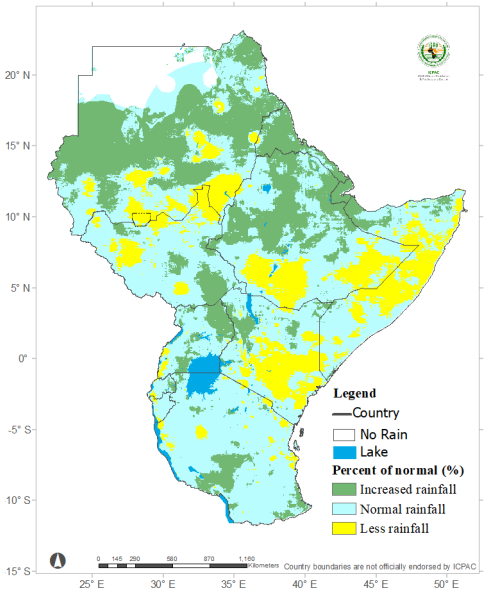
Review of Updated Rainfall Conditions in the Greater Horn of Africa (GHA)

During February 2019, a series of early wet spells brought wetter than average rainfall in the western parts of GHA from Uganda to South Sudan extending to western and northeastern Ethiopia. Few places in Southern Tanzania, coastal Kenya and parts of Southern Somalia also experienced wetter conditions in February 2019. On the other hand, drier conditions persisted along the Great (Eastern) Rift Valley and surrounding regions extending from Ethiopia through Turkana and central Kenya to northern Tanzania, Burundi and Rwanda.

Assessment of rainfall conditions from October 2018 through 10 March 2019 (Figure 1a) underscore the prevalence of moderate to severely dry conditions over southern Ethiopia (Borena including southern Rift Valley Lakes and surrounding regions), central Somalia, south-central Kenya, western Tanzania bordering Lake Tanganyika, and Burundi and Rwanda. The northwestern Kenya, especially Turkana showed consistently below average cumulative rainfall as compared to the long term mean beggining 1 July 2018 (Figure 1b). While some episodic rainfall events that started in early March 2019 appeared to give some relief to the dryness in southern Ethiopia and parts of northwestern Kenya, dry weather conditions, characterized by mostly dry winds and warm temperatures, continued to persist across southeastern Ethiopia, Somalia, and much of Kenya east of the Great Rift Valley, especially northwestern and south-central Kenya. The dryness in the eastern GHA was largely caused by the Tropical Cyclone named “IDAI” that lingered in the Mozambique Channel for the better part of March 2019. This cyclone significantly reduced moisture influx into the equatorial region, which led to a continued sunny and dry weather conditions over the region.

a)



b)

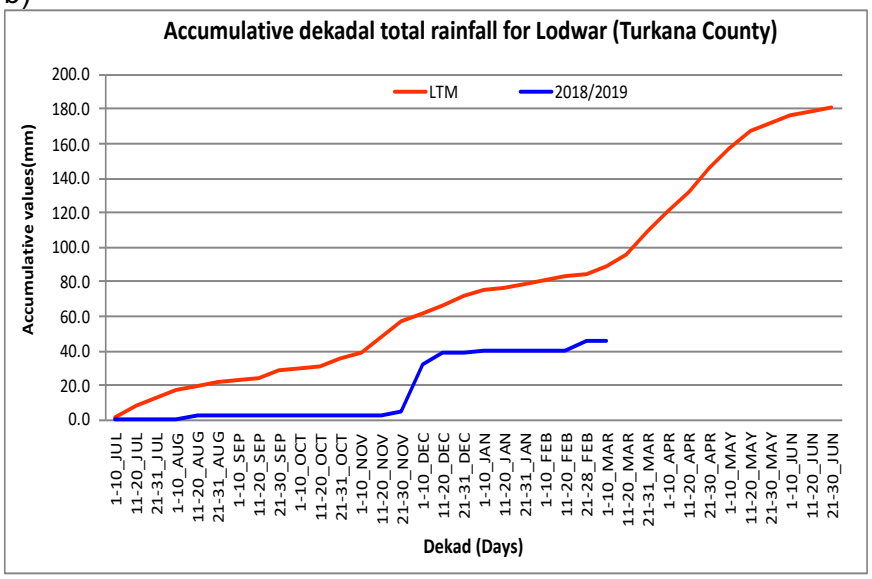


Figure 1: Cumulative rainfall performance ending on 10 March 2019. a) Rainfall performance measured as percentages of cumulative rainfall beginning 1 October 2018 relative to 1982-2010 climatology for entire GHA. b) Time series of cumulative decadal rainfall beginning 1 July 2018 and corresponding long-term 1982-2010 climatology for Loduwa, Turkana County, Northern Kenya.

