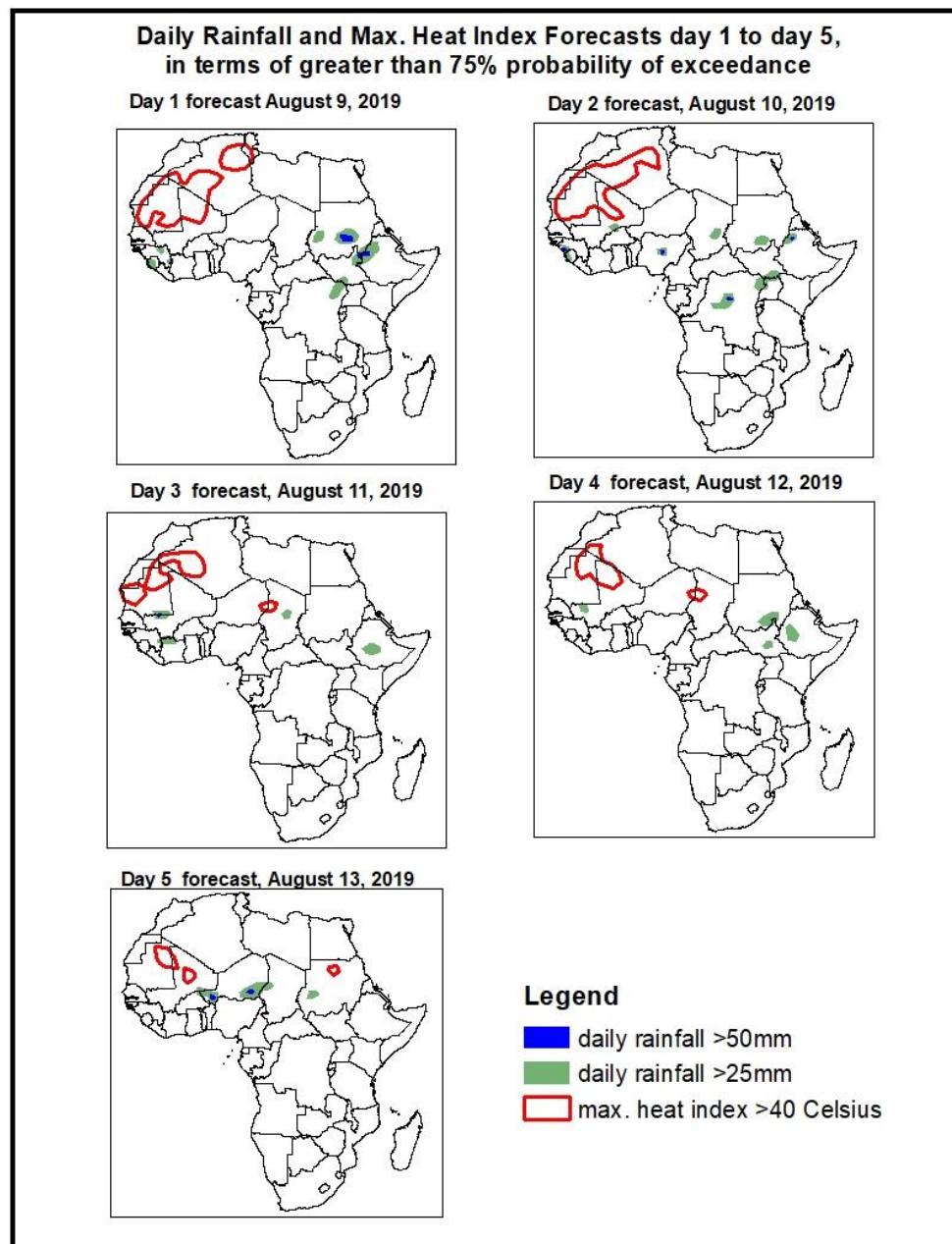


NCEP Contributions to the WMO Severe Weather Forecasting Demonstration Project (SWFDP) and to the African Monsoon Multidisciplinary Analysis (AMMA) Initiative

