

Special Report

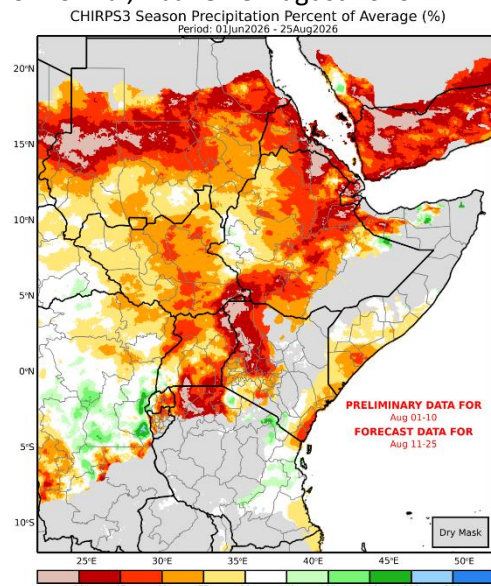
Strengthening El Niño Conditions: Implications for Rainfall, Flood Risk and Food Security in Eastern Africa

18 August 2026

The ongoing El Niño episode is forecast to strengthen over the coming months and persist through early 2027. The intensification of the El Niño through July 2026 was similar to the 1997-1998 episode. The National Oceanic and Atmospheric Administration (NOAA) forecast that this El Niño has a 95 per cent chance of being categorised as a ‘strong’ or ‘very strong’ episode in the late calendar year 2026.

‘Strong’ and ‘very strong’ El Niño episodes have significant worldwide impacts that are particularly acute in Eastern Africa (see Annex 1). Across the western parts of the region (Sudan, South Sudan, northern Uganda, western and central Ethiopia, Djibouti and Eritrea) El Niño is associated with below-average rainfall during the main rainy season (June to September). Across the eastern and southern parts of the region (Somalia, Kenya, Uganda, eastern and southern Ethiopia, Rwanda, and Burundi), it is associated with above-average rainfall and flooding during the October-December rainy season. ‘Strong’ and ‘very strong’ El Niño events are typically related to greater impacts than weaker El Niño events.

Figure 1. Rainfall anomalies as a percent of normal, 1 June-15 August 2026



Source: UCSB CHC

is among the driest seasons on record.

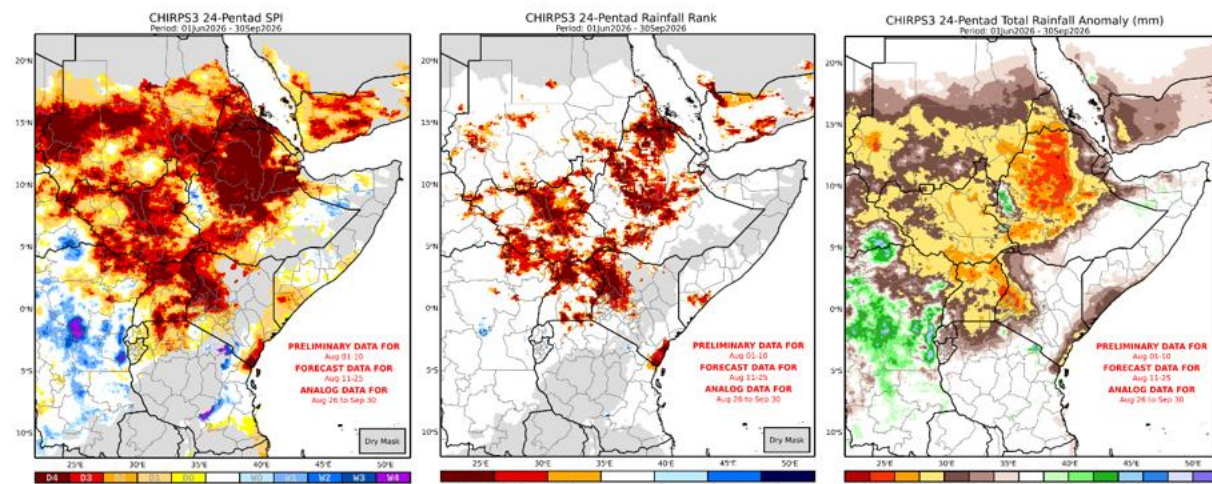
The Indian Ocean Dipole is currently in a neutral phase but meteorological agencies like the Australia’s Bureau of Meteorology report that a shift toward a positive phase remains possible later in the year. Such a positive shift would reinforce the El Niño signal during the October-December period, further strengthening the outlook for above-average October - December rains.

