

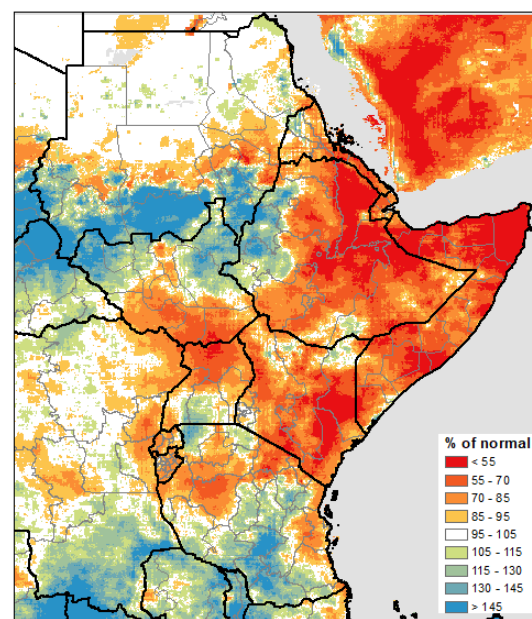
# Unprecedented 4<sup>th</sup> consecutive poor rainfall season for the Horn of Africa

Updated May 23<sup>rd</sup>, 2022

## Highlights

- Across the Horn of Africa, the 2022 March to May (MAM) seasonal rains were late, poorly distributed, and generally below-average. Seasonal rainfall totals from the beginning of March to May 15<sup>th</sup> range from less than 50 percent of average to less than 75 percent of average in most areas (Figure 1), and drought conditions are severe and widespread.
- Severe rainfall deficits affected main season *Gu* crops in Somalia, *Belg* producing regions in central, east, and southern Ethiopia, main season Long Rains crops over marginal agricultural producing areas of north, east, southeast, and coastal Kenya as well as in central Kenya.
- Little to no crop recovery is expected in affected areas of eastern East Africa as the peak of MAM season rains (late April to early May) has passed, late season rains have been highly localized, and drier-than-average conditions are forecast to continue (Figure 8).
- This is now the fourth consecutive season of below-average rainfall for eastern East Africa overall, and many areas in Somalia, Ethiopia, and Kenya have been repeatedly impacted (Figures 3 and 4). NDVI data indicate severe vegetation stress in many areas due to multi-year and MAM 2022 drought conditions (Figure 7). March to mid-May 2022 rainfall is among the worst in the 40-year record across parts of Ethiopia, Somalia, Kenya, and Uganda.
- A fourth below-average MAM season is highly concerning and is very likely to worsen an already alarming food security situation in affected regions (Figure 9). Some of these areas are also at risk of below-average June to September 2022 rainfall that is expected to erode gains made by any received rains, followed by below-average October to November (OND) 2022 rainfall that has the potential to result in a fifth consecutive below-average season (Figure 8 right panels).

Seasonal Rainfall Accumulation Percent of Normal by pentad  
2022 season Mar - May  
(Mar pentad 1 thru May pentad 3) / Avg (1981-2010) \* 100



Source: CHIRPS version 2.0 *prelim*  
Map produced by USGS/EROS  
USGS USAID FEWS NET

Figure 1: Percent of normal seasonal rainfall accumulation March to May 2022 as of May 15<sup>th</sup>, 2022. Source: CHIRPS version 2.0 *prelim*

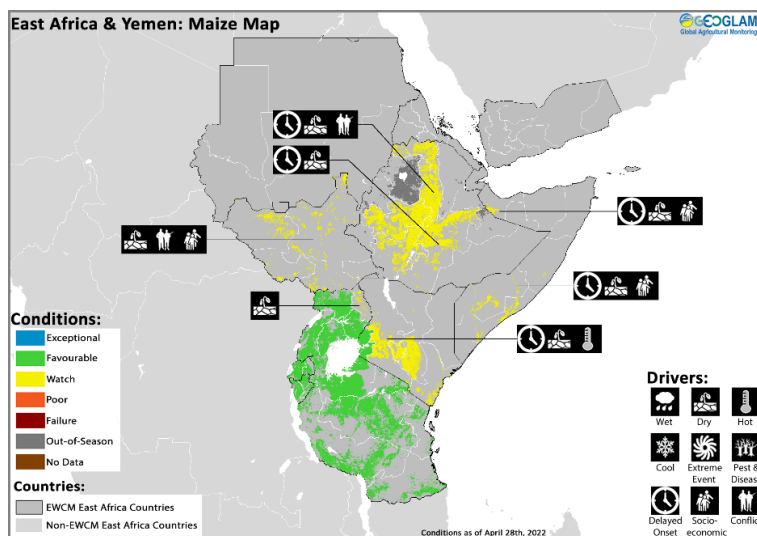


Figure 2: East Africa maize synthesis graphic combining Maize 1 and Maize 2 assessments as of April 28<sup>th</sup>, 2022. Source: GEOGLAM Crop Monitor

