

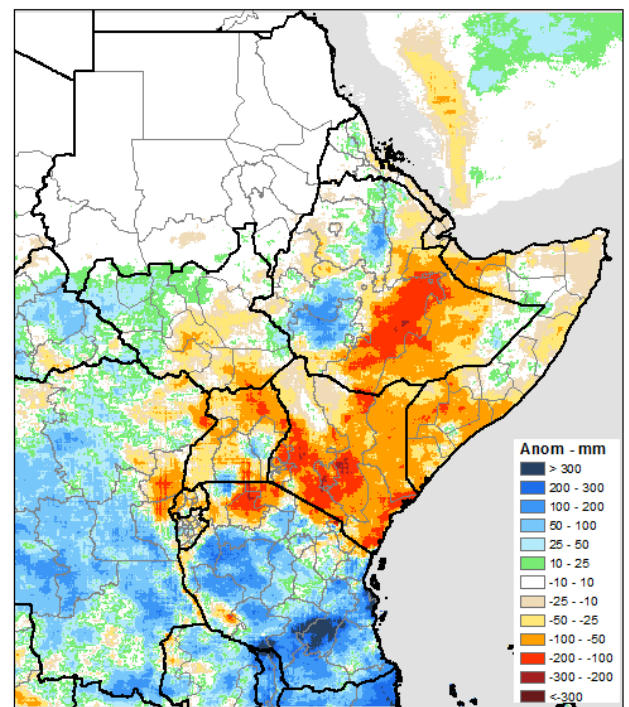
## East Africa 2019 cropping concerns

updated June 20<sup>th</sup>, 2019

### Highlights:

- Central and southern parts of East Africa experienced weather conditions among the driest on record during the onset of the March-May rainy season up to mid-April (Figure 1).
- Severe dryness caused substantial planting delays across Somalia, Kenya, Uganda, and in “Belg” receiving areas in central and eastern Ethiopia.
- Southeastern and coastal Kenya, and southern Somalia, have experienced some the most severe rainfall deficits on record.
- Above-average rainfall in early May in Kenya and late April to early June in Somalia marginally improved vegetation conditions, but damage due to early and mid-season dryness was largely irreversible across eastern Kenya and southern Somalia. However, recent rains may have benefitted off-season crop development in riverine areas.
- Crop production is expected to be 40-50 percent below average in Somalia and southeastern and coastal marginal agriculture areas of Kenya.
- This will result in the second consecutive season with a below-average crop output. Food security is of increasing concern.

Seasonal Rainfall Accumulation Anomaly by pentad  
2019 season Mar - May  
(Mar pentad 1 thru May pentad 4) - Average (1981-2010)



Source: CHIRPS version 2.0 final

Map produced by USGS/EROS



Figure 1. Seasonal rainfall accumulation anomaly for the March 1- May 20 period over Eastern Africa (source: USGS/EROS).

### Season Progress to Date:

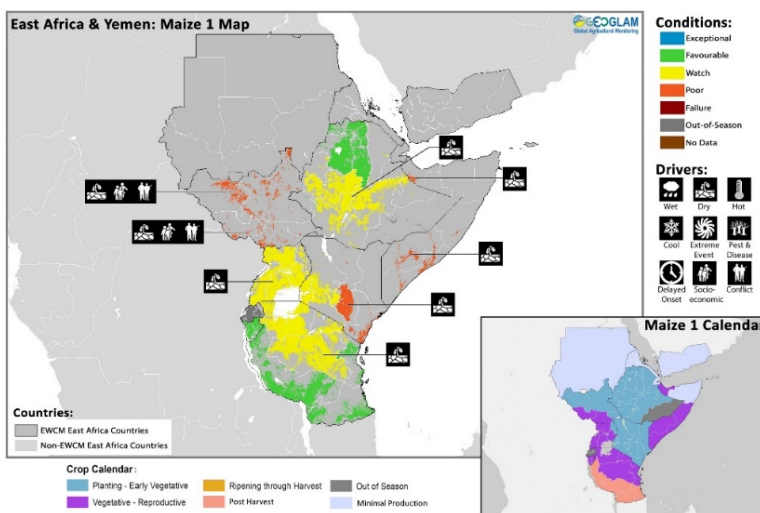


Figure 2. Crop condition map synthesizing conditions as of May 28<sup>th</sup> from the June CM4EW bulletin. Crop conditions over the main growing areas are based on a combination of inputs including remotely sensed data, ground observations, field reports, national, and regional experts (source: CM4EW June Bulletin).