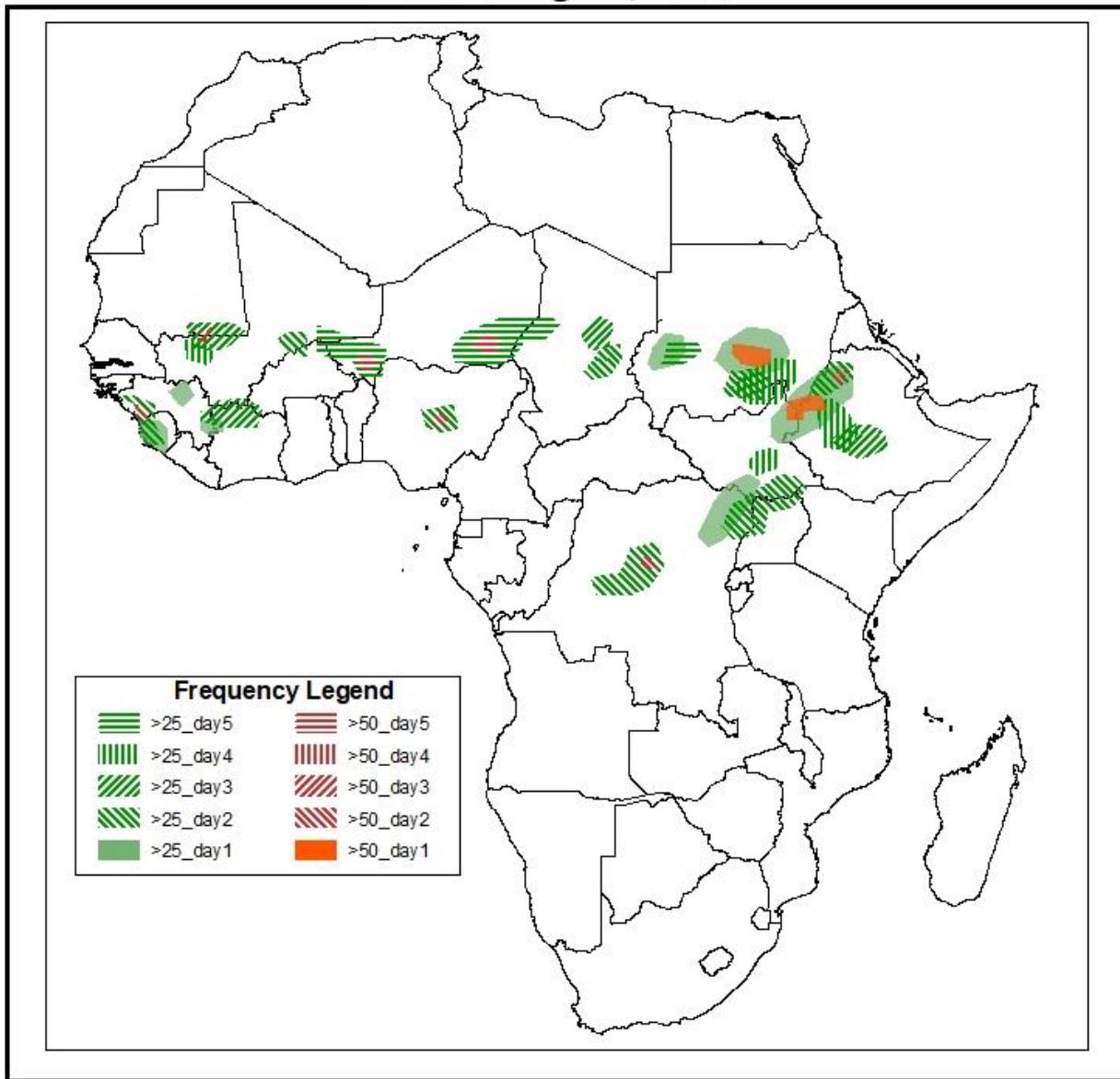
1. Rainfall, Heat Index and Dust Concentration Forecasts, (Issued on August 8, 2019)

1.1. Daily Rainfall and Maximum Heat Index Forecasts (*valid: 9 – 13 August, 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 9 - 13 August, 2019

