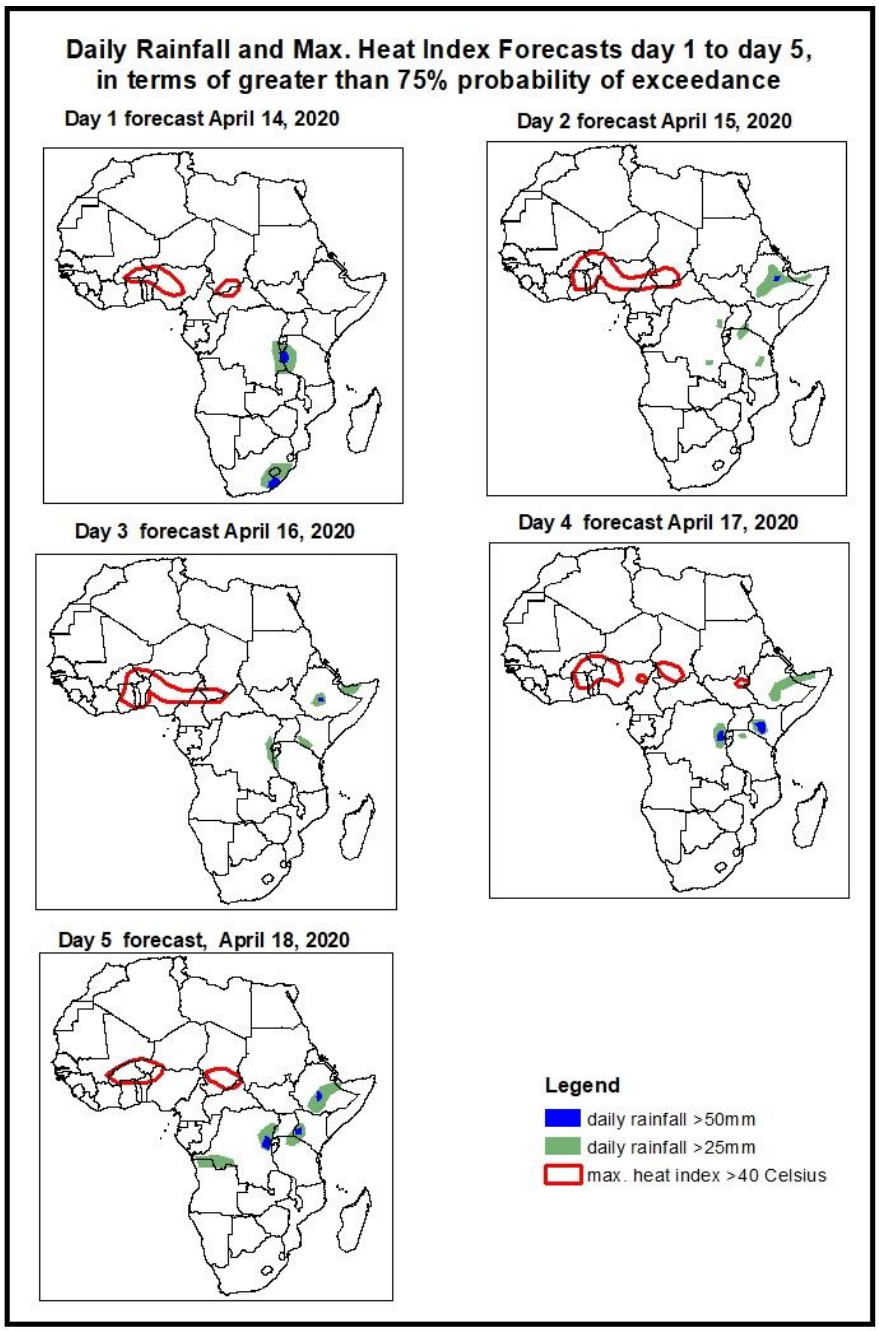
NCEP Contributions to the WMO Severe Weather Forecasting Demonstration Project (SWFDP) and to the African Monsoon Multidisciplinary Analysis (AMMA) Initiative