Throughout East Africa, the March-May rainy season was characterized by severe dryness and above average temperatures during March and the first two dekads of April, with cumulative precipitations estimated to be up to 80 percent below-average across most of the Horn of Africa (GIEWS). In **Somalia**, “Gu” rains were delayed by three weeks, severely affecting crop germination and establishment in southern key cereal producing areas. Abundant precipitations in May did not significantly improve crop prospects as they occurred too late during the growing season, therefore the “Gu” harvest is expected to be 40-50 percent below-average. In **Kenya’s** high potential cropping areas of the southwestern “maize basket”, the “Long rains” have been up to 80 percent below average between February and mid-April. Improved precipitations between late April and early June mostly offset rainfall deficits and improved vegetation conditions. Over

these areas, if weather forecasts of above-average rainfall between now and August materialize, a substantial recovery of water-stressed crops is still possible as the growing season continues up to October. However, there have been cases of fall army worm reported in Uasin Gishu and fall armyworm and fungal disease in Narok damaging maize crops and below average yields are expected for these areas. By contrast, in in southeastern and coastal marginal agriculture areas, where a similar pattern of the rainy season was observed, seasonally dry conditions established in June. As a result, damage to crops was irreversible and crop production is forecast to be about 50 percent below average. Similarly, in **Uganda**, exceptionally dry conditions prevailing in March and April delayed planting and severely affected crop germination and establishment. Abundant rains in May and early June mostly offset rainfall deficits, but vegetation conditions remained generally poor. In addition, heavy downpours triggered localized floods, likely resulting in some damage to standing crops. As a result, the harvest is expected to be 30-50 percent below-average. In **Ethiopia**, harvesting of secondary “Belg” season crops is underway in central and eastern areas, and the production outlook is mixed. The February-to-May rainy season was characterized by adequate amounts of water in the highlands of eastern Amhara and southern Tigray regions, by early-season dryness followed by improved precipitations in eastern SNNRP region and by a very poor performance over eastern Oromia region, where seasonal rains were 30-60 percent below-average and significant crop production shortfalls are expected.

In western **Ethiopia**, northern **South Sudan** and the **Sudan**, planting of the June–September 2019 main season crops is underway under generally favourable weather conditions, except in parts of western Ethiopia, where below-average rains in May and early June have delayed planting activities and affected the establishment of early planted crops. From mid-May, rainfall has been above average across the Horn of Africa with the highest rainfall recorded over southern Sudan, northern South Sudan, and southwestern Ethiopia ([FEWSNET](#)). Heavy rainfall was received in the first week of June over South Sudan, southern Sudan, west-central Ethiopia, western Yemen, southwestern Kenya and Uganda, causing flooding and in some cases landslides in parts of Uganda and northwestern Kenya ([FEWSNET](#)).

## Kenya and Somalia 2019 main cropping season:

In **Kenya**, seasonal rains had a very poor performance, with severe early season dryness prevailing over most cropping areas, delaying planting operations and affecting crop germination and vegetation conditions. The most severe rainfall deficits were recorded in some central medium-potential cropping areas and in marginal agriculture livelihood zones, located in the southeast (Meru North, Tharaka Nithi, Mbeere, Mwingi, Machakos, Makueni, and Kitui counties) and southern coastal areas (Kwale, Kilifi, Taita Taveta and Lamu counties). In these areas, drought conditions prevailed in March and April, and despite localized heavy rains in May, which also triggered localized floods along the coast, cumulative seasonal precipitations were 30-65 percent below-average (See Figure 3) ([FAO GIEWS](#)). Seasonally dry conditions established in June and damage to crops is irreversible due to early season dryness, therefore, harvest is forecast to be about 50 percent below-average.