## Overview

The March to May (MAM) rainy season in the Horn of Africa has been characterized by a substantially delayed onset and dry conditions that are causing concern for current crop conditions (Figure 2). In several northern and equatorial areas, there has been a two-to-four dekad-long (20 to 40 days) delay of the start of the rains as well as below-average rains during the February/March to May rainy season. Drought conditions are historic, severe, and widespread. Rainfall amounts have been low, with seasonal cumulative rains from the beginning of March to 15<sup>th</sup> May ranging from less than 50 percent of average to less than 75 percent of average across the Horn of Africa (Figure 1), and precipitation was characterized by an erratic temporal and spatial distribution. In addition,

weather forecasts point to below-average rains for the remainder of May, making this the fourth consecutive season of below-average rains in eastern East Africa (Figures 3 and 4). The substantial moisture deficits affected main season Long Rains crops over marginal agricultural producing areas of north, east, southeast, and coastal Kenya as well as in central

Kenya, main season *Gu* crops in Somalia, and *Belg* producing regions in central, east, and southern Ethiopia. The poor rainfall performance thus far in combination with the unfavourable forecast are of high concern in affected areas (Figure 8). Under normal conditions in eastern East Africa, seasonal rains typically peak in April or early May, making significant recovery of water-stressed crops highly unlikely. The dry 2022 MAM season was anticipated in September of 2021, based on long-lead forecasts of La Niña conditions ([link](#)), as well as a strong “Western V Gradient” (WVG) in MAM 2022 ([link](#)). Compounding these concerns on crop production are the severe impacts on agro-pastoral livelihoods of the past [three seasons](#) (Figures 3 and 4), which were characterized by below-average or poor spatially and temporally distributed rainfall, as well as record-high temperatures recorded during recent months. As a result, significant negative impacts on crop production and food security are expected in these areas. Rangeland conditions are also very poor in affected areas, further contributing to the negative food security implications for agro-pastoral and pastoral households (Figure 9). These concerns are worsened by economic challenges affecting both the agriculture and livestock sectors, including increased food, fuel, and farming input prices and eroded household purchasing power due to shortage of agricultural wage opportunities, all of which are expected to worsen food insecurity in the region (Figure 9). Current long-lead forecasts are highly concerning as they indicate elevated risks for a below-average October to December (OND) 2022 season in ongoing drought areas (Figure 8 far right panel).

### Four consecutive poor rainfall seasons in the Eastern Horn of Africa

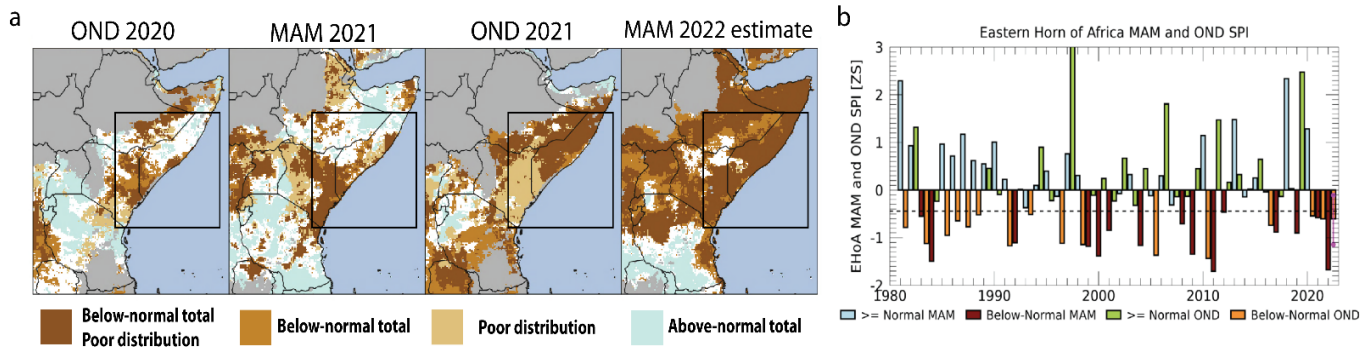


Figure 3: (a) Areas with below-normal seasonal rainfall totals and poor rainfall distribution during OND 2020, MAM 2021, OND 2021 and the current estimate for MAM 2022 (March-April and preliminary data plus a 15-day forecast for May). Below-normal: In the driest 1/3 of 1981-2020 seasons. (b) Eastern Horn of Africa MAM and OND season SPI since 1981. Source: UCSB CHC

