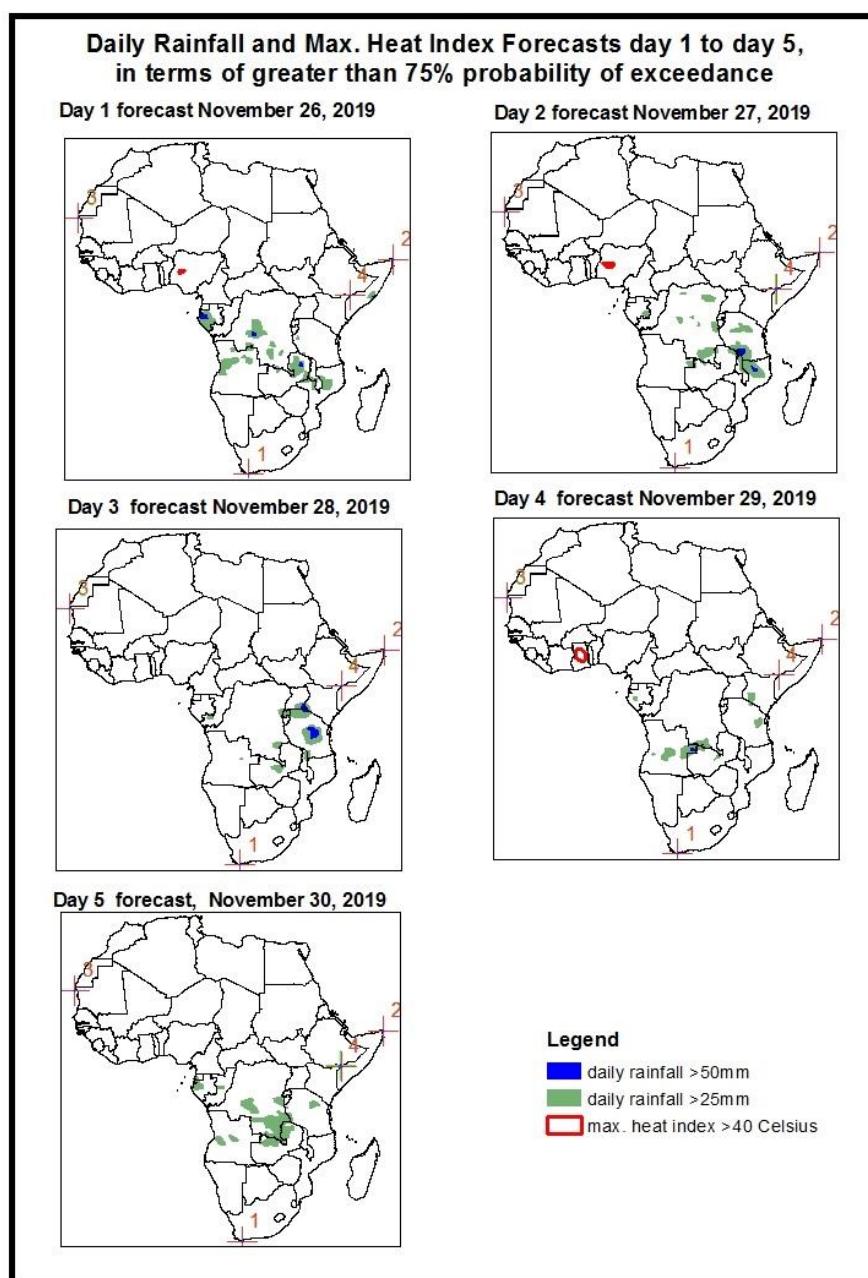


NCEP Contributions to the WMO Severe Weather Forecasting Demonstration Project (SWFDP) and to the African Monsoon Multidisciplinary Analysis (AMMA) Initiative