After the large carryover stocks from the bumper 2018 “Long-rains” harvest was depleted, cereal and pulse prices started to surge throughout the country, driven by concerns over the performance of current crops. In the markets located in main urban centers and in western key growing areas, maize prices surged by 35-75 percent between March and May, when they were up to 50 percent higher than their year-earlier levels. Similarly, prices of beans increased over the same period by up to 70 percent, and in May they were 35-60 percent higher on yearly basis. In markets located in agro-pastoral and marginal agriculture livelihood zones, prices of maize increased by 30-70 percent in April, when they were up to 40 percent higher than one year earlier. ([FAO GIEWS](#)).

In the southeastern and coastal areas, harvest which normally starts in July is expected to be delayed by at least one month and production is forecast to be 50 percent below-average as a result of early season drought conditions and the approaching normal finish to the seasonal rains in early June ([FAO GIEWS](#)).



# 2019 Kenya Long Rains Maize Season

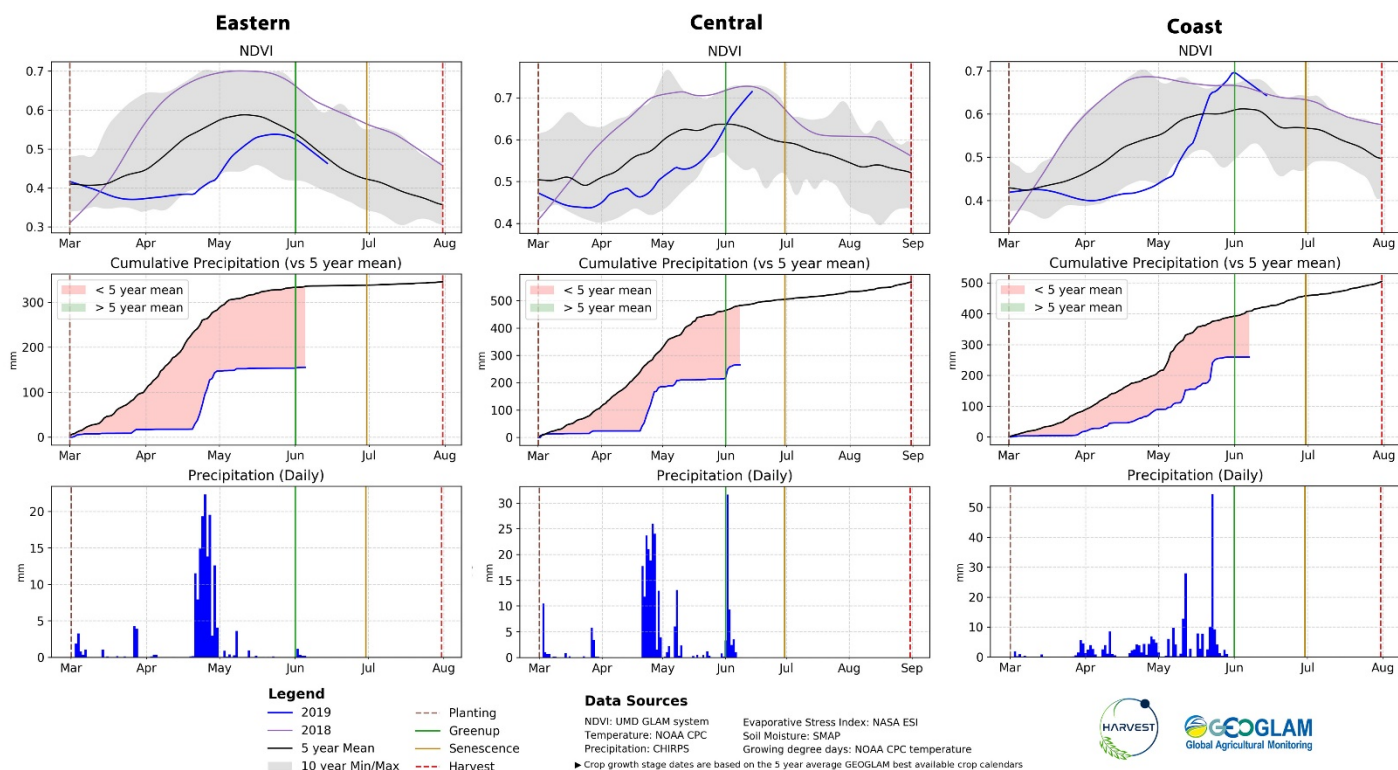


Figure 3: Agro-climatic indicators over the current 2019 season in Eastern, Central, and Coastal Kenya (source: NASA Harvest).