June-September season: Western areas

Western parts of the region have already had a very poor start to the season, with prolonged dry spells observed since April. Rainfall anomalies from 1 June to 25 August (including two-week forecasts) show that widespread areas of central and northern Ethiopia, the pastoral belt of Sudan, most of Eritrea and Djibouti, the Karamoja region of Uganda, and western and northwestern Kenya, along with other localized areas, have received less than 60 percent of normal rainfall (Figure 1); in the worst-affected areas, this

ICPAC forecasts indicate that below-average rainfall and above-average temperatures are likely to persist in these affected areas between August and October. Analysis by the University of California, Santa Barbara's Climate Hazards Center, combining observed rainfall to date, two-week forecasts, and rainfall from analogue years, points to significant cumulative rainfall deficits by season's end, with many areas facing their driest season on record (Figure 2).

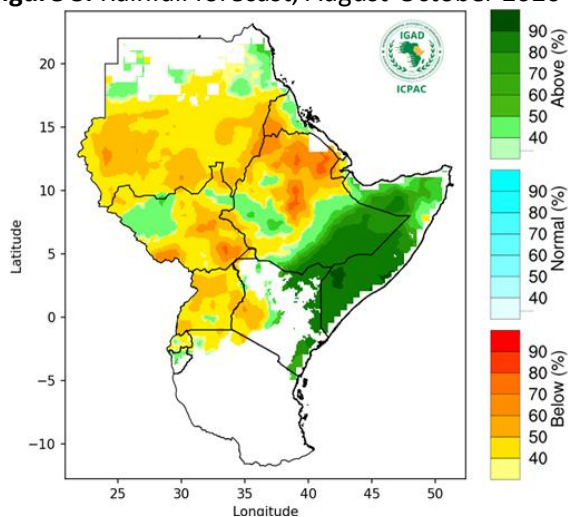
Figure 2. June to September 2026 Seasonal Estimates for East Africa expressed as SPI, ranks and anomalies



Source: UCSB CHC

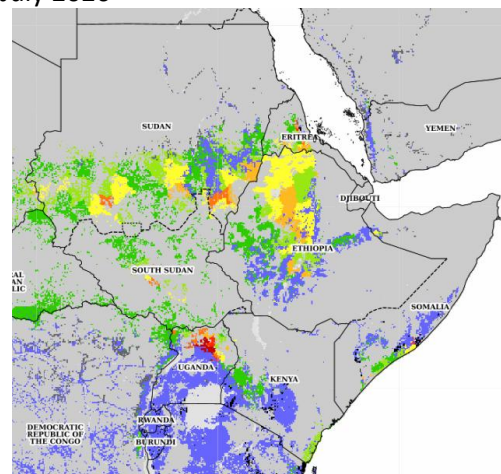
Field reports from parts of western Kenya, northern Ethiopia, the Karamoja region of Uganda, and South Sudan indicate delayed planting, poor germination, reduced planting rates and crop wilting. Crop models (WRSI and ASIS), and NDVI data show deteriorating vegetative and crop conditions across many affected areas (Figure 4). As some of these areas are key production areas, this raises concerns of below-average national cereal production, with implications for household, local, and national cereal supplies, and potential upward pressure on prices already elevated by high fuel costs linked to the Middle East crisis.

Figure 3. Rainfall forecast, August-October 2026



Source: ICPAC

Figure 4. Agricultural Stress Index for croplands, 21 July 2026



Source: FAO

Severe rainfall deficits are expected to reduce recharge of rivers, ponds, reservoirs, and groundwater, increasing water shortages for domestic consumption, livestock, and agriculture. In pastoral and agro-pastoral areas, declining pasture and water availability will result in deteriorating livestock body condition, reduced milk production, lower livestock productivity, and falling household incomes from reduced milk production, and falling livestock prices. Increased livestock migration in search of pasture and water is also likely, heightening competition over natural resources and raising the risk of localized resource-based conflicts, particularly around key water points, grazing areas, and livestock corridors.

The combined effects of reduced agricultural and livestock production and productivity, and water shortages will negatively affect food security and livelihoods across the affected areas. While livestock and water impacts are already emerging during the JJAS season, the consequences of poor crop production will become more pronounced post-harvest, particularly in the first half of 2027, as households face reduced food stocks, lower agricultural incomes, and greater reliance on markets. These impacts may further exacerbate household vulnerabilities during this period, potentially worsening food security and livelihood outcomes during an already challenging period for many households.