## Country Specific Impacts

In **Somalia**, the secondary *Deyr* season crops harvested in January 2022 were affected by the poor performance of the rainy season as the 2021 October to December *Deyr* rains largely failed across most parts of the country, with rainfall totals ranging from less than 30 to less than 60 percent of average (Figure 3a middle-right panel). The severe rainfall deficits resulted in below-average planted area, germination failures, and crop stress. As a result, *Deyr* cereal production was estimated to be 58 percent lower than the long-term average, the third lowest *Deyr* harvest since 1995. While planting activities for main *Gu* season maize and sorghum crops are normally concluded in early May, planting is still underway due to a late onset of seasonal rains, and there is a high level of concern due to late onset, well below-average March to mid-May rains (Figure 1), observed widespread vegetation stress (Figure 7), and compounded impacts from multiple consecutive below-average rainfall seasons (Figures 3 and 4). Dry conditions prevailed in the first half of April, with some scattered and below-average rains received in the second half of the month. Subsequently, improved rains received in early May allowed farmers to plant. However, crop prospects as of late April are unfavourable (Figure 2) due to the short time remaining in the growing season. The government declared a state of emergency in November 2021, and as of early April, some parts of the country were experiencing the worst water scarcity in 40 years. This 2022 April to June *Gu* rainfall season is forecast to remain below-average (Figure 8), worsening extreme drought conditions

### Number of below-average rainfall seasons in eastern East Africa since OND 2020

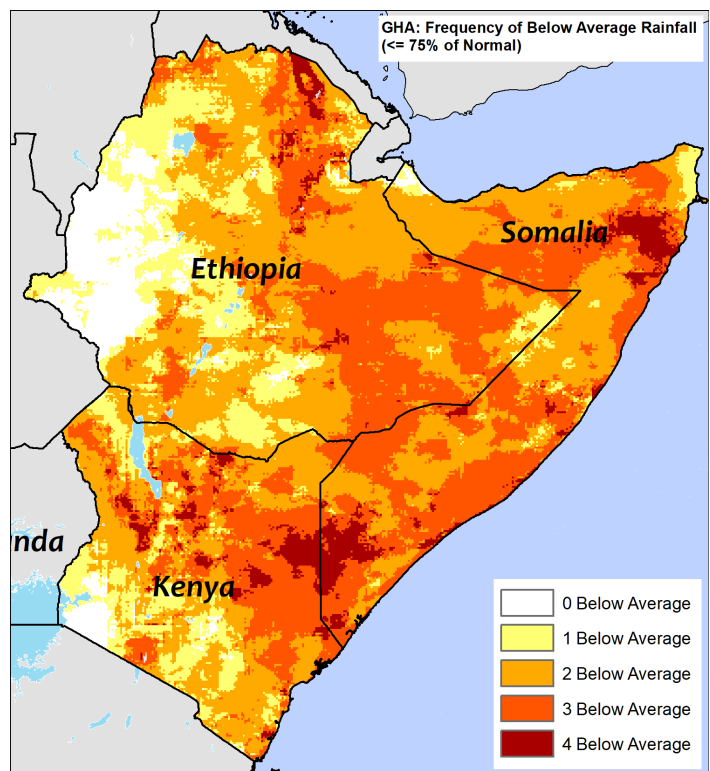


Figure 4: Number of below-average OND and MAM rainfall seasons in East Africa since OND 2020, as of May 2022.

that have been present in many areas since December 2021 and associated with multiple recent failed *Gu* seasons (Figures 3 and 4). As around 75 percent of rainfall in Somalia is typically received during the *Gu* rainfall season, outcomes are critical for crop performance and livelihoods. For irrigated crops, rising water levels in rivers could support crop development; however, water levels remain below-average in the Juba-Shabelle basin, and an early cessation of rains may further impact water levels and crop outcomes.