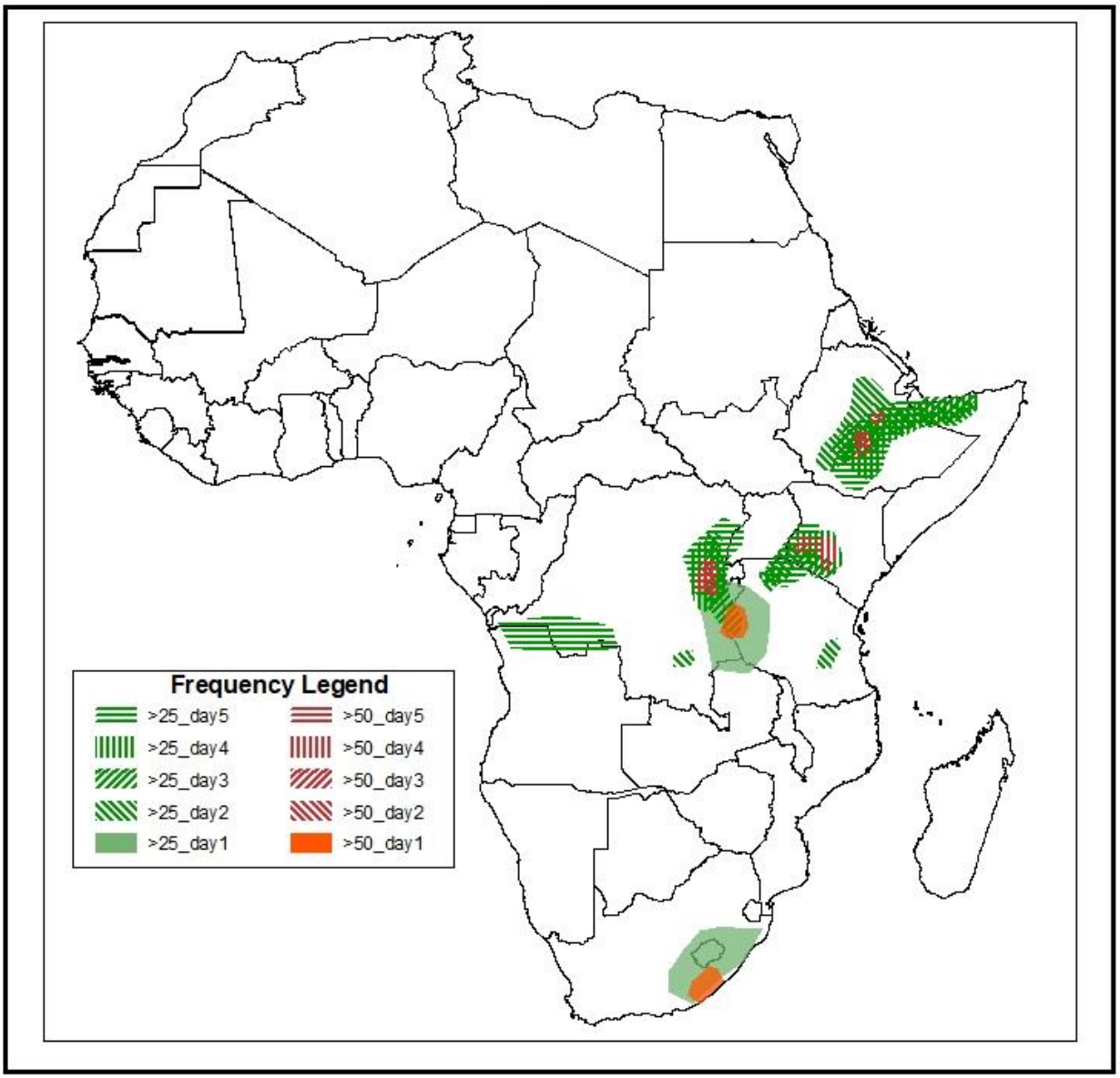
1. Rainfall, Heat Index and Dust Concentration Forecasts, (Issued on April 13, 2020)

1.1. Daily Rainfall and Maximum Heat Index Forecasts (valid: 14 – 18 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
14 - 18 April, 2020

