# Status of Drought and Outlook for the Second Half of 2022 Across Eastern Horn of Africa


WFP Regional Bureau for Eastern Africa
Research, Analysis & Monitoring (RAM) Unit

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# Main Highlights

- **The significantly below-average March-May rainfall season marked the 4th consecutive poor season since late 2020 and the most severe in 70 years in many areas of Ethiopia, Kenya, and Somalia.**

- The exceptionally long drought, amplified by warmer-than-normal temperatures, has devastated livelihoods and debilitated livestock herds, crops and vegetation, water availability, household incomes, and increased displacement.

- **At least 7 million livestock depended upon by households for sustenance and livelihoods have died in Kenya, Ethiopia and Somalia.**

- The situation is likely to worsen over the June-September period given the inadequate grazing resources to support recovery and breeding.

- **The combined effect of drought and other shocks have worsened the food security and malnutrition situation across the affected areas, with an estimated 18.4 to 19.3 million people facing severe food insecurity (IPC 3+) due to drought and with likely deterioration over the June-September season**.

- **6.5 million children are projected to suffer from acute malnutrition**, of which 1.8 million are children with severe wasting in Kenya, Somalia, and Ethiopia (FSNWG, July 2022).

- Areas of greatest concern are those at risk of famine in Somalia where the situation might quickly deteriorate if seasonal harvests fail, market prices continue rising, and humanitarian response is inadequate to cater for the rising needs; and in Mandera (Kenya) and Bay region (Somalia) where malnutrition levels have exceeded the critical levels (GAM >30%).

# Forecast for the Period July – Dec 2022

- Over the July-September dry period, the drought condition will worsen given the inadequate recovery during the March-May rainfall season and prevailing warmer-than-normal air temperatures.

- The upcoming October to December rainy season will be below-average, resulting in a **fifth below-average rainy season**.

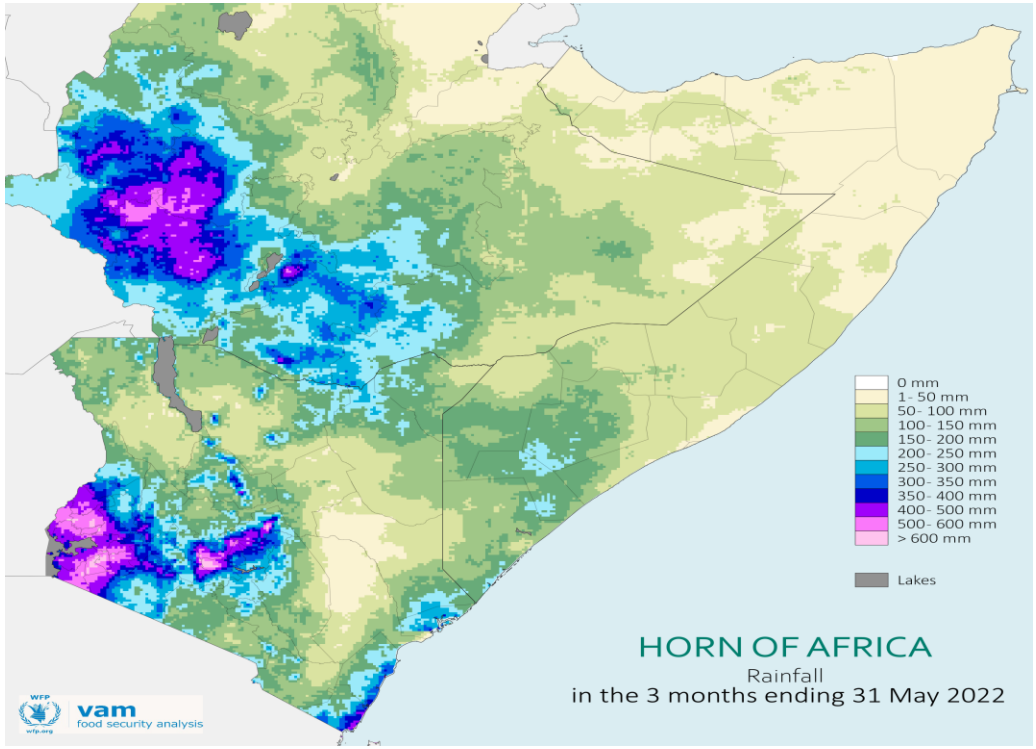
- The 2022 crop harvests in drought-affected areas will be below-average, resulting in rising market demand despite reduced supply.

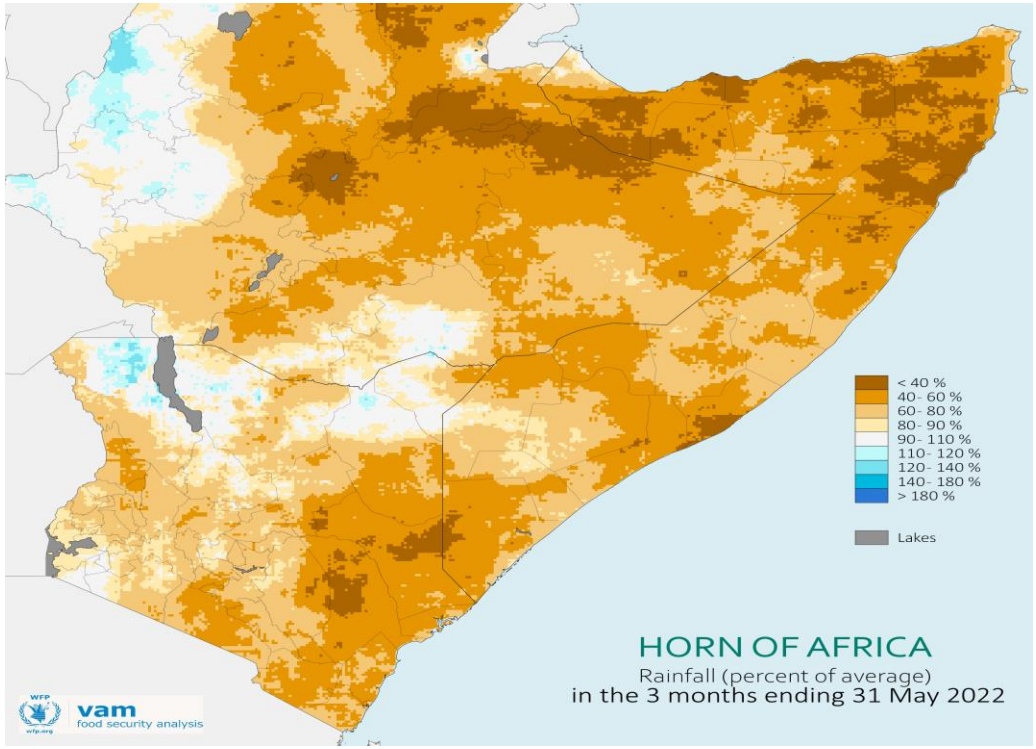
- Pastoralists will continue to face widespread livestock deaths, little to no milk production, and poor livestock-to-cereal terms of trade.

- In summary, the drought spanning over 2-years will have **devastating and long-lasting impacts on societies** through disrupted livelihoods, eroded assets, magnified food insecurity and malnutrition, and extensive environmental impacts that will take a long time to recover from.

- In the absence of a marked increase in assistance and aid programs, it is expected that the numbers of food insecure that have been climbing steadily will continue to do so. WFP estimates the numbers of food insecure due to the drought to increase from the current 18 – 19 M to at least **22 M by end of year**

# March – May 2022 Rainfall Performance

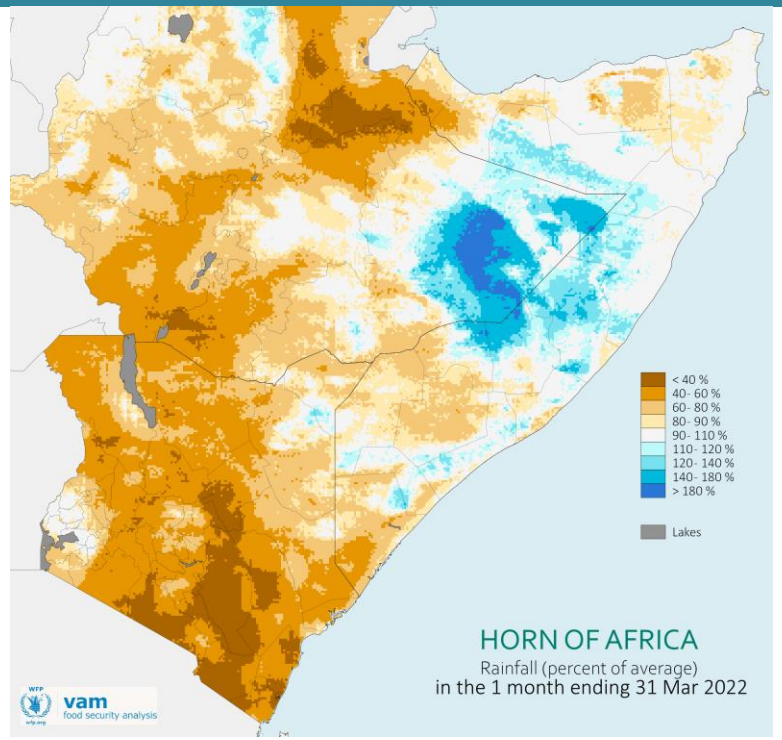


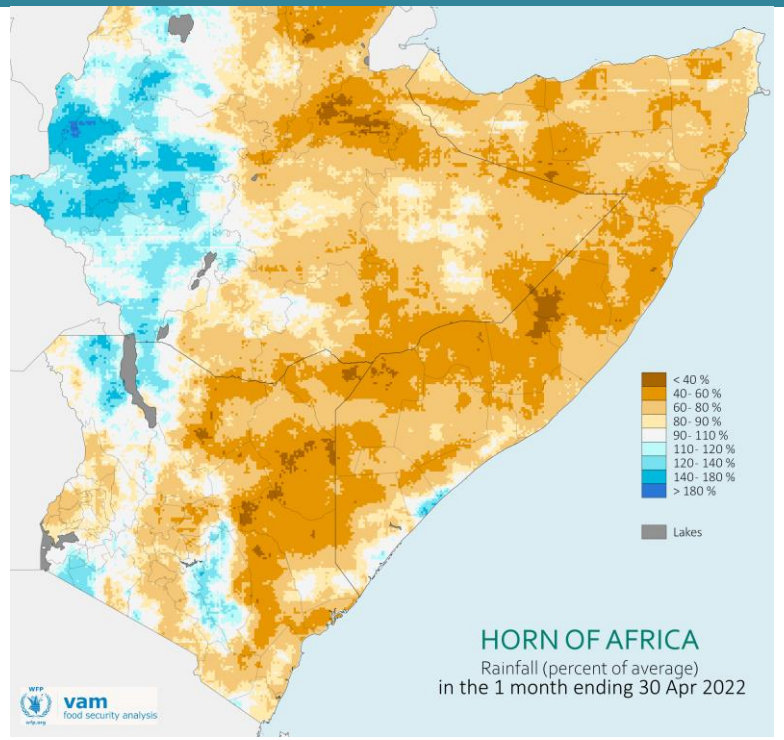



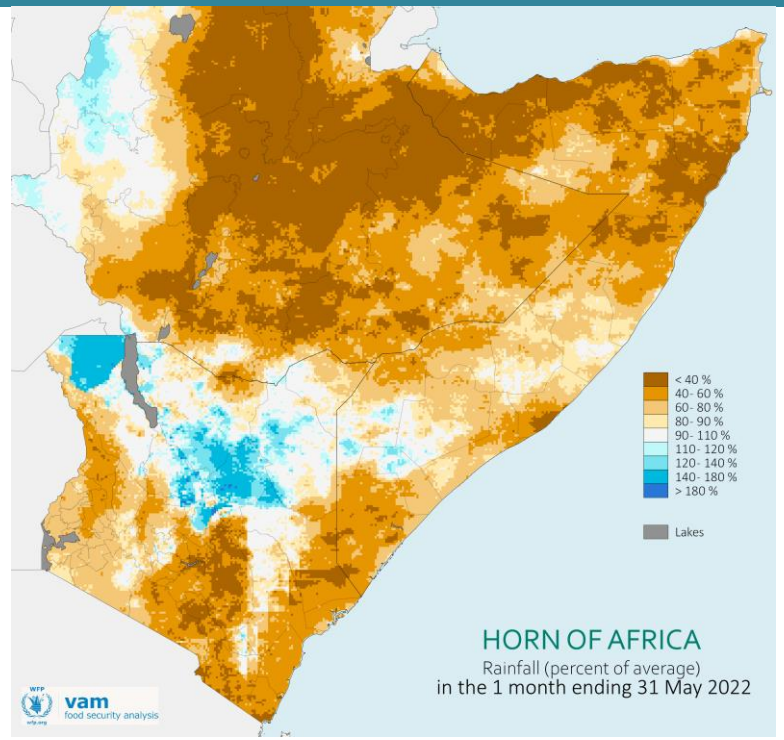

*Seasonal rainfall anomaly for March – May 2020 season as a percentage of 20-year average (top). Brown shades indicate below-average rainfall; blue shades above-average seasonal rainfall (Source: CHIRPS, CHG, USCB).*