In **Ethiopia**, harvesting of main *Meher* season (Long Rains) cereals finalized in February 2022 under poor conditions in Tigray, Afar, and Amhara regions due to the impacts of internal conflict that erupted in November 2020 and failure conditions in the marginal producing southeast due to severe drought conditions. Secondary *Belg* season (Short Rains) maize crops are now in vegetative to reproductive stage for harvest from June, and there is concern in most areas (Figure 2) due to delayed and substantially below-average *Belg* rains and observed vegetation stress (Figure 7). In many regions, rainfall onset was delayed by 20 to 40-days, and season-to-date totals as of May 15<sup>th</sup> are less than 75 percent of average (Figure 1). Some areas have received only a small fraction of typical amounts. While pockets of western Oromia, Gambela, and western SNNPR experienced near-average rains from March through early April that improved growing conditions, the [delayed onset](#) and anticipated well-below-average MAM rainfall (Figure 8 far left panel) is expected to affect crop outcomes in most *Belg* producing areas, particularly in the centre, east, and south. For instance, in major producing central Oromia and East Amhara regions, cumulative precipitation remains well below the five-year average (Figure 5). Following several failed rainy seasons since late 2020 (Figures 3 and 4), much of the agro-pastoral south and southeast and a few areas in the *Belg* producing southwest began the 2022 *Belg* season having recently experienced prolonged drought conditions, particularly in southern Oromia, southern SNNPR, Southwest, and Somali regions. Some of these areas experienced a poor [2021 Belg season](#) and/or exceptionally low March-October [Long Rains](#). In locations across central, east, and northern Ethiopia, and in parts of the southwest, the severity of dryness during this season is striking, and March to mid-May 2022 rainfall totals are [among the lowest in at least the past 40 years](#). In central Ethiopia, the [2022 Belg season](#) performance is similar to record droughts in 2011 and 1984, and there are serious concerns for the large populations being affected. If forecast drier-than-average conditions during coming weeks materialize (Figure 8), there will be a large expansion in areas experiencing severe and historic rainfall deficits.

**Agro-climatic Indicators for the 2022 Belg cropping season in Ethiopia**

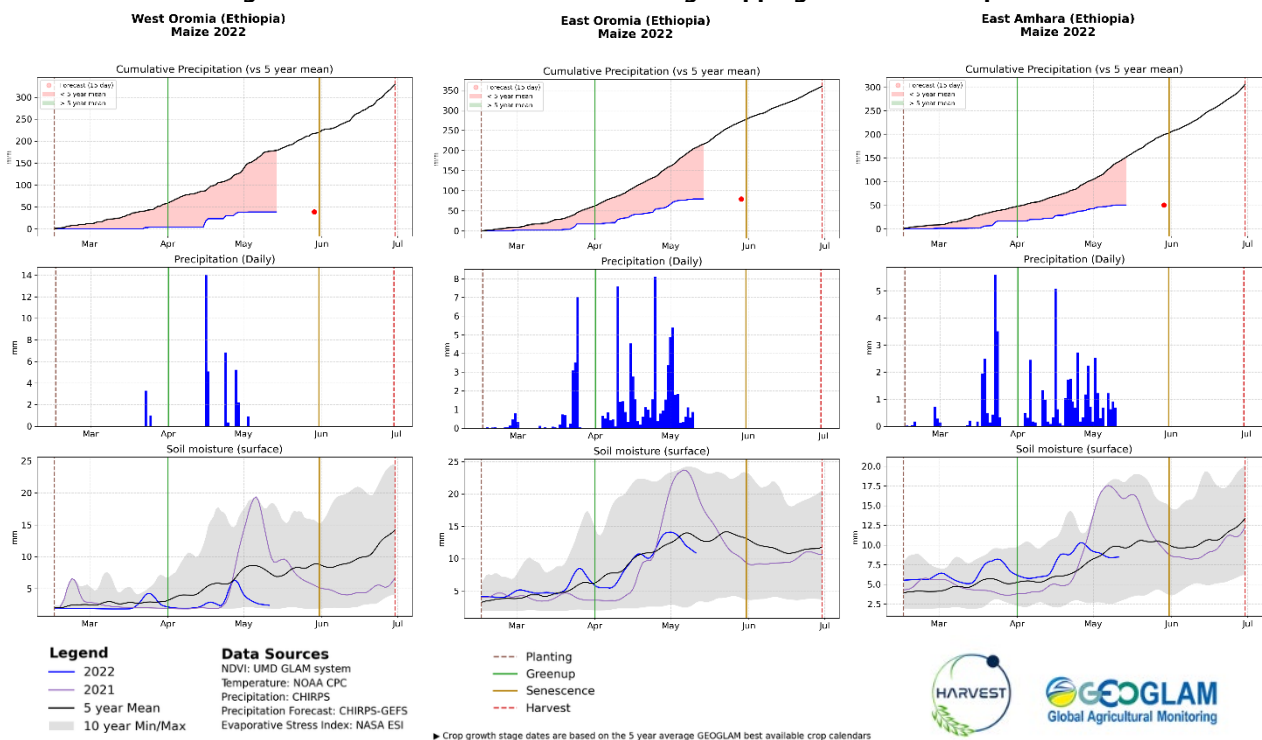


Figure 5. Agmet indicators over the current 2022 Belg cropping season in West Oromia (left), East Oromia (middle), and East Amhara (right) Ethiopia. Source: NASA Harvest.

