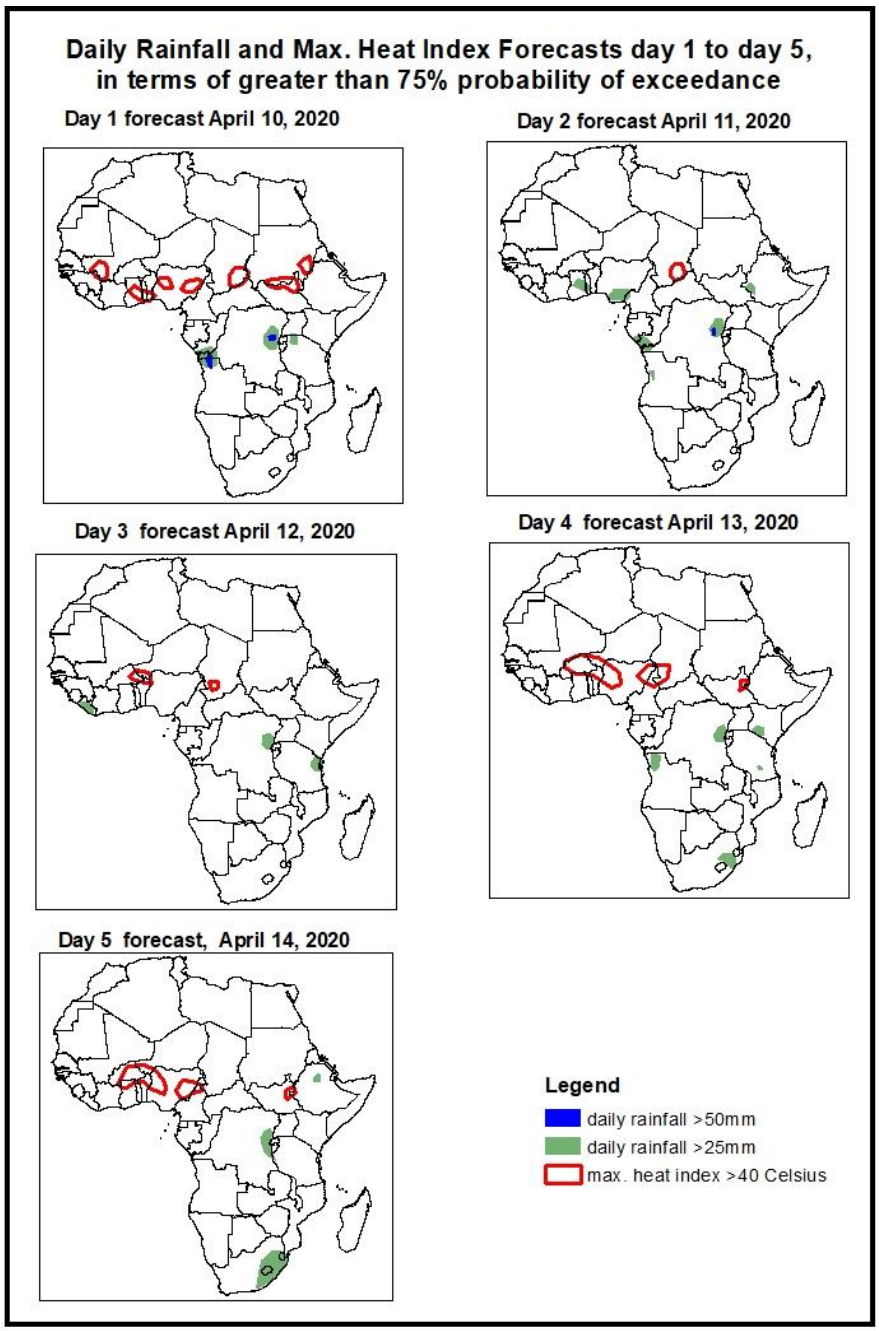
NCEP Contributions to the WMO Severe Weather Forecasting Demonstration Project (SWFDP) and to the African Monsoon Multidisciplinary Analysis (AMMA) Initiative

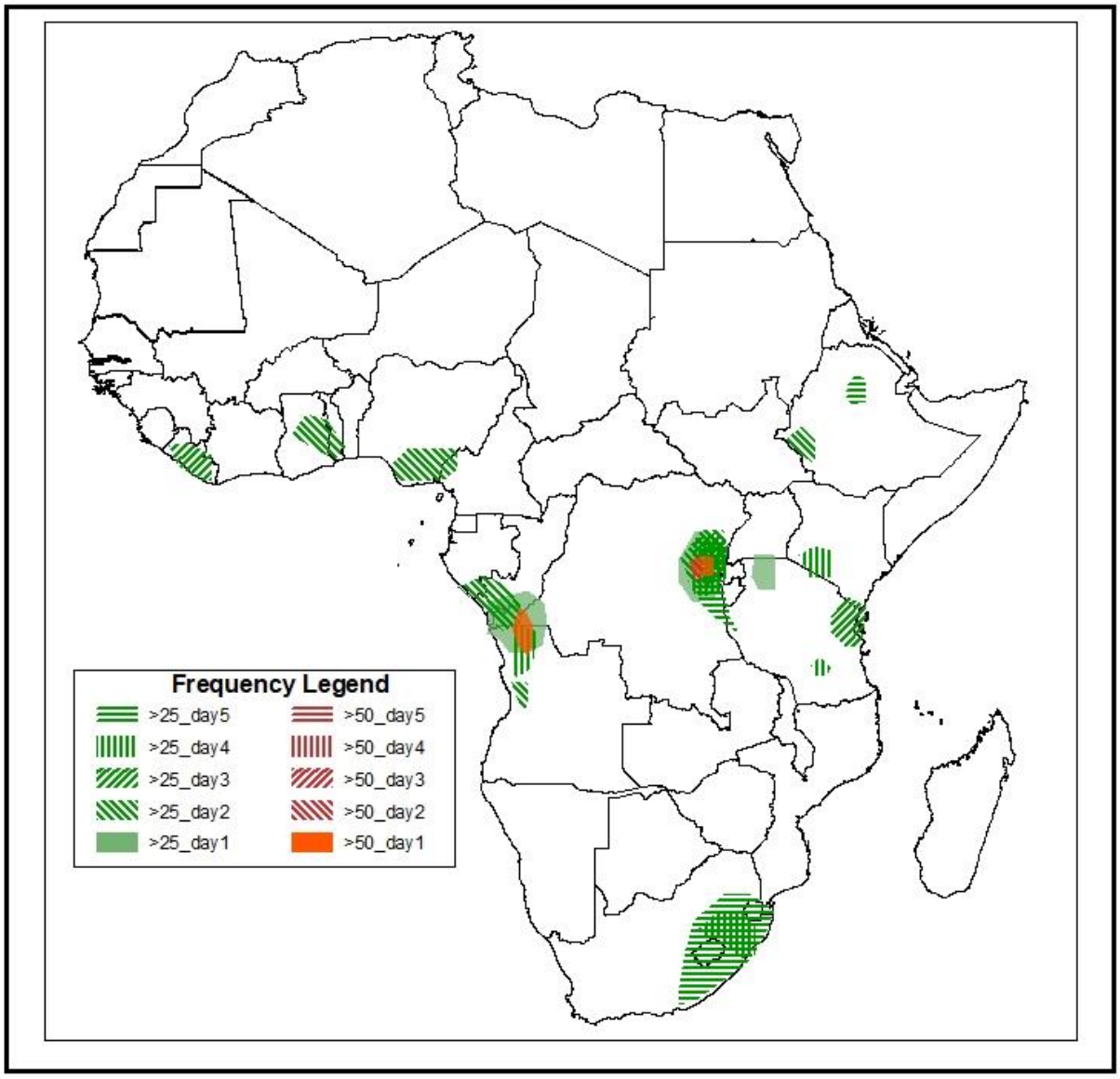
1. Rainfall, Heat Index and Dust Concentration Forecasts, (Issued on April 9, 2020)

1.1. Daily Rainfall and Maximum Heat Index Forecasts (valid: 10 – 14 April, 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.



Five Days Rainfall Forecast Summary
10 - 14 April, 2020

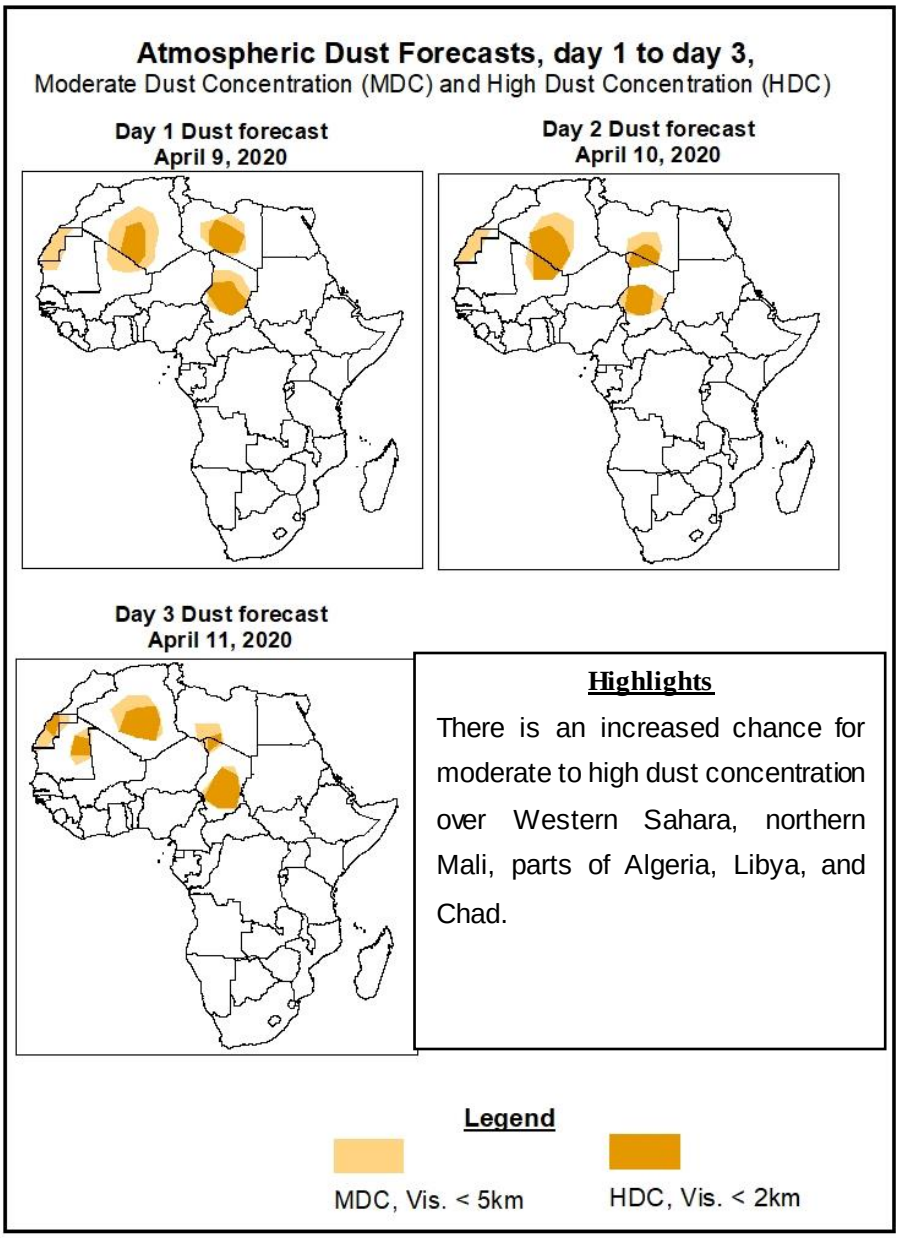


Highlights

- Localized lower-level wind convergences are expected to enhance rainfall over local areas in Central and Southern Africa.
- At least 25mm for two or more days is likely over parts of southern Congo, northern Angola, eastern DRC and eastern South Africa.
- There is an increased chance for daily rainfall amount to exceed 50mm over local areas in Angola and DRC.
- There is an increased chance for daily maximum heat index to exceed 40ºC across many places in the Sahel region, and local areas in eastern Sudan, South Sudan and southwestern Ethiopia through 24 hours, and probability of extreme heat is likely to decrease over many of thes e places during the rest of the forecast period.

1.2. Atmospheric Dust Concentration Forecasts (valid: 10 – 12 April, 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: 10 – 14 April 2020*

The Azores High Pressure system over Northeast Atlantic and neighboring areas is expected to intensify with its central pressure value decreasing from 1027hPa to 1033hPa during the forecast period.

The St. Helena High Pressure system over the South Atlantic Ocean is expected to intensify. Its central pressure value is expected to increase from 1020hPa to 1024hPa during the forecast period.

The Mascarene High Pressure system over the Southwest Indian Ocean is expected to maintain an average central pressure value of 1034hPa during the forecast period.