- The March–May 2022 seasonal rains had a delayed start across the region until after mid-March, which prolonged the hot and dry period that prevailed during the January-February months. Thereafter, the performance varied significantly over space and time occasioned by dry spells that impacted on the growing conditions.
- Cumulatively, only the western, central and parts of coastal Kenya, southwestern and parts of southern Ethiopia had over 200mm of rain (Map on left). The rest of the areas received very low rainfall, which was insufficient to alleviate the prevailing drought conditions.
- In comparison to long-term average, there was widespread and significantly below-average rains (<60 percent) across most areas (Map on right), which worsened the drought conditions in southern and south-eastern Ethiopia, the arid and semi-arid lands (ASALs) of Kenya, and across most of Somalia.

# Monthly Distribution of the March – May 2022 Rains



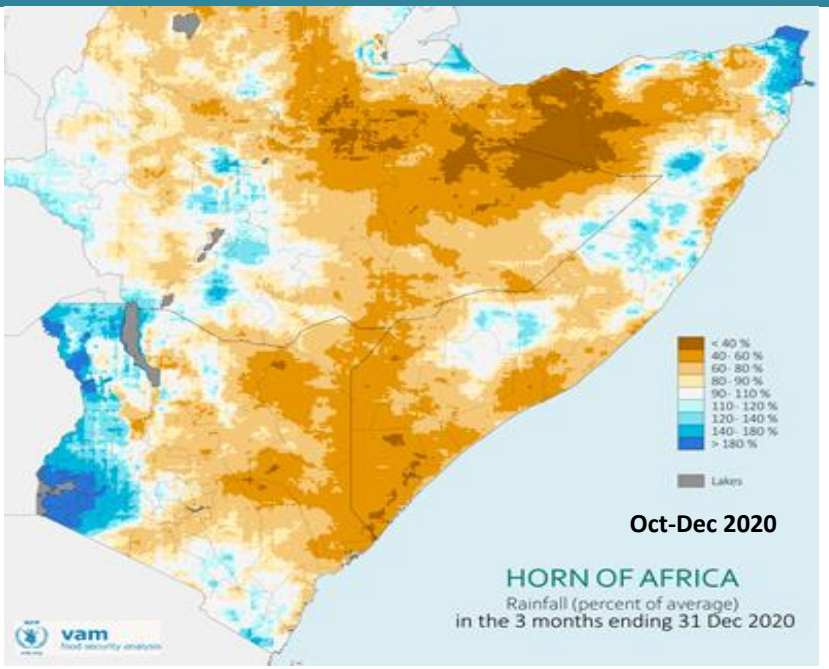



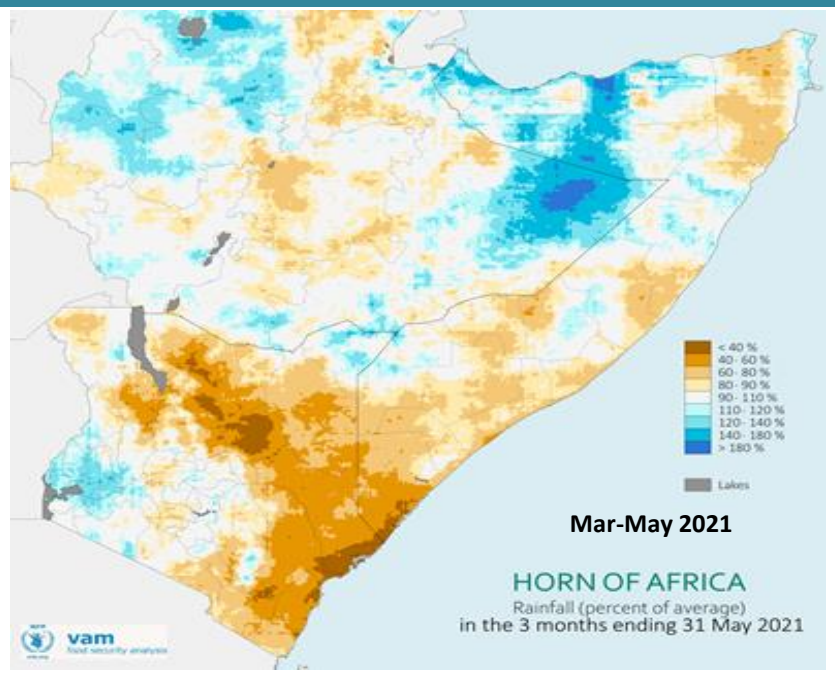



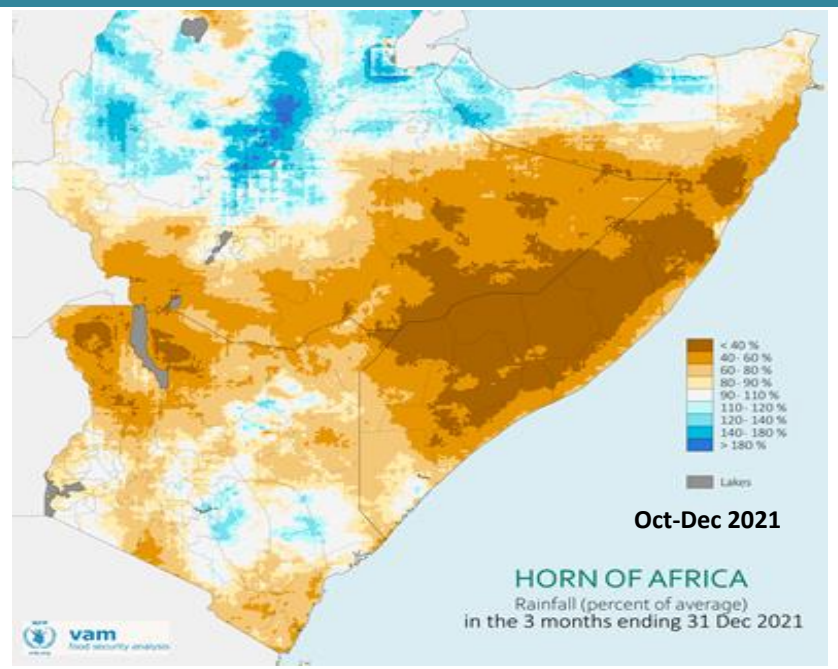

*Monthly rainfall anomalies for March, April and May 2020 season as a percentage of 20-year average (top). Brown shades indicate below-average rainfall; blue shades above-average seasonal rainfall (Source: CHIRPS, CHG, USCB).*

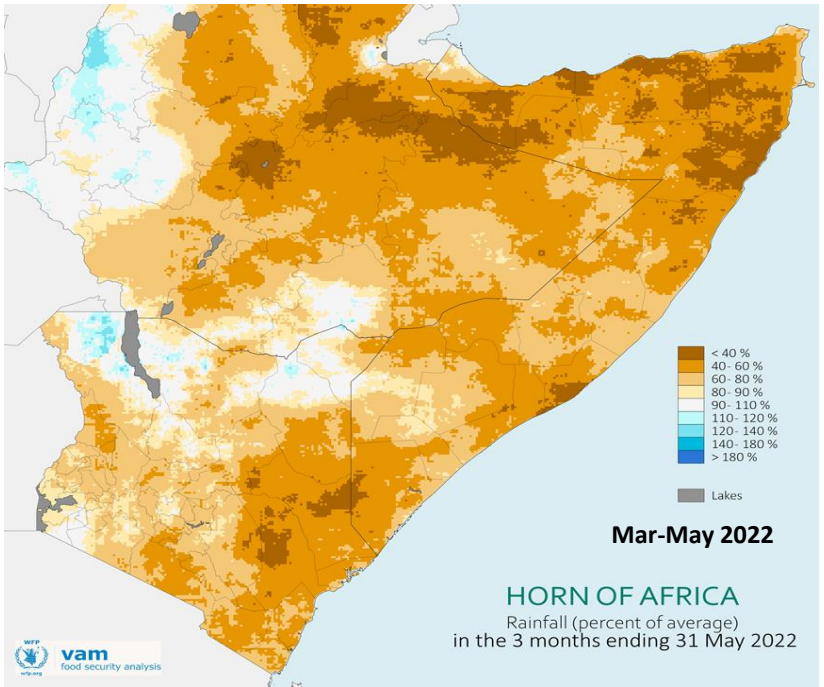
- The performance varied significantly over space and time as evidenced by the monthly anomalies maps above. In March, most benefitting areas in Kenya and Belg areas of Ethiopia had significant below-average rains. The situation continued in April when the seasonal rains normally peaks, the situation improved in western Ethiopia and parts of western Kenya but the situation in eastern part of the region remained poor.
- In May, the rainfall deficits were exceptionally intense across most of Ethiopia and Somalia, as well as in the southwestern and coastal marginal agricultural cropping areas of Kenya. The significant low rainfall amounts coupled with dry spells during the season, negatively impacted on the growing conditions (pastures and crops).