In **Kenya**, the October to December 2021 Short Rains season largely failed (Figure 3a middle-right panel), marking a third consecutive poor performance rainfall season. In marginal agricultural producing areas of the southeast and coast, rainfall was erratic, and totals were inadequate for crop development. In October and November, rainfall was less than 60 percent of the 40-year average, with some areas experiencing significantly delayed or no rainfall onset. According to [national sources](#), maize production was estimated at about 50 percent below-average. Planting of 2022 Long Rains maize and rice crops is ongoing, and there is a high level of concern (Figure 2), particularly in marginal producing southeast and coastal areas, regarding widespread below-average March to mid-May rainfall (Figure 1), a forecast continuation of drier-than-average conditions during late-May (Figure 8 left panels), and the impacts that this is having in marginal producing regions of the north, east, southeast, and coast as well as in the central region, which have endured poor rainfall during several recent seasons (Figures 3 and 4). Additionally, high temperatures are resulting in increased evapotranspiration, in turn limiting soil

Agro-climatic Indicators for 2022 MAM cropping season in marginal producing regions of Kenya

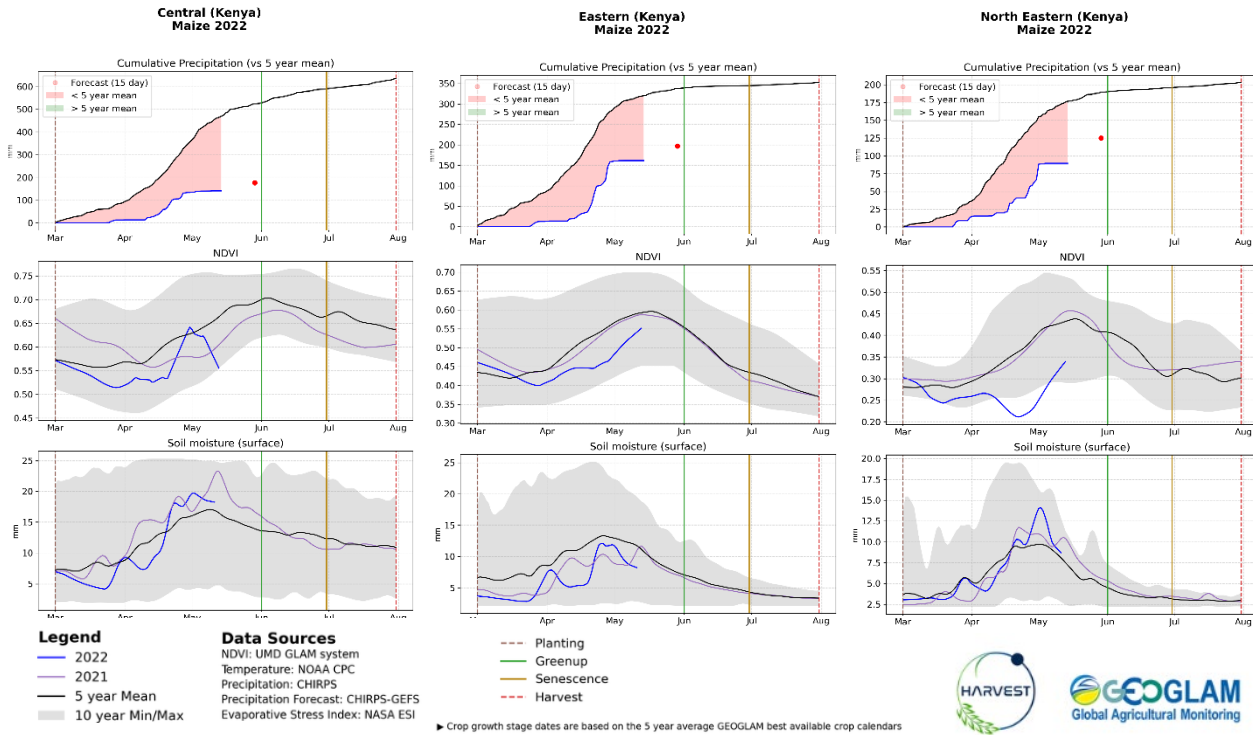


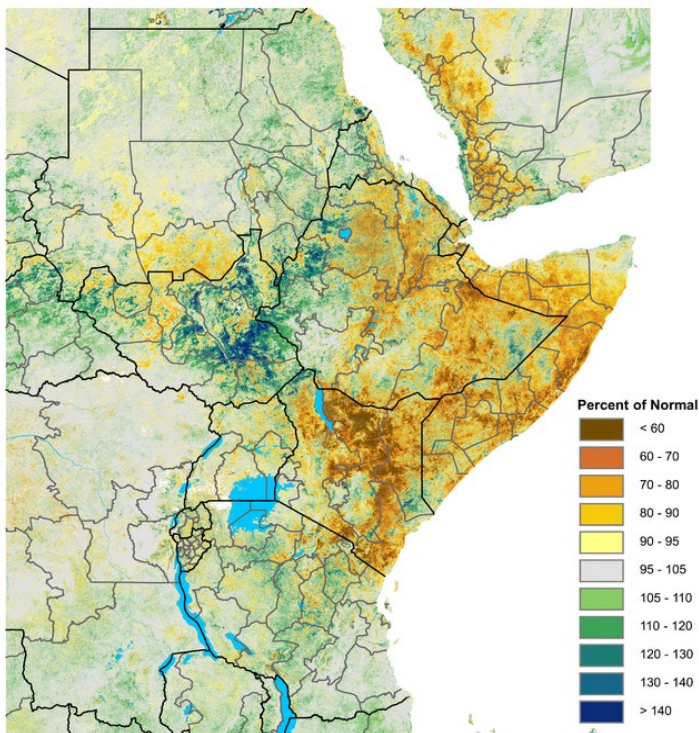
Figure 6. Agmet indicators over the current 2022 March to May main cropping season in Central (left), Eastern (Middle), and North Eastern (right) Kenya. Source: NASA Harvest.

moisture retention. NDVI data indicates severe vegetation stress in many of these areas as of May 15<sup>th</sup> (Figure 7). Overall, seasonal rainfall was delayed in the Highlands West of the Rift Valley and has only recently been realized over most of the central Rift Valley, northwest, and coast. According to the FEWS NET May 10<sup>th</sup> [Kenya Food Security Alert](#), pastoral and marginal agricultural areas in the north and east only received minimal MAM rains (Figure 6), and most areas will likely conclude the season with rainfall amounts 25 to 75 percent below-average. Additionally, early cessation of the Long Rains in marginal producing areas, as indicated by the poor rainfall forecast through May (Figure 8), will negatively impact late planted crops. According to the United States Department of Agriculture Foreign Agricultural Service (USDA FAS) March 21<sup>st</sup> [Kenya Grain and Feed report](#), overall 2021/2022 maize production is estimated to decline by 23 percent compared to the

