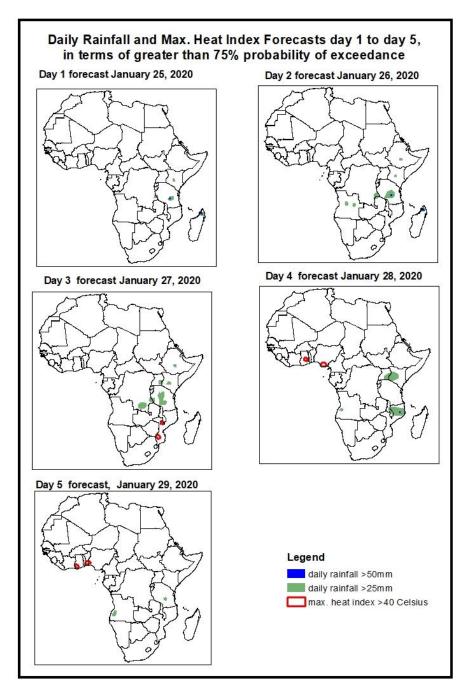
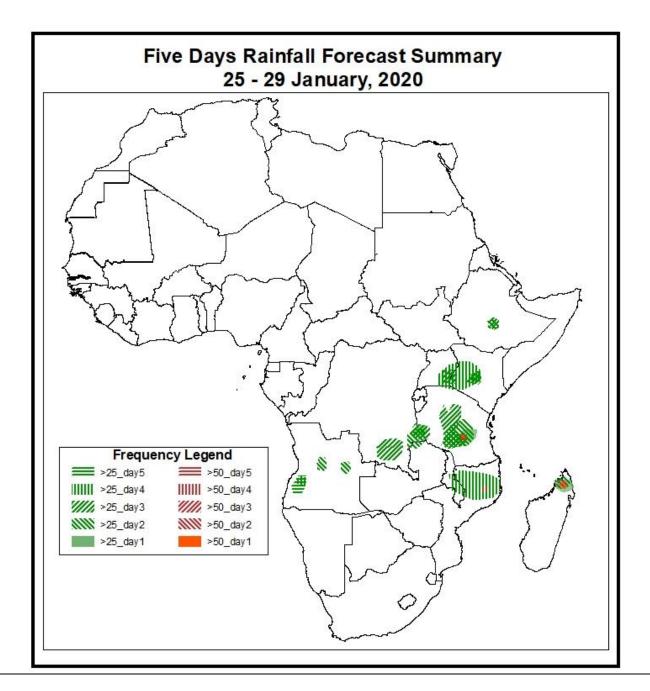
NCEP Contributions to the WMO Severe Weather Forecasting Demonstration Project (SWFDP) and to the African Monsoon Multidisciplinary Analysis (AMMA) Initiative

# 1. Rainfall, Heat Index and Dust Concentration Forecasts, (Issued on January 24, 2020)

#### **1.1. Daily Rainfall and Maximum Heat Index Forecasts** (valid: 25 Jan – 29 Jan, 2020)

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.

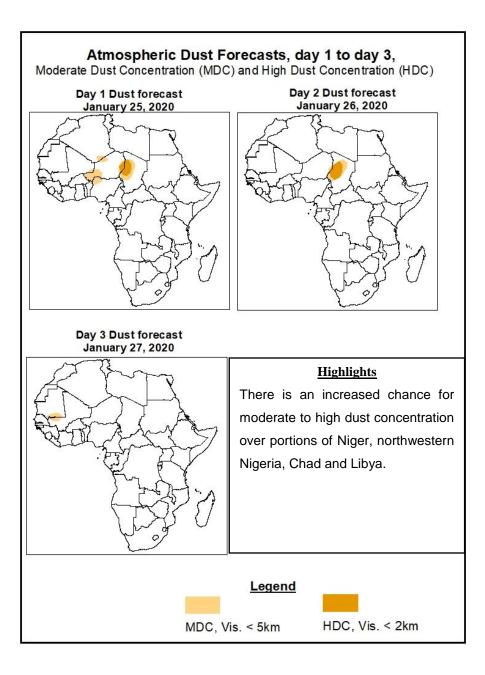




# <u>Highlights</u>

- Lower-level wind convergences are expected to enhance rainfall over parts of Uganda, Kenya, Tanzania and northern Madagascar.
- At least 25mm for two or more days is likely over local areas in Angola and Ethiopia, southeastern Uganda, southwestern Kenya, Tanzania and northern Madagascar.
- There is an increased likelihood for daily rainfall to exceed 50mm over local areas in Tanzania, northern Mozambique and northern Madagascar.
- There is an increased chance for daily maximum heat index to exceed 40°C over local areas in Cote d'Ivoire, Ghana, Nigeria and Mozambique.

**1.2.** Atmospheric Dust Concentration Forecasts (valid: 25 Jan – 27 Jan 2020) 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: 25 January – 29 January 2020

The Azores High Pressure system over the Northeast Atlantic Ocean is expected to weaken, with its central pressure value decreasing from 1026hPa to 1023hPa during the forecast period.

The St. Helena High Pressure system over the Southeast Atlantic Ocean is expected to weaken, with its central pressure value decreasing from 1027hPa to 1023hPa during the forecast period.

The Mascarene High Pressure system over Southwest of Indian Ocean is expected to intensify, with its central pressure value increasing from 1027hPa to 1035hPa during the forecast period.

The Arabian Ridge is expected to remain strong, stretching as far as Ethiopia, and is expected to maintain dry weather over northeastern Africa.

At 925-hPa level, an area of strong dry northerly to northeasterly flow is expected to prevail across the Sahel and the neighboring areas of the Gulf of Guinea region. Zonal wind convergences are expected to remain active in the equatorial Africa region.

At 850-hPa level, lower level wind convergences are expected remain active over Tanzania and the neighboring areas. A lower-level cyclonic circulation east of Madagascar is expected to shift southeastward while deepening.

Lower-level wind convergences are expected to enhance rainfall over parts of Uganda, Kenya, Tanzania and northern Madagascar. At least 25mm for two or more days is likely over local areas in Angola and Ethiopia, southeastern Uganda, southwestern Kenya, Tanzania and northern Madagascar. There is an increased likelihood for daily rainfall to exceed 50mm over local areas in Tanzania, northern Mozambique and northern Madagascar. There is an increased chance for daily maximum heat index to exceed 40°C over local areas in Cote d'Ivoire, Ghana, Nigeria and Mozambique.

# 2.0. Previous and Current Day Weather over Africa

# 2.1. Weather assessment for the previous day (January 23, 2020)

Daily rainfall amount exceeded 25mm over portions of Angola and Madagascar. Daily rainfall totals exceeded 50mm over local areas in Angola and northwestern Madagascar.

### 2.2. Weather assessment for the current day (January 24, 2020)

Deep convective clouds are observed over the northern portions of Southern Africa, including Tanzania and northern Madagascar.