The impact of the delayed rainfall onset and the severe deficit on crop growth, is clearly visible on high-resolution satellite imagery (Sentinel-2, Landsat-8) for crop areas in the central region of Nakuru (Figure 4) and the southeastern region of Kitui (Figure 5) (ASAP - Special Focus May 2019 ). In Figures 4 and 5, active vegetation is shown in red and bare or sparsely vegetated soil in green. In both figures, the satellite images of 2019 show that most agricultural areas are bare, while at the same time of the year in 2016 (used as a close to average reference year), most fields had active crops.

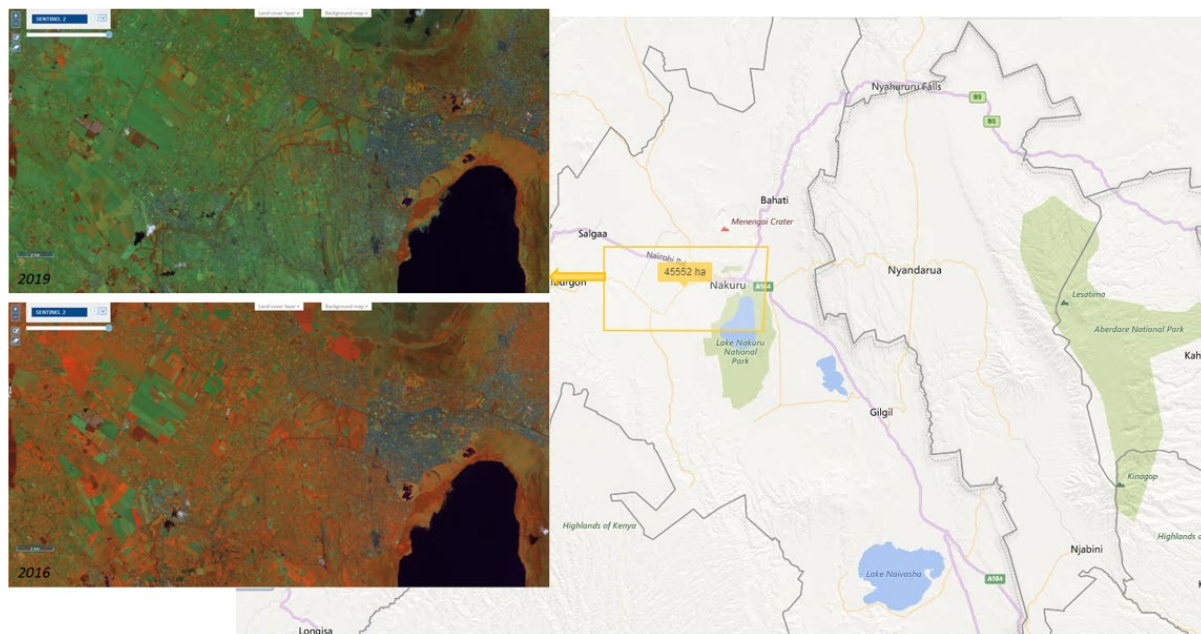


Figure 4: Sentinel-2 Imagery (composite 12/05-11/06) showing crop areas in Kenya, Nakuru county, in 2019 (top) and in 2016 (bottom). Active vegetation is shown in red and bare or sparsely vegetated soil in green (source: JRC ASAP).

The zoom around Nakuru town (Figure 4) shows that many fields, for both large and small scale farming, were still completely bare in May 2019. These areas can only achieve good production in the 2019 Long rains season if (re)planted in late May/June and if there would be improved late season rainfall. The area is representative for Nakuru and neighboring counties (Laikipia, Baringo, Uasin Gishu) which include important maize production areas in Kenya.

In the Western high-potential production areas, despite a significant rainfall deficit, crop conditions are not as different from previous years and the situation is mixed.

