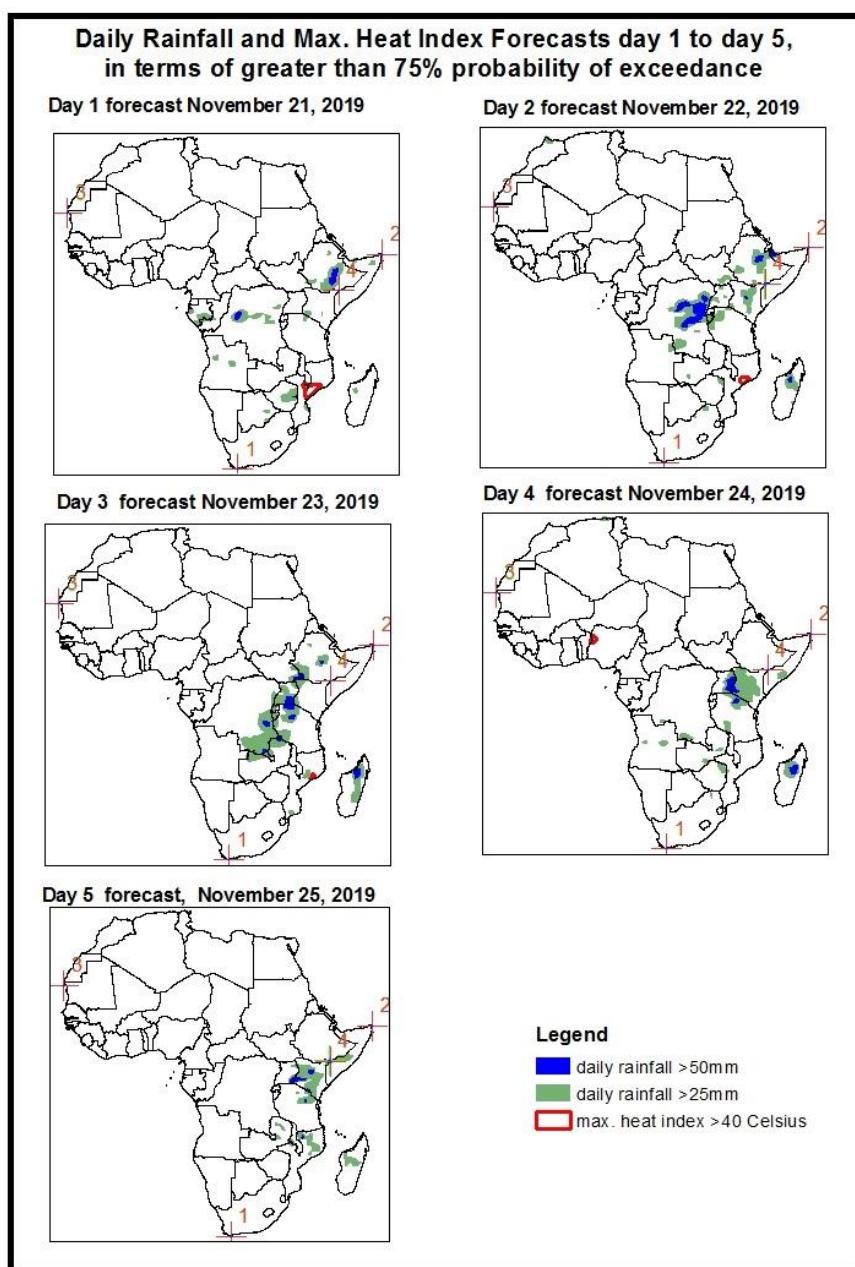


NCEP Contributions to the WMO Severe Weather Forecasting Demonstration Project (SWFDP) and to the African Monsoon Multidisciplinary Analysis (AMMA) Initiative