# Fourth Consecutive Below-Average Seasons Since late 2020



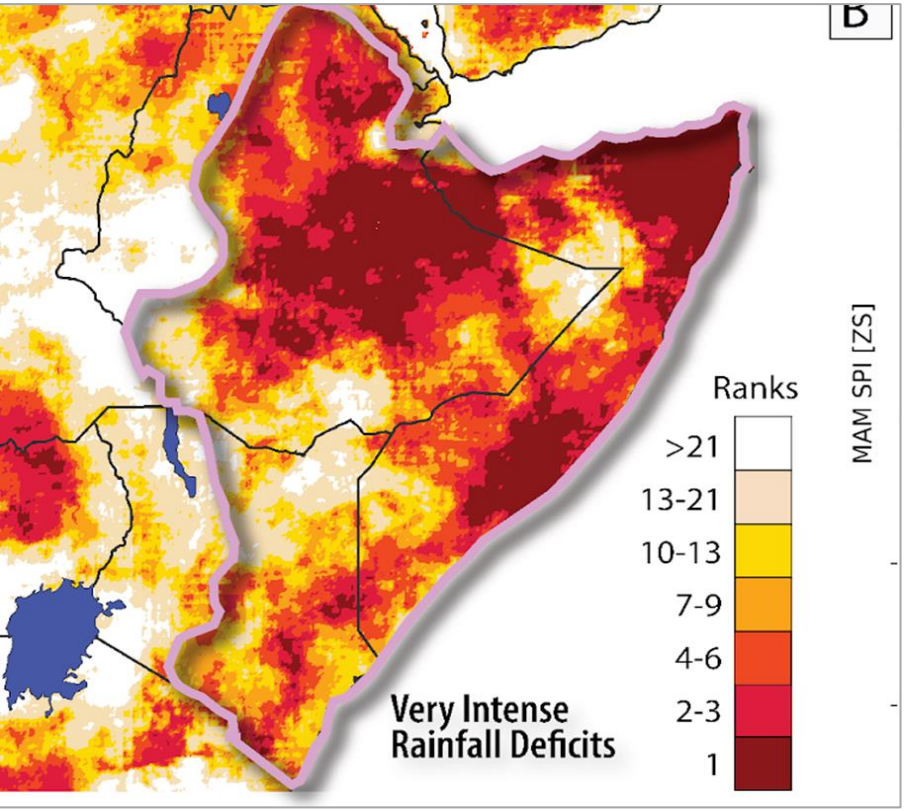



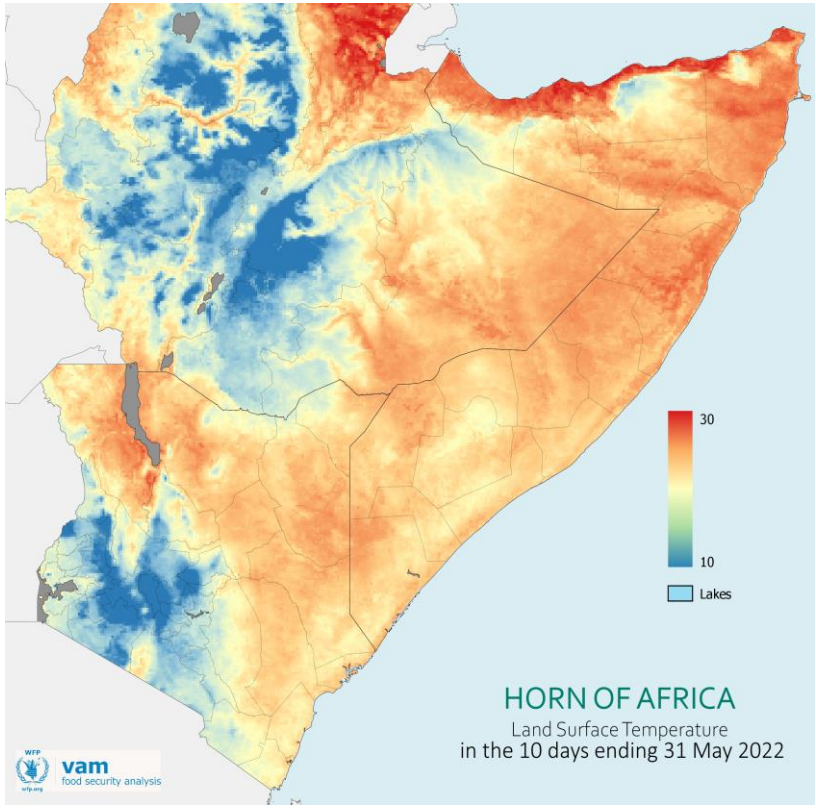

- As a result of the record low performance, the March-May 2022 season marked the fourth unprecedented below-average seasonal rains since late 2020. The associated drought conditions and high temperatures have been severe, widespread across many areas, with significant environmental and socio-economic impacts.

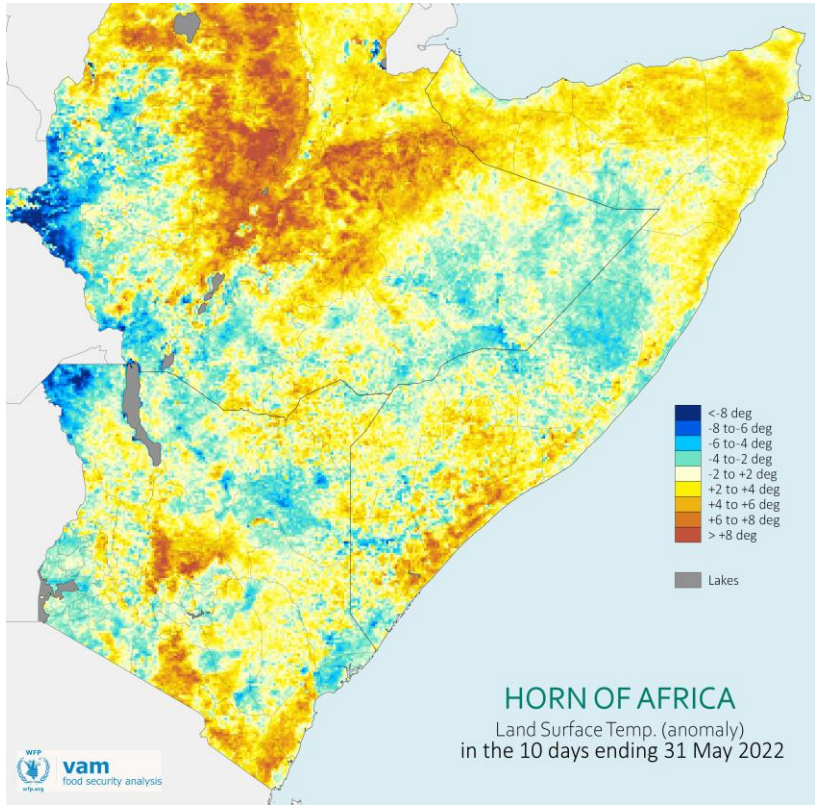
*Seasonal rainfall anomalies for the main seasons since late 2020 as a percentage of 20-year average (top). Brown shades indicate below-average rainfall; blue shades above-average seasonal rainfall (Source: CHIRPS, CHG, USCB).*

# Lowest Rainfall in Decades Coupled with High Land Surface Temperatures




*The March-May 2022 season ranking in comparison to past 42 years based on SPI*
*Generated using Chirps data*

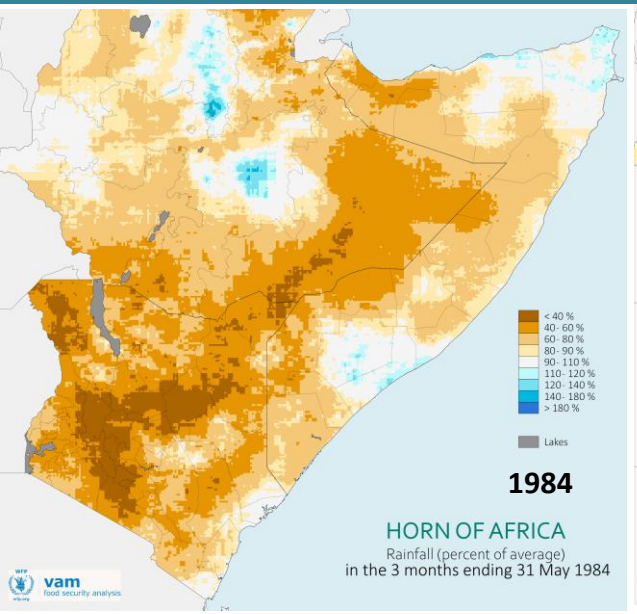


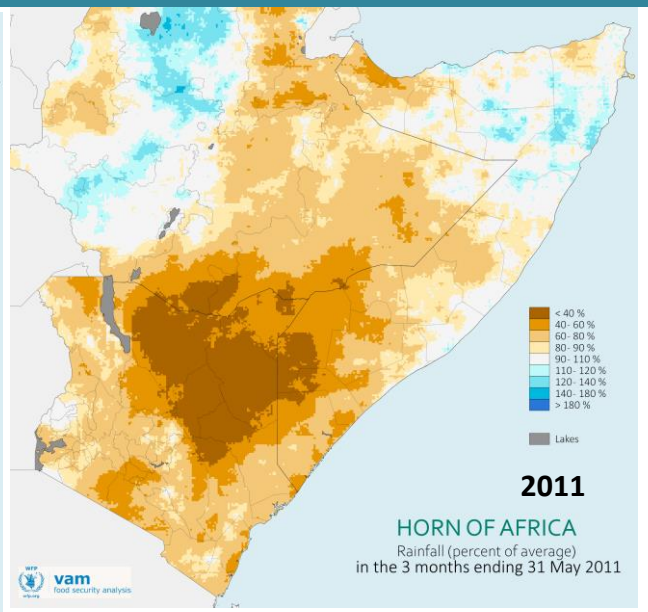



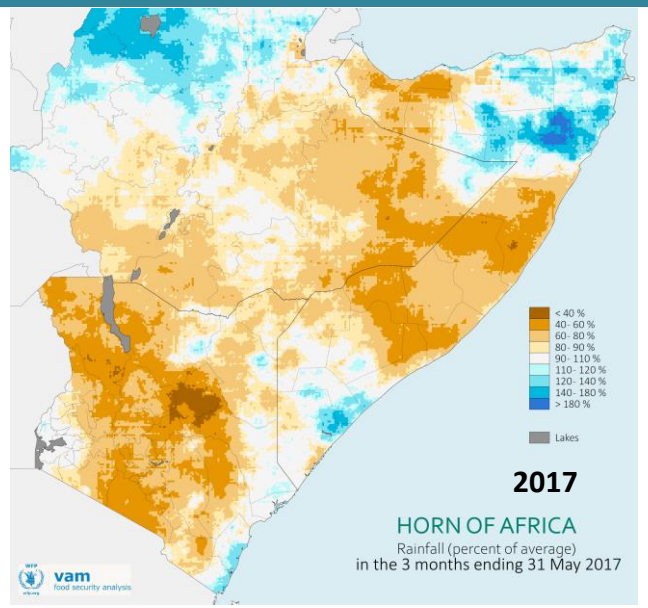

*Land surface temperature and anomaly for the period 21-30 May 2022 (ECMWF ERA5-Land data)*

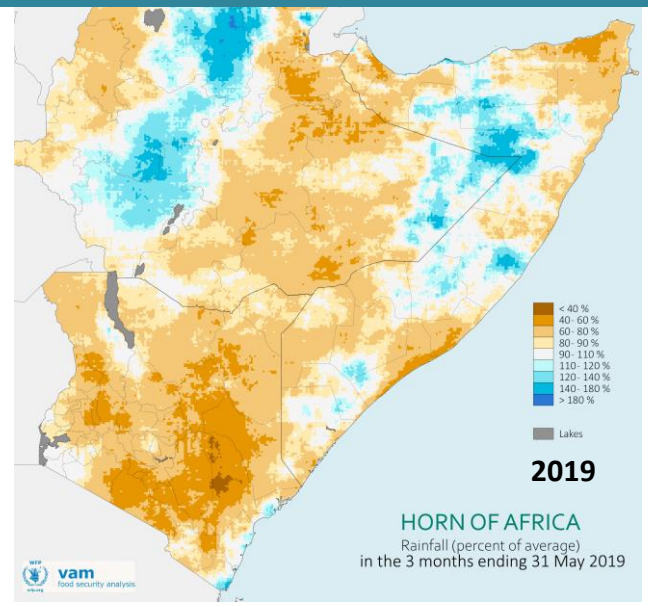
- Ranking on the basis of standardised precipitation index (SPI) data for March-May season over the last 42 years show that the 2022 rainfall season had record low rainfall amounts in many areas across the region as shown by map on left (Joint Alert, June 2022).
- The record low rainfall and drought conditions were further amplified by high air temperature that prevailed during the season increasing evapotranspiration and desiccation of rangelands vegetation and planted crops, water evaporation from surface water points, drying of soils, and weakening of livestock body conditions.