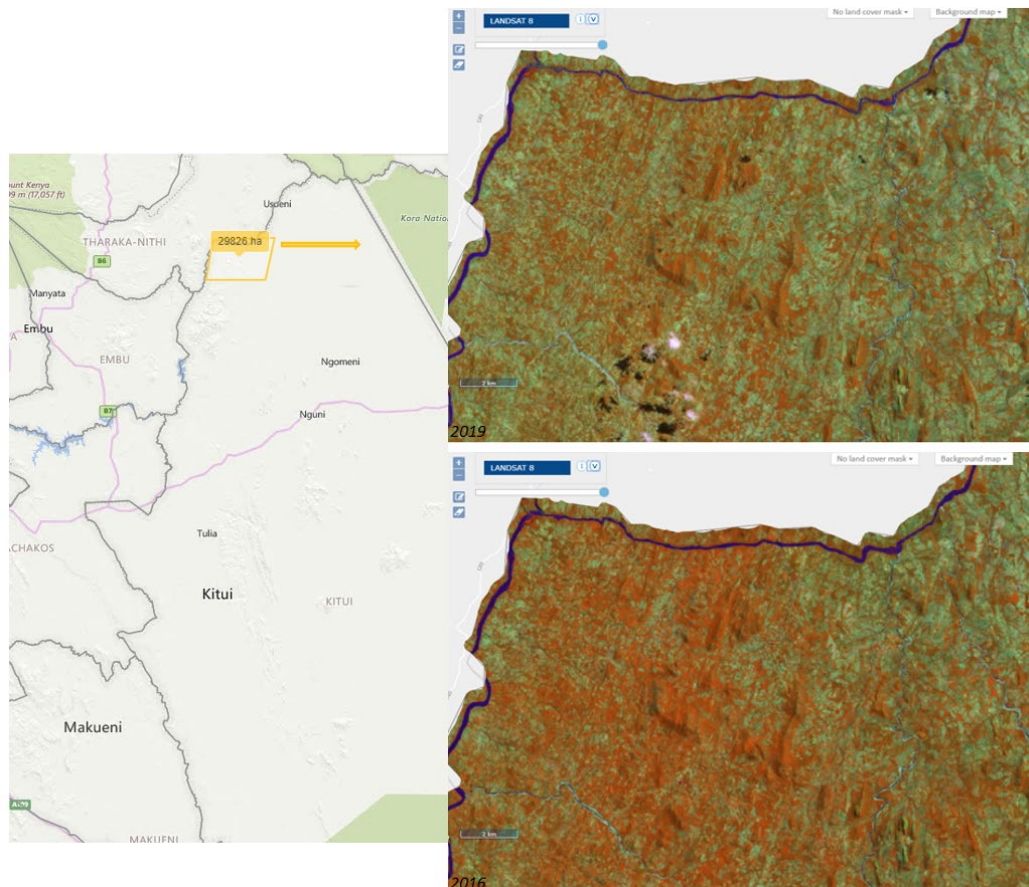


Figure 5: Landsat-8 Imagery (composite 01/05-31/05) showing crop (and pastoral) areas in Kenya, Kitui province, in 2019 (top) and in 2016 (bottom). Active vegetation is shown in red and bare or sparsely vegetated soil in green (source: JRC ASAP).

A different situation is visible in marginal small scale farming areas in the South/East of the country. As example (Figure 5) we focus on an area in the North/East of Kitui county using Landsat imagery of May 2019 and May 2016. In May 2019, we are already close to the end of the crop season, and the images show significantly lower presence and vigor of crop and pastures vegetation as compared with the same time of 2016, that we can consider an average year.

In southern key cropping areas of **Somalia**, the establishment and development of “Gu” (April-June) season crops, to be harvested in July 2019 and accounting for about 60 percent of the country's total annual cereal output, have been severely impacted by drought conditions prevailing in April and early May (FAO). Up through mid-April, the 2019 Gu season was among the top three driest on record (FEWSNET). In the Lower Shabelle Region, which on average accounts for more than 60 percent of the total maize “Gu” output, severe dryness prevailed until early May, and cumulative rains between early April and first dekad of May were 85 percent below-average. River levels were also relatively low due to limited rainfall in Ethiopia and this lead to low planted areas of irrigated crops. Subsequently, above-average rains in the second and third dekad of May reduced the water deficits and resulted in a marginal improvements of vegetation conditions, but did not significantly improve crop prospects, as they occurred too late during the growing season, with seasonally dry conditions establishing in the first dekad of June. Similarly, in the “sorghum belt” of Bay Region, which on average accounts for about 55 percent of the total sorghum “Gu” output, rains started in the third dekad of April with a delay of more than twenty days, and despite improved rains in May, cumulative seasonal precipitations remained about 30 percent below average. As a result, according to the [FAO Food Security and Nutrition Analysis Unit \(FSNAU\) - Somalia and FEWS NET](#), the aggregate “Gu” output is forecast to be 40-50 percent below average. It would be the second consecutive poor harvest as the 2018/19 “Deyr” harvest, gathered last January, was more than 20 percent below average due to inadequate precipitations.

