

SPECIAL FOCUS – May 2019

Low crop production outlooks in Somalia, Coastal Kenya and Southern Belg areas in Ethiopia despite end of season rainfall improvement

The first 2019 crop season in many countries in East Africa started with a delay of ca. 1 month due to below-average rainfall in April/May and particularly high temperatures since the beginning of the year. The rainfall situation slightly improved in the last week of May for parts of Somalia, Southern Ethiopia and Coastal Kenya, but this improvement was generally late to help crops recover from the early season drought. In some areas, like for example in North/West Somalia the late season rainfall might be sufficient for off-season crop development. For areas with a long crop season (eg. in Western and Central Kenya) and parts of Uganda and for the uni-modal areas, where the main season starts in June (eg. Meher areas in Ethiopia and Sudan) a good June-September rainfall can still be beneficial for crop recovery or planting.

The 52nd GHCOF statement released in late May confirms an increased likeliness of above-average June to September rainfall for the western part of Kenya, Sudan, South-Eastern Uganda and South-Western Ethiopia. For other areas, including South Sudan, Western and Central Ethiopia and the Northern part of Uganda there is an increased likeliness of below-average rainfall for the same period. If the June/Sept. rainfall will be in line with this seasonal forecast, this could aggravate drought damage on crops and pastures in Northern Uganda, southern and central parts of Ethiopia and in South Sudan. In Somalia, there are no crops active in that period, but below-average rainfall could lead to accelerated rangeland vegetation depletion.

The cumulative 90-days rainfall anomaly (in %) at the end of May (Figure 1) shows that only a few areas in East Africa experienced above-average rainfall, whereas most of the region is affected by a negative anomaly exceeding 50%. This is reflected by the NDVI anomaly of the last dekad of May (Figure 2), with biomass showing extended negative anomalies in South Sudan, Uganda, Kenya, Somalia and southern Ethiopia.

High-resolution imagery of the SENTINEL2 sensor can be used to zoom in to field level for the agricultural areas most concerned by drought and compare crop conditions to reference years.

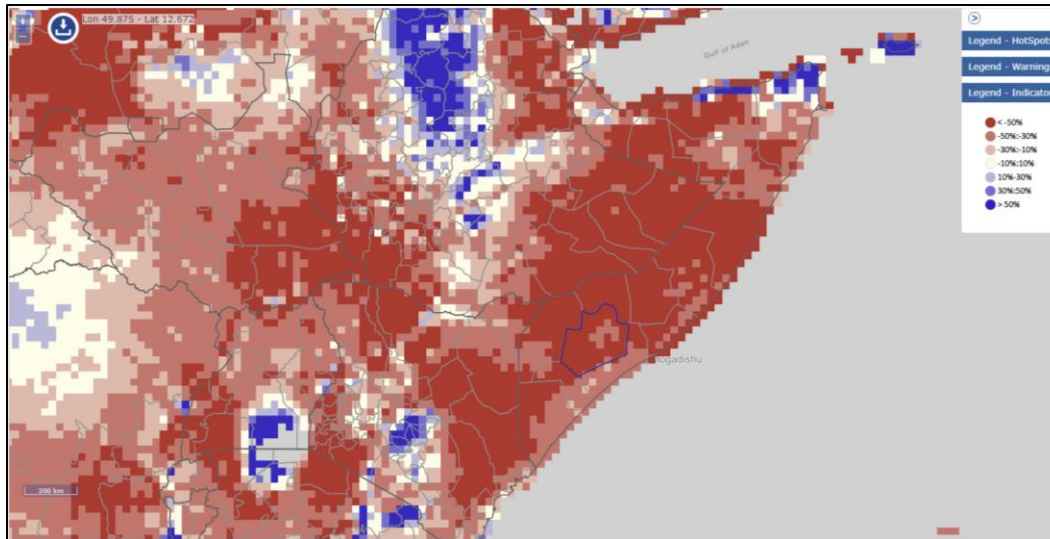


Figure 1. Cumulative rainfall anomaly for March/April/May in %, showing significant seasonal rainfall deficits for most of the region.