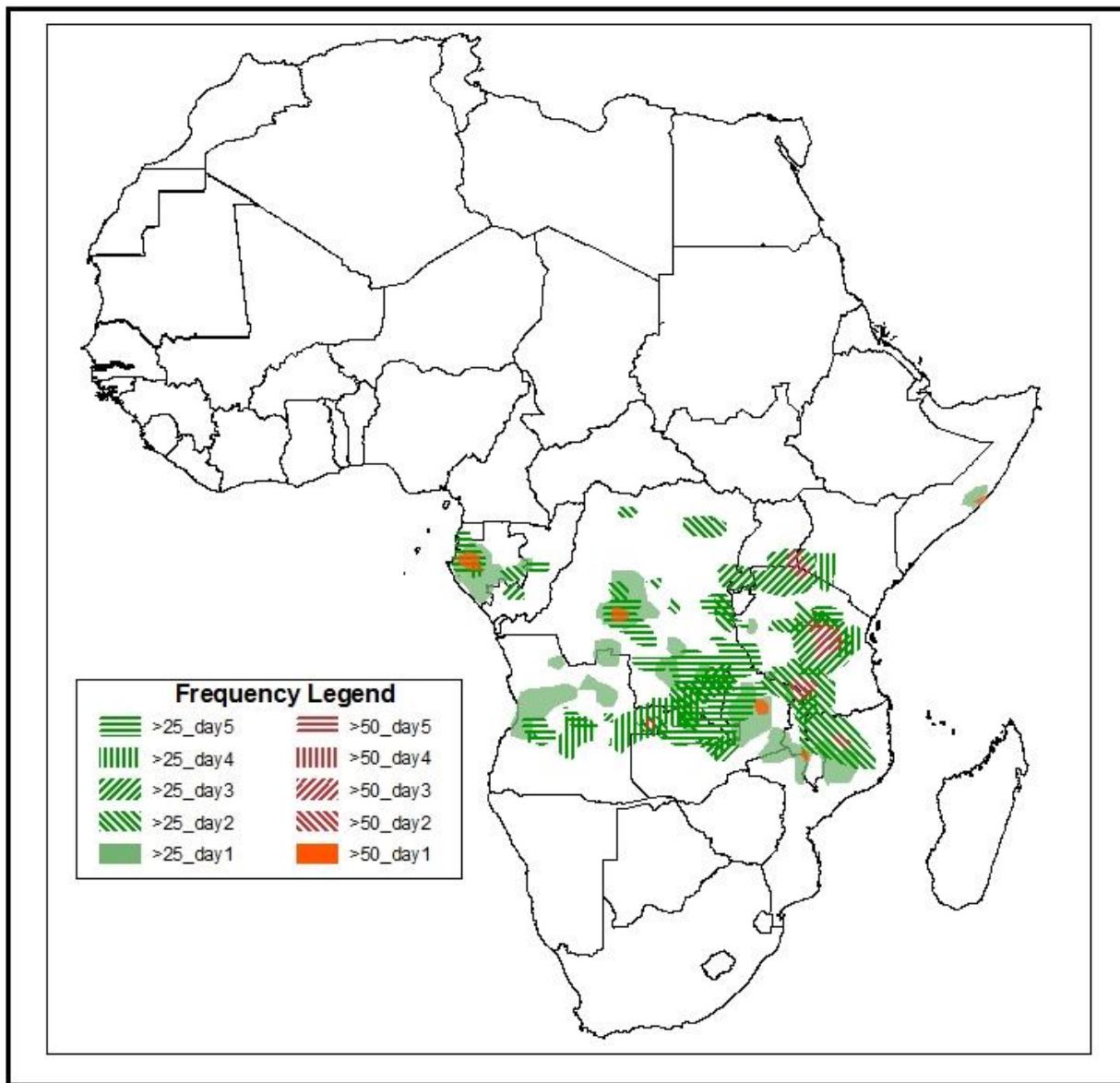
1. Rainfall, Heat Index and Dust Concentration Forecasts, (Issued on November 25, 2019)

1.1. Daily Rainfall and Maximum Heat Index Forecasts (*valid: 26 November – 30 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 26 - November 30, 2019

