EAST AFRICA Seasonal Monitor

March 25, 2020

Current and forecast rainfall indicative of early to timely onset of rainfall seasons in February and March

KEY MESSAGES

- Since mid-February, Tanzania and equatorial East Africa have received above-average rainfall. The dry season between the October-December 2019 rains and onset of the main season and first season rains in Tanzania, western Kenya, and Uganda, Rwanda, and Burundi was atypically short.
- The Horn of Africa has remained seasonally dry and hot since January. However, rangeland conditions are above normal following the exceptional October-December 2019 rains. According to the latest rainfall forecasts, there is an increased likelihood of an early to timely onset of the *Belg* rains in Ethiopia and the long rains/*Gu* rains in the Horn.
- Given persistent above-average rainfall in equatorial East Africa, the rainfall forecast poses an elevated risk of flooding in lowland and hilly areas. In addition, the expected resurgence of second-generation desert locusts through June pose a hazard to crop and livestock production.

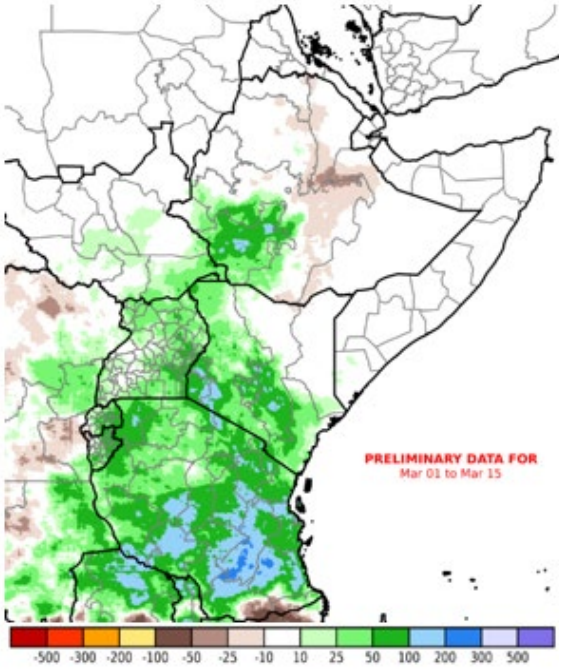
SEASONAL PROGRESS

Since mid-February, Tanzania, western Kenya, Uganda, Rwanda, and Burundi have experienced wetter-than-normal conditions, indicating an early start of their seasonal rains (Figure 1). Similarly, positive anomalies were observed in parts of Greater Equatoria region of South Sudan and southwestern Ethiopia. This marks an early onset of the *Belg* seasonal rains in southwestern Ethiopia and bimodal rains in South Sudan. In contrast, rainfall deficits of 10 to 50 mm are observed in localized areas of southern Afar region and surrounding areas, due to the slightly delayed onset of their seasonal rains. Meanwhile, northeastern Kenya, eastern Ethiopia, and Somalia were seasonally sunny and hot with little or no rainfall during this period.

According to the eMODIS/Normalized Difference Vegetation Index (NDVI), vegetation anomalies in early March were exceptionally above normal across most of the East Africa (Figure 2). Only a few localized areas were indicative of below-normal vegetation conditions. These conditions are a result of well above-average rains during the 2019 main season and 2019 short rains seasons, coupled with atypical rainfall that extended into early 2020.

