

Severe drought conditions persist over eastern Horn despite late seasonal rains

KEY MESSAGES

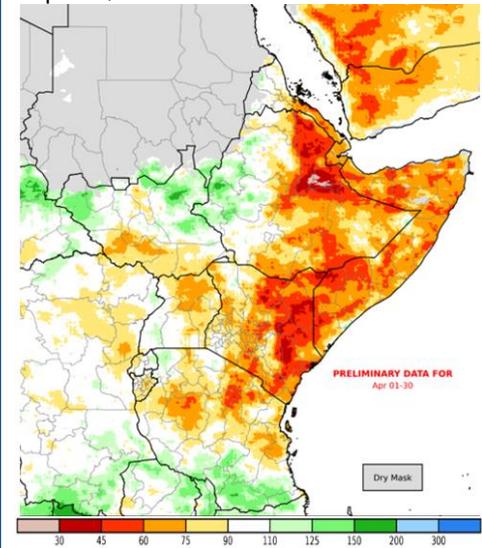
- Rainfall in March and April was characterized by a significantly delayed onset of the March to May/June rainfall season, with well below-average rainfall across much of the region. Many areas recorded less than 75 percent of the historical average, while much of eastern Kenya, southern Somalia, and eastern Ethiopia received less than 60 percent of the historical average. As April marks the typical peak of the *Gu*/long rains season in Kenya, Ethiopia, and Somalia, prospects for rainfall recovery are increasingly low. This is now the fourth sequential poor rainfall season in the eastern Horn.
- Given that April is typically the peak month of the March to May seasonal rains, its poor performance is expected to have significantly adverse impacts on crop and livestock production across eastern East Africa. Early-season crop production prospects for eastern Kenya and southern Somalia cropping zones remain unfavorable, and pasture and water shortages continue to drive livestock emaciation and very high livestock mortality rates. In Ethiopia, *belg* planting is limited, but *belg* planted crops are generally in good condition. Overall, local harvests are expected to be well below average, with possible crop failure in localized areas.
- Based on the short-term forecast through mid-May, below-normal rainfall will likely persist across much of East Africa. As a result, prospects for seasonal rainfall recovery are increasingly low. Meanwhile, the IRI/CPC sub-seasonal (sub-X) rainfall forecasts for mid-to late-May are indicative of an increased likelihood for continued below average rainfall in the worst-drought affected areas of the eastern Horn and much of the western sector. The overall seasonal rainfall performance into late May is likely to be ranked among the worst on record in parts of the eastern Horn.

SEASONAL PROGRESS

In March and April, cumulative seasonal rainfall was less than 75 percent of the 1981-2020 average across East Africa, with many areas of eastern and northern Kenya, parts of Somalia, and northeastern and southern Ethiopia accumulating less than 60 percent of average rainfall (Figure 1). Historic hotter-than-normal land surface temperatures have exacerbated the drought situation in the Horn from January to early April, which have severely dried out water sources, vegetation, and soil. The ongoing sequence of four consecutive below-average rainfall seasons has increased the level of water demand, meaning the light to moderate rainfall amounts received in March and April are increasingly inadequate to relieve drought conditions.

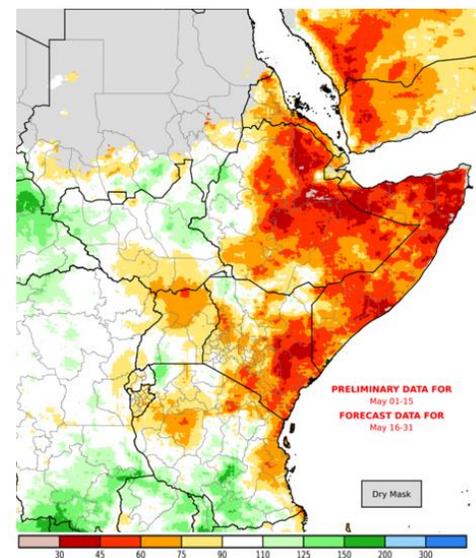
The late seasonal rains (mid-April into early May), associated with the transient warming of the Indian Ocean along the East Africa coastal strip,

Figure 1. CHIRPS preliminary rainfall shown as a percent (%) of the 1981-2020 average, March 1 - April 30, 2022.