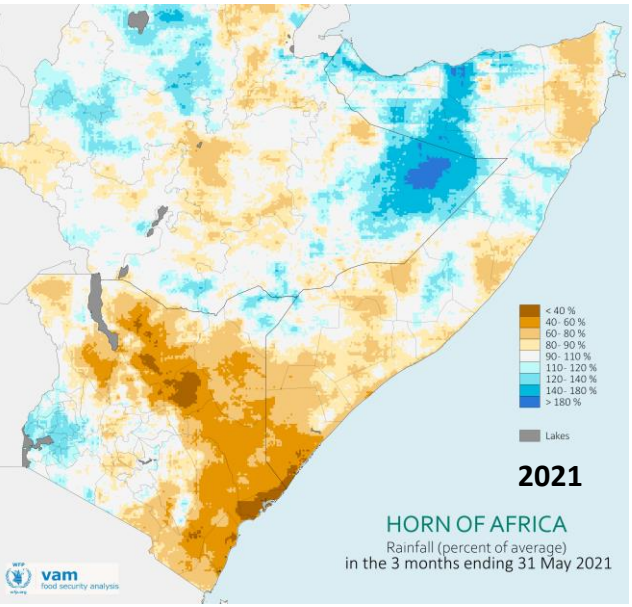
# The March-May 2022 Season Compared with Previous Drought Years

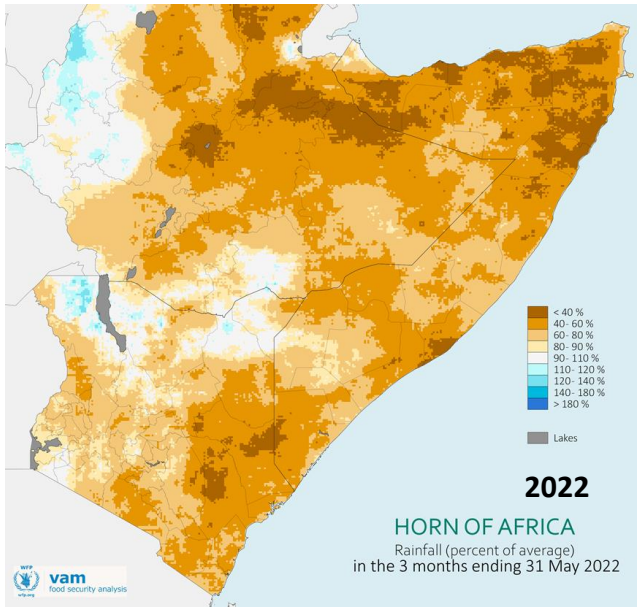


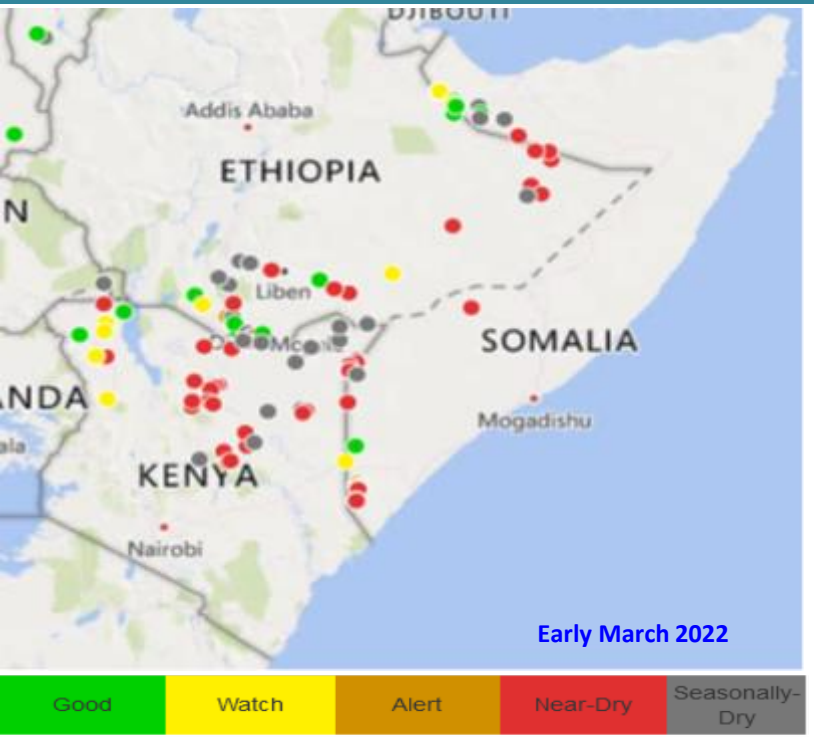

*Rainfall anomaly for March-May 2022 compared to previous drought years as a percentage of 20-year average (top). Brown shades indicate below-average rainfall; blue shades above-average seasonal rainfall (Source: CHIRPS, CHG, USCB).*

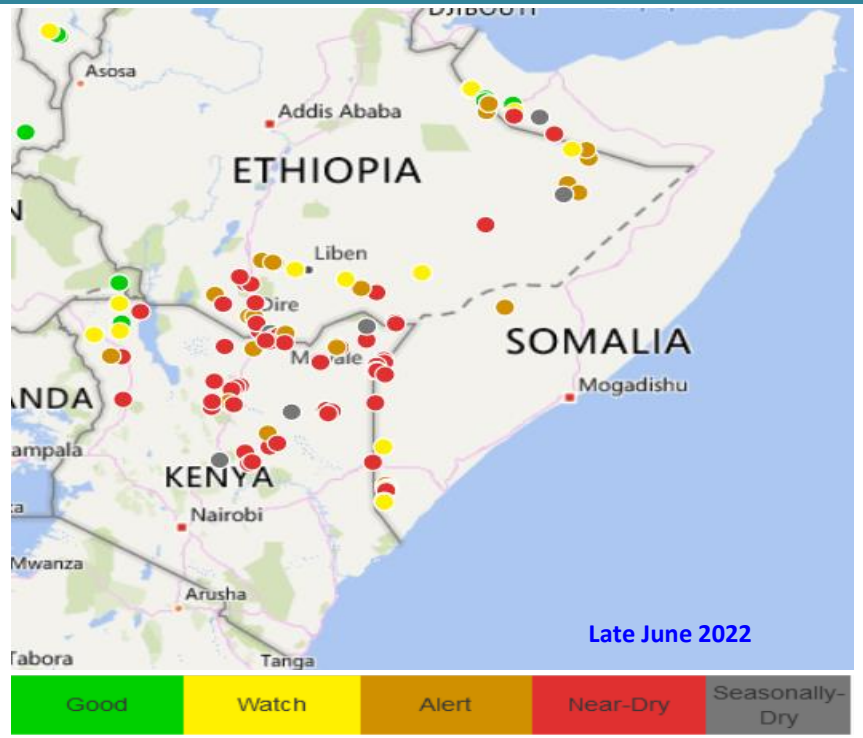
- The March-May 2022 season rainfall performance mirrors to some extent the situation during the 1984 and 2011 droughts especially in many areas of Kenya, southern Ethiopia and parts of southern Somalia (see Maps).

- What makes the current drought unique is the prolonged period of about 2-years (Oct 2020 – May 2022) that has led to significant and severe environmental and socio-economic impacts that will last for a longer time.

# Implications of the Ongoing Drought

# Severe Water Scarcity



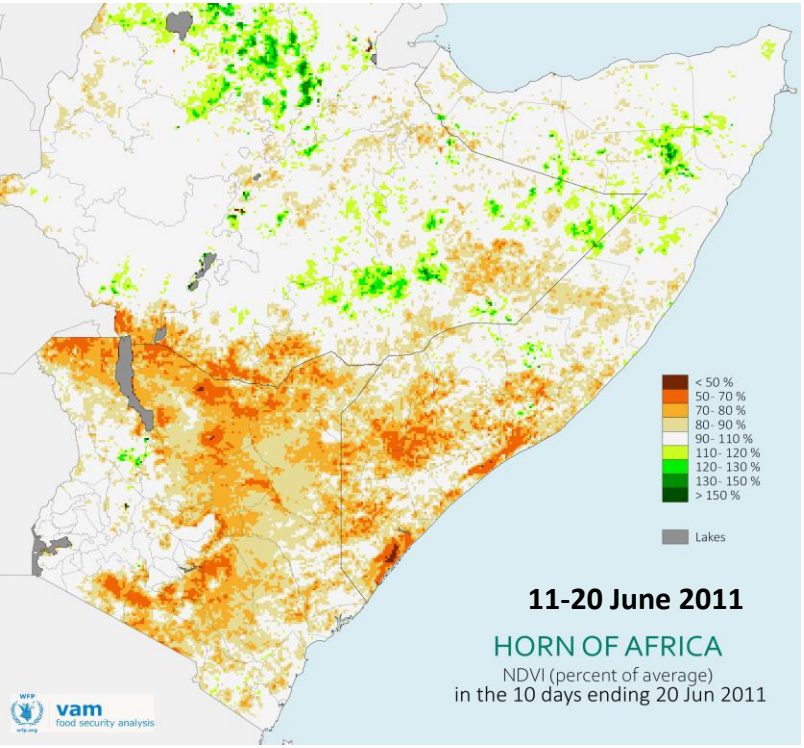

*Status of water points by early March (left) and early June 2022 (right) based on RFE; Green for good and orange to reddish for alert to nearly-dry water points (USGS/Fews Net system*

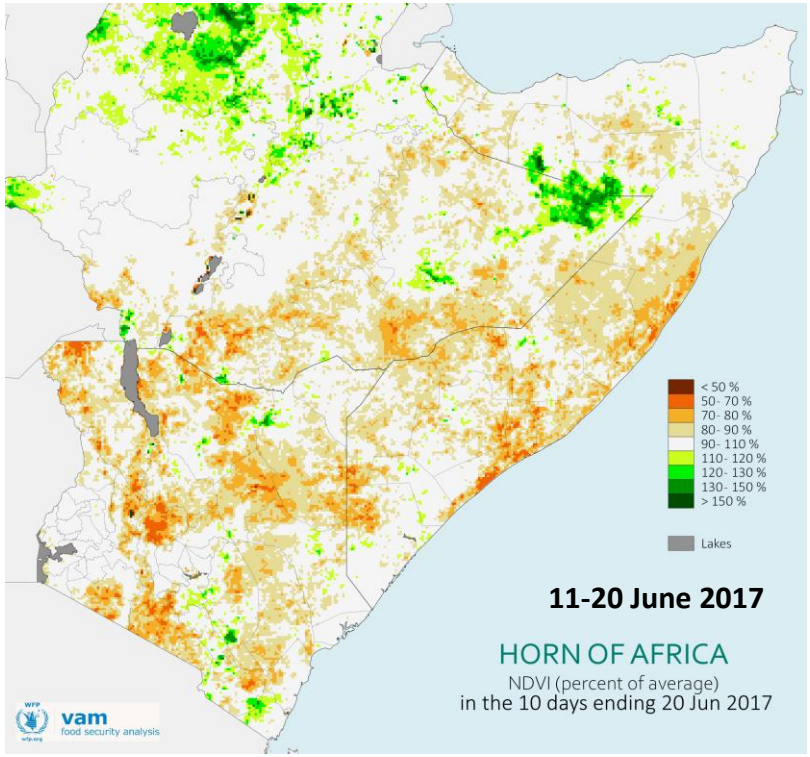

*Source: UNICEF*

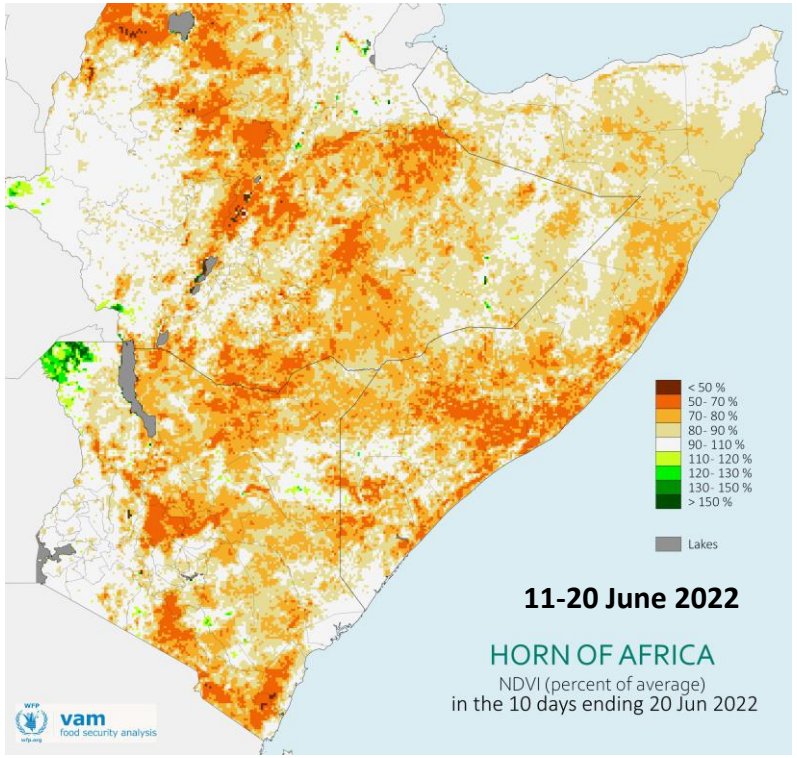
- By end of June, most surface water points had not adequately replenished and were still in alert to seasonally-dry status same as before the rains started in early March. Hence, most drought affected areas will continue experiencing water scarcity over the June-September dry season pushing the need for continued water trucking especially in Somalia. Water prices will remain high or increase.
- Although the water resources slightly improved in some locations, they are expected to deteriorate (or get depleted) earlier-than-normal leading to livestock and humans trekking over longer distances in search of water or lead to unusual outmigration. Governments and stakeholders should therefore strengthen anticipatory actions that will allow communities access water in coming months to safeguard their livestock assets and meet domestic water requirements.

*Water scarcity and trucking in Togdheer district, Somalia (Concern Worldwide, Feb 2022)*

# Severe Vegetation Deficits Immediately After the Rainfall Season




*Vegetation anomaly in early June (1-10th) 2022 compared to previous drought years. Green shades indicate better-than-normal vegetation while shades of orange to red, below-average situation (MODIS, NDVI).*

- In a normal year, the vegetation would be in good condition by the end of a rainy season before it starts deteriorating in the course of the June-September dry season. However, available vegetation data for mid-June (11-20$^{th}$) show significant deficits in many areas and worse off than during the same periods in 2011 and 2017. This implies that rangelands have not recovered and vegetation regeneration has been poor especially in pastoral and agropastoral areas. Hence, the region will continue facing limited availability of grazing resources, which will negatively impact on the livestock sector during the dry June-September period. Limited grazing resources and water scarcity will sustain livestock in poor body condition as well as lead to further livestock deaths in the most affected areas.
- In the marginal agricultural areas of eastern and coastal Kenya, southern Somalia, and Belg producing areas of Ethiopia, the poor vegetation condition shows there has been minimal crop development; a consecutive below-average/poor harvest is expected starting July. As a result, food availability and household food stocks will last for a relatively shorter period than usual leading to worsening food insecurity situation in coming months.

# Poor Growing Conditions; Likely Below-Average Seasonal Crop Production

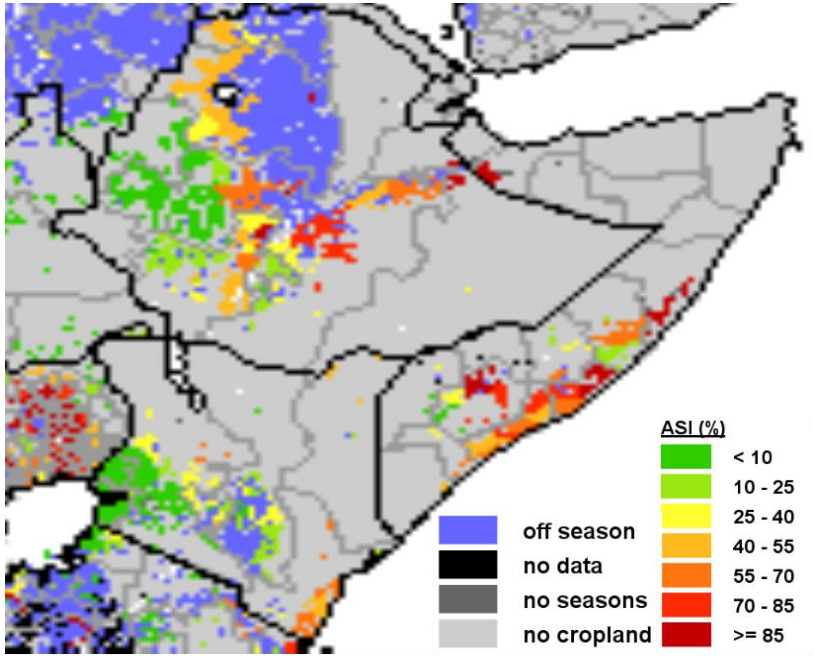
- During the Oct-Dec 2021 short-rains season, the region faced a 3rd consecutive below-average crop production in most marginal agricultural areas of Kenya, south-central Somalia and Belg areas of Ethiopia. In southern Somalia, production was 58% lower than 1995-2020 average and 3rd lowest *Deyr* harvest since 2010 while in northwest region it was 56 percent lower than 2010-2020 average. In Kenya, the national short rains crop production was 45-50 percent of 5-Yrs Average.

- Similarly, the 2022 long-rains cropping season started late following delayed rains, the area planted declined, germination failures occurred in some areas, and the significant below-average rains impacted on crop establishment and development. In most receiving areas, the seasonal rains have declined/ended while late planted crops are yet to reach maturity.

- By mid-June, the FAO GIEWS Agricultural Stress Index data showed that most croplands (>40 percent) in southern and central Somalia, Belg areas of Ethiopia, and coastal Kenya have been grossly affected by drought (bottom map on right). Coupled with socioeconomic challenges and disruption on inputs supply (fertiliser) following the Russia-Ukraine conflict, widespread below-average June-July-August harvests are anticipated. In Somalia, this will be the fifth consecutive below-average seasonal harvest on record.

- The impact on food availability will vary across the three countries. In the belg areas of Ethiopia and marginal agricultural areas of Kenya, the contribution/proportion of the March-May season to overall production is relatively small. In Somalia, the Gu is the main producing season and the estimated production at 40-60 percent below-average (FSNAU) will significantly impact on food availability and food security in rest of the year.

*Failed crop in Kieni, Nyeri county, Kenya during the Oct-Dec 2021 season (source: KFSSG)*




Percentage of cropland affected by severe drought as of 2nd Dekad, June 2022 (FAO GIEWS)

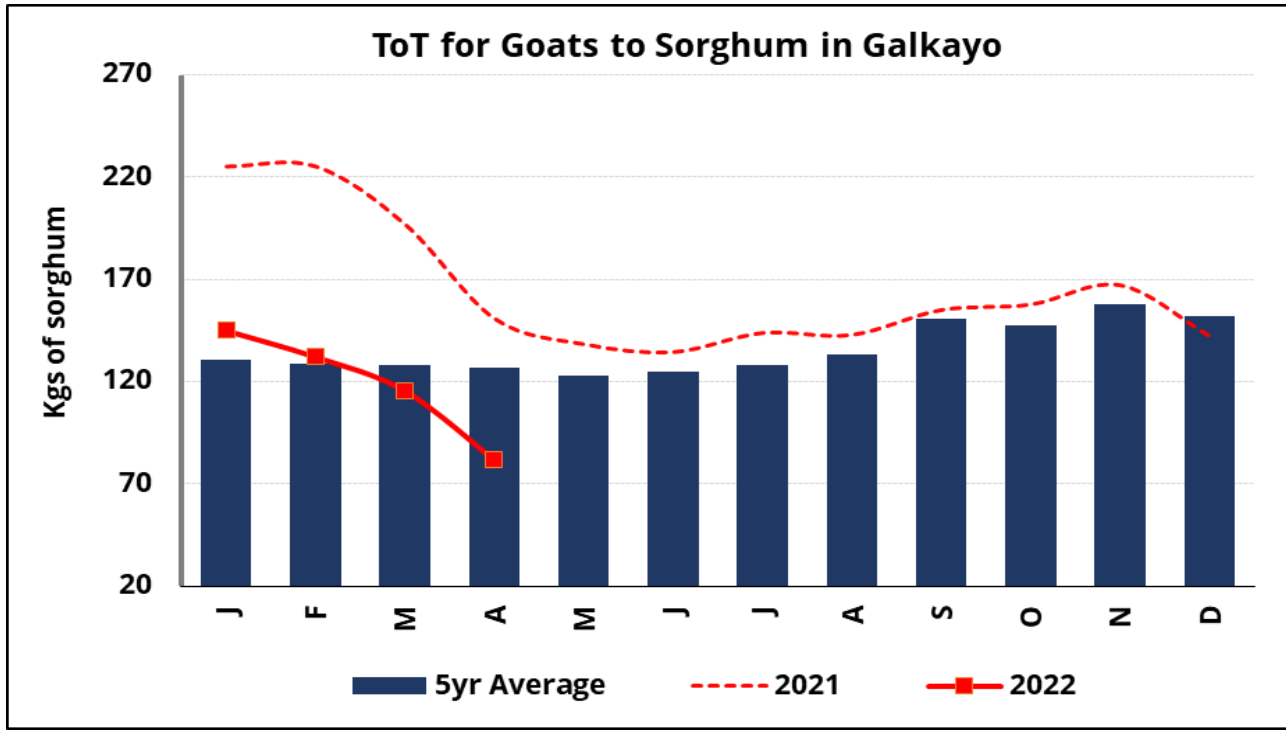
# Deteriorating Livestock Condition, Deaths & Declining Livestock prices

- Across the pastoral and agropastoral areas, the poor status of pasture and water availability continues to impact on livestock production and productivity, availability of consumption products, and income generation among households.

- Across the drought affected areas, the poor livestock body condition and increased need for distress sales has lowered livestock prices thereby eroding the household purchasing power. The terms of trade for livestock to cereals has worsened since 2021. For instance in Galkayo, Somalia, the ToT for a goat to sorghum declined by nearly half between January and April 2022 as shown in the upper right figure.

- The drought has also caused significant losses of household assets through livestock deaths in the three affected countries. **Atleast 7 million heads of livestock depended upon by households for food and livelihoods have died since the drought started.** This includes 1.5 million heads in Kenya since 2021, about 2.1 – 2.5 million heads in Ethiopia in addition to 22 million heads at risk (OCHA, June 2022), and over 3 million in Somalia since mid-2021 (Joint UNICEF/WFP/FAO/OCHA (June 2022) and IPC report (June 2022).

- The prevailing drought conditions will continue eroding the household livelihood assets through deaths in coming months.



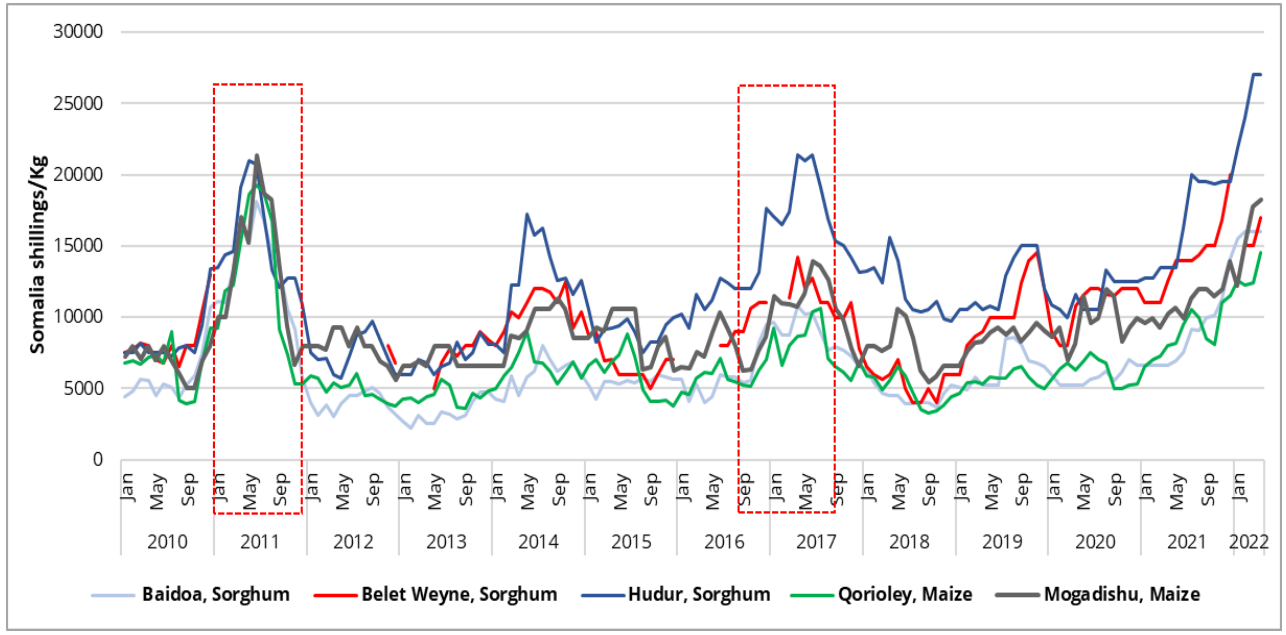

*Emaciated livestock in Isiolo county (source: KFSSG); dead livestock in Marsabit county (source: 51 degrees)*

# High Food Prices

- In the drought-affected areas, cereal prices are high due to insufficient availability after consecutive poor harvests combined with the global price shocks and macroeconomic challenges facing some countries. The prices are likely to increase or remain elevated due to the expected below-average long-rains harvests, high inflation, and the disruption in crop production and international trade flows following the Russia-Ukraine conflict.
- In **Somalia**, price analysis for April and May show local cereals (white maize, red sorghum and white sorghum prices) were substantially higher (25-105%) than the five-year averages (2017-2021) and increased by 5-20 % based on month-to-month basis due to reduced supply this year. Similarly, were the prices of imported food items in northeast markets (60-62% for rice, 151-160% for vegetable oil, and 72-73% for wheat flour), which is driven by currency depreciation and rising food prices on the international market. In parts of southern Somalia, the commodity prices in some markets have exceeded the levels witnessed during the 2010/11 and 2016/17 drought periods (Figure below) due to combined effects of drought and conflict/insecurity continue on supply.

- In **Ethiopia**, food prices are also high and linked to macroeconomic challenges facing the country over the past years as well as effect of drought in southern and southeast areas.

- Retail price of maize in Kenya varied across markets in April from 13-34 percent above the 5-years averages in marginal agricultural areas due to higher demand driven by relatively lower availability and high priced cross-border regional imports. In Turkana pastoral areas, prices were average driven by supplies from neighbouring high producing areas (Trans Nzoia and Uasin Gishu counties) and imports from Uganda. In rest of the other markets, the prices were 6-25 percent above the 5-years average due to increased demand for human consumption and livestock feeds, coupled with reduced supplies from the typical source markets in Kenya and Ethiopia.

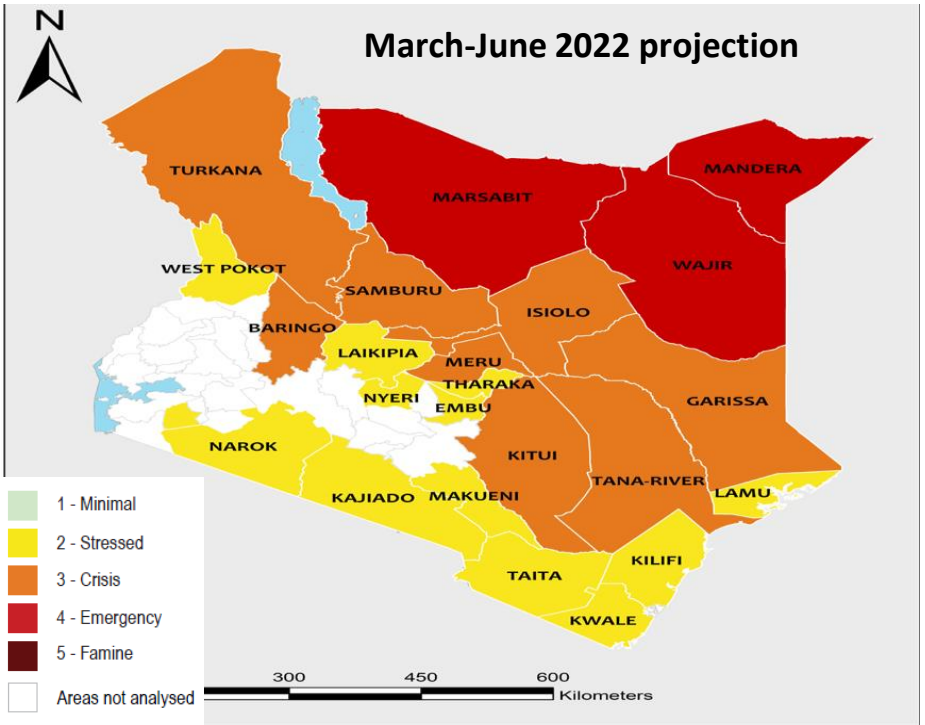



Cereal prices in selected Markets in Somalia (Source: WFP)

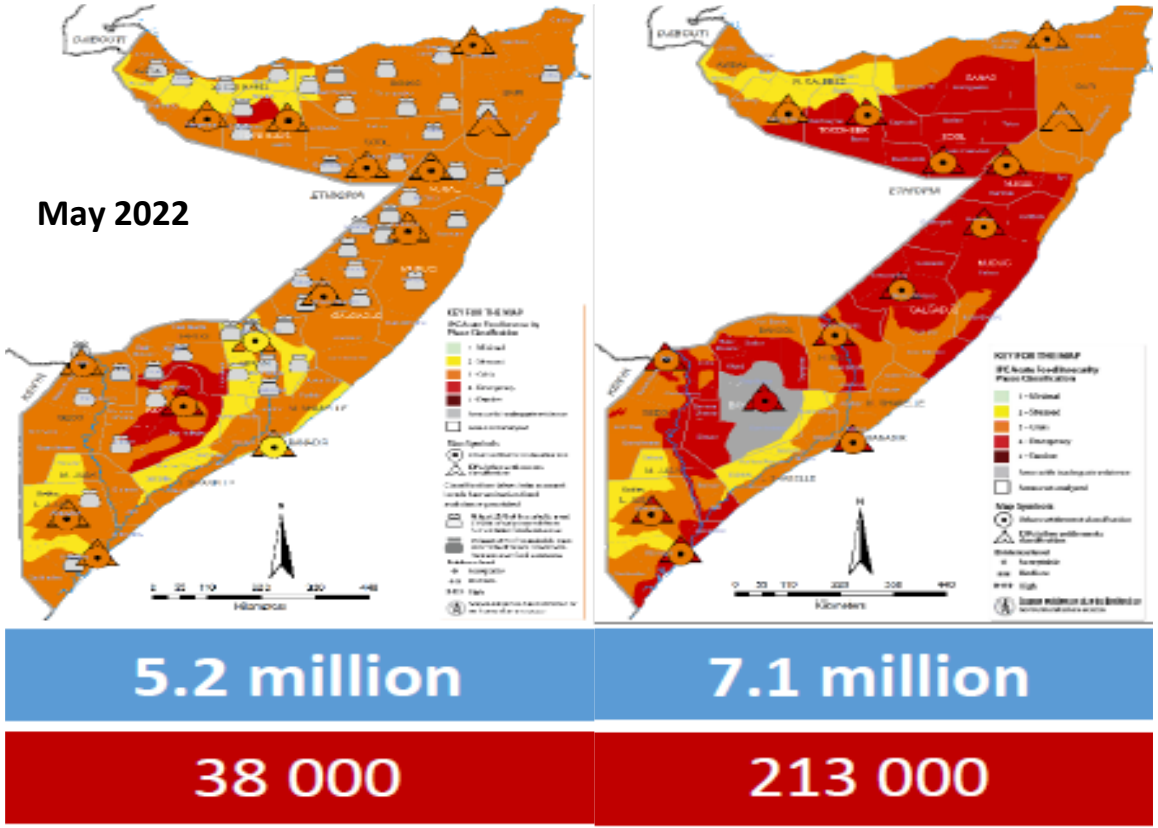
# Rising Food Insecurity

- The food security situation has worsened across the affected areas with an estimated **18.6** million people facing severe food insecurity over June-September period: Somalia **(7.1M),** Ethiopia **(7.4M),** Kenya **(4.1M**). The number is likely to increase to over 20 million by September.

- Of these **3.2 million** are in **Emergency** situation (IPC phase 4) in Kenya (1.1 million) and Somalia (2.1million), and **213,000** are at risk of famine (IPC phase 5) in Somalia if food prices continue rising, Gu crop harvests and livestock production significantly fail, and if humanitarian assistance not scaled up in the most affected areas.




- The worsening food security situation is driven by local and global factors including the impacts of drought, consecutive below-average crop production, macroeconomic challenges (inflation and currency devaluation), rising food prices associated with local context and Ukraine-Russia conflict, as well as inadequate consumption of livestock products, and eroded household purchasing power.



# Deteriorating Nutrition Situation

- The nutrition status of children under 5-years has generally deteriorated in most of the drought affected areas due to inadequate consumption, low availability of milk products, and increased disease burden.

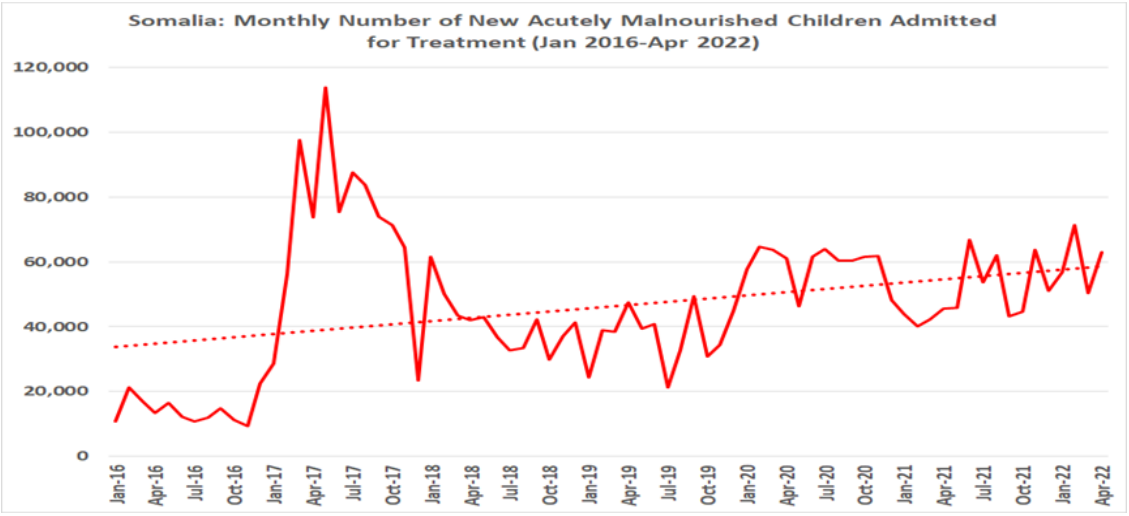
- In quarter 1 of 2022, the number **SAM admissions** were **27 to 68%** higher than in 2021 across Ethiopia, Somalia and Kenya (UNICEF).

- Statistics by the Emergency Nutrition Coordination Unit (*ENCU*) of the NDRMC in **Ethiopia** estimates **2.4 million** children under 5-years as being moderately malnourished and **1.2 million** severely malnourished. This is addition to more than 1.1 million pregnant and lactating women.

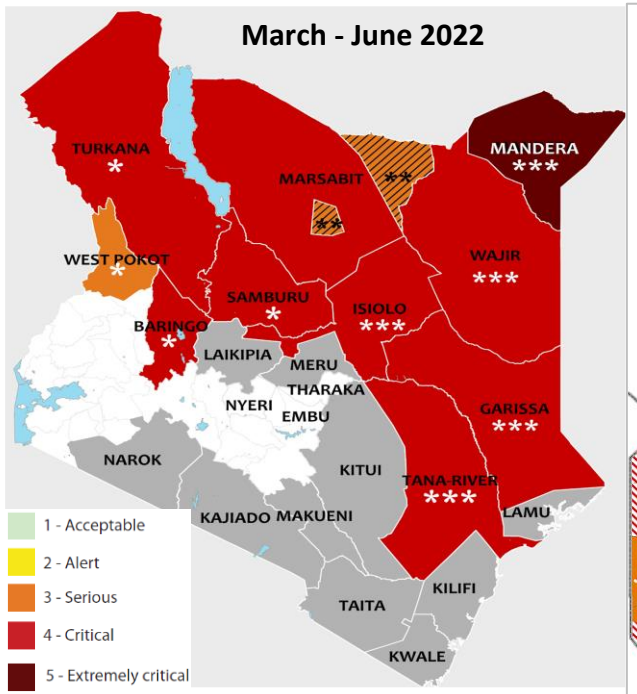
- In **Somalia**, an estimated **1.5 million children under 5-yrs** are likely to be acutely malnourished in 2022, including 386,400 who are likely to be severely malnourished.

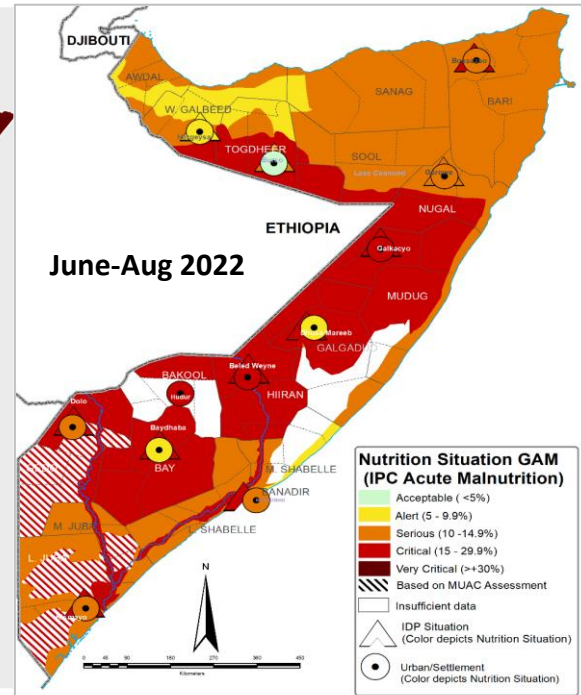
- In Kenya, **942,500 children** and **134,272** pregnant and lactating women (PLAW) needed treatment for acute malnutrition over March-June period.

- Areas of greatest concern are Baidoa district (southern Somalia), and Mandera county (Kenya) where malnutrition rates have exceeded the extremely critical levels of acute malnutrition **(GAM >30%).**




*SAM Admissions in Somalia over the Jan 2016 to April 2022 (FSNAU)*



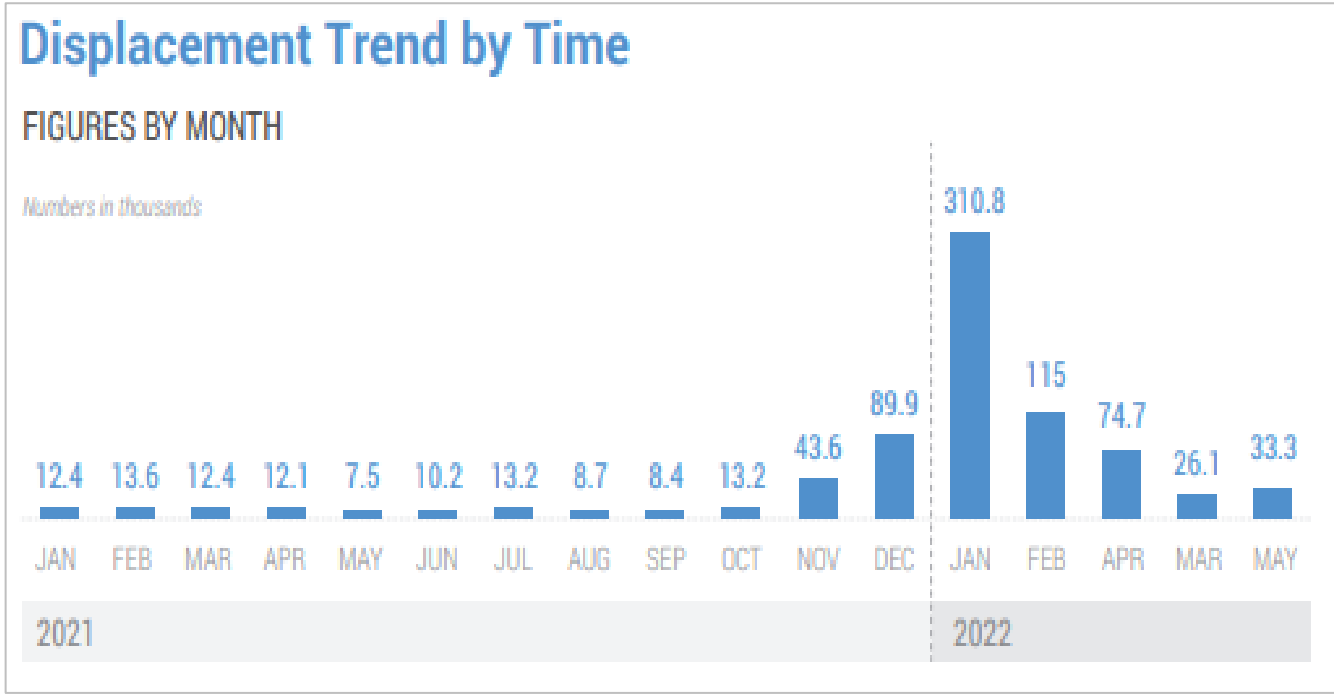
# Increased Human Displacement

- Across the drought affected areas, human displacement has been on the rise as households take desperate measures to survive. **Over 1.1 million people are displaced from their homes in search of grazing resources (pastures and water), alternative livelihoods in urban areas, or humanitarian assistance in IDP camps (OCHA).**

- In **Somalia**, OCHA estimates that over **805,000** have been displaced since the beginning of 2021. About **693,000** of them have been displaced in 2022 mostly due to drought (about **560,000 people)** and the rest due to conflicts and other factors. The main areas of displacement are Galgaduud, Bay, Mudug, Lower Shabelle, Togdheer, Bakool and Gedo in that order.

- In **Ethiopia**, over **344,000 people** have been displaced between October 2021 and mid-April 2022, primarily in search of water, pasture, and humanitarian assistance. This includes 175,000 people in Somali region and 139,000 people in southern Oromia Region.

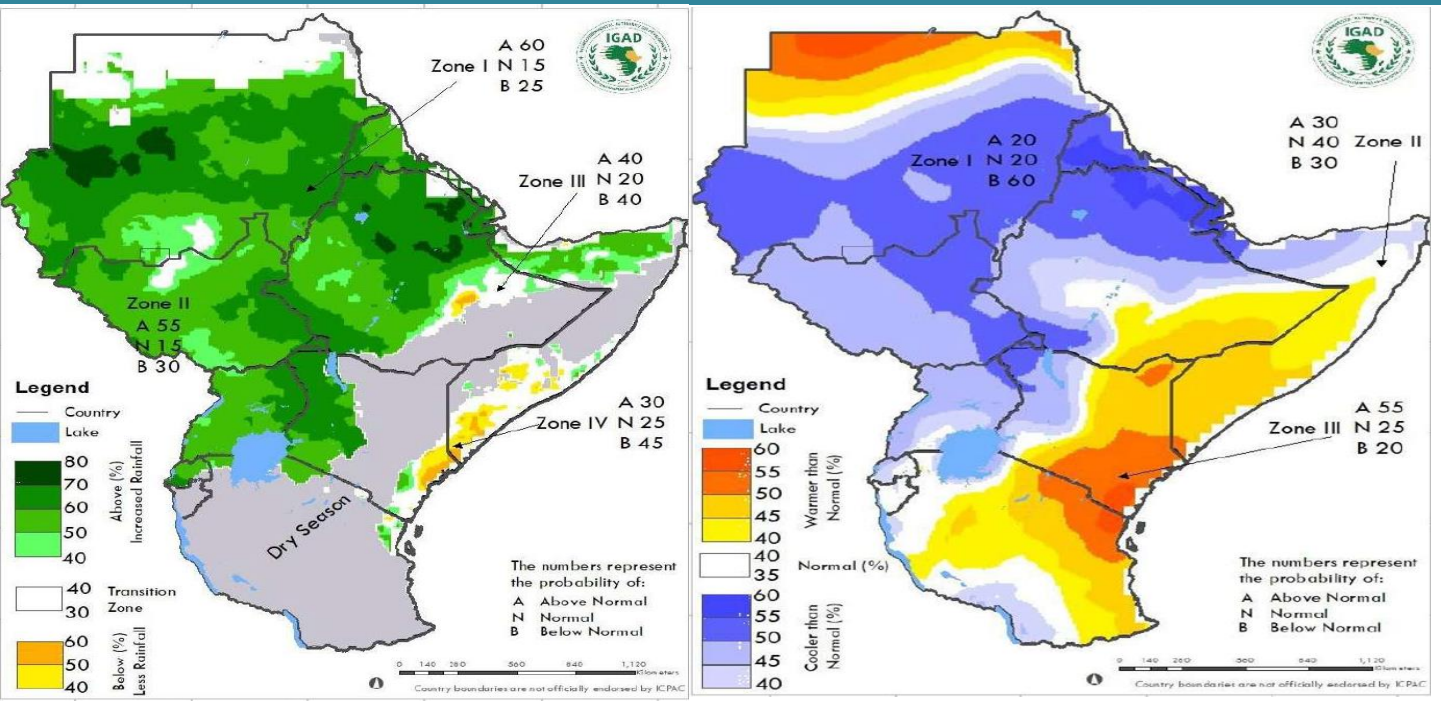
- In **Kenya,** the magnitude of displacement has been minimal with about **29,120 people** being newly displaced in Turkana, Marsabit, Lamu and Baringo between December 2021 and March 2022 following resources-based conflicts (IDMC).




*Human displacement in Somalia over the Jan 2021 to May 2022 (OCHA)*

# Outlook over June-September and Oct-Dec Periods

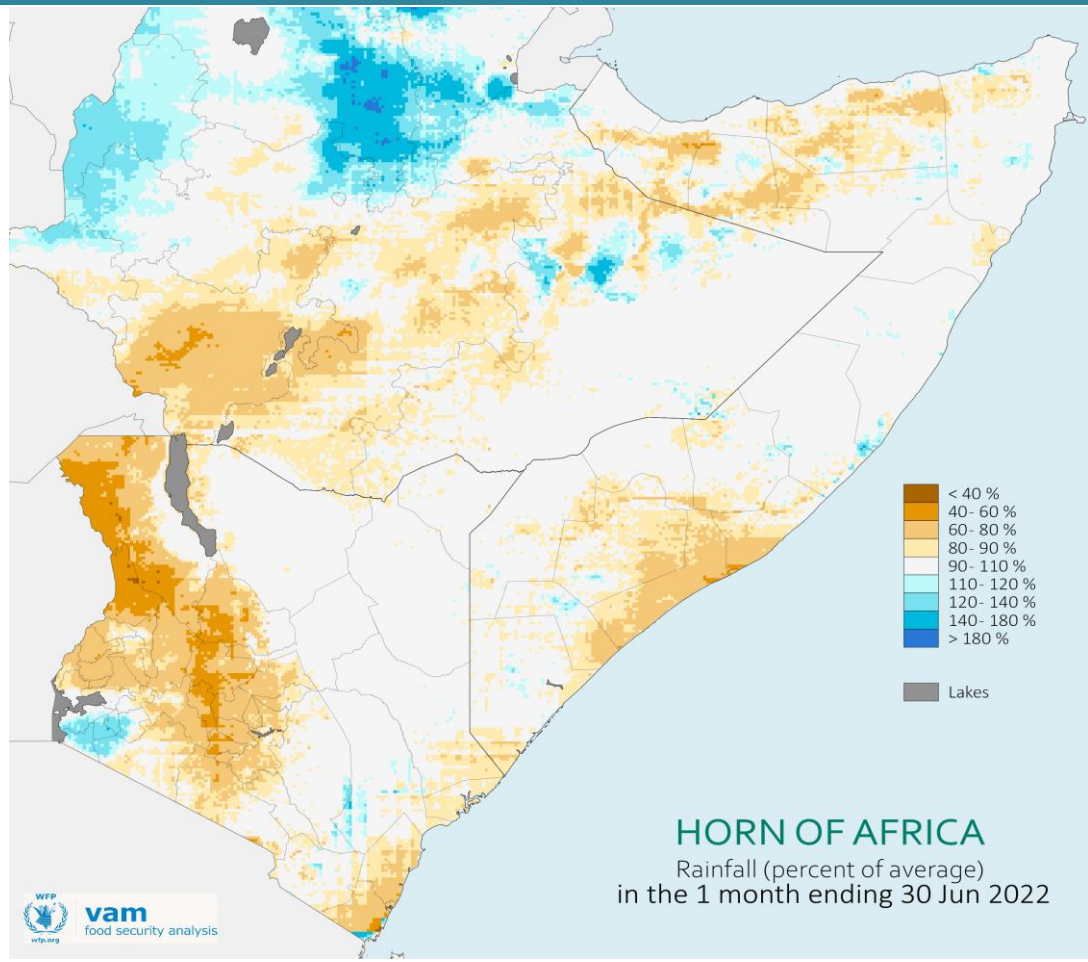
# Situation Outlook over June – Sept Period




*Rainfall (upper left) and temperature (middle) forecast for the June – September 2022 season (Source: ICPAC).*

- The rainfall season has generally come to an end in most of pastoral and agropastoral areas of Kenya, Somalia and southern and southeast Ethiopia despite the significant below-average performance.

- The rainfall and temperature forecast for June – September period show that the drought affected areas will remain climatologically average with no rains (maps on above left). The warmer-than-normal temperatures will increase evapotranspiration negatively impacting on available water resources and vegetation.




*Rainfall anomaly for June 2022 as a percentage of 20-year average (top). Brown shades indicate below-average rainfall; blue shades above-average seasonal rainfall (Source: CHIRPS, CHG, USCB).*

- The rainfall anomaly map for June (right) clearly shows normal dry conditions in most areas pastoral and agropastoral areas, and below-average rains along the coast of Kenya and southern Somalia where rains were expected to continue during this period.

# Situation Outlook over June – Sept Period (conti..)

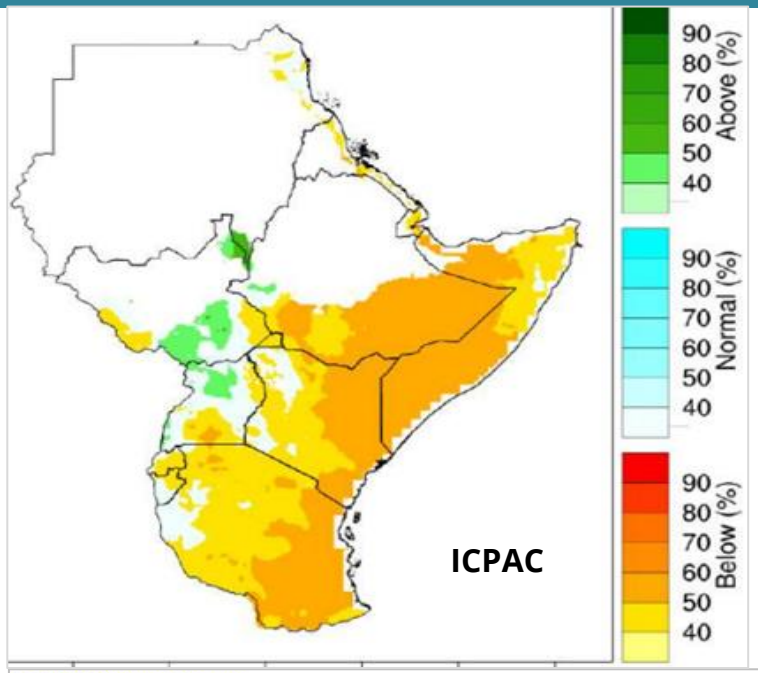
- The implications of the climatologically dry conditions to below-average rains coupled with with warmer-than-normal temperatures will hinder the late planted crops from attaining maturity leading to poor/significant below-average harvests in marginal areas of Kenya, Somalia and Belg areas of Ethiopia – in exception of long cycle crops in Belg cropping areas that may benefit from June-September season enhanced rains.

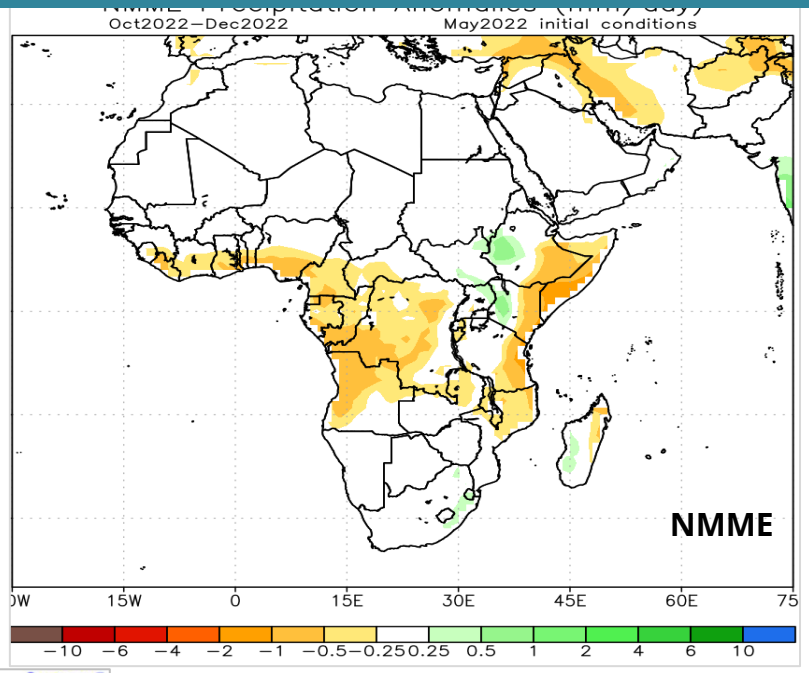
- As a result, household food availability from harvests expected over June-July will reduce and food stocks will not last households for long. Moreover, food supply and availability in markets will be limited, thereby sustaining the high food prices especially during the lean season.

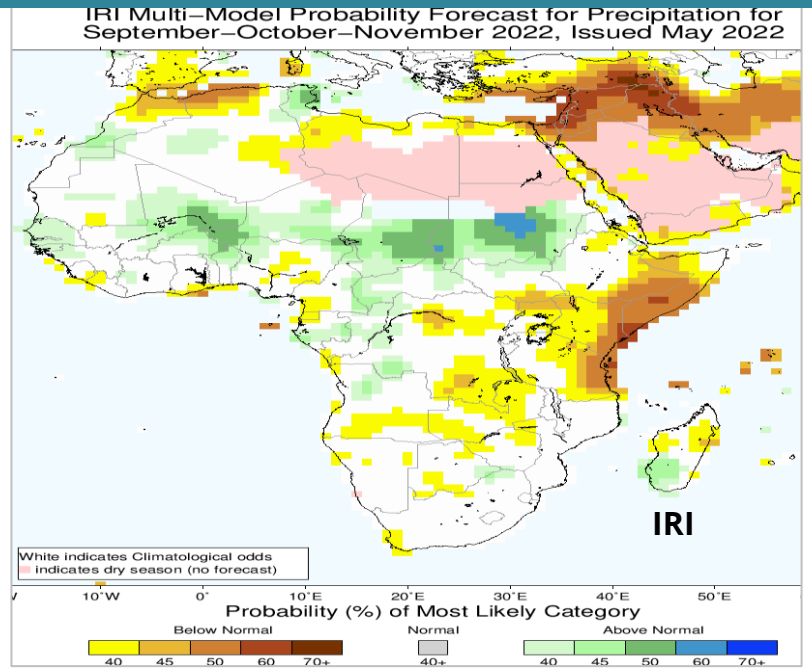
- Similarly, it implies that most rangelands and water resources will remain in poor condition or deteriorate faster-than-normal with significant implications on livestock before the next rains expected from October 2022. This will drive atypical earlier-than-normal livestock outmigration, and continued livestock losses through deaths thereby increasing destitution among the affected populations. Moreover, the increased competition for dwindling resources (pastures, water) will trigger resource-based conflicts/insecurity in various locations.

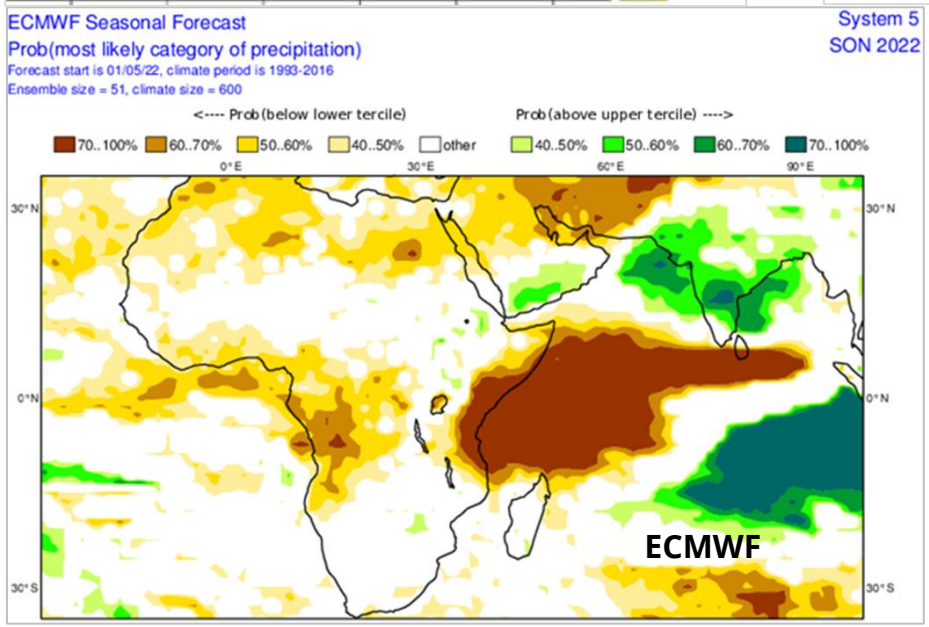
- Given that the livestock sector has not recovered, the continued poor livestock body condition, reduced production and productivity will further drive huge consumption gaps among the pastoral and agropastoralists communities leading to **worsening food insecurity** (IPC Phase 3+) and **malnutrition** through September. Of great concern are areas at risk of famine in Somalia and Mandera county in Kenya where malnutrition has exceeded the critical thresholds (GAM > 30 percent)**.**

# Worrying Climate Outlook over Oct-Dec 2022 Season




- The situation is made more worrisome by the preliminary rainfall simulations for Oct-Dec 2022 from multiple forecasting agencies that consistently predict the possibility of a 5th below-average rainfall season given the persistence of La Nina conditions and negative Indian Ocean Dipole (IOD) - both of which are associated with depressed rains in the region.
- The risk of a 5th consecutive below-average October-December rainfall season raises grave concerns given that the drought conditions will extend for over 2-years with devastating and long-lasting impacts on societies through disrupted livelihoods, eroded assets, magnified food insecurity and malnutrition, and extensive environmental impacts that will take long time to recover from.

*NMME: https://www.cpc.ncep.noaa.gov/products/international/nmme/nmme.shtml; IRI: https://iri.columbia.edu/our-expertise/climate/forecasts/seasonal-climate-forecasts/; ICPAC: https://www.icpac.net/seasonal-forecast/; C3S: https://climate.copernicus.eu/charts/c3s_seasonal/*

## Data Sources:

**Rainfall**: CHIRPS, Climate Hazards Group, UCSB

**Vegetation:** MODIS NDVI, EOSDIS-NASA

**Water points status:** USGS/USAID/Fews Net Water Viewer

**Temperature:** ECMWF ERA5-Land data

**Rainfall forecast**:

- European Centre for Medium-Range Weather Forecasts (ECMWF),
- North American Multi-Model Ensemble (NMME),
- International Research Institute (IRI) for Climate and Society at Columbia University
- IGAD Climate Prediction and Applications Centre (ICPAC)

**Food security & nutrition:** IPC, food security bulletins, UNICEF, FSNWG, FSNAU

**Livestock:** FSNWG, OCHA

**Displacement:** OCHA & UNHCR

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