

Heavy rain led to significant flooding across much of East Africa and Yemen in August

KEY MESSAGES

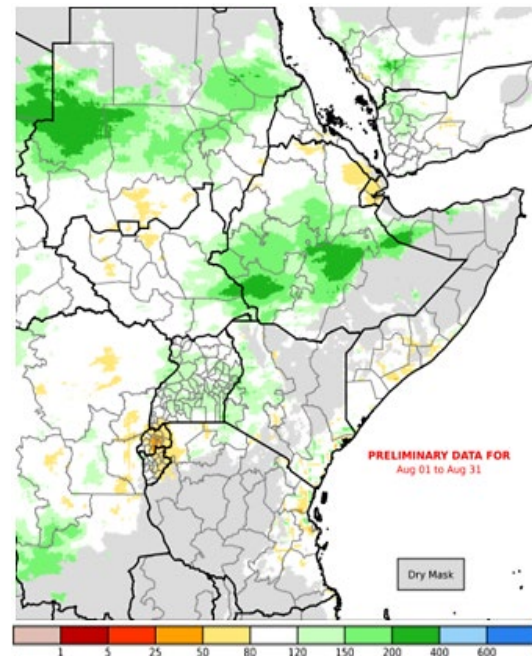
- National governments and UNOCHA estimate more than 1.5 million people have been directly affected by sustained, above-average seasonal rains across the region in July and August. Floods have affected Sudan, South Sudan, Yemen, Ethiopia, and parts of Somalia, Kenya, and Uganda. The floods have also led to significant crop damage and property loss.
- Outside of the worst-affected areas, the seasonal rains are generally beneficial for agricultural production in crop-producing zones in the northern and western sector. Additionally, water sources are fully replenished, and the water levels of many lakes, rivers, and dams are at historic levels.
- Rangeland conditions broadly remain favorable. In the Horn, recent August rainfall helped slow the decline of pasture availability and surface water pans that usually occurs in the July-September dry season. The rain has also helped offset the impacts of the early end of the March to June seasonal rains and recent above-average temperatures in parts of the eastern Horn.
- The 1-2 week rainfall outlook depicts an increased likelihood of continued, widespread moderate to locally very heavy rains. A heightened risk of flooding will persist in Yemen, Ethiopia, Sudan, South Sudan, western Kenya, and eastern and northern Uganda.

SEASONAL PROGRESS

During August, the seasonal rains intensified and peaked in mid- to late-August. Monthly totals ranged from near average to 150-400 percent above average. The heaviest rainfall occurred in Ethiopia, Sudan, eastern South Sudan, Uganda, western Kenya, and parts of Yemen (Figure 1). Where data is available, lake and river levels are among the highest on record, attributed to the cumulative impact of exceptional seasonal rainfall events since late 2019. As a result, persistent, above-average rainfall since July led to moderate to severe riverine flooding and flash floods across East Africa and Yemen.

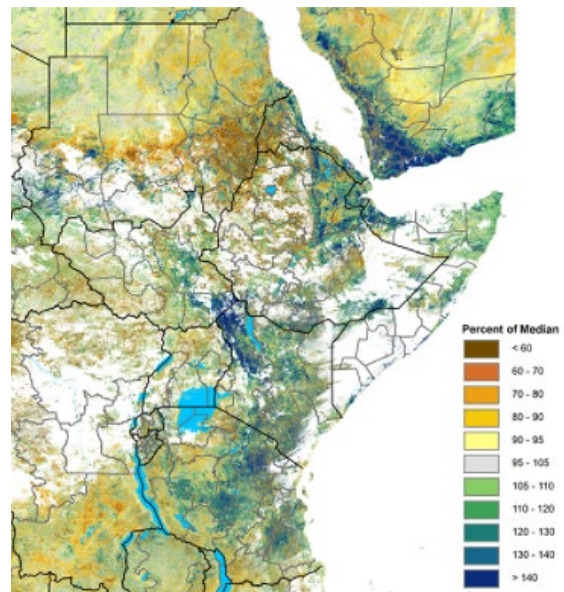
National governments and UNOCHA estimate more than 1.5 million people have been adversely affected by the ongoing floods. Reports include several fatalities, large-scale displacement, and significant crop and property losses. In Sudan, the government declared a national state of emergency for three months, counting an estimated 99 fatalities and more than 250,000 people displaced after the River Nile flooded. The states of Khartoum, Blue Nile, and River Nile are among the hardest hit by the floods, while damage has also been reported in the Gezira, Gadarif, West Kordofan, and South Darfur regions. In South Sudan, over 600,000 people are

