

Heavy rainfall causes flooding over eastern Sudan, western Ethiopia, and eastern Uganda

KEY MESSAGES

- Rainfall has remained persistently above average over the past month in the western Ethiopian highlands and the eastern lowlands of Sudan which has caused extensive soil saturation, localized flash floods, crop water-logging, and property damage.
- Meanwhile, the northward progression of rainfall has resulted in an increase of seasonal rains in northeastern Ethiopia and Djibouti, early season cumulative rainfall deficits remain.
- Widespread moderate to very heavy rains are forecast to continue over Ethiopia, Sudan, South Sudan, and across the Kenya/Uganda border areas, with a high risk of flooding in the coming weeks.

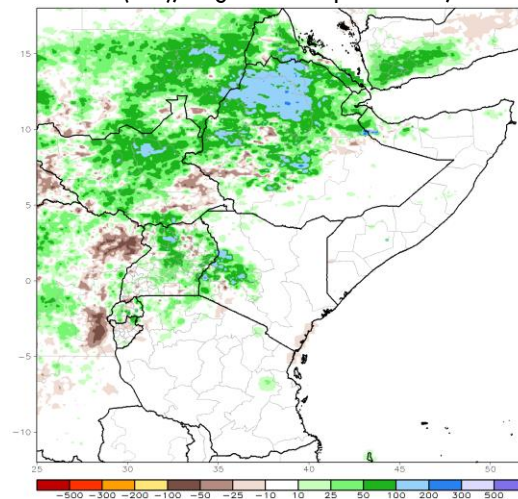
SEASONAL PROGRESS

August is typically the peak month of June through September seasonal rains in the northern areas of East Africa, and was characterized by persistently heavy rainfall, with above-normal amounts (+50 to +200 mm) over the western and central Ethiopian highlands and across the bordering eastern Sudan regions (Figure 1). The ongoing persistent heavy rains have resulted in saturated soils, crop waterlogging, and crop damage within the low-lying flood prone regions of western Ethiopia, eastern Sudan, and in Mt. Elgon areas of eastern Uganda. Much of South Sudan, northwestern Uganda, DRC, and Rwanda have also experienced above or near-normal seasonal rainfall amounts in August.

Meanwhile, Yemen, Eritrea, northeastern Ethiopia, Djibouti, neighboring areas of northwestern Somalia also experienced an increase in rainfall due to the northward progression of the tropical rainfall system (ITCZ). Despite the increase in rainfall this month, early season rainfall deficits have continued in parts of northeastern and southwestern Ethiopia.

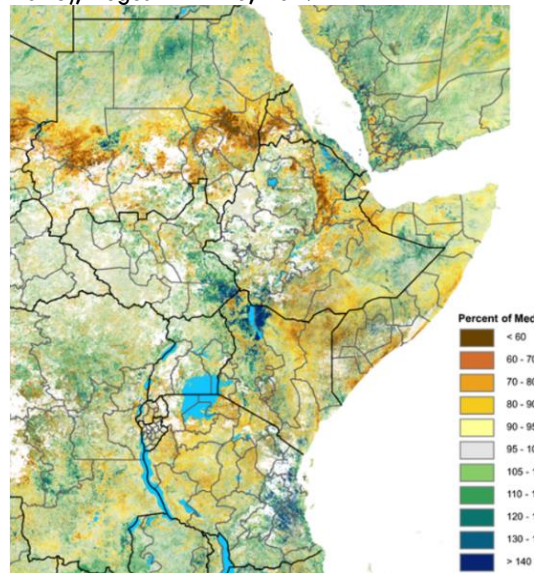
Based on vegetation remote-sensing products, areas regions with favorable cropping and vegetation conditions include South Sudan, western Ethiopia, northern Uganda, and eastern Tanzania (Figure 2). This is in response to above normal to normal rains in many northern areas, as well as some off-season rains over parts of East Africa’s coastal strip. These conditions are generally indicative of favorable cropping conditions and rangeland resources (pasture and water resources). Crops simulation models, such as WRSI, also suggest rainfall levels have been sufficient to be favorable for crop growth. However, persistently heavy rains and cloud cover have made difficult to comprehensively monitor current vegetation conditions in some areas such as Sudan. In some areas of Sudan, such as northern Kassala and northern Gadaref, where remote sensing products suggest vegetation conditions are very poor, initial field reports suggest some areas were affected by dry spells in July and a later than normal start of season. Meanwhile, much of the Horn of Africa remains seasonally dry, resulting

Figure 1. ARC2 seasonal rainfall estimate anomalies (mm), August 6 – September 4, 2017



Source: [NOAA/NWS/CPC](#)

Figure 2. eMODIS/NDVI anomalies (2007-2016), August 11 - 20, 2017



Source: [USGS/FEWS NET](#)

Please see http://www.cpc.ncep.noaa.gov/products/african_desk/cpc_intl/ and <http://earlywarning.usgs.gov/?l=en> for more information on remote sensing.

in a continual decline in rangeland resources, especially in eastern and southern Ethiopia, central Somalia, and most pastoral areas of northern, eastern, and southern Kenya.