Forecast for April 2019

The latest global climate model ensemble forecasts for April 2019 (Figure 2) indicate high chances of drier than average conditions over the western half of Kenya, southern and southeastern Ethiopia, central and northeastern Somalia, coasts of Tanzania and Kenya, and much of Uganda and South Sudan. On the other hand, increased chances of wetter conditions are expected over central Tanzania, western South Sudan, northern Ethiopia, and in the cluster connecting Ethiopia, Kenya and Somalia.

Forecast of depressed rainfall in areas that experienced anomalously dry conditions beginning October 2018 is a concern, especially in regions where April is the peak rainfall month. In this regard, the conditions in northwestern and south-central Kenya, southern Ethiopia, and central Somalia may require closer follow up, as the increased likelihood of depressed rainfall in peak rainfall month could further exacerbate the situation caused by the mounting dry conditions in these regions. ICPAC will provide regional updates on regular basis while the National Meteorological and Hydrological Services (NMHSs) will provide detailed national and sub-national updates.

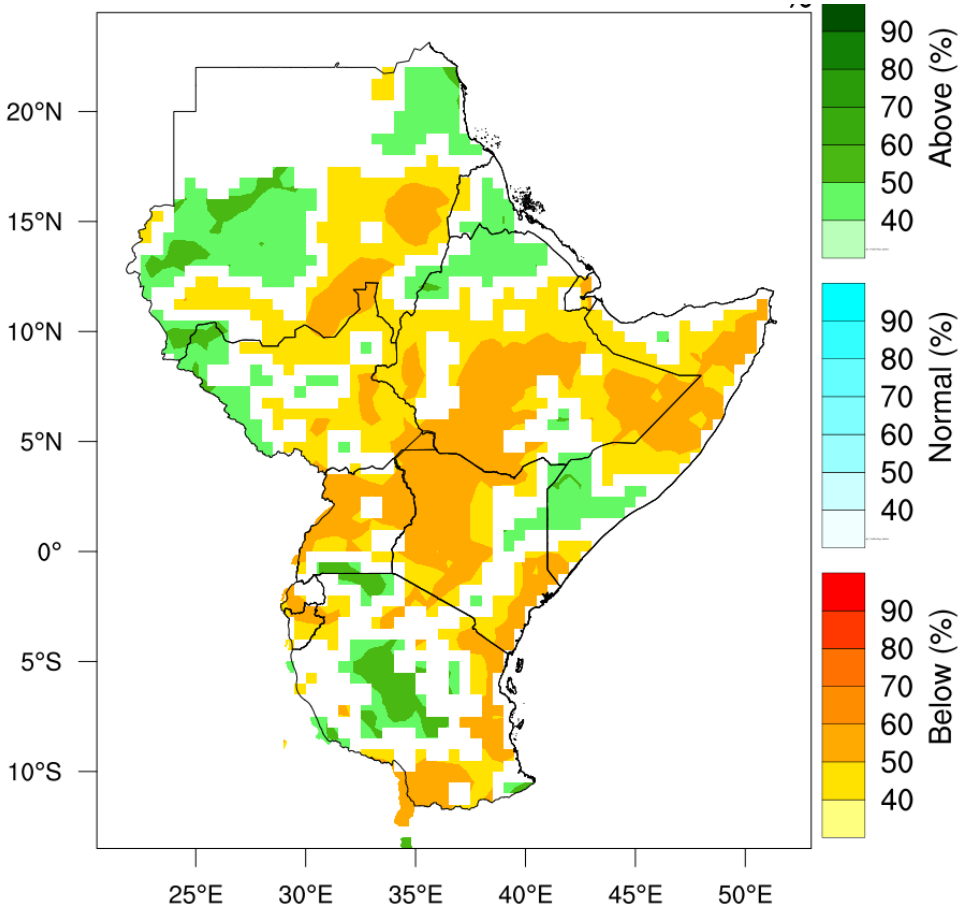


Figure 2: Probability forecasts of rainfall for April 2019. Multi-ensemble global forecasts from six Global Climate Models (ECMWF and 5 models participating in the North American Multi-Model Ensemble) were statistically downscaled for GHA.