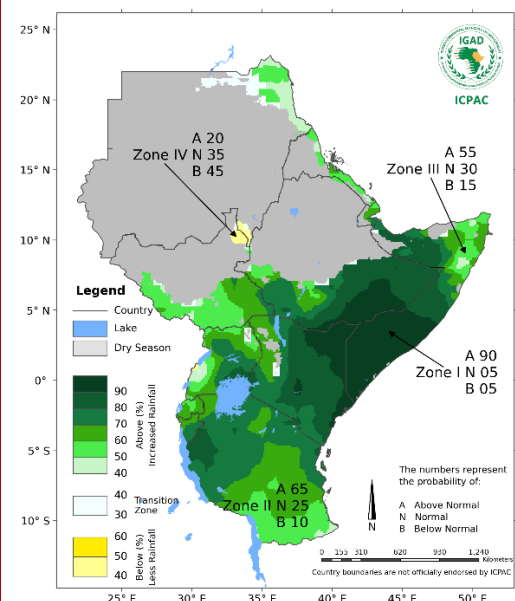
Reduced food availability, declining household purchasing power, lower livestock and milk production, water shortages, and increased reliance on markets are expected to heighten the risk of worsening household food consumption and deteriorating child nutrition, particularly among young children and other nutritionally vulnerable groups. In areas that received depressed rains, where the lean season may begin earlier or be more severe than usual, close monitoring of acute malnutrition and sustained access to essential nutrition services will be critical.

October-December season: eastern and southern areas

For the OND season, 'strong' El Niño and positive IOD conditions are typically associated with above-normal rainfall across the eastern sector of the region. Countries like Somalia, eastern and southern Ethiopia, northern Kenya, Uganda, Rwanda, and Burundi are therefore likely to experience wetter-than-normal conditions. ICPAC identifies 2023 and 1997 as comparable years; both saw widespread and severe flooding with significant humanitarian impacts (Annex 1).

El Niño and positive IOD conditions, carry both positive and negative implications for livelihoods. On the positive side, above-average rainfall will recharge groundwater, rivers, and reservoirs, improve water availability for domestic and agricultural use, and promote pasture regeneration and livestock productivity. On the negative side, excessive rainfall substantially raises flood risk, which can cause loss of life and property, displacement, crop destruction, and damage to roads, bridges, and other infrastructure, disrupting transport, market access, and humanitarian operations. Flooding also raises the risk of water- and vector-borne disease outbreaks affecting both people and livestock. Flooding

Figure 5. Rainfall forecast, October-December



Source: ICPAC

also increases the risk of water- and vector-borne disease outbreaks affecting both human and livestock populations. In addition, it may disrupt access to health, nutrition, and safe water services, while displacement and a higher disease burden could further elevate nutrition risks among vulnerable groups, particularly young children. Cumulatively, these are likely to further increase the prevalence of acute malnutrition, especially among children under five years of age.

Flood risk in several countries depends not only on local rainfall but also on heavy rainfall upstream within shared water basins. Above-average rainfall in Ethiopia's southern highlands, for instance, can trigger downstream flooding in Somalia, while excessive rainfall across the Lake Victoria Basin (Kenya, Uganda, Tanzania, Rwanda, and Burundi) can raise White Nile flows and flood risk in South Sudan and Sudan. As a result, even countries receiving near-normal seasonal rainfall may still flood due to upstream runoff from neighboring countries.

Response recommendations

El Niño's impacts in Eastern Africa are well understood and well documented and are already materializing across western unimodal areas, where seasonal performance to date has been very poor and is expected to remain so. For these areas, the window for Anticipatory Action is closing rapidly; plans should now be made for likely increased humanitarian needs in the coming months, particularly in the first half of 2027, as meagre harvests are likely to leave households with depleted food stocks, resulting in an earlier and more severe-than-usual lean season.

For the October-December season, forecasts are relatively robust and skillful even several months out. As analogue years have seen severe flooding with significant humanitarian impacts, now is the time to implement preparedness and Anticipatory Actions, informing local communities of likely flood risks, supporting them in taking mitigation measures to reduce the floods' expected impacts, and helping them capitalize on the positive effects of above-average rains.

Overall, the anticipated impacts of drought in western unimodal areas and the heightened risk of flooding during the October-December season underscore the need for strengthened monitoring of food security, acute malnutrition, food consumption, and access to essential nutrition services. Preparedness and Anticipatory Action efforts should also safeguard livelihoods, food access, and the continuity of nutrition supplies, service delivery, and referral pathways, helping ensure that vulnerable populations can maintain access to adequate food, services and critical nutrition support despite the potential disruptions associated with drought, flooding, and population displacement.

Annex 1. Historical El Niño events and their impacts on East Africa

Comparable El Niño years, 1982–2023, showing rainfall anomalies and food security impacts during the June–September and October–December rainy seasons.