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

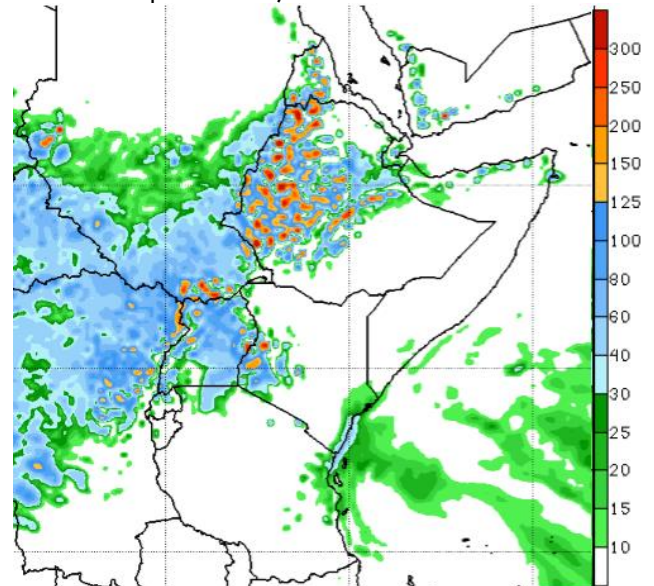
- In **Ethiopia**, the (June – September) seasonal rains have generally remained well above average over western and parts of the central Ethiopian highlands. Despite the recent increase in rainfall over northeastern regions of Afar and Tigray, cumulative rainfall deficits remain, resulting in poorer than usual vegetation conditions. NDVI also suggests vegetation conditions are poorer than normal in much of eastern and southern Oromia.
- Overall **Somalia**, remained generally sunny and dry, apart from the on-going *Karan/Xagaa* seasonal rains, which are forecast to continue over its northern coastal regions of Somalia into neighbouring eastern Djibouti. The rangeland conditions over northern and southern Somalia are somewhat better than normal as a result of these rains as well as light to moderate showers over southern coastal areas in past month. However, rangeland conditions in much of the country are expected to continue deteriorating due to the expected prolonged dry and hotter-than-normal conditions.
- In **Kenya**, parts of western and northern Rift Regions continued experiencing above normal to normal rainfall into August, which were very beneficial for late planted crop due to erratic onset and Fall Army Worm infestation at the start of the rainfall season, especially in Trans-Nzoia and Uasin-Gishu counties. However, in Bungoma and much of the western regions of Kenya, the persistent and extended season rains during this month and forecast into September may constrain ongoing harvest and drying activities, which may result in some post-harvest losses.
- In **Uganda**, recent field reports indicate floods and mudslides in parts of Bududa of Mt. Elgon region of eastern Uganda. This is due to the heavy and well above normal rains during the past month. In addition, heavy rains in Amuru district caused River Unyama to overrun its banks and cause in flooding in Elegu border town. The road between Uganda and South Sudan via Nimule at the Elegu border has been cut off and the road linking Adjumani/Amuru to Lamwo district and the refugee settlement in Palabek is also cut off at River Unyama, where the flash floods swept away the bridge. Meanwhile, most bimodal areas, except those in the the southwest, received above-average rainfall in July, and many farmers planted quick-maturing crops in response. The newly planted maize crop is at knee height and is in good condition. However, the presence of young maize has also resulted in a resurgence FAW in some of these areas, most notably in parts of West Nile, Acholi, and Lango.
- In **Sudan**, seasonal rains have continued to be well above average over its eastern areas bordering Ethiopia, resulting in soil saturation and flash floods in Sennar. These persistent rains and cloud cover have made it difficult to accurately assess vegetation conditions. Currently, eMODIS/NDVI anomaly images are starting to show extensive areas of significantly poor-than-normal vegetation conditions. This is possibly due to persistent above-average rainfall causing crop and pasture water-logging, damage, and loss. However, field reports also suggest that vegetations are poorer than normal in northern Kassala and northern Gadaref due to dry spells in July. Recent flash floods in Sennar, Darfur, and other areas have also reportedly caused damage to crops and houses. More heavy rains are forecast in the coming weeks, in much of Sudan, raising concerns for increased flooding in much of these regions.
- In **South Sudan**, rainfall in August has generally remained average to above average across the country, apart for the southeastern districts of Kapoeta, where rainfall was significantly below average. Seasonal rainfall has supported fairly favorable conditions for cropping, but although production is expected to be impacted by continued conflict and displacement, as well as FAW. The Ministry of Agriculture and FAO have in the past month coordinated efforts to create awareness and in combating FAW in the worst-affected areas of worm reported in Yei, Yambio, Tombura in the Greater Equatorial State.
- In **Yemen**, the second season (July to September) which started on time in July have continued at generally above-average levels in August, especially in southern and western regions of the country. The rest of the northern regions of country have also remained generally dry, with localized areas of light rains, which were near average.

FORECAST

Widespread, heavy, and well-above average rainfall is forecast for the next 1-2 weeks over northern areas of East Africa. Next week's GFS rainfall forecast indicates an increased likelihood for heavy to very heavy rains (100 – 300 mm) across western and central Ethiopian highlands, parts of western Darfur in Sudan, southern South Sudan, and near the Uganda/Kenya border (Figure 3). Persistent heavy rains in the Ethiopian highlands and downstream in eastern Sudan, coupled with highly saturated soils in these areas, are very likely to continue causing flooding in flood-prone areas. Continued heavy rains over Mt. Elgon areas on the Kenya/Uganda borders will also result likely result in flooding.

Much of Sudan, South Sudan, Uganda and parts of southwestern Kenya, are also expected to continue experiencing widespread moderate to heavy rainfall (30-100mm). This could mark the merging of the current seasonal rains and a very early onset of the short-rains season in bimodal rainfall regions of South Sudan, Uganda, and western Kenya. As discussed earlier, the merging of the two seasons (June – August) and (September – December) could constrain ongoing crop harvesting and drying activities in Uganda and bi-modal regions of western Kenya, but also be beneficial for early planting of the short-rains season crop.

Figure 3. 1Week's GFS-Rainfall forecast (mm), valid until September 10, 2017



Source: [NOAA/CPC](#)