Source: UC Santa Barbara Climate Hazards Center

Figure 2. CHC Early Estimate for March 1 – May 31, 2022, expressed as rainfall percent of average (%) from the 1981-2020 average. Based on CHIRPS preliminary data for May 01 - 15, 2022, and unbiased GEFS forecast for May 16 - 31, 2022.



Source: UC Santa Barbara Climate Hazards Center

coupled with the passage of [Madden-Julien Oscillation](#) and the presence of tropical cyclones in southern Africa, are likely to only marginally regenerate the availability of rangeland resources (water and pasture) in the eastern Horn.

While the rains have triggered limited, belated planting of cereals and short-maturing crops in marginal agricultural areas of the eastern Horn, it is highly likely that rainfall in the remainder of the season will be erratically distributed and insufficient for cereal crop growth, given that rainfall needed to support the growing season will soon subside in June. Based on short-term rainfall forecasts, cumulative rainfall through the end of May is likely to remain well below the 1981-2020 average, with the worst-affected areas of the eastern Horn expected to accumulate less than 45 percent of average amounts (Figure 2).

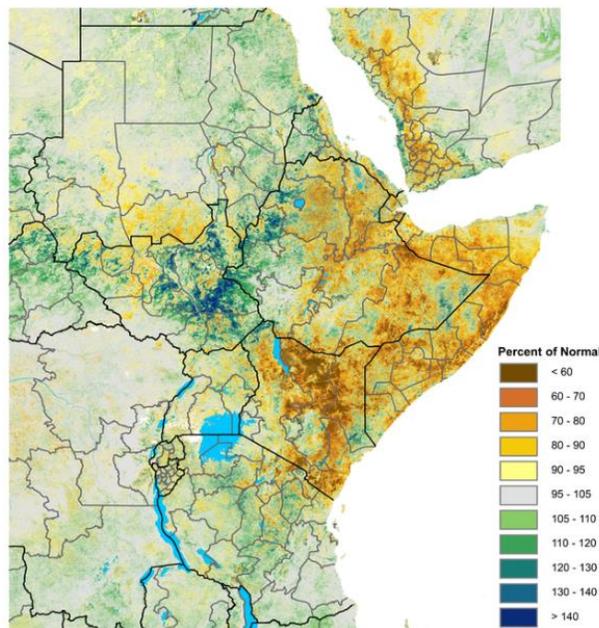
In contrast, the key agricultural zones of the western sector of region (parts of Rwanda, Burundi, Uganda) and western Kenya, have generally observed improved rainfall performance (90 – 125 percent of normal) from early April to early May. This has relatively improved cropping conditions, despite the earlier occurrence of long-dry spells and large-scale African Fall Worm (AFW) infestations in parts of northern Tanzania, western Kenya, and Uganda in March and early April.

The latest assessment of vegetation condition anomalies compared to the 2012-2021 average shows extremely drier-than-normal conditions in Kenya, Somalia, and eastern and southern Ethiopia, with record lows recorded in areas such as Marsabit and Gedo (Figure 3). This is attributed to poor rainfall performance and extremely hotter-than-normal land surface temperatures (>3 deg. C), which have severely reduced pasture and browse availability, surface water sources, and seasonal rivers in both pastoral and agro-pastoral livelihood zones. Current rangeland conditions are worse than last year, particularly in northeastern Kenya, southeastern Ethiopia, and southern Somalia (Figure 4). [Monitored water points](#) indicate that water pans are well below-average despite some re-fill following heavy rainfall in late April and early May. Typically, time-series data of monitored water sources show that the replenishment of surface water and improved rangeland conditions last for less than two months in these abnormally hotter-than-normal conditions, as observed in late 2021 into early 2022.