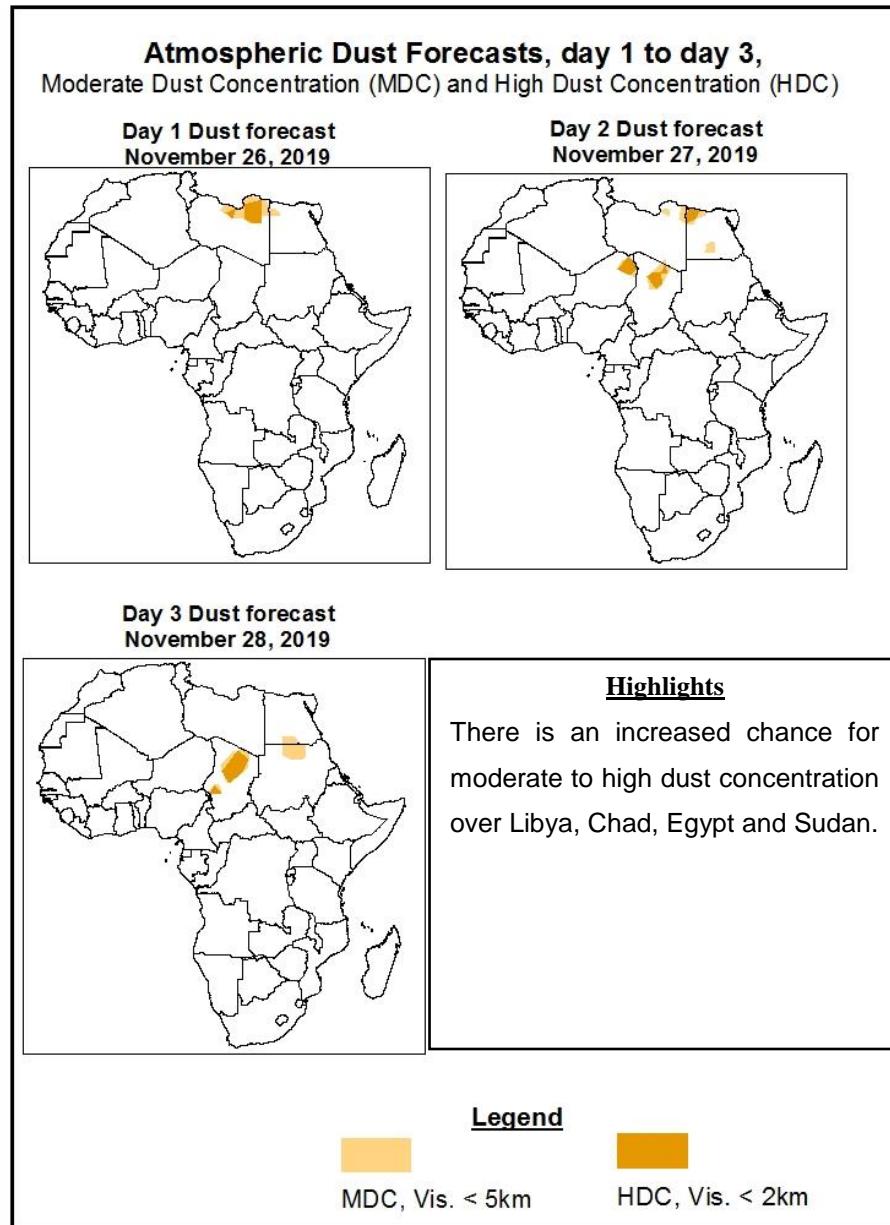


Highlights

- 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 Atlantic Ocean with its associated lower-level convergence is expected to enhance rainfall over parts of western Equatorial and Central Africa.
- At least 25mm for two or more days is likely over portions of Equatorial Guinea, Gabon, Republic of Congo, DRC, Angola, Uganda, Kenya, Rwanda, Burundi, Tanzania, Malawi, Zambia and Mozambique.
- There is an increased likelihood for daily rainfall to exceed 50mm over local areas in Mozambique, Zambia, DRC, Malawi, Tanzania, Uganda, Kenya, Somalia and Gabon.
- There is an increased chance for daily maximum heat index to exceed 40°C over Nigeria and Ghana.

1.2. Atmospheric Dust Concentration Forecasts (valid: 26 Nov – 28 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: 26 November –30 November 2019

The Azores High Pressure system over the Northeast Atlantic is generally expected to remain constant while shifting eastwards with its central pressure value at 1020hPa for the first three days of the forecast period and then it is expected to slightly strengthen to 1022hPa during the remainder of the forecast period. From day two of the forecast period, the center is expected to be purely continental.

The St. Helena High Pressure system over the Southeast Atlantic Ocean is generally expected to remain constant while shifting eastwards with its central pressure value at 1020hPa during the forecast period.

The Mascarene High Pressure system is further to the east of the Indian Ocean with its center expected to intensify from 1026hPa to 1037hPa during the forecast period. However, there is a secondary center at 1016hPa expected to form in the Mozambique Channel from day two of the forecast period and this will intensify to 1025hPa during the remainder of the forecast period.

The relatively strong Arabian Ridge from the strong Siberian High Pressure system (strengthening from 1039hpa to 1047hPa during the forecast period) is expected to remain active and it will have a significant impact on the weather across most parts of northeastern Africa and Great Horn of Africa.

At 925-hPa level, moist southwesterly flow from the Atlantic Ocean with its low-level convergence is expected to prevail across the Gulf of Guinea, southern Sahel regions and most neighboring areas of Central Africa. On the other hand, a combination of easterly and northeasterly flow from the Indian Ocean with their low-level convergences is expected to prevail across the Greater Horn of Africa, parts of Central Africa and 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, Cameroon, Gabon, Equatorial Guinea, 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, Lesotho, South Africa and Madagascar; 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 Atlantic Ocean with its associated lower-level convergence is expected to enhance rainfall over parts of western Equatorial and Central Africa. At least 25mm for two or more days is likely over portions of Equatorial Guinea, Gabon, Republic of Congo, DRC, Angola, Uganda, Kenya, Rwanda, Burundi, Tanzania, Malawi, Zambia and Mozambique. There is an increased likelihood for daily rainfall to exceed 50mm over local areas in Mozambique, Zambia, DRC, Malawi, Tanzania, Uganda, Kenya, Somalia and Gabon. There is an increased chance for daily maximum heat index to exceed 40°C over Nigeria and Ghana.

2.0. Previous and Current Day Weather over Africa

2.1. Weather assessment for the previous day (Nov 24, 2019)

Daily rainfall amount exceeded 25mm over Liberia, Cote D'ivoire, Angola, DRC, Tanzania, Kenya, Ethiopia, Eritrea, Somalia, Zambia, Zimbabwe, Mozambique, South Africa and Madagascar; and exceeded 50mm over Cote D'ivoire, Kenya, Somalia and Eritrea.

2.2. Weather assessment for the current day (Nov 25, 2019)

Deep convective clouds are observed over many places in the equatorial western Africa, Central Africa, the Greater Horn of Africa and portions in southeastern Africa.