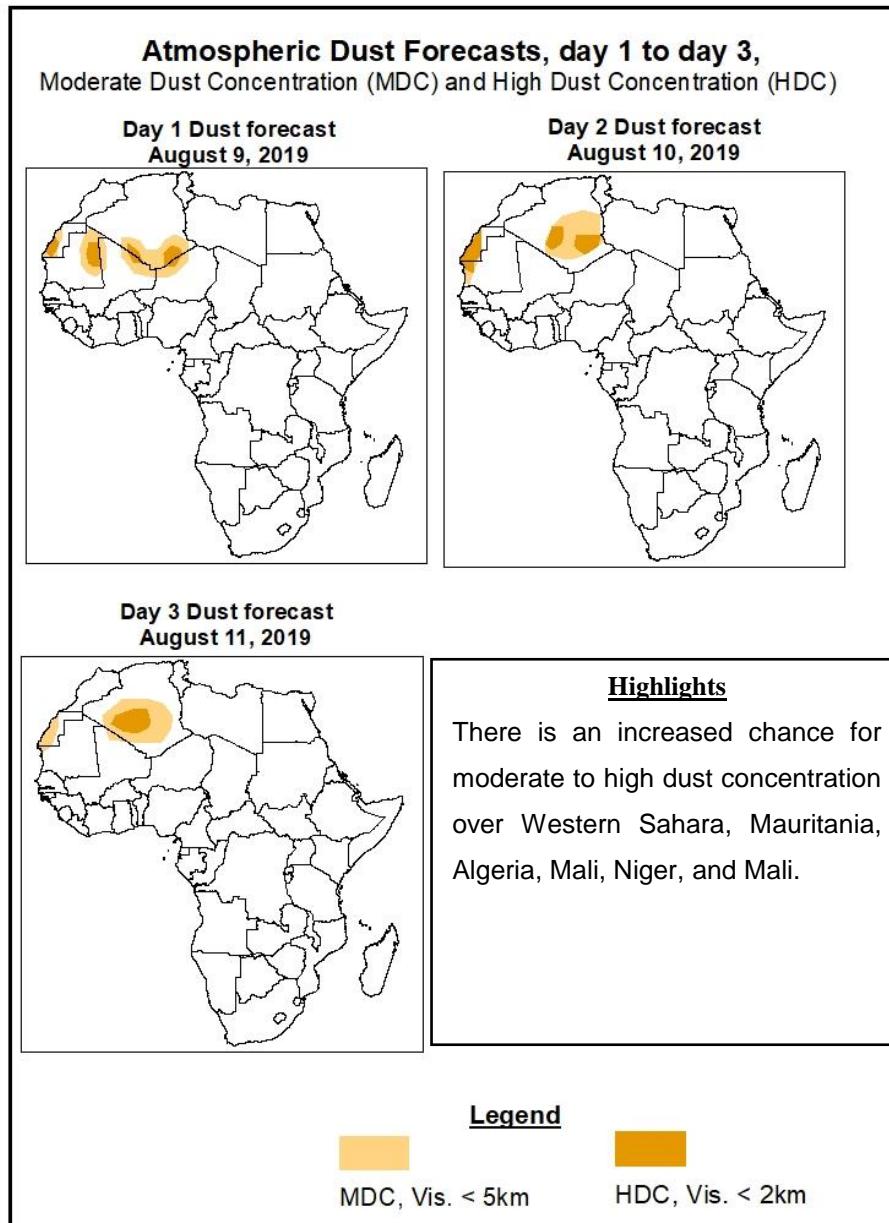


Highlights

- The monsoon flow from the Atlantic Ocean with its associated lower-level convergence, and westward propagating meso-scale convective systems are expected to enhance rainfall over portions of the Sahel and central Africa countries.
- Lower-level wind convergences are expected to enhance rainfall across portions of the Greater Horn of Africa.
- At least 25mm for two or more days is likely over portions of West Africa and the Greater Horn of Africa. There is an increased chance for daily rainfall to exceed 50mm over portions of Guinea, Niger, Sudan and Ethiopia.
- There is an increased chance for daily maximum heat index to exceed 40°C over portions of Northwest Africa and Sudan.

1.2. Atmospheric Dust Concentration Forecasts (valid: 9 – 11 August 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: 9 – 13 August 2019

The Azores High Pressure system over the Northeast Atlantic is expected to strengthen with its central pressure value increasing from 1025hPa to 1028hPa during the forecast period and to stay just northwest of West Africa during the forecast period.

The St. Helena High Pressure system over Southeast Atlantic Ocean is expected to weaken, with its central pressure value increasing from 1032hPa to 1030hPa during the forecast hours.

The Mascarene High Pressure system over Southwest Indian Ocean is expected to strengthen with its central pressure value increasing from 1030Pa to 1037hPa during the forecast period.

Thermal low over western and central Sahel is expected to deepen slightly with its central pressure value decreasing from about 1008hPa to 1004hPa during the forecast period.

At 925-hPa level, strong dry northerly to northeasterly flow is expected to prevail across portions of Northwest Africa. In contrast, moist southwesterly flow from the Atlantic Ocean is expected to prevail across the Gulf of Guinea and the Sahel regions, and the neighboring areas of Central Africa.

At 850-hPa, lower-level wind convergences are expected to remain active over portions of the Sahel and Lake Victoria regions. A cyclonic circulation over Southern Algeria and the neighboring areas is expected to remain quasi stationary during the forecast period.

At 700-hPa, a broad area of anticyclonic flow is expected to prevail across much of Northwest and West Africa during the forecast period.

At 500-hpa, wind speed associated with easterly flow is expected to exceed 30kts across portions of West Africa during the forecast period.

At 150-hPa, a strong wind (>70kts) associated with tropical easterly jet (TEJ) is expected to prevail across portions of central and the Greater Horn of Africa towards end of the forecast period.

The monsoon flow from the Atlantic Ocean with its associated lower-level convergence, and westward propagating meso-scale convective systems are expected to enhance rainfall over portions of the Sahel and central Africa countries. Lower-level wind convergences are expected to enhance rainfall across portions of the Greater Horn of Africa. At least 25mm for two or more days is likely over portions of West Africa and the Greater Horn of Africa. There is an increased chance for daily rainfall to exceed 50mm over portions of Guinea, Niger, Sudan and Ethiopia. There is an increased chance for daily maximum heat index to exceed 40°C over portions of Northwest Africa and Sudan.

2.0. Previous and Current Day Weather over Africa

2.1. Weather assessment for the previous day (August 7, 2019)

Daily rainfall amount exceeded 25mm over portions of Nigeria.

2.2. Weather assessment for the current day (August 8, 2019)

Deep convective clouds are observed over portions of the Sahel and the Greater Horn of Africa regions..