Figure 1. CHIRPS preliminary rainfall as a percent of the 1981-2010 average, August 1 -31, 2020



Source: UC Santa Barbara Climate Hazards Center

Figure 2. eMODIS/NDVI as a percent of the 2003-2017 median, August 11-20, 2020



Source: FEWS NET

affected by the recent floods, resulting in two consecutive years of significant flood events. In Ethiopia and Somalia, 300,000 and 191,000 people have been affected since mid-July. Yemen, Uganda, and Kenya report an estimated 35,000, 8,700, and 1,800 families affected by floods, respectively.

Despite the extreme wetness and adverse flood impacts in many parts of the region, there are beneficial impacts from the seasonal rains on crop and livestock production and fish availability across much of the northern and western sector. Rainfall and soil moisture levels are generally favorable in western Kenya, *meher*-producing areas of Ethiopia, Sudan, and western South Sudan. Outside of the areas that are worst-affected by floods, cropping conditions are sufficient to support average to slightly above-average crop yield prospects by the end of the season, barring other shocks. Water resources and hydropower generation dams have also attained peak-levels across the regions; however, there is heightened concern for major outflows and flooding downstream due to the relentless seasonal rains.

The latest vegetation conditions based on eMODIS/NDVI satellite observations and available field assessments are indicative of largely greener-than-normal to normal conditions in most pastoral and agropastoral livelihood zones of the region, especially Somalia, northern and eastern Somalia, Kenya, and Tanzania (Figure 2). However, below-normal conditions are present in northern and eastern Sudan and western Tanzania, attributed to slightly delayed rains in Sudan and the ongoing dry season in Tanzania. Persistent cloud cover continues to obscure comprehensive land surface observations over much of East Africa, and is associated with the seasonal rains. The rains are most likely to result in improved vegetation and rangeland resources by the end of September into early October, apart from areas that remain waterlogged or flooded.

Desert locust remains an ongoing threat in the region, given environmental and meteorological conditions. Currently, vegetation, soil moisture, and prevailing northward wind regimes are most favorable for desert locust development in South Sudan, Sudan, Ethiopia, and Yemen. Assessments of adverse impacts are ongoing, with the most significant impact on crops and pasture reported in Ethiopia. Most recently, over eastern Tigray, Amhara, and Afar regions in northeast Ethiopia, there was a report of emerging of swarms that affected newly germinated crops. Farmers had to replace long-cycle crops with other short-cycle crops in some localities.

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

- **In Somalia**, over 10,000 people have recently been affected by floods in parts of southwestern Somalia, according to the latest available field and UNOCHA reports. These floods are attributed to above-average *haaga* seasonal rains. Since mid-July, at least 191,000 have been adversely affected by floods in South West and Jubaland states. Crops, homesteads, and properties were also damaged. FSNAU-led assessments of *gu* crop production are currently underway. Meanwhile, rangeland and water resources have significantly improved across the country.
- **In Ethiopia**, above-average rains continued in August in most *kiremt*-dependent areas in western and central highlands, and the northeastern and southwestern regions. Since late July, at least 151,828 people have been affected, of which 100,176 were displaced due to floods. The worst-affected flood areas are Afar, Gambella, Oromia, and SNNP regions. Hundreds of hectares of crops were also damaged, though final estimates are not yet available. Despite significant flood damage in the worst-affected areas, the *kiremt* rains have supported favorable cropping conditions and there is an increased likelihood of average to slightly above average yield prospects. However, other drivers such as desert locust and reductions in planted area may limit production. Additionally, there is a continued risk of additional flooding in the remainder of the *kiremt* season. Major water reservoirs and hydropower dams' water levels have already surpassed the maximum levels before the seasonal rains cease.
- **In Kenya**, the seasonal rains peaked and were well above average in August in most of the western and Rift Valley regions. Persistent rains since late 2019 have continued to cause unprecedented lake and river water levels, especially in the Rift Valley lakes of Turkana, Baringo, Nakuru, and Naivasha. At least 1,000 families have been displaced by flooding from Lake Turkana in northwestern Kenya, with massive damage to property and infrastructure in Turkana County in late August, according to official county government reports. There is looming concern for Turkwel dam bursting its banks, with over 300,000 people at risk of being displaced. Outside of these areas, crop, rangeland, and water resource conditions have remained exceptionally good, with expected average crop and livestock production prospects. Meanwhile, the adverse impacts of desert locusts have generally been localized. However, current environmental and meteorological conditions are likely to be conducive for further breeding in northwestern Kenya.
- **In Sudan**, the seasonal rains intensified across the country in August, causing widespread, devastating floods in several regions and culminating in an Emergency Declaration by the Sudanese government. At least 84 people have died and 381,770 people have been affected by heavy rains and flooding, which is historically higher than the 1906 flood levels and