1. Rainfall, Heat Index and Dust Concentration Forecasts, (Issued on November 19, 2019)

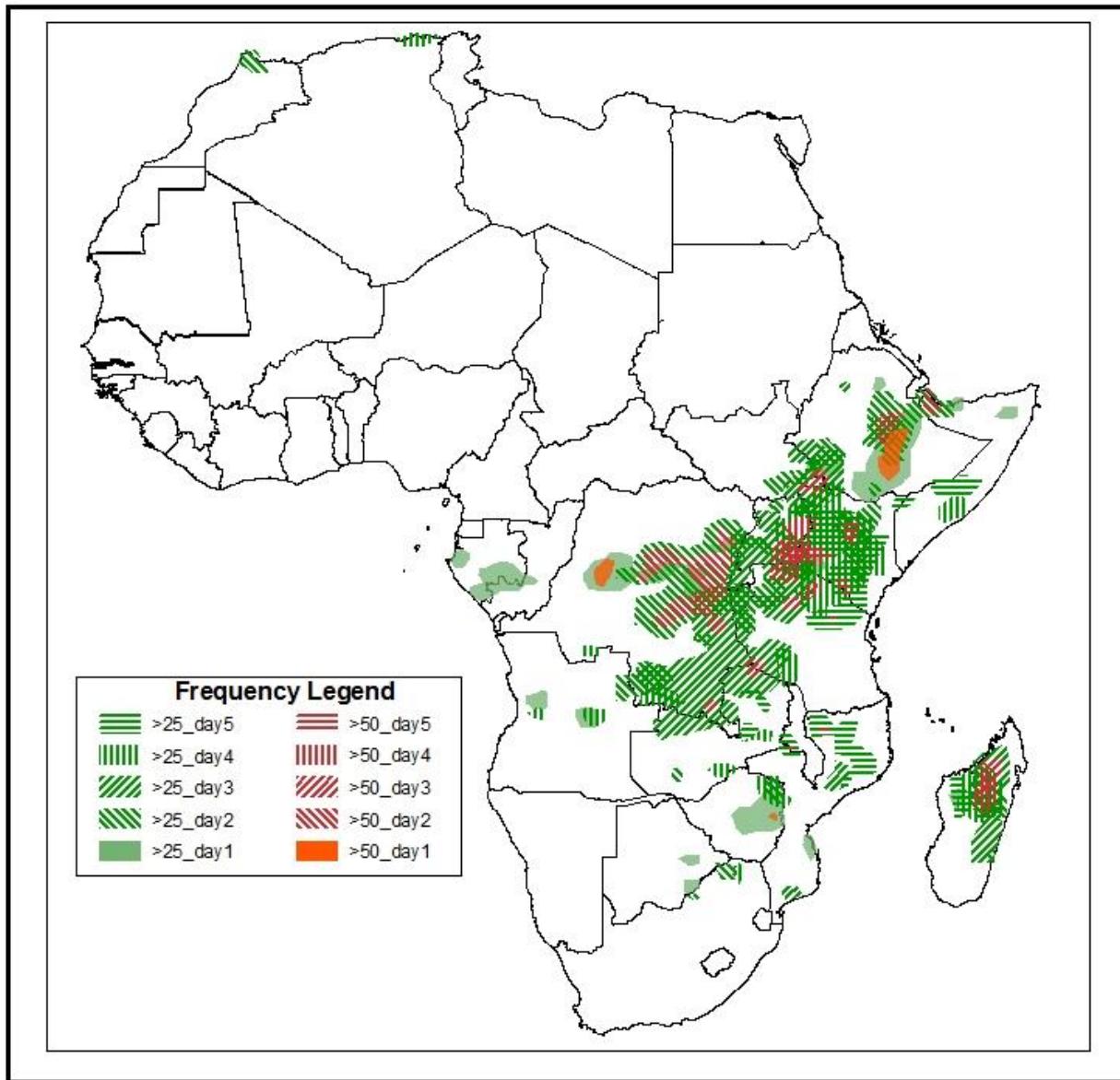
1.1. Daily Rainfall and Maximum Heat Index Forecasts (*valid: 21 November – 25 November, 2019*)

The forecasts are expressed in terms of high probability of precipitation (POP), valid 06Z to 06Z, and exceedance probability of maximum heat index ($>40^{\circ}\text{C}$), based on the NCEP/GFS and the NCEP Global Ensemble Forecasts System (GEFS) and expert assessment.