In the rest of the region, vegetation conditions currently range from slightly below average to average. However, in May, improvement is likely to occur in the western and southern sectors due to ongoing, widespread rainfall. Greener-than-normal vegetation conditions are evident in southern and central Tanzania, along the Nile basin in South Sudan, and parts of eastern Sudan and western Ethiopia. In Yemen, vegetation is drier-than-normal over the western highland regions.

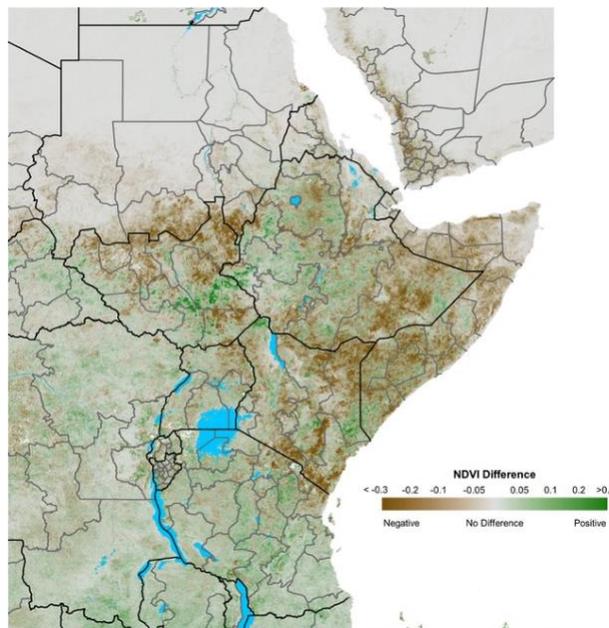
The significantly delayed onset of seasonal rainfall by more than a month in eastern Kenya, parts of southern Somalia, and *belg* cropping areas of Ethiopia is an early and reliable precursor for unfavorable cropping conditions and significantly reduced yields. Many of these marginal agricultural areas have already experienced sequential below-average to failed crop harvests since late 2020. In comparison to the long rains season of last year, current cropping conditions are reportedly worse in

Figure 3. eVIIRS Normalized Difference Vegetation Index shown as the percent (%) of the 2012-2021 average, May 01 - 10, 2022



Source: FEWS NET

Figure 4. EVIIRS Normalized Difference Vegetation Index, difference between 2022 and 2021, May 01-10, 2022



Source: FEWS NET

southeastern Kenya and parts of the rain-fed sorghum growing regions of Bay and Bakool regions in southern Somalia. However, across the main maize growing areas of Kenya's rift-valley and western counties and central Uganda, agricultural production prospects are likely to be near-average despite early season long-dry spells and AFW. There are ongoing response measures to mitigate AFW in Kenya and Uganda, with the ongoing moderate to locally very heavy rains in the western sector of the region likely to provide some respite.

The following is a country-by-country update on recent seasonal progress to date:

- **In Somalia**, the April – June seasonal rains are significantly delayed by 20-30 days in most central and northern regions, while the rains in southern regions are uneven and well below average (<60 percent of average rainfall). There are increasing concerns for below-average rainfall in May, maintaining unfavorable cropping conditions for the recently planted maize and sorghum crops. In the south, ongoing rainfall in late April into early May will marginally alleviate the severity of pasture, browse, and water shortages, but these resources are unlikely to last beyond the next one to two months due to the severity of evapotranspiration. For irrigated crops in riverine areas, rising water levels could support crop development, but subsiding rainfall in May and June may not be sufficient to support normal crop growth. Season-to-date rainfall accumulations in the Juba-Shabelle basin are very low. Farmers are also facing difficulties accessing agricultural inputs and labor as the extreme water shortage, and high food prices have drained household finances and resulted in high displacement levels.
- **In Ethiopia**, rainfall in April has been poor in central and eastern Ethiopia, and many regions are experiencing 30 to 40-day delays as of late April. Localized areas of western Oromia, Gambela, and western SNNPR have recorded near-average rainfall from early March through early April that improved growing conditions, but the delayed onset and potential early cessation of seasonal rainfall are expected to affect crop outcomes in most areas significantly. Meanwhile, the southern and southeastern parts of Ethiopia are still reeling from prolonged drought conditions, with some short-term relief occasioned by the mid-April to early May rainfall in most pastoral zones of Oromia and Somali regions. Afar and Dire-Dawa regions are likely to remain under severe drought conditions in the coming weeks.
- **In Kenya**, the planting of the long rains maize and rice crops is underway, but there is ongoing concern that the delayed onset of rainfall and ongoing drought will reduce the area planted and reduce crop yields in marginal bimodal areas in the northeastern, coastal, and eastern regions as well as in the unimodal central region. As of mid-April, seasonal rainfall was still delayed in the Highlands West of the Rift Valley and had yet to be realized over most of the Central Rift Valley, the Northwest, and most of the Coastal regions. Additionally, high temperatures are resulting in increased evapotranspiration of the received rains, limiting soil moisture retention. Overall, planting conditions remain favorable in western Kenya despite a delayed start to the rains. However, an AFW invasion has impacted 33 counties in the West and Rift Valley in late April, with an estimated 500,000 acres affected. County governments in affected areas are working with the country's agricultural ministry to combat the invasion. However, smallholder farmers who cannot afford pesticides are likely to be the most affected.
- **In Sudan**, the winter wheat harvest was finalized in April with below-average yields in the northeast due to dry conditions and prolonged socio-economic challenges impacting agricultural production. During its typical dry season, hotter-than-normal conditions continue to prevail across much of Sudan. Seasonal rains are expected to start normally in late May into June. Vegetation and surface water conditions are likely to further decline until the start of the annual rainy season.
- **In South Sudan**, the March-May first season rains in bimodal western and southern areas had an erratic onset, with the start of the season ranging between March and April. Much of the southeastern Equatoria regions are yet to establish an effective rainfall pattern conducive for crop planting, which could translate to more than 20 days' delay. Despite the erratic start of the season, ongoing rainfall in April has helped to ease the severity of rainfall deficits across the country. Moreover, given that Nile River water levels remain atypically high and given that soil remains saturated in many areas along the Nile River basin after the 2021 floods, additional rainfall within the Nile catchment area is likely to result in an elevated, high risk of flooding as rainfall intensifies in the coming weeks.
- **In Uganda**, rainfall has generally been erratic since March, with poor temporal and spatial distribution, including consecutive weeks of below-average rainfall. Despite somewhat favorable rains in late April, cumulative rainfall remains significantly below average in northern and eastern Uganda. As of late April, cumulative rainfall deficits totaled 50 to 100 mm or more. Below-average rainfall has been exacerbated by hotter-than-normal land surface temperatures of 2-7 degrees Celsius in eastern and northern areas. Planting and development of first season cereals is underway for harvest from June, and the current cropping conditions are largely mediocre to near-average according to the [Water Requirement Satisfaction Index](#). However, the forecast below-average rainfall across Karamoja is likely to adversely impact planting activities, as this region typically receives relatively lower seasonal rainfall in May. Overall, the rainfall

outlook is likely to remain slightly below average to average for both cropping and rangeland conditions, with generally near-average yield prospects despite an AFW infestation in 35 districts—primarily the east, center, and northern regions—affecting maize, millet, and sorghum crops. Flood risks also remain high over eastern flood-prone regions of Mt. Elgon bordering Kenya due to the forecast moderate to locally very heavy rains in the next one to two weeks.

- **In Rwanda and Burundi**, planting and development of main Season B maize and rice crops for the June harvest is ongoing, and conditions are generally favorable. In Burundi, overall vegetation conditions and soil moisture levels are favorable despite some localized areas with deficit rainfall in the south. In Rwanda, rainfall is favorable for cropping conditions in most areas, but a heavy downpour of rainfall on April 23 resulted in some localized flooding and crop damage. According to the Rwanda Environment Management Authority, flooding across Kigali resulted in significant crop damage around wetland areas, including in Kibumba, Nyabugogo, Rugenge-Rwintare, Rwampara, and Gikondo. Additional forecast rainfall through late April may exacerbate the damages.
- **In Yemen**, the March-May seasonal rainfall has largely been below average across the country, especially over the western highlands, with a slight improvement in cumulative rainfall in mid-to-late April. Vegetation conditions have also remained drier-than-average, especially in the western highlands, but largely near-normal for the rest of the country. Hotter-than-normal land surface temperatures have persisted across most of the country associated with the poor rains. This is likely to continue into May, with rainfall confined mostly over the western sector allowing for cropping activities in accessible agricultural areas.