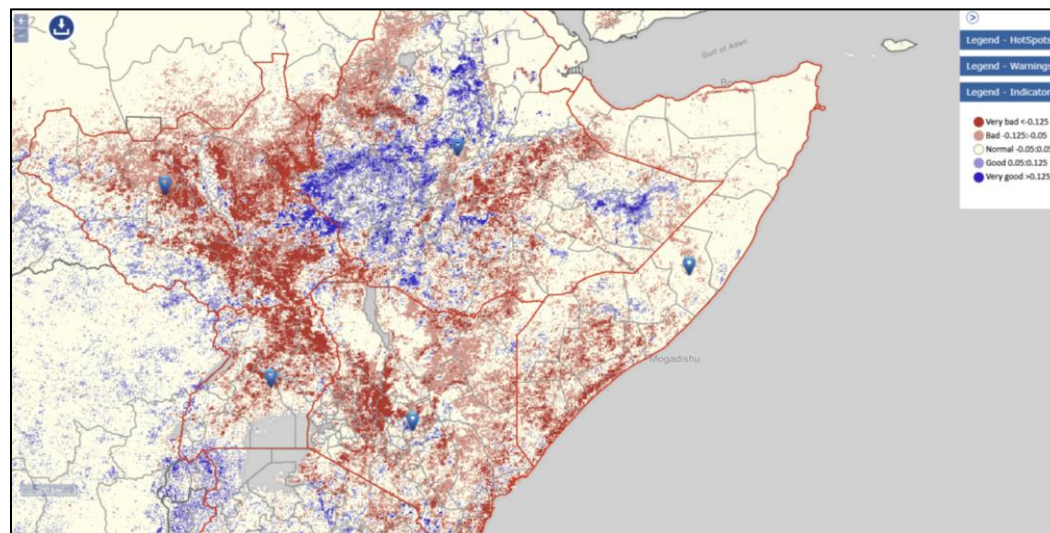


Figure 2. NDVI difference for East Africa at the end of May 2019 showing below-average biomass for large parts of the region.

Kenya

In Kenya different parts of the country are affected by the consequences of low April/May rainfall and high temperatures. But while that period is key for the crop season of marginal crop areas along the coast and for southern inlands; in the western high potential areas and in the Rift Valley the crop season is much longer, and there is still room for replanting or recovery of damaged crops. Nakuru country in central Kenya experienced an exceptionally good crop season in 2018 and we therefore compare the current

season with 2016, which was closer to the long-term average, as shown by the NDVI profiles for all crop areas in the county (Figure 3). Crop conditions in 2019 are clearly below both long-term average and 2016.

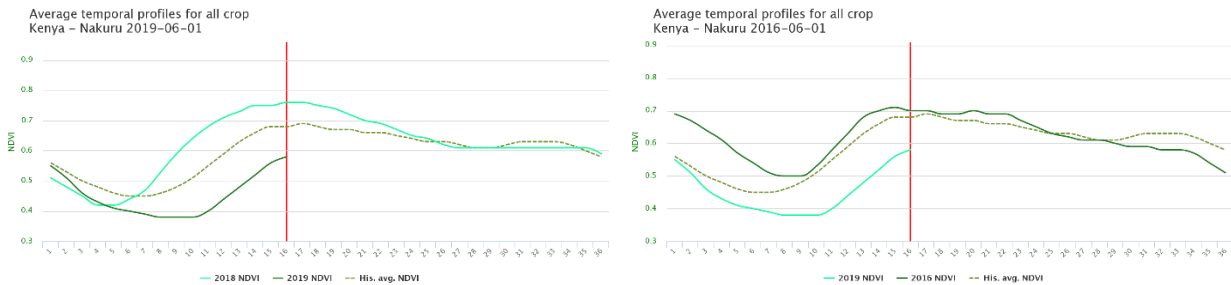


Figure 3. NDVI profiles for crops in Nakuru showing the difference with long-term average with 2018 (left) and 2016 (right).

