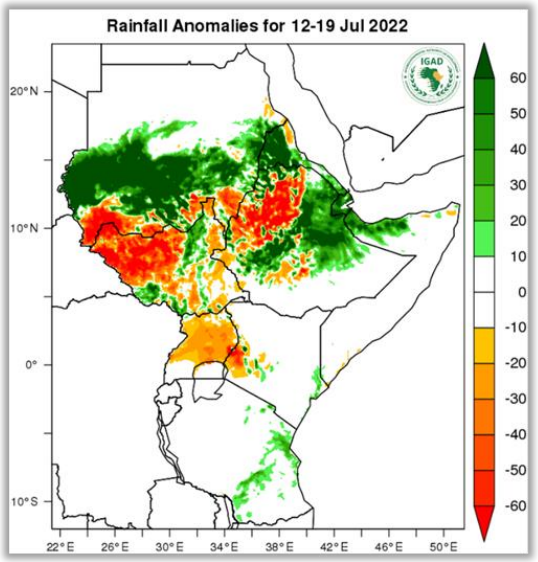
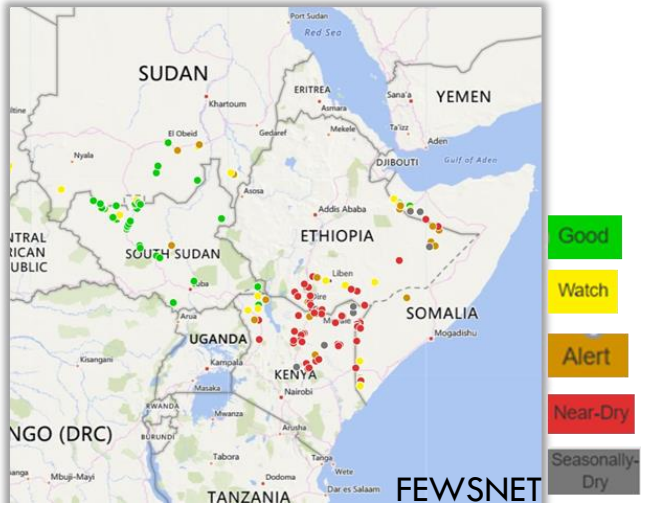
Rainfall Forecast for 12-19 Jul 2022



Status of Water Points (May 2022)



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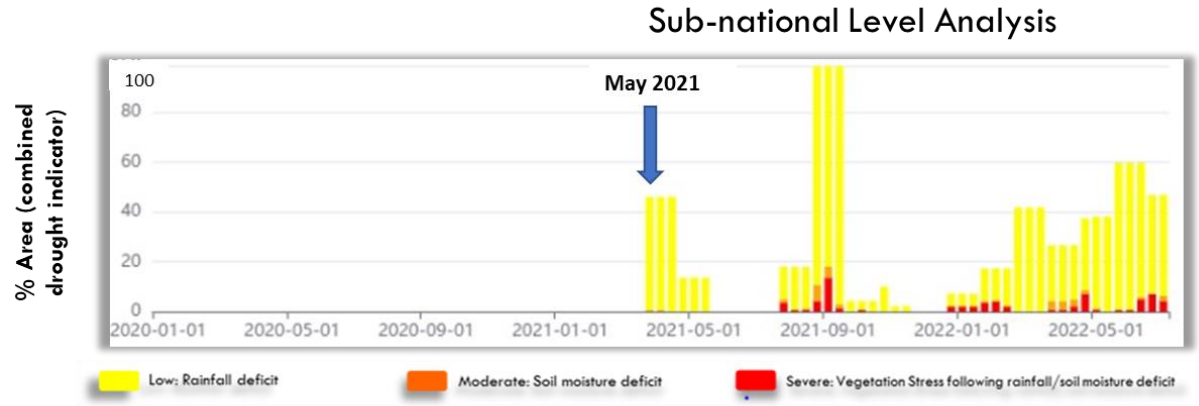
Products: Sub-national Analysis - Kotido, Uganda