Event	June–September (JJAS)	October–December (OND)
1982 <i>Very strong El Niño, positive IOD</i>	Widespread rainfall deficits affected much of East Africa. Ethiopia experienced poor <i>Belg</i> and <i>Kiremt</i> rains, with crop failures across north-central and eastern areas and severe drought in pastoral regions.	Well above-average rains observed across the region. However, in Ethiopia, the impacts of the drought from the failed <i>Meher</i> main season persisted. Due to widespread crop failure, severe food insecurity and humanitarian needs were observed.
1987 <i>Moderate El Niño</i>	Regional drought affected Sudan, Ethiopia, Somalia and Djibouti. Ethiopia faced a highly precarious food security situation, with famine risks. Djibouti experienced severe drought, widespread livestock losses and deteriorating nutritional outcomes. Cereal production declined in several countries.	Rainfall remained below average across much of the region, although humanitarian impacts were not extensively documented.
1991 <i>Strong El Niño</i>	Severe drought, alongside conflict, across the region created a major regional food crisis. Ethiopia's political upheaval disrupted relief operations, increasing famine risks. Sudan faced widespread food shortages, rising cereal prices and major logistical constraints, while conflict in Somalia caused severe food shortages, depleted stocks and starvation in some districts.	Below-average rainfall persisted across much of East Africa. Crop conditions deteriorated further in southern Somalia, southern Ethiopia, western Kenya and bimodal Uganda. Food insecurity remained severe with drought impacts combined with conflict and limited humanitarian access.
1994 <i>Moderate El Niño, positive IOD</i>	Most western areas received near- or above-average rainfall, although localized rainfall deficits occurred. Significant flooding was observed in Sudan, where heavy rains and exceptionally high Nile levels affected multiple states, displaced thousands of families, damaged homes and increasing disease risks.	Above-average rainfall across eastern East Africa generally supported favourable agricultural production. Somalia recorded consecutive good <i>Gu</i> and <i>Deyr</i> harvests, substantially improving national food security. Kenya experienced above-average short-rains production despite localized flood and drought impacts. Major flooding affected Djibouti City, where more than 100,000 people were affected and a national emergency was declared.
1997 <i>Very strong El Niño, positive IOD</i>	Early El Niño conditions produced mixed impacts. Rainfall deficits affected parts of Ethiopia and Southern Sudan (now South Sudan). In Ethiopia, this drove poor <i>Belg</i> production, moisture stress during the <i>Meher</i> season and increased food assistance needs. Southern Sudan experienced erratic rainfall and poor first-season harvests following May–June dry spells, while Uganda suffered delayed harvests, crop production declines in eastern areas and deteriorating pasture conditions in Karamoja. Kenya's bean harvest was poor, although maize prospects were favourable in major producing areas.	Strong El Niño rains produced widespread flooding across eastern East Africa. Flooding affected Somalia, Kenya, Ethiopia, Uganda and neighbouring countries, causing extensive displacement, infrastructure damage, disease outbreaks and crop losses. At the same time, the abundant rainfall substantially improved pasture and water availability in many areas following earlier drought conditions. According to EM-DAT, the floods caused 2,823 fatalities across the region—including 2,311 in Somalia—making this the deadliest El Niño flood event in the historical record.
2002 <i>Moderate El Niño</i>	Localized rainfall deficits developed in western parts of the region, but impacts remained relatively limited. No major regional food security issues due to this climate shock.	Above-average short rains improved agricultural conditions across much of eastern East Africa, although localized flooding occurred in some areas.
2004 <i>Weak El Niño</i>	Rainfall deficits affected parts of the region, contributing to localized drought impacts and reduced agricultural production in some areas.	Mixed seasonal conditions occurred, with localized flooding in eastern areas.

Event	June–September (JJAS)	October–December (OND)
2015 <i>Very strong El Niño, positive IOD</i>	Below-average June–September rainfall in western parts of the region, contributed to drought conditions in Sudan, Ethiopia and neighbouring areas.	Strong El Niño conditions brought widespread above-average rainfall and flooding across eastern East Africa. Flooding affected parts of Somalia, Kenya, Ethiopia and neighbouring countries, while improved rainfall also benefited pasture and crop production in some drought-affected areas.
2023 <i>Strong El Niño, positive IOD</i>	El Niño contributed to below-average June–September rainfall across western areas of the region, particularly Sudan, South Sudan, western Ethiopia and parts of Uganda. Combined with ongoing conflict, especially in Sudan, this resulted in poor agricultural production, deteriorating food security and expanding humanitarian needs.	One of the strongest recent El Niño flood seasons. Exceptionally heavy October–December rains caused widespread flooding across Somalia, Kenya, Ethiopia, South Sudan, Uganda and Burundi, leading to extensive displacement, infrastructure damage, crop losses, livestock deaths and outbreaks of water-borne diseases, while also improving water resources and pasture conditions in many drought-affected areas. EM-DAT recorded 705 flood-related fatalities across the region, making 2023 one of the deadliest El Niño flood seasons since 1997.

Legend

	Drought / below-average rainfall		Flooding / above-average rainfall		Mixed / limited impact
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Note: Regional summaries are based on rainfall anomaly maps, ASIS crop condition maps, and documentary evidence compiled for each El Niño year. Flood fatality statistics are from the EM-DAT International Disaster Database and are included only where they provide useful context on the severity of flood impacts.