Light to moderate rainfall was reported between June 1-10 in parts of the south and central areas and moderate rainfall to heavy rainfall in the north (FEWSNET). Water levels have risen for both the Shabelle and Juba rivers and some flooding has been reported in riverine areas in Jowhar and Middle Shabelle (FEWSNET). In riverine areas, the “Gu off season” crops, to be harvested in September, may have benefited from increased river levels so late in the season.

Persistent cloud cover over Southern Somalia makes it difficult to produce high quality imagery mosaics for monitoring crop conditions at field level. But despite cloud cover, riverine areas in Lower Shabelle show considerably lower area planted than in 2018 (Figure 6 shows a zoom in Southern Somalia close to Merka). Even taking into account that “Gu” 2018 was a particularly good crop season, the low area with active crops at the end of May clearly shows that there is major drought



impact in 2019. The late May rainfall however can still be beneficial for off-season crops, especially in the irrigated areas of lower Shabelle.



Figure 6: Sentinel-2 Imagery (composite 08/05-07/06) showing crop areas in Somalia, Lower Shabelle province close to Merka town, in 2019 (left) and in 2018 (right). Active vegetation is shown in red and bare or sparsely vegetated soil in green. The image for May 2019 shows that most agricultural areas are bare, while at the same time of the year in 2018 (a very good crop season) most fields had active crops (source: JRC ASAP).

**Forecast and Climate Drivers:**

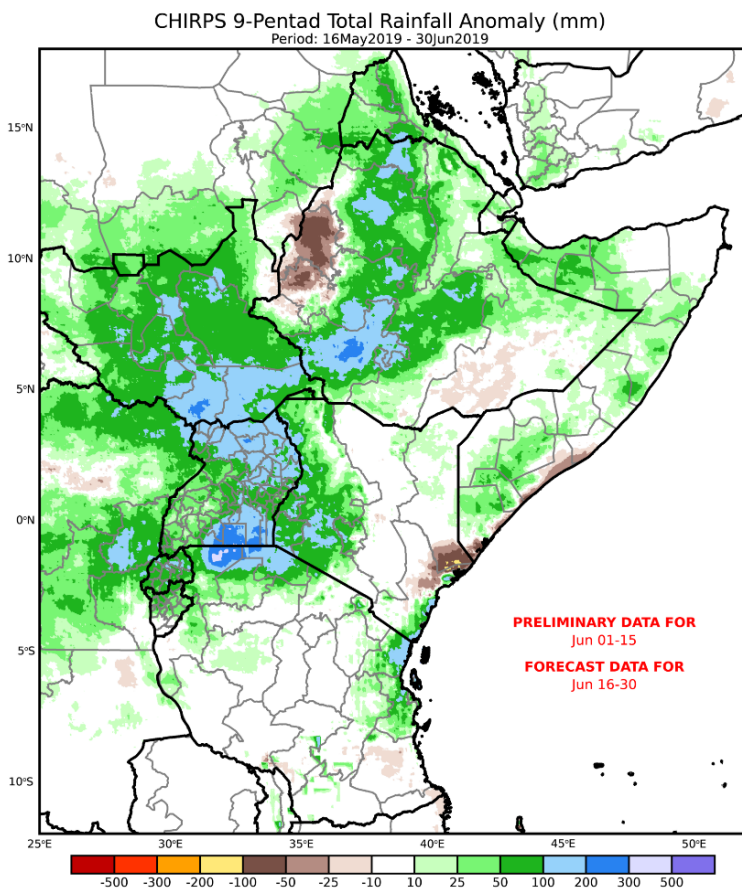


Figure 7. A preliminary estimate of May 16<sup>th</sup> through June 30<sup>th</sup>, 2019 rainfall in terms of the difference from the 1981 to 2018 average. This Climate Hazards Center Early Estimate combines CHIRPS final and preliminary rainfall with an unbiased version of the 15-day GEFS ensemble mean forecast (source: UCSB Climate Hazards Center).