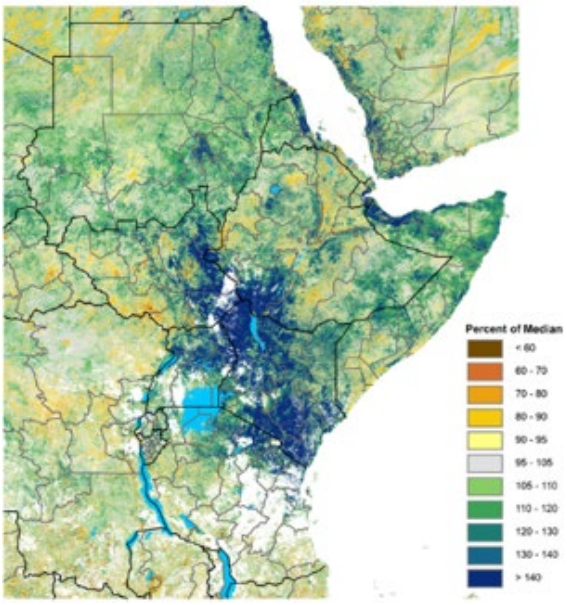
Cropping conditions are currently broadly favorable across the region. In Tanzania, there are average to above-average maize crop production prospects in both the bimodal and unimodal cropping zones. Persistent cloud cover has obscured comprehensive, satellite-derived observations of current vegetation conditions, but field information suggests these are likely to be favorable. Tanzanian cereal production is important for regional food security in both East

Figure 1. CHIRPS preliminary rainfall performance as a percent of normal in comparison to average (1981-2010), February 16 – March 15, 2019



Source: *FEWS NET/UCSB Climate Hazards Center*

Figure 2. eMODIS/NDVI percent of normal (2007-2016), March 1 -10, 2019



Source: *FEWS NET/USGS*

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and Southern Africa, supplying maize to structurally deficit neighboring countries. In southwestern Ethiopia, the early onset of *Belg* rains has similarly resulted in favorable cropping conditions and field reports are indicative of early planting in this area. In Rwanda, Burundi, most of Uganda, and western, southern, and central Kenya, rainfall has similarly led to favorable soil moisture for timely land preparation and planting activities. Based on the forecast onset and establishment of favorable rainfall from March to June across much of the eastern Horn, cropping and rangeland conditions are expected to remain good.

However, the ongoing desert locust upsurge remains of high concern in East Africa. A resurgence of second-generation desert locusts is expected due to on-going breeding and hopper development and, in the absence of effective control measures, the number of locusts would multiply by 200 to 400 percent through June. Current environmental and climatic conditions are favorable for desert locust development into maturity. Forecast changes in low-level wind regimes from north-easterlies to south-easterlies from April onward are likely to ensure a northward migration of desert locust, steering swarms northward from Kenya through South Sudan and into Ethiopia, Sudan, Djibouti, Eritrea, and Yemen. In bimodal areas, there is a risk of adverse impacts on young crops in their vegetation stages and rangeland in April/May, particularly in lowland areas of southern and eastern Ethiopia, northern and eastern Kenya, and Somalia's border regions and northern regions. However, forecast average to above-average rainfall through at least June is likely to mitigate adverse impacts by facilitating replanting and regenerating pasture and forage, given existing and anticipated vegetation conditions. In a worst-case scenario in which the seasonal rains fail, desert locust damage to crops and rangeland would likely be more severe.

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

- **In Somalia,** the latest field assessment reports indicate that above-average 2019 *Deyr* rainfall performance led to above-average *Deyr* crop production on the national level and improved livestock productivity after the 2018/19 drought. However, crop losses occurred in areas that were worst affected by severe floods in Shabelle and Juba riverine cropping areas in the Juba and Middle Shabelle regions. Above-normal rangeland conditions have boosted livestock body conditions and value, though livestock holdings remain below normal in Addun, East Golis, and Guban Pastoral livelihood zones where households have yet to fully recover from the 2016/17 drought, 2018/19 drought, and May 2018 cyclone. Desert locusts pose a hazard to crop production in some agropastoral areas of south-central and northern Somalia, particularly in areas bordering Ethiopia and Kenya and areas in the north. Given that prevailing insecurity limits aerial control operations, swarms are likely to increase in scale and spread from March to June.

- **In Ethiopia**, field and satellite observations are currently indicative of an early onset of the *Belg* seasonal rains in the southwest while the full establishment across the country is expected by end of March/early April. Near-average cropping conditions are expected in most *Belg*-dependent areas, despite early-season rainfall deficits in parts of southern Afar and bordering areas. Despite ongoing control operations, second-generation desert locust pose a hazard to young crops and rangeland conditions in lowland areas of southern and eastern Ethiopia, particularly as hoppers develop into mature locusts from April to May. The impacts on crop production and rangeland conditions depend on control measures and climatic and environmental conditions during this period.

- **In Kenya**, the findings of the 2019 short rains field assessment indicate improved rangeland conditions and livestock productivity across all pastoral and agropastoral livelihood zones. Crop production in marginal agricultural areas in the southeast is estimated to range from average to above average on the county level due to above-average rainfall. This validates satellite-derived observations and crop simulation models for the extended short-rains season. However, localized areas were adversely affected by excessive rainfall and floods, mostly in low-lying or riverine areas. A threat to livestock and crop production is the presence of desert locust, which invaded the country in late December. To date, locusts have had minimal impacts on vegetation conditions. However, impacts on the next harvest and on rangeland conditions will depend on the effectiveness of on-going control operations and the effect of the long-rains season.

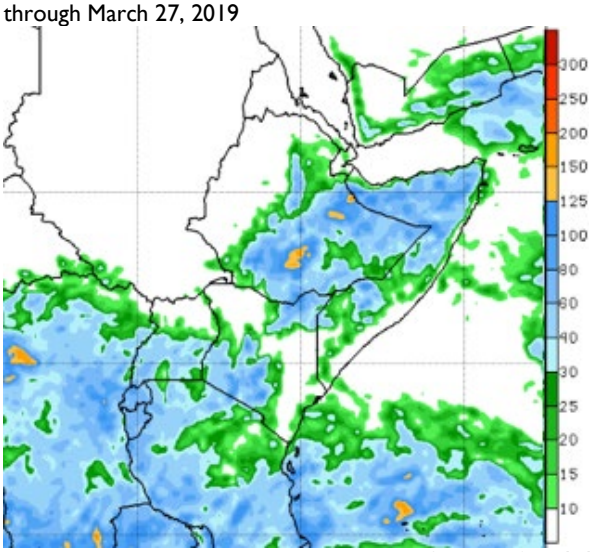
- **In Sudan**, conditions have remained typically sunny and dry. Little or no rainfall is forecast until the start of the main rainy season in late May/June. Vegetation conditions are currently average to above average following favorable 2019 June to September seasonal rains. However, there are localized areas of relatively drier-than-normal vegetation conditions, due to mid-2019 floods in parts of Darfur. Based on the 2019 annual cereal production assessment, the main cereal harvest is 18 percent below the five-year average, but this was primarily driven by farmers' decision to grow cash crops like groundnuts and secondarily by excess rainfall. Remote-sensing observations and derived products (end of season WRSI and NDVI anomalies) indicated 10-20 percent yield decreases in localized areas of the country.

- **In South Sudan**, 2019 floods in Jonglei, Upper Nile, Northern Bahr el Ghazal, and Lakes states had adverse impacts on crop and livestock production. Production shortfalls were also driven by the long-term impact of the conflict and

general civil insecurity. Currently, part of Greater Equatoria - specifically southeastern Kapoeta counties – are experiencing a slightly earlier-than-normal onset of moderate seasonal rains. However, most of the country is dependent on main season rainfall from June to September, and these areas are expected to remain generally sunny and hot until then but with favorable vegetation and water resources.

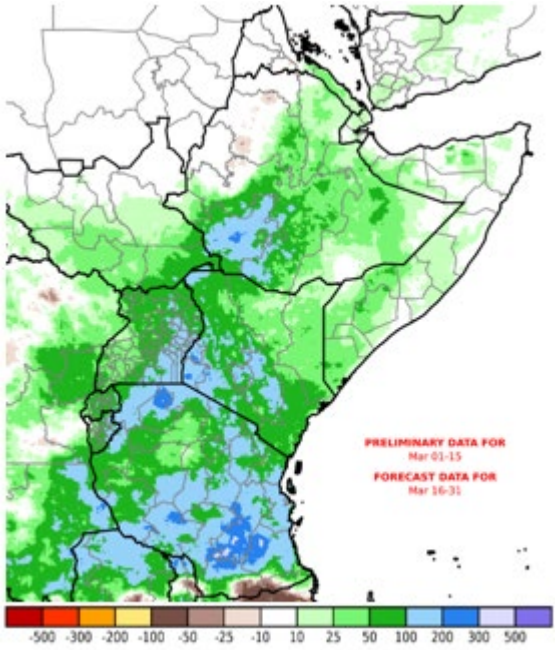
- **In Uganda,** atypical rainfall in January through March has provided favorable conditions for early, first season land preparation in southern and central Uganda. These rains are forecast to be fully established and become more widespread in coming weeks. There is a generally favorable outlook for entire season; however, there is an elevated flood and landslide risk in hilly and soil-saturated areas. Desert locust is of concern in Karamoja and parts of northern Uganda, where swarms were reportedly present in February.
- **In Rwanda and Burundi,** season B rains are currently fully established in the both countries, after above-average 2019 season A cereal and livestock production in most regions. However, localized areas were adversely affected by flooding in late 2019, resulting in property and crop losses. The continuation of sustained, heavy rainfall at the start of the season presents an elevated flood risk in flood-prone areas.
- **In Tanzania,** rainfall has been consistently above average across most of the country, leading to anticipated average to above-average crop production prospects for the upcoming main season *Msimu* harvest in April/May. Rainfall in bimodal regions have also maintained favorable conditions for *Masika* season planting and rangeland resources. However, there is an increased risk for floods in southern, central, and eastern coastal regions of the country due to persistent rainfall and a forecast of moderate to locally very heavy rains.
- **In Yemen**, vegetation conditions in the country have generally remained average to slightly above average according to latest remote-sensing observations. Light to moderate rains are forecast through end of March. The anticipated northward migration of desert locusts poses a threat to vegetation conditions in by May, due to the expected change in low-level wind regime (from north-easterlies to south-easterlies) in tropical East Africa.

Figure 3. Week 1 GFS rainfall forecast in mm, valid through March 27, 2019



Source: *NOAA CPC*

Figure 4. CHC Early Estimate for March 1 through March 31, 2020, expressed as the difference from the 1981-2018 average in mm. Based on CHIRPS preliminary data for March 1-15 and unbiased GEFS forecast for March 16-31.



Source: *FEWS NET/UCSB Climate Hazards Center*

FORECAST

The February to May *Belg* rains and March to June long rains/*Gu* rains are forecast to be established in the Horn in late March and April. The rainfall forecast through March 27th is indicative of widespread, moderate to heavy rainfall in long rains, *Gu*, and *Belg*-dependent areas of the Horn, marking a timely to early onset (Figure 3). Seasonal rainfall is also forecast to continue in western Kenya, southern Uganda, Rwanda, Burundi, and Tanzania. Based on current and forecast conditions, rainfall performance in March is generally expected to above average in these areas (Figure 4). However, conditions in Sudan, South Sudan, and western/northern Ethiopia are likely to remain seasonally sunny and dry during this period. Given that conditions in southwestern Ethiopia, the Lake Victoria basin, Rwanda and Burundi, and parts of southern, eastern, and central Kenya are already wet, there is an elevated risk of flooding. The short-term forecast through late March is in agreement with the seasonal outlook in *Belg, Gu,* and long-rains dependent areas, which calls for average to above-average rainfall performance. The seasonal forecast is driven by sustained, warmer-than-normal sea surface temperatures off the East African coast, despite neutral ENSO and IOD climate drivers.