At 925-hPa level, an area of strong dry northerly to northeasterly flow is expected to enhance atmospheric dust concentration over portions of the Sahel region and North Africa. Zonal wind convergences are expected to remain active near 10^{o}N in West and Central Africa.

At 850-hPa level, a cyclonic circulation over eastern Mediterranean Sea and the neighboring areas is expected fill up while shifting eastward. In contrast, a broad anti-cyclonic circulation is expected to prevail across North Africa during the forecast period. Localized wind convergences are expected to remain active In the Gulf of Guinea region and, in parts of Central, East and Southeast Africa.

At 700-hPa level, a broad anti-cyclonic ridge is expected to prevail across West Africa and the neighboring areas of the Sahel region during the forecast period. A trough associated with a mid-latitude frontal system is expected to deepen over eastern Mediterranean Sea and the neighboring areas of Northeast Africa.

Localized lower-level wind convergences are expected to enhance rainfall over local areas in Central and Southern Africa. At least 25mm for two or more days is likely over parts of southern Congo, northern Angola, eastern DRC and eastern South Africa. There is an increased chance for daily rainfall amount to exceed 50mm over local areas in Angola and DRC. There is an increased chance for daily maximum heat index to exceed 40^{o}C across

many places in the Sahel region, and local areas in eastern Sudan, South Sudan and southwestern Ethiopia through 24 hours, and probability of extreme heat is likely to decrease over many of these places during the rest of the forecast period.

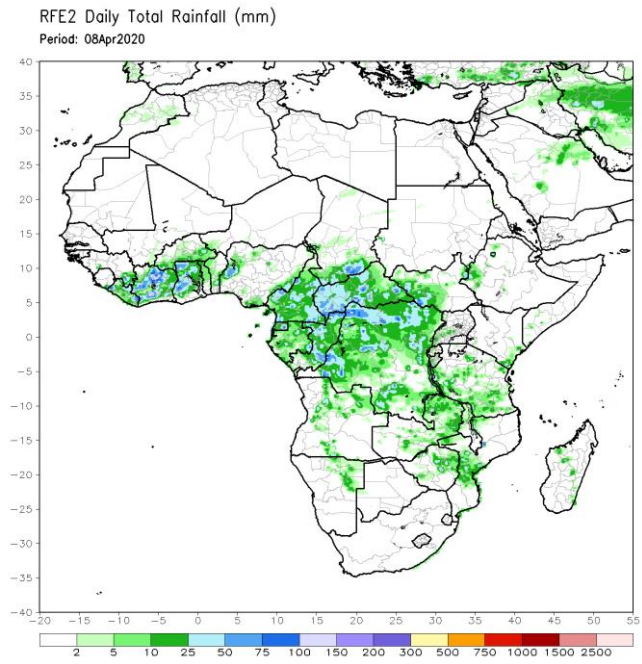
2.0. Previous and Current Day Weather over Africa

2.1. Weather assessment for the previous day (*April 8, 2020*)

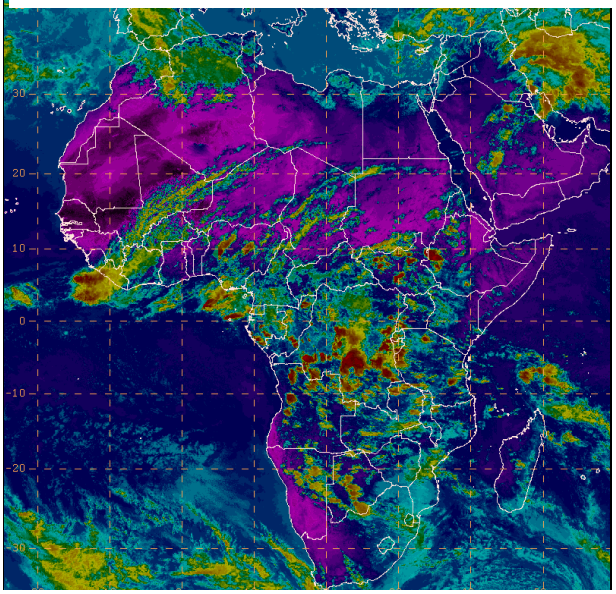
Daily rainfall amount exceeded 25 mm over many places in the Gulf of Guinea and Central Africa countries.

2.2. Weather assessment for the current day (*April 9, 2020*)

Convective clouds are observed over portions of Central Africa and the northern portions of Southern Africa.



IR Satellite Image (valid 1430 April 9, 2020)



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