previous year due to impacts of drought and untimely rains. Additionally, vegetation greenness in pastoral areas is significantly below the long-term average. Across arid and semiarid counties, [water point monitoring](#) indicates that pastoralists are currently facing very low water levels, and some locations are already nearly dry. Pastoral households in the arid lands have lost significant part of their livestock due to the prolonged drought and are rapidly depleting their coping strategies in a context of increasing food and fuel prices (fuel prices driving up the cost of water transport). Forecasts for the October to December Short Rains season are also signalling elevated chances of an unprecedented fifth consecutive below-average season (Figure 8 far right panel).

Below-average and erratic rainfall is also impacting first season crops in localized bimodal rainfall areas of [Uganda](#) and main season crops in parts of northeastern bimodal rainfall areas (*Masika*) and to a lesser extent in central and southern unimodal rainfall areas (*Msimu*) of the [United Republic of Tanzania](#). In [Uganda](#), the northeast and northern areas have had below-average rainfall performance, and crop growth has generally been delayed. While late-planted crops in the north may benefit from the forecast above-average June through September rainfall (Figure 8 middle-right panel), crop

East Africa Percent of Mean NDVI  
Period 27 / May 06 - 15, 2022



Map Produced by USGS/EROS Source: eVIIRS 375m

Figure 7. Percent of Mean NDVI May 6-15, 2022 over East Africa. Source: FEWSNET

development for the majority crops is likely to be poor for affected areas, which would result in a third consecutive season of below-average harvests. While crop development is also delayed in central regions, the majority of crops have not yet flowered. In the **United Republic of Tanzania**, drought conditions during the planting season are expected to result in a 16 percent decrease in maize production and a 9 percent decrease in harvested area as farmers switched to alternative crops, according to the USDA FAS March 24<sup>th</sup> [Grain and Feed report](#). The reduced cereal outputs expected are a source of concern as parts of these areas are main maize exporters of the East Africa region, and lower exportable surpluses are likely to have a knock-on impact on cereal availability in structurally deficit countries. Conversely, in some parts of East Africa, including western **Kenya**, **Rwanda**, and **Burundi**, crop conditions are favourable (Figure 2) as some west and southern areas of the subregion received average to above-average rainfall in late-April.

## Rainfall Outlook

The widespread rainfall deficits observed from March 1<sup>st</sup> to May 15<sup>th</sup> (Figure 1) are expected to worsen across many areas, including central, east, and northern Ethiopia, central and eastern Kenya, and most of Somalia, based on forecast rainfall for May 16<sup>th</sup> to 31<sup>st</sup>. Figure 8 far left shows anticipated percent of average MAM 2022 rainfall, including preliminary data and an unbiased GEFS forecast. While localized late-season rain events in the eastern Horn are possible, current forecasts indicate these are unlikely. Most areas will likely end the season with substantially below-average rainfall, and many areas will be impacted by severe deficits. This outlook is also supported by SubX and WMO model forecasts, which highlight drier-than-normal conditions across much of East Africa through May, and in June in southern coastal areas that typically receive seasonal rains through then (Figure 8 middle panels). During June to September, above-normal rainfall is forecast in many northern and western areas of East Africa (Figure 8 middle-right). Suppressed MAM rainfall is consistent with the drying impacts from many recent La Niña events and the [increased frequency](#) of below-normal March to May rains in the eastern Horn (see CM4EW August 2021 to March 2022 Seasonal Forecast Alerts). La Niña conditions are forecast to weaken somewhat during coming months and then strengthen for a potential third consecutive La Niña event. Models also indicate that strong negative Indian Ocean Dipole conditions could develop. These climate conditions tend to suppress rainfall in the region, and associated with this, the latest models confidently forecast increased chances of below-normal October to November 2022 rainfall in eastern Kenya, southern Somalia, southeastern Ethiopia, and northeastern Tanzania (Figure 8 far right)—a very troubling scenario given the current multi-year drought.

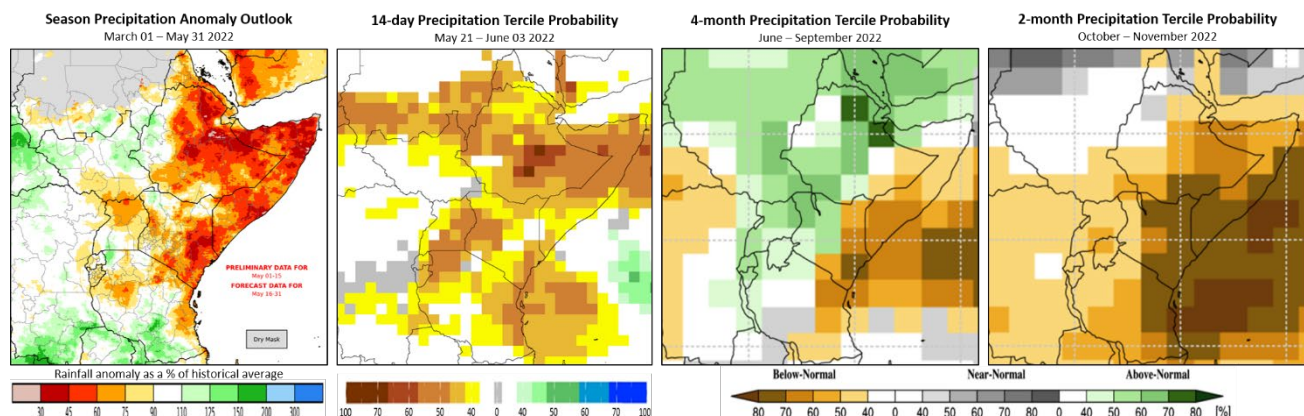


Figure 8: A March-to-May season precipitation anomaly outlook, and 14-day, 4-month, and 2-month precipitation probability forecasts. The left panel shows the seasonal rainfall performance, represented as a percent of the 1981-2021 CHIRPS historical average, for March 1st to May 31st, 2022 based on final CHIRPS data for March and April, preliminary CHIRPS data for May 1st to 15th, and CHIRPS-GEFS (unbiased GEFS) for May 16th to 31st. The other panels show forecast probabilities for below-normal (yellow-brown) and above-normal (green-blue) precipitation for three periods: Middle-left shows May 21st to June 3<sup>rd</sup> (IRI SubX forecast from May 13<sup>th</sup>), Middle-right shows June-to-September 2022, and Right shows October-to-November 2022 ([WMO Lead Centre Long-Range Forecast Multi-Model Ensemble](#), based on models initialized in May).

## Food Security Outcomes and Response

An unprecedented four-consecutive-season drought in parts of eastern East Africa has seriously constrained household ability to access food and income. Several consecutive seasons of below-average harvests in combination with water and pasture shortages and related livestock losses are likely to worsen severe food insecurity with Crisis (IPC Phase 3) and Emergency (IPC Phase 4) outcomes expected in affected areas (Figure 9). Drought across the Horn of Africa could increase the current number of acutely food-insecure people to around 17 million, as indicated in the latest Integrated Food Security Phase Classification (IPC) estimates available for Somalia, Ethiopia, and Kenya. Additionally, the situation is likely to worsen given the deterioration of economic, agrometeorological, and production conditions in many countries.

The latest IPC analysis for Somalia projects an increase in the number of people facing IPC Phase 3 (Crisis) or above levels of acute food insecurity from 4.8 million people in March to 6 million people during the April to June period. Although no Famine is projected, a "Risk of Famine" warning is raised for some areas, including the Hawd Pastoral livelihood zone of Central and Hiran, Addun Pastoral livelihood zone of Northeast, Central Bay Bakool Low Potential Agro Pastoral livelihood zone, and IDP settlements in Mogadishu, Baidoa, and Dhusamareb. Poor rainfall during the April to June *Gu* rainfall season in combination with challenges related to food prices, conflict, humanitarian assistance, and displacement could lead to famine outcomes. In addition to the six population groups that face the risk of Famine, other areas of concern include Southern Agropastoral, Southern Rain-fed Agropastoral of Middle and Lower Juba, Togdheer Agropastoral livelihood zones, and IDP settlements in Burao, Garoowe, Belet Weyne, Doolow, and Kismaayo, which face Emergency (IPC Phase 4) levels of acute food insecurity between April and June 2022 (IPC, March 2022). In Ethiopia, FEWS NET estimates from March 2022 indicate IPC Phase 3 (Crisis) and IPC Phase 4 (Emergency) outcomes are likely (Figure 9). In Kenya, a significant deterioration in the food security situation was estimated in the last IPC projection update from March 2022, indicating 3.5 million people face IPC Phase 3 (Crisis) or above levels of acute food insecurity in the ASAL counties for the March to June period. The deterioration is due to multiple shocks, including dry spells from three consecutive poor seasonal rainfall, below-average crop and livestock production, localized resource-based conflict, and the ripple effects of the COVID-19 pandemic which resulted in increasing staple food prices across the country. The following seven counties in Kenya, representing more than 50 percent of the total population classified in IPC Phase 3 (Crisis) or above, are likely to be most affected: Marsabit (50 percent), Turkana (40 percent), Baringo (35 percent), Wajir (35 percent), Mandera (35 percent), Samburu (35 percent), and Isiolo (30 percent). These areas are predominantly pastoral livelihoods (IPC TWG, March 2022).

Households are unable to rely on cereal stocks and income from previous seasons, and domestic cereal shortages as well as global food price shocks have drastically increased cereal and other staple food prices and decreased household purchasing power. In addition, decreasing demand for agricultural labour has reduced household income. According to the May 2022 [Regional Food Security & Nutrition Update](#) from the WFP, food inflation in most countries reached the second-highest level in a decade in February 2022. Domestic food price inflation reached 42 percent in Ethiopia, 9 percent in Kenya, and 13 percent in Somalia as of February. As a result, large segments of the population in the region face extreme difficulty in accessing essential food items. Soaring food and water prices are significantly constraining families' ability to cope. Furthermore, imports and prices of fuel, fertilizers, and wheat imported from Ukraine and Russia have been affected by the current conflict, underpinning inflation. Humanitarian response is also hindered by escalating global food and fuel price shocks that make it difficult to obtain and deliver supplies.

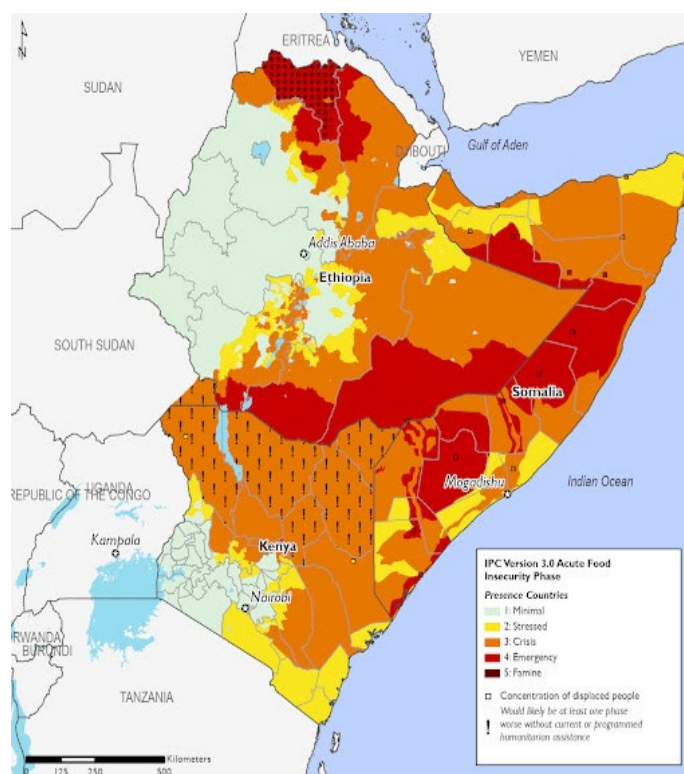


Figure 9: East Africa Food Security Outlook for the May to September 2022 period. Source: FEWS NET [March 2022 East Africa Food Security Outlook](#)

## Prepared in Collaboration with:



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