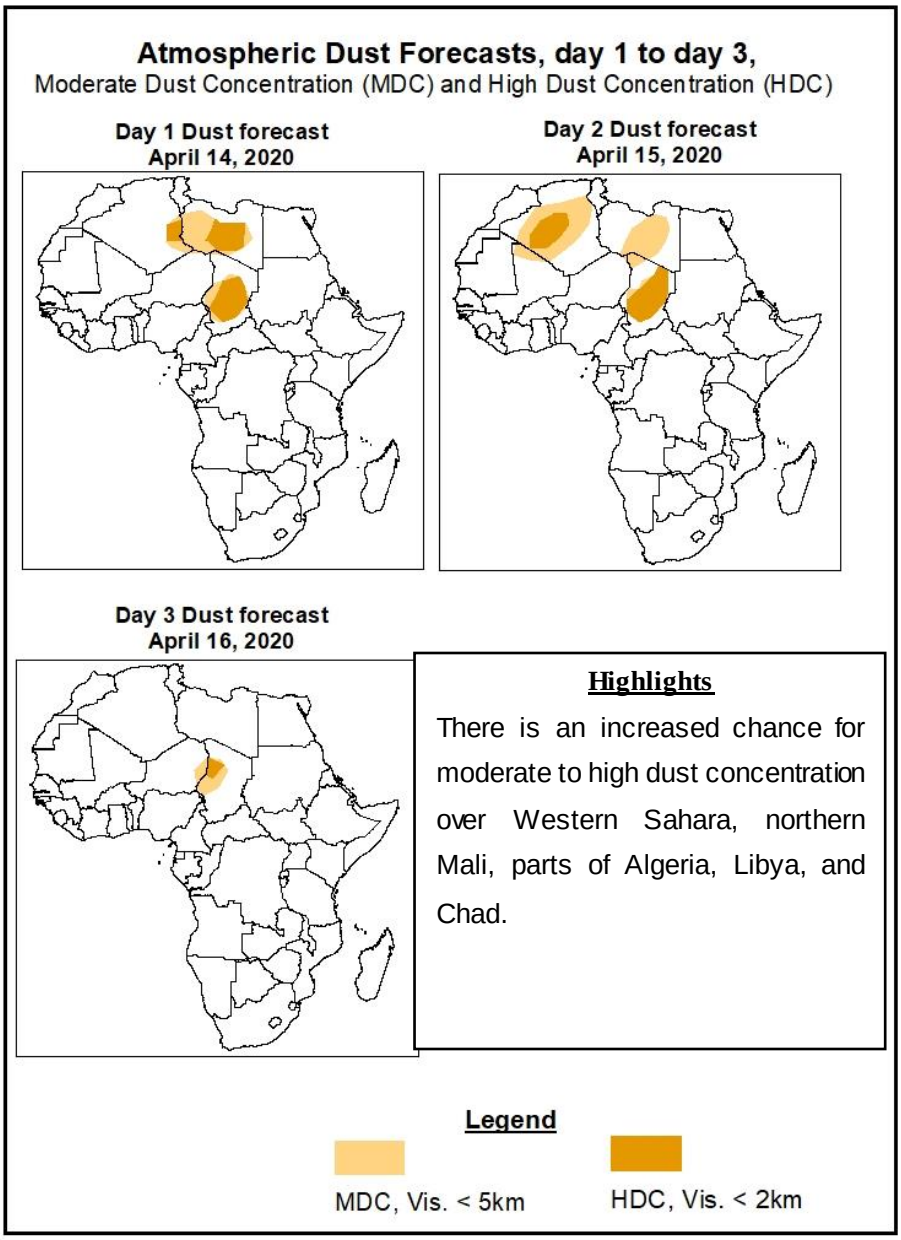


Highlights

- Tropical/extratropical interactions across Northeast Africa, lower-level convergences in in the Lake Victoria region, and passage of frontal system across South Africa are expected to enhance rainfall in these areas.
- At least 25mm for two or more days is likely over portions of Ethiopia, eastern DRC, and parts of Kenya and Tanzania.
- There is an increased chance for daily rainfall amount to exceed 50mm over local areas DRC, Ethiopia, Kenya, Tanzania and South Africa.
- There is an increased chance for daily maximum heat index to exceed 40^{o}C over portions of the Sahel region.

1.2. Atmospheric Dust Concentration Forecasts (valid: 13 – 15 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: 13 – 18 April 2020*

The Azores High Pressure system over Northeast Atlantic and neighboring areas is expