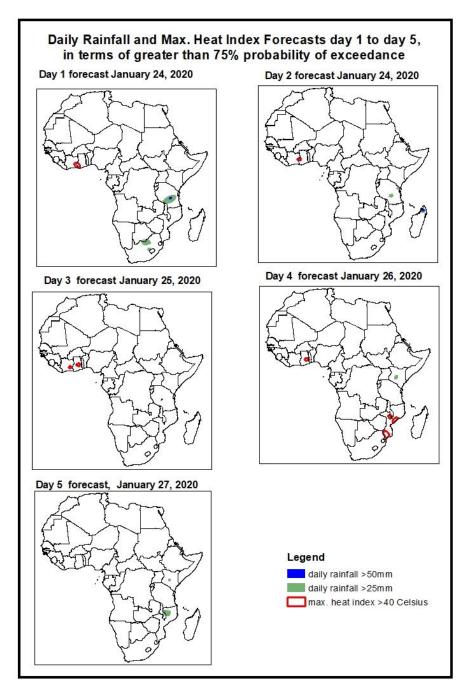
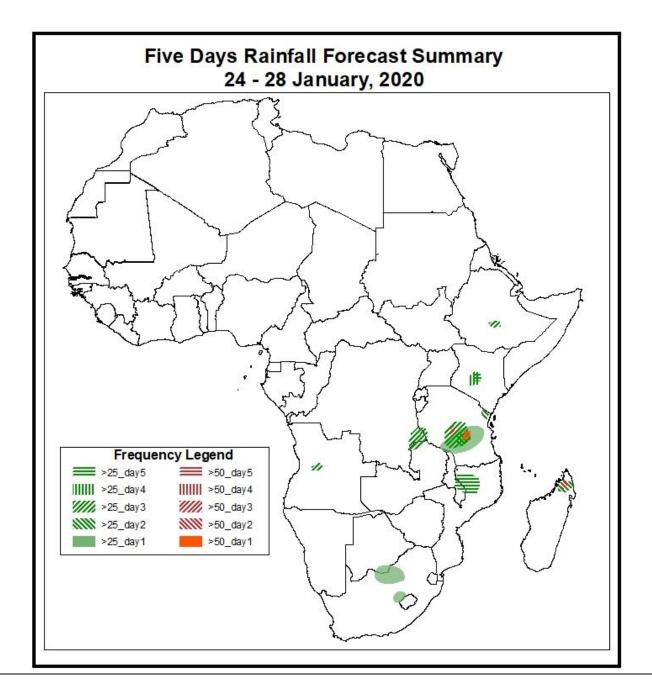
NCEP Contributions to the WMO Severe Weather Forecasting Demonstration Project (SWFDP) and to the African Monsoon Multidisciplinary Analysis (AMMA) Initiative

1. Rainfall, Heat Index and Dust Concentration Forecasts, (Issued on January 23, 2020)

1.1. Daily Rainfall and Maximum Heat Index Forecasts (valid: 24 Jan – 28 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.

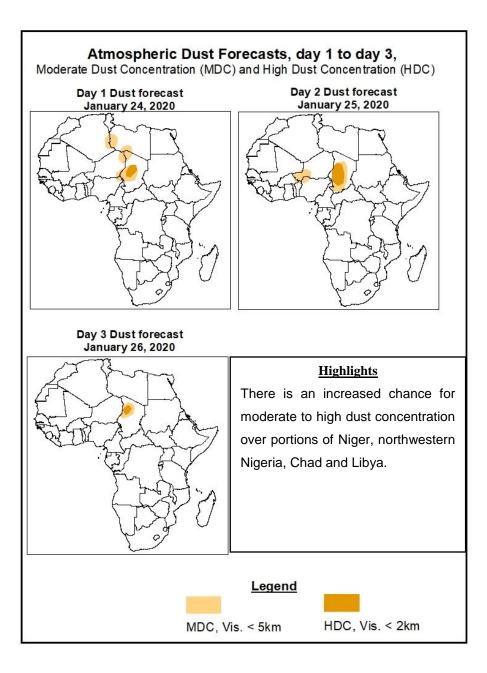




<u>Highlights</u>

- Lower-level wind convergences are expected to enhance rainfall over parts of Tanzania.
- At least 25mm for two or more days is likely over central Tanzania and northern Madagascar.
- There is an increased likelihood for daily rainfall to exceed 50mm over local areas in Tanzania 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 and Mozambique.

1.2. Atmospheric Dust Concentration Forecasts (valid: 24 Jan – 26 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: 24 January – 28 January 2020

The Azores High Pressure system over the Northeast Atlantic Ocean is expected to weaken, with its central pressure value decreasing from 1028hPa to 1025hPa during the forecast period.

The St. Helena High Pressure system over the Southeast Atlantic Ocean is expected to maintain an average central pressure value of 1026hPa 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 1029hPa 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, a broad area of strong dry northerly to northeasterly flow is expected to prevail across the Sahel region and northern Africa. 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 in the Lake Victoria region. Lower-level cyclonic circulation associated with the Angola low is expected to weaken during the forecast period. A lower-level cyclonic circulation over the Mozambique Channel is expected to shift eastwards into Madagascar while weakening during the forecast period.

Lower-level wind convergences are expected to enhance rainfall over parts of Tanzania. At least 25mm for two or more days is likely over central Tanzania and northern Madagascar. There is an increased likelihood for daily rainfall to exceed 50mm over local areas in Tanzania 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 and Mozambique.

2.0. Previous and Current Day Weather over Africa

2.1. Weather assessment for the previous day (January 22, 2020)

Daily rainfall amount exceeded 25mm over portions of Tanzania, northeastern Zambia and Madagascar. Daily rainfall totals exceeded 50mm over central Tanzania and northwestern Madagascar.

2.2. Weather assessment for the current day (January 23, 2020)

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