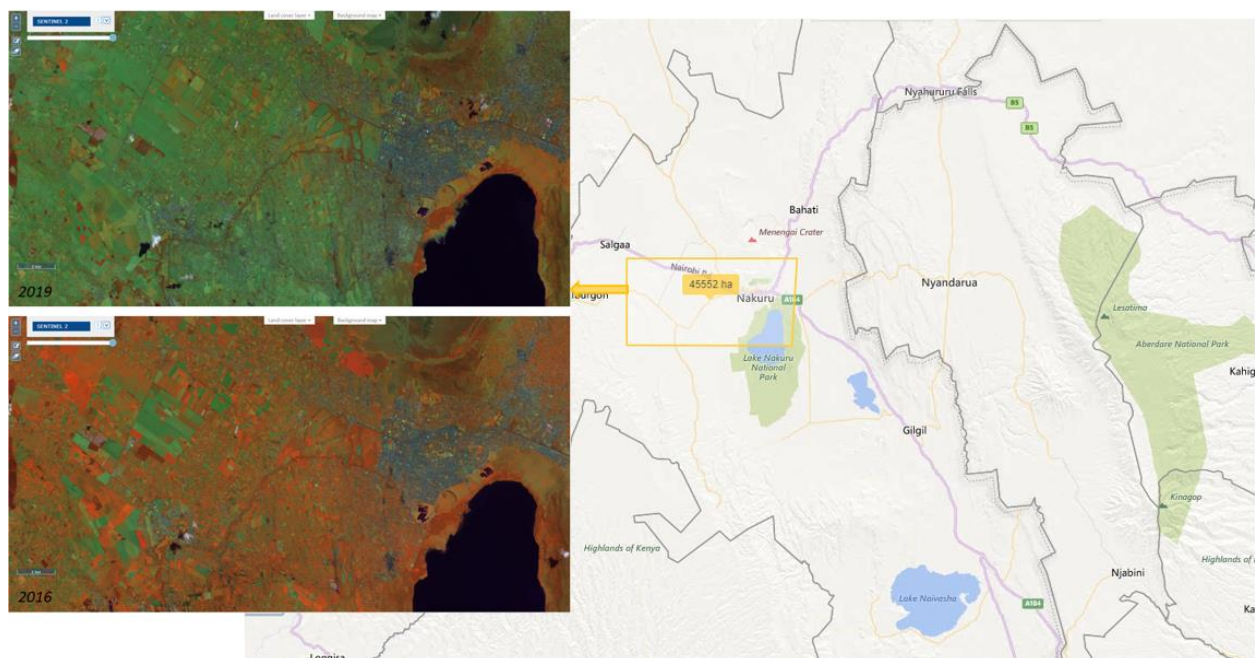


Figure 4. Sentinel-2 Imagery showing crop areas in Kenya, Nakuru county, in 2019 (top) and in 2016 (bottom). Active vegetation is shown in red and bare soil in green. The top left image for May 2019 shows that most agricultural areas are bare, while at the same time of the year in 2016, most fields had active crops.

The zoom around Nakuru town shows that many fields, for both large and small scale farming, are 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 and if there will be improved late season rainfall. The area is representative for Nakuru and neighbouring 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. Again, we did not compare with the exceptionally good year 2018, but in this case with the closer to average 2017 season. As compared to 2017, crop area and greenness in May in a zoomed area of Homa Bay county (Figure 5) appears slightly lower, while in other areas of the same county, it's slightly higher. This means that if there is a normal rainfall evolution in June and following months (as predicted by the GHACOF), western Kenya can still achieve good cereals production.



Figure 5. Sentinel-2 Imagery showing crop areas in Kenya, Homa Bay province, in 2019 (top) and in 2017 (bottom). Active vegetation is shown in red and bare soil in green. The top right image for May 2019 shows that most agricultural areas are active and the situation is comparable with the year 2017, with slightly lower active crop area in that particular area of Homa Bay.

A different situation is visible in marginal small scale farming areas in the South/East of the country. As example here we looked at an area in the North/East of Kitui county using Landsat imagery of May 2019 and May 2016. In May here, 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.