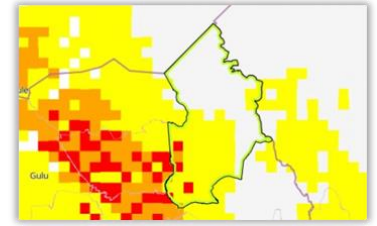


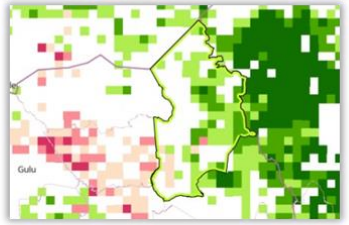
Population exposed (Apr 2022)

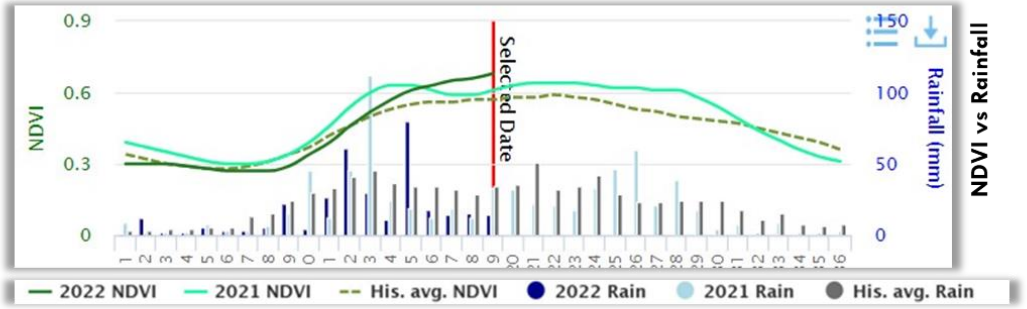
Category	Population	% of whole region
Warning	65,918	9.49 %
Watch	218,327	31.44 %
Alert	21,632	3.12 %

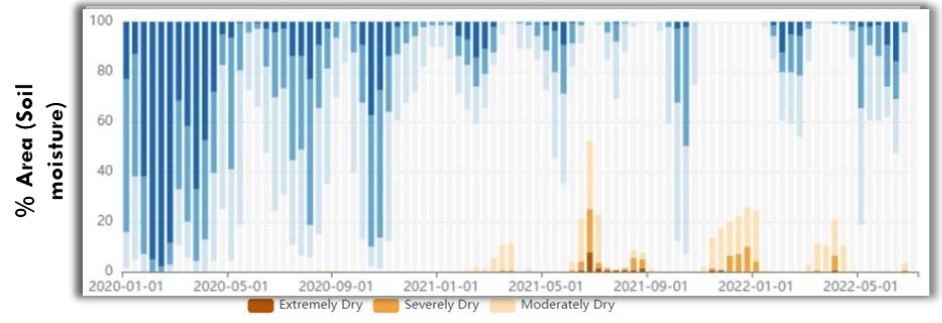
Population exposed (Jun 2022)

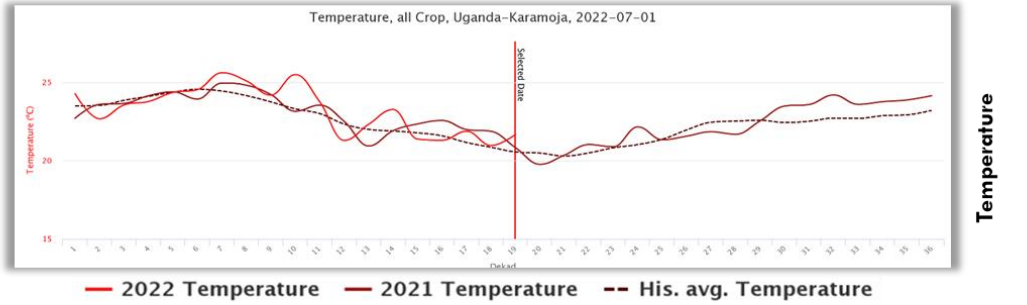
Category	Population	% of whole region
Watch	335,327	48.29 %
Warning	18,225	2.62 %
Alert	31,287	4.51 %