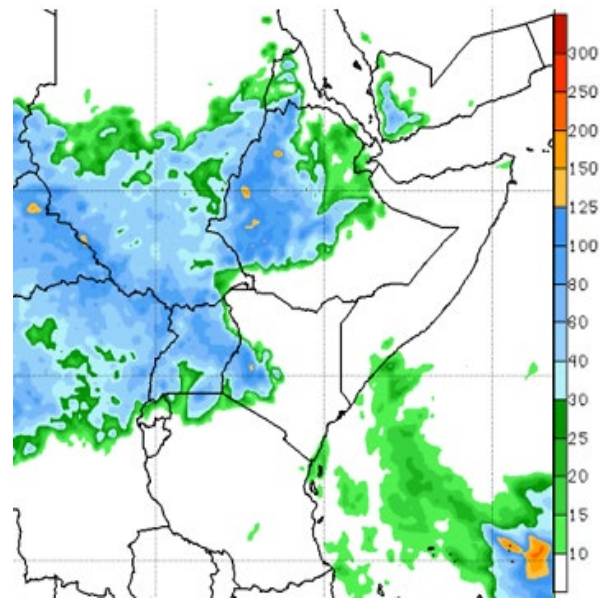
comparable to 1988 levels. The Blue Nile River is currently at 17.43 meters, which is the highest on record, and expected to rise further. Above-average rains are forecast until at least mid-September. Crop conditions in flood-affected areas are characterized by excessive soil saturation. However, crop conditions are favorable outside flood-affected areas. In parts of central and northern Sudan where vegetation conditions are currently below normal, conditions are expected to improve in the coming weeks given the delayed establishment of the seasonal rains in mid-July into August.

- **In South Sudan**, UNOCHA reports 24 counties in six states have been affected by floods since mid-July, mostly along the White Nile basin. Abnormally heavy rains have led to river-overflows, causing large-scale displacement and crop and property damage in Jonglei and Lakes states. At least 240,000 people have been displaced in Jonglei and 221,000 in Lakes, according to latest UN reports. Other worst-affected states include Upper Nile (59,000 displaced), Unity (53,000), Central Equatoria (26,000), and Western Equatoria (4,000) States. Flood-response activities are constrained by persistent heavy rains, infrastructure damage, and conflict. Meanwhile, in western South Sudan, agricultural production in areas that have not been adversely affected by the current floods, desert locusts and other underlying factors are favorable. There is a likelihood of worsening floods due to a forecast of heavy rainfall through at least late September into early October.
- **In Uganda**, Lake Albert and Lake Kyoga water-levels continue to rise. In recent weeks, the floods displaced an estimated 8,700 people in Buliisa, Nakasongola, and Amolatar districts. The Red Cross and local government authorities are currently assessing and responding to adverse flood impacts. Apart from these areas, June to September unimodal crop conditions in Karamoja are largely in favorable condition and in the harvesting stages. There is concern, however, that continued heavy rains may affect harvesting activities and could lead to post-harvest losses.
- **In Rwanda and Burundi**, the season-B crop harvest was generally average across the two countries. Ongoing off-season rainfall is slightly below average. However, the start of season-A rains is anticipated gradually between August into early October.
- **In Yemen**, above-average heavy rainfall in August continued to cause flash floods, casualties, and property damage. Recent reports indicate floods caused 130 deaths and affected 35,000 families since late July. The worst-affected areas are Marib, Hajjah, Al Hudaydah, Raymah, and Abyan governorates in western and central regions.