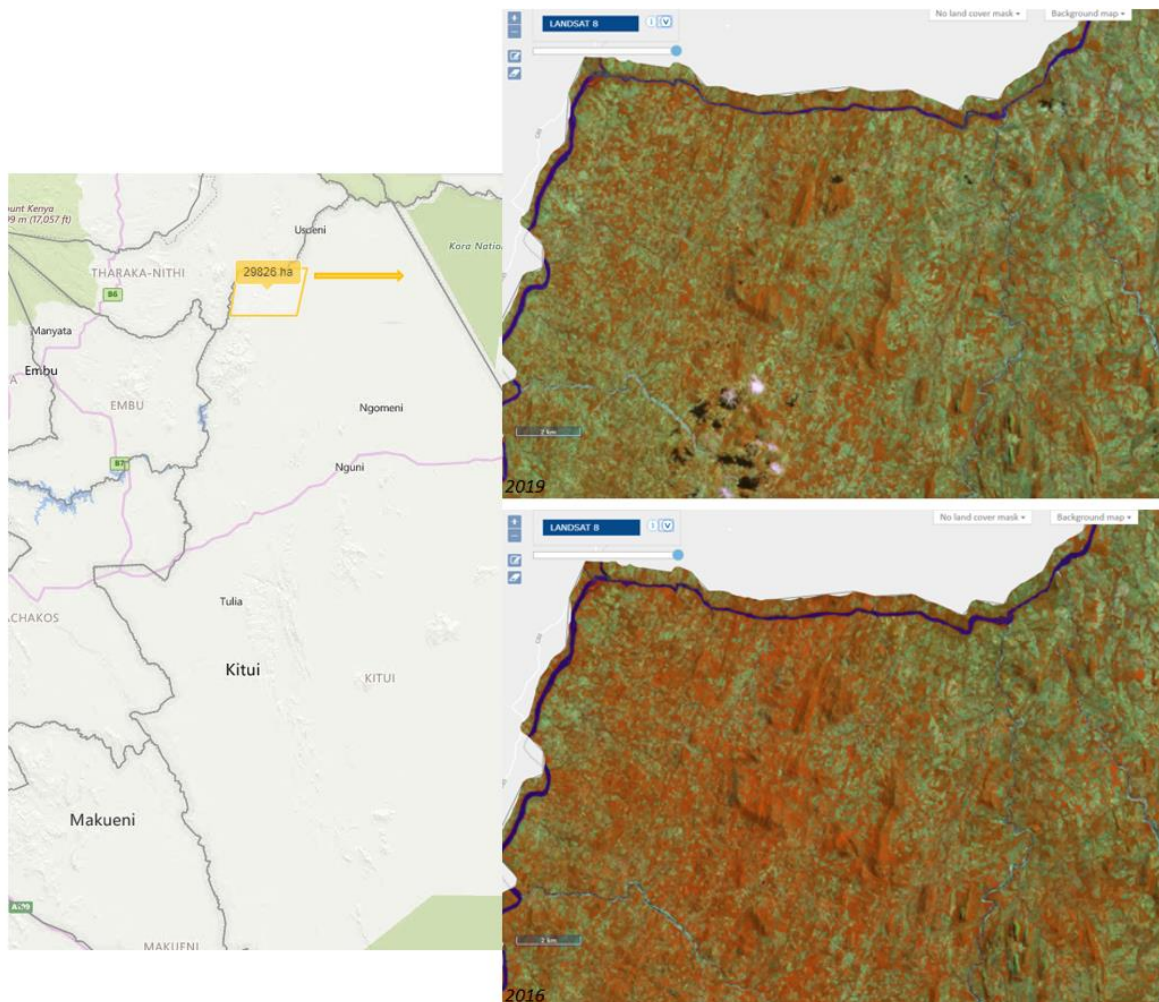


Figure 6. Landsat-8 Imagery showing crop (and pastoral) areas in Kenya, Kitui province, in 2019 (top) and in 2016 (bottom). Active vegetation is shown in red and bare soil in green. The top image for May 2019 shows that many agricultural areas are bare, while at the same time of the year in 2016 most fields had active crops.

Somalia

Late rainfall in May will most likely bring only minor improvements to a "Gu" rainy season that was largely insufficient for crop production in most of Southern, Central and North/Western Somalia. According to FSNAU and FEWSNET, the total Gu production is forecast to be 50% below-average and follows on a previous poor Deyr 2018/2019 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 7 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.



Figure 7. Sentinel-2 Imagery showing crop areas in Somalia, Shabelle Hoose province close to Merka town, in 2019 (left) and in 2018 (right). The top 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.

In the North Western sorghum production area between Hargeisa and the border with Ethiopia, May 2019 high-resolution imagery also reveals an extremely low area planted, and basically bare soil in April/May (Figure 8). In May/June some irrigation (dark grey) and vegetation (red) is visible indicating planting. This off-season crop will be highly dependent on rainfall continuation in June.