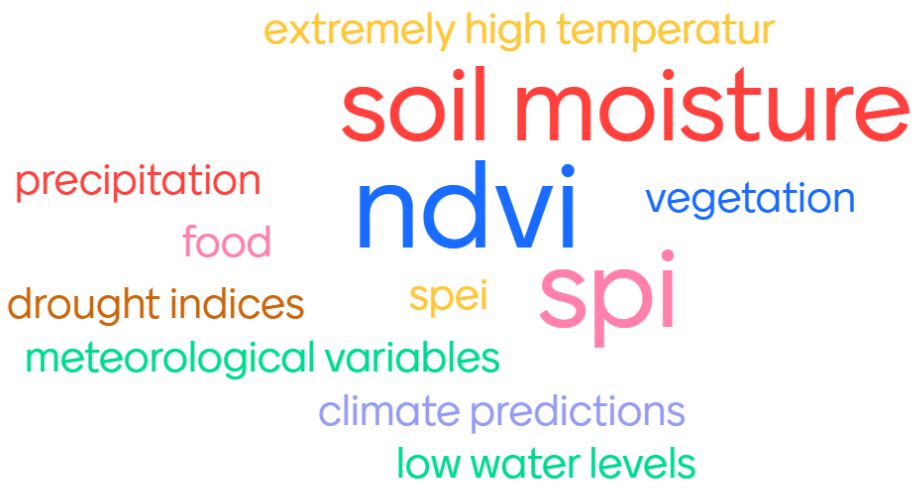




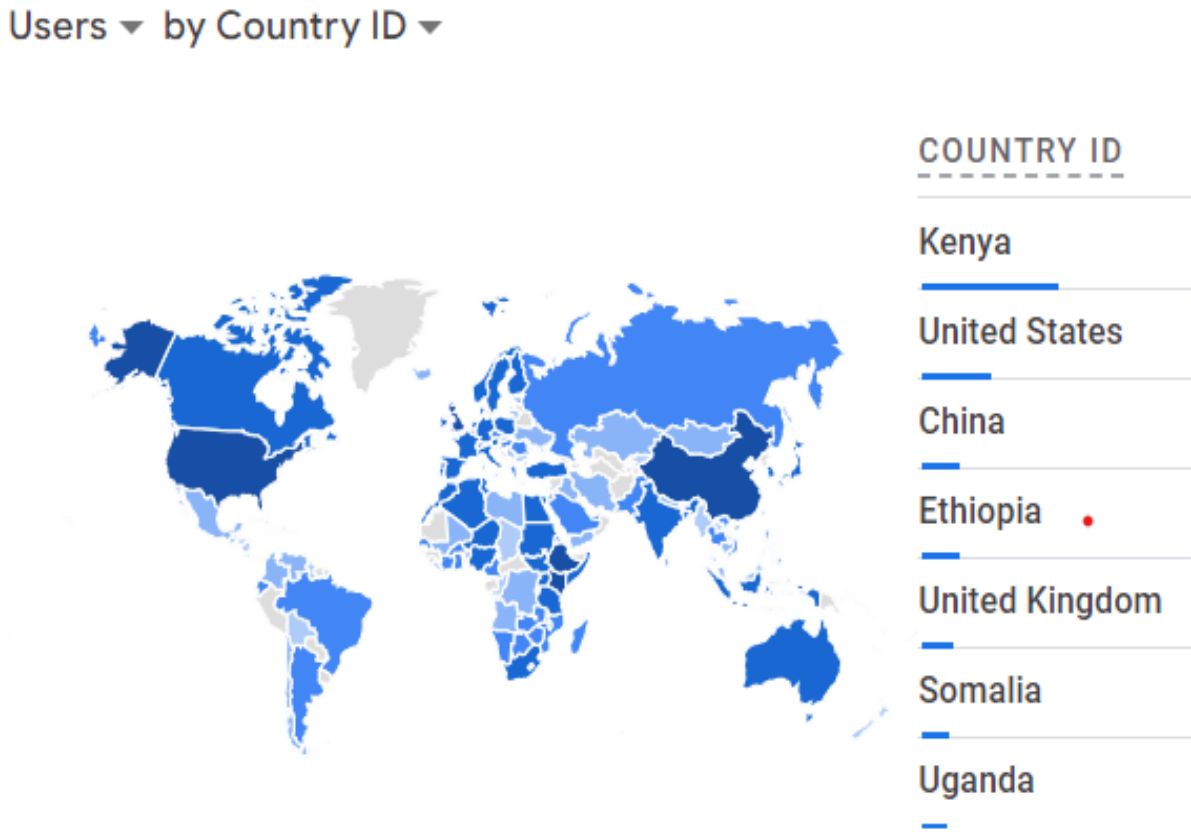


Drought Indicators

workshop results



Users Analytics



Thank You

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