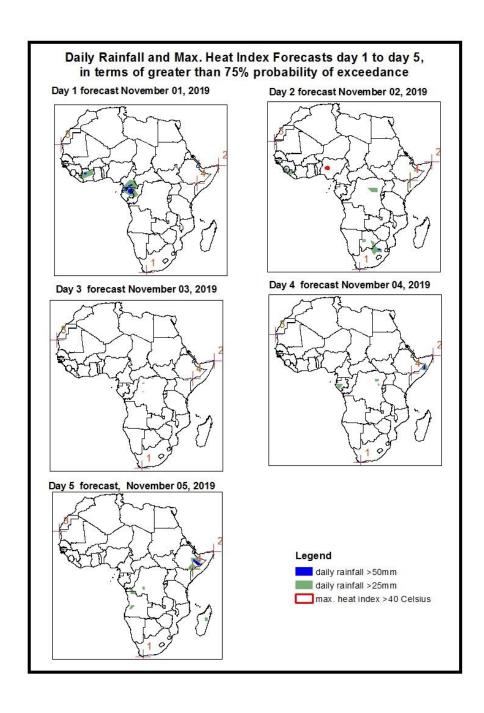
# NCEP Contributions to the WMO Severe Weather Forecasting Demonstration Project (SWFDP) and to the African Monsoon Multidisciplinary Analysis (AMMA) Initiative

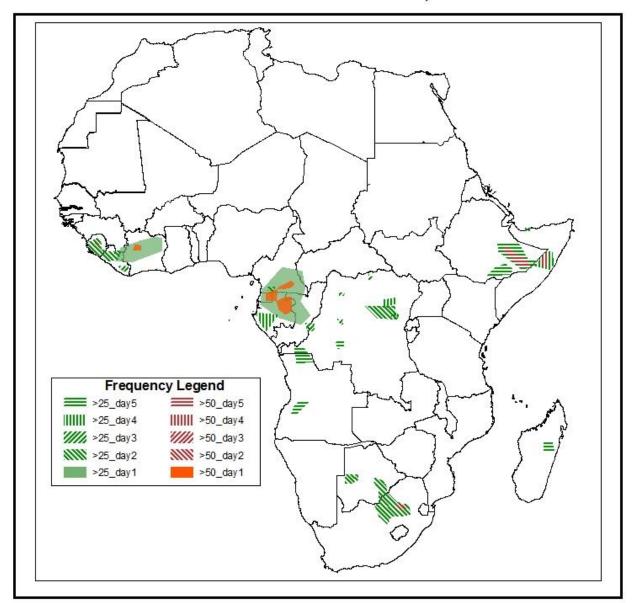
## 1. Rainfall, Heat Index and Dust Concentration Forecasts, (Issued on October 31, 2019)

# **1.1. Daily Rainfall and Maximum Heat Index Forecasts** (valid: 01 November – 05 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°C), based on the NCEP/GFS and the NCEP Global Ensemble Forecasts System (GEFS) and expert assessment.



# Five Days Rainfall Forecast Summary November 01 - November 05, 2019



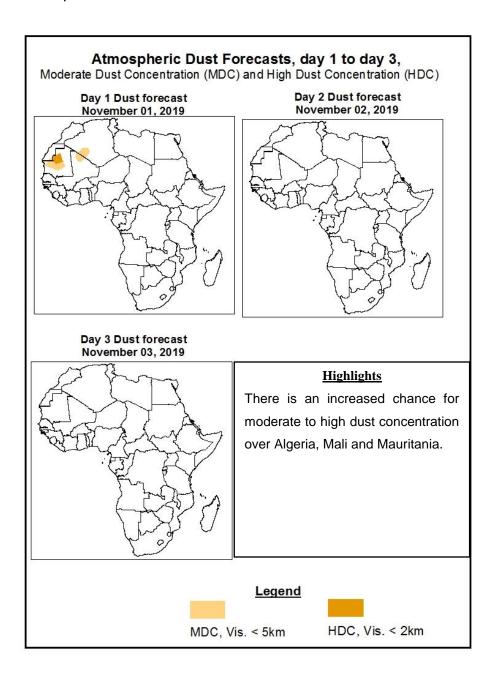
#### **Highlights**

- The monsoon flow from the Atlantic Ocean with its associated lower-level convergence is expected to
  enhance rainfall over portions of west and Central Africa. Onshore flow from the Indian Ocean with its
  associated lower-level convergence is expected to enhance rainfall across southeastern Ethiopia and
  southern Somalia.
- At least 25mm for two or more days is likely over portions of Sierra Leone, Liberia, DRC, Gabon, Angola, Ethiopia, Somalia, Botswana, South Africa and Madagascar.
- There is an increased likelihood for daily rainfall to exceed 50mm over local areas in Ethiopia, Somalia and South Africa
- There is an increased chance for daily maximum heat index to exceed 40°C over Nigeria.

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# 1.2. Atmospheric Dust Concentration Forecasts (valid: 01 Nov – 03 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: 01 November –05 November 2019

The Azores High Pressure system over the Northeast Atlantic is further to the west of Africa and is generally expected to remain constant with its central pressure value at 1028hPa for the first three days of the forecast period and then it is expected to intensify while shifting eastward towards Africa with its central pressure increasing from 1028hPa to 1032hPa during the remainder of the forecast period.

The St. Helena High Pressure system over Southeast Atlantic Ocean expected to weaken while shifting eastward with its central pressure value decreasing from 1028hPa to 1022hPa during the first three days of the forecast period and then it is expected to slightly strengthen from 1022hPa to 1025hPa during the last two days of the forecast period.

The Mascarene High Pressure system over Southwest Indian Ocean is generally expected to weaken with its central pressure value decreasing from 1028hPa to 1021hPa during 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 equatorial parts of Great Horn of Africa and parts of Central Africa while the northeasterly flow is expected to prevail across southern Africa.

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

The monsoon flow from the Atlantic Ocean with its associated lower-level convergence is expected to enhance rainfall over portions of west and Central Africa. Onshore flow from the Indian Ocean with its associated lower-level convergence is expected to enhance rainfall across southeastern Ethiopia and southern Somalia. At least 25mm for two or more days is likely over portions of Sierra Leone, Liberia, DRC, Gabon, Angola, Ethiopia, Somalia, Botswana, South Africa and Madagascar. There is an increased likelihood for daily rainfall to exceed 50mm over local areas in Ethiopia, Somalia and South Africa. There is an increased chance for daily maximum heat index to exceed 40°C over Nigeria.

# 2.0. Previous and Current Day Weather over Africa

### 2.1. Weather assessment for the previous day (Oct 30, 2019)

Daily rainfall amount exceeded 25mm over Sierra Leone, Liberia, Cote d'Ivoire, Ghana, Nigeria, Gabon, Republic of Congo, Angola, DRC, Uganda, South Sudan, Kenya, Somalia, Tanzania and Mozambique; and exceeded 50mm over Liberia and Kenya.

# 2.2. Weather assessment for the current day (Oct 31, 2019)

Deep convective clouds are observed over many places in Central Africa, and portions of western, eastern and southern Africa.