Five Days Rainfall Forecast Summary

November 21 - November 25, 2019

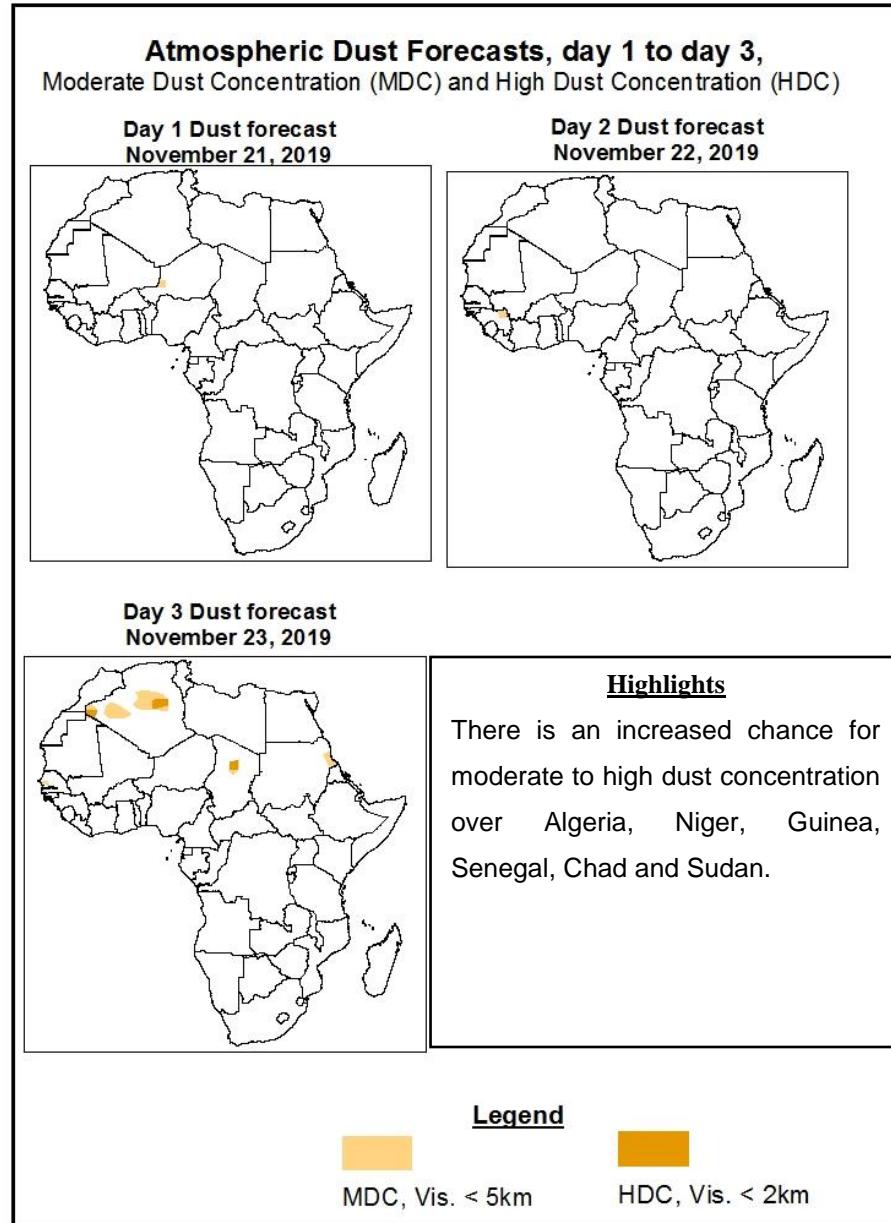


Highlights

- Strong lower-level convergence in the Lake Victoria region and onshore flow from the Indian Ocean with its associated lower-level convergence is expected to enhance rainfall over the many places in the Greater Horn of Africa. Onshore flow from the Indian Ocean with its associated lower-level convergence is expected to enhance rainfall over parts of Southeast Africa.
- At least 25mm for two or more days is likely over portions of Morocco, Algeria, DRC, Angola, Uganda, South Sudan, Kenya, Ethiopia, Somalia, Djibouti, Tanzania, Malawi, Zambia, Zimbabwe, Mozambique, Madagascar and South Africa.
- There is an increased likelihood for daily rainfall to exceed 50mm over local areas in Zimbabwe, Mozambique, Madagascar, Malawi, Zambia, DRC, Tanzania, Uganda, Kenya, South Sudan, Ethiopia and Somalia.
- There is an increased chance for daily maximum heat index to exceed 40°C over Nigeria, Malawi and Mozambique.

1.2. Atmospheric Dust Concentration Forecasts (valid: 21 Nov – 23 Nov 2019)

The forecasts are expressed in terms of high probability of dust concentration, based on the Navy Aerosol Analysis and Prediction System, NCEP/GFS lower-level wind forecasts and expert assessment.



1.3. Model Discussion, Valid: 21 November –25 November 2019

The Azores High Pressure system over the Northeast Atlantic is generally expected to weaken while shifting eastwards with its central pressure value decreasing from 1024hPa to 1020hPa for the first four days of the forecast period and then it is expected to be partly continental and strengthen to 1023hPa during the last day of the forecast period.

The St. Helena High Pressure system over the Southeast Atlantic Ocean is expected to weaken while shifting eastwards with its central pressure value decreasing from 1021hPa to 1018hPa during the first day of the forecast period and then it is expected to slightly strengthen from 1018hPa to 1021hPa during the rest of the forecast period.

The Mascarene High Pressure system over Southwest Indian Ocean is expected to slightly strengthen while shifting eastwards with its central pressure value increasing from 1023hPa to 1025hPa for the first two days of the forecast period and then it is expected to remain constant at 1025hPa during the remainder of the forecast period.

At 925-hPa level, moist southwesterly flow from the Atlantic Ocean is expected to prevail across the Gulf of Guinea, southern Sahel regions and the neighboring areas of Central Africa. On the other hand, easterly flow from the Indian Ocean with its low-level convergence is expected to prevail across the Great Horn of Africa and parts of Central Africa while the northeasterly flow with its low-level convergence is expected to prevail across most parts of southern Africa.

At 850-hPa level, strong dry northerly flow is expected remain active and prevail across southern Sahel countries. On the other hand, meridional and seasonal wind convergence is expected to remain active across the Lake Victoria region, Congo Basin and the neighboring areas of Central Africa, southern Cameroon, Gabon, Angola, CAR, South Sudan and Sudan during the forecast period. Converging winds over Kenya, Tanzania, Uganda, Burundi, Rwanda, Ethiopia, South Sudan, Mozambique, Malawi, Zimbabwe, Zambia, Namibia, Botswana, Madagascar and South Africa; these are likely to maintain the occasional enhanced to moderate precipitation over these areas.

Strong lower-level convergence in the Lake Victoria region and onshore flow from the Indian Ocean with its associated lower-level convergence is expected to enhance rainfall over the many places in the Greater Horn of Africa. Onshore flow from the Indian Ocean with its associated lower-level convergence is expected to enhance rainfall over parts of Southeast Africa. At least 25mm for two or more days is likely over portions of Morocco, Algeria, DRC, Angola, Uganda, South Sudan, Kenya, Ethiopia, Somalia, Djibouti, Tanzania, Malawi, Zambia, Zimbabwe, Mozambique, Madagascar and South Africa. There is an increased likelihood for daily rainfall to exceed 50mm over local areas in Zimbabwe, Mozambique, Madagascar, Malawi, Zambia, DRC, Tanzania, Uganda, Kenya, South Sudan, Ethiopia and Somalia. There is an increased chance for daily maximum heat index to exceed 40°C over Nigeria, Malawi and Mozambique.