The two-week weather forecast, as of June 17<sup>th</sup>, indicates above average rainfall in western Ethiopia, western Eritrea, parts of eastern Sudan, central and southern South Sudan, much of Uganda, and parts of western Kenya. Most of the eastern Horn has been dry since early June and no substantial rains are forecast, signaling the end of the March/April to May/June season in those areas. In the western sector this wet two-week forecast is consistent with a wet pattern during the past several weeks. Figure 7 shows the current expectation for rainfall totals (the difference from average) from mid-May to the end of June, based on this forecast and available rainfall estimates.

The Indian Ocean Dipole is expected to be in a positive mode through October, based on recent observations and forecasts. Associated warm ocean temperatures in the tropical western Indian Ocean may be conducive for above average rainfall in East Africa. The latest North American Multi-Model Ensemble seasonal forecast shows model agreement as to moderately higher than normal chances for above normal rainfall in parts of Sudan, South Sudan, Ethiopia, Uganda, and Kenya. However, there is substantial uncertainty at this point as to how July to September rains will perform. Thus far in June the ITCZ has been farther north than usual and has helped support early onset of seasonal rains in the northern sector.

## Food Security outcomes and response:

Outcomes for the 2019 main season crops are poor across parts of Kenya, Somalia, and the “Belg” receiving areas of Ethiopia with increasing concern for food security in the region. In **Kenya** and **Somalia**, the food security situation has significantly deteriorated since early 2019, due to the cumulative impact of poor 2018 October-December “Deyr/Short rains” and severe dryness during most of the 2019 “Gu/Short rains” on livelihoods in pastoral, agro-pastoral and marginal agricultural areas. In pastoral areas, the decline in terms of trade and shortages of livestock products (mainly milk) are severely affecting food availability and access, while in subsistence farming livelihood zones, poor cropping conditions have caused a significant decline in farm labor opportunities and household income. In **Somalia**, 2.2 million people are estimated to be severely food insecure in July, the caseload being more than 40 percent higher than the estimate of 1.55 million people in early 2019. The areas with the highest levels of food insecurity are central Galgadud and Mudug regions and northern Nugal, Bari, Sool, Sanag, Awdal and Woqooyi Galbeed regions, where IPC Phase 4: “Emergency” levels prevail. In **Kenya**, the current food insecure caseload is 2 million, more than twice the estimate of 800 000 individuals at the beginning of 2019. The areas most affected by food insecurity are northern Turkana, Marsabit and Wajir counties, eastern Garissa and Tana River counties, and eastern Baringo County.

On June 5<sup>th</sup>, the UN allocated USD 45 million from the Central Emergency Response Fund to scale up humanitarian support in Somalia, Ethiopia, and Kenya in response to drought, with the majority of the funds allocated to Somalia, where the food security situation is of particular concern ([UN CERF](#)). On June 14<sup>th</sup> FAO launched the Somalia drought action plan seeking 144 million to assist over 6 million Somalis affected by drought including 2 million that will receive direct food security and livelihood support ([FAO](#)). In addition, delivering emergency veterinary care will be provided to 32.7 million livestock belonging to around 4.3 million people. Consistently with the significant deterioration of the food security situation, WFP has up scaled up interventions in the framework of its Interim Country Strategic Plan: the total number of beneficiaries targeted for relief food assistance (in kind, cash based, Urban Safety Nets) has increased by 1.7 million to assist a total of 2.3 million persons for the period June to December 2019. In addition, the beneficiaries targeted for malnutrition prevention interventions increased by over 164 000 to assist a total of 1.5 million.

The June–September main season rains will be key in supporting crop production across the major producing areas of Ethiopia and Sudan.

The GEOGLAM Crop Monitor team is monitoring the situation. Further information will be provided in the next Crop Monitor for Early Warning, to be released July 4<sup>th</sup>.

## Prepared in Collaboration with:



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**ICPAC**  
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