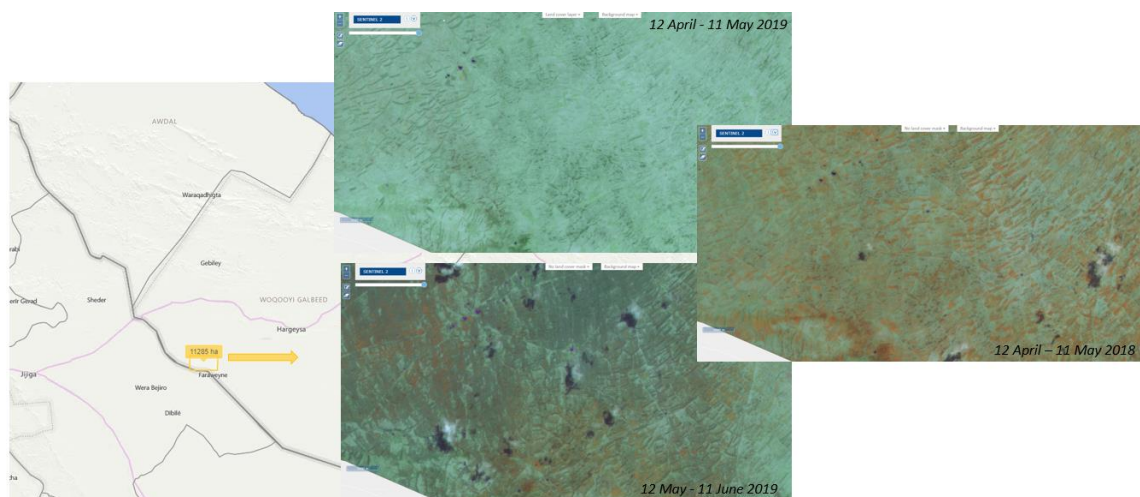


Figure 8. Sentinel-2 Imagery showing crop areas in Somalia, in Woqooyi Galbeed region, between 12 April – 11 May 2019 (top-left), 12 May – 11 June 2019 (bottom-left) and in comparison with 2018 (right). The top left image for April/May 2019 shows that most agricultural areas are bare, while at the same time of the year in 2018 (right side image) most fields had active crops. There is a slight improvement in May/June 2019 (lower left image).

Ethiopia

The Southern half of Ethiopia experienced a generally unfavourable Belg rainy season. Rainfall in the South/East in late May was beneficial mainly for pastoral vegetation, while the GHACOF52 seasonal rainfall forecast predicts below-average rainfall for the main season from June to September.

According to high-resolution imagery over the southern part of Ethiopia, strong differences with previous years are visible mainly in Eastern Oromia (eg. East Harerge) and in areas next to the border with Somaliland (Fanfan). Especially the latter shows very limited vegetation activity in April/May and still only minor areas with crop activity in May/June (Figure 9).

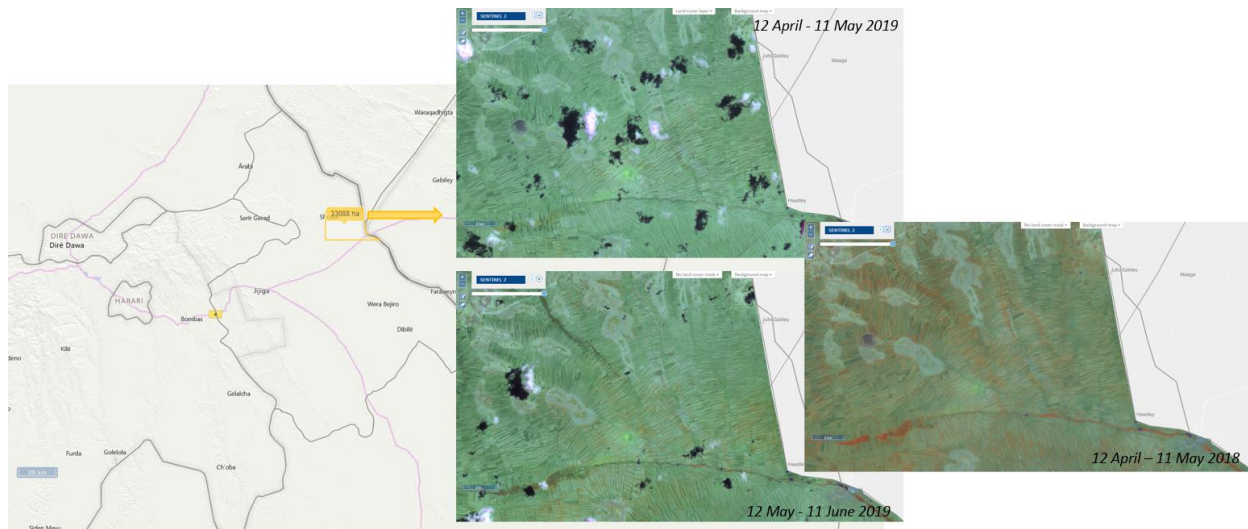


Figure 9 Sentinel-2 Imagery showing crop areas in Ethiopia, in Fanfan province, between 12 April – 11 May 2019 (top-left), 12 May – 11 June 2019 (bottom-left) and in comparison with 2018 (right). The top left image for April/May 2019 shows that most agricultural areas are bare, while at the same time of the year in 2018 (right side image) most fields had active crops. There is a slight improvement in May/June 2019 (lower left image).

More information can be found here:

<http://fews.net/east-africa>

<http://www.fao.org/documents/card/en/c/CA4618EN>

<https://docs.wfp.org/api/documents/WFP-0000104595/download/>

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