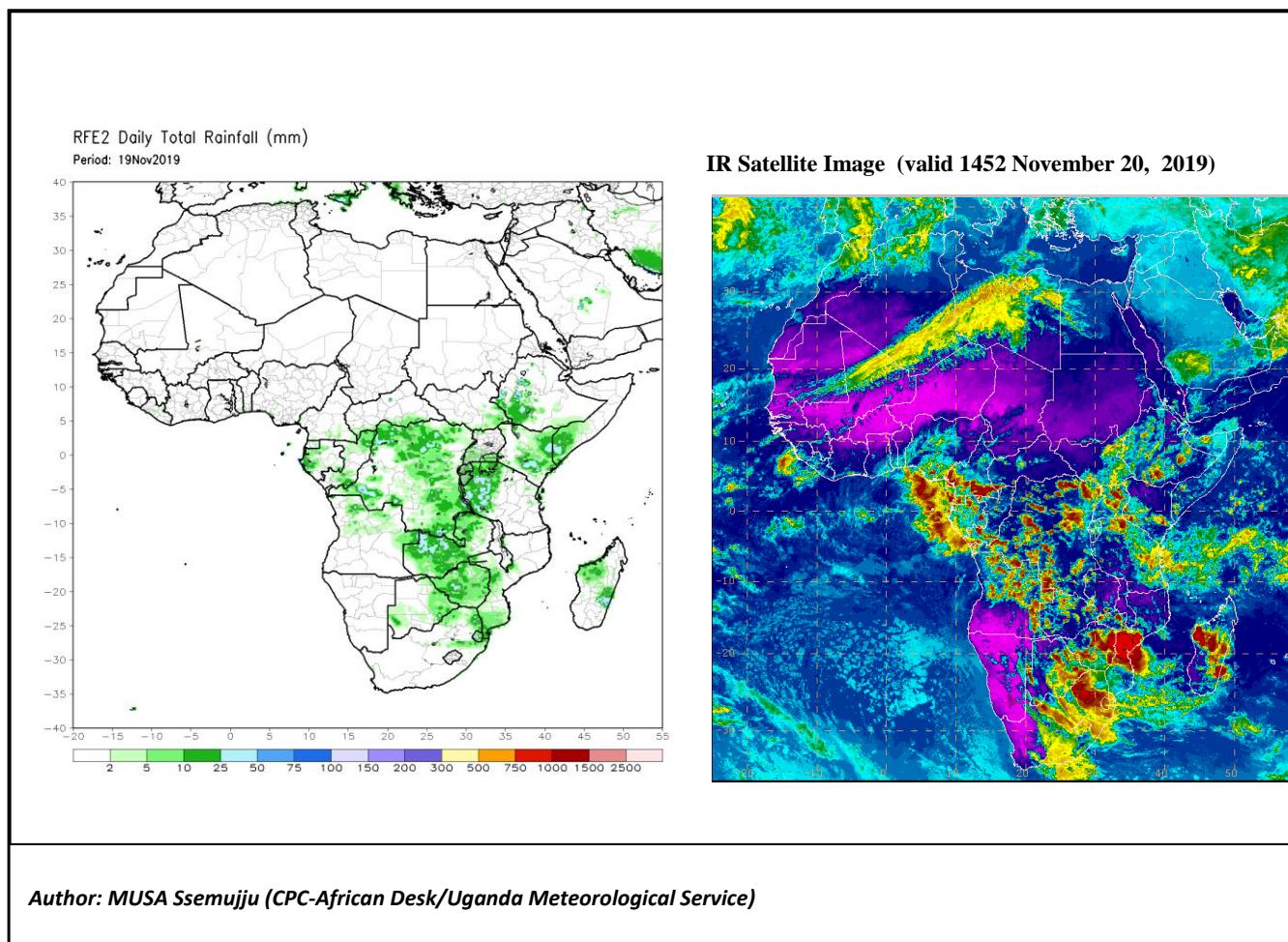
2.0. Previous and Current Day Weather over Africa

2.1. Weather assessment for the previous day (Nov 19, 2019)

Daily rainfall amount exceeded 25mm over Gabon, Republic of Congo, CAR, DRC, Tanzania, Kenya, Ethiopia, Somalia, Angola, Zambia, Zimbabwe, Botswana, Eswatini, South Africa and Madagascar; and exceeded 50mm over CAR, DRC, Tanzania, Kenya, Ethiopia and Madagascar.

2.2. Weather assessment for the current day (Nov 20, 2019)

Deep convective clouds are observed over many places in Central Africa, the Greater Horn of Africa and southern Africa.



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