FORECAST

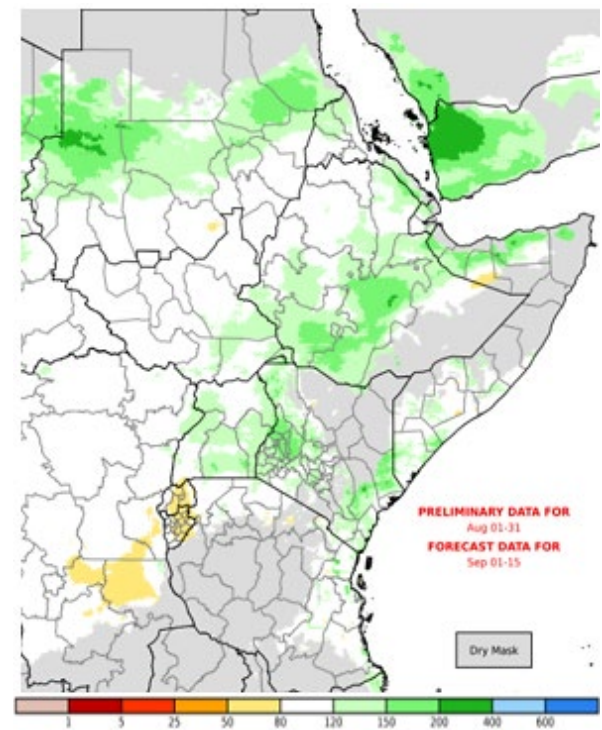
The rainfall forecast in early September depicts heavy to localized very heavy rainfall over eastern and northern Ethiopia, much of central and southern Sudan, South Sudan, Uganda, western and central Rift Valley area of Kenya, and western Yemen (Figure 3). The rainfall outlook through September 20th shows similar rainfall patterns, with the coastal strip of Kenya and northeastern Tanzania additionally forecast to experience heavy to very heavy rains. The sustained heavy rains in August and September, coupled with already super-saturated soils and record-high river and lake water-levels, will sustain an elevated

Figure 3. Week I GEFS rainfall forecast in mm, valid through September 13, 2020



Source: NOAA/CPC

Figure 4. CHC Early Estimate for June 1-August 31, 2020, expressed as a percent of the 1981-2018 average. Based on CHIRPS preliminary data for August 01-31, 2020 and unbiased GEFS forecast for September 1-15, 2020.



Source: UC Santa Barbara Climate Hazards Center

risk of flooding in the northern sector. Areas at highest risk include the Nile river basin of South Sudan, flood-prone areas of eastern Sudan and western Darfur region of Sudan, low-lying regions in the western Ethiopia highlands, the western and Rift Valley regions of Kenya, and eastern Uganda. However, heavy rains are likely to begin to gradually ease in northern and central Sudan and neighboring South Sudan from late September through October as the tropical rainfall system gradually shifts toward equatorial East Africa. In contrast, the rest of the region is forecast to remain typically sunny and unusually hot, apart from the highland regions of Tanzania, Kenya, and Ethiopia.

Given cumulative rainfall since June and the rainfall forecast through mid-September, the anticipated seasonal rainfall performance will conclude at well above average to average levels (Figure 4). This was predicted as early as May by national, regional, and international climate forecasting centers. It is also worthwhile to note that the consensus seasonal rainfall forecast for East Africa from October to December 2020 is most likely to be below average in terms of rainfall amounts and is most likely to be hotter-than-normal. Details are available <https://www.icpac.net/seasonal-forecast/> and <https://blog.chc.ucsb.edu/?p=790>.