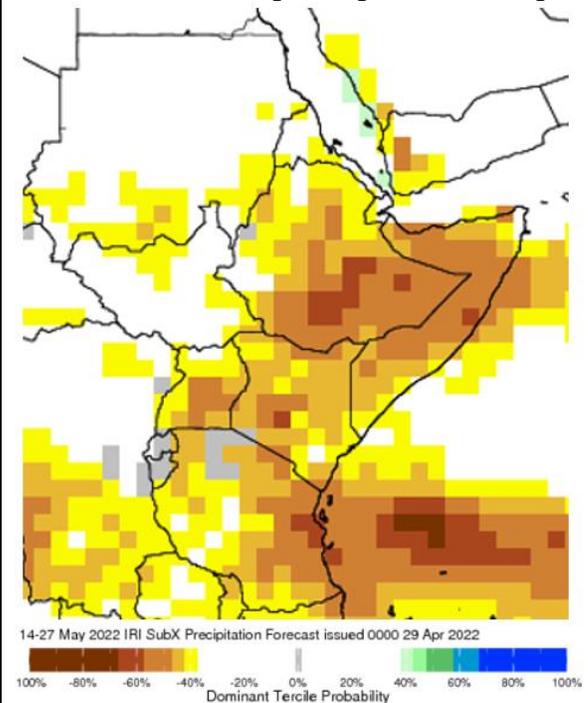
FORECAST

Most of the short-term rainfall forecasts into early May indicate continued uneven, light to moderate late-seasonal rainfall across the eastern Horn. Meanwhile, the East African coastal strip and much of the western sector of the region are likely to experience a peak in rainfall performance in early May, with a risk of flooding.

The IRI/CPC sub-seasonal (sub-X) probabilistic rainfall forecast (Figure 5) for May 14-27 indicates a high probability (>60 percent) of below-average rainfall across much of the region, particularly in the eastern Horn. May often marks the cessation of seasonal rainfall over northern Tanzania and eastern and southeastern Kenya, but it is also the peak in rainfall intensities across the East African coastal strip of Tanzania, Kenya, and Somalia. The poor rainfall outlook for the remainder of the season strongly indicates that another poor cropping season is likely in eastern Kenya, southern Somalia, and Ethiopia's *belg* cropping zones. Below-average rainfall amounts are also forecast for much of western Kenya, Uganda, and western Ethiopia for mid-to-late May but are not expected to significantly impact crop production due to the seasonal rains typically lasting to September. Meanwhile, South Sudan, Sudan, parts of western Ethiopia, Rwanda, and Burundi are likely to experience near-average to slightly below average rainfall in May. Based on the May rainfall outlook, no significant changes or improvements are anticipated for livestock conditions and productivity for arid and semi-arid regions of eastern and southern Ethiopia, southern Somalia, and northern and eastern Kenya, despite the current short-term improvement following the recent widespread but erratic rainfall distribution in mid-to-late April.

Forecast models are now signaling an increased likelihood of strong sea surface temperature gradients in the Indo-Pacific Ocean, and a La Niña event and/or a negative Indian Ocean Dipole appear likely during the OND 2022 rainfall season. Based on research conducted by FEWS NET science partners, these three climate drivers are all correlated with below-average rainfall in the eastern Horn, signaling an elevated chance that the October to December 2022 short rains season will be below average. This would set the stage for an unprecedented, five-season drought.

Figure 5. IRI/CPC Sub-X rainfall probabilistic forecast for May 14-27, 2022, showing the probability that forecast rainfall will be below average, average, or above average



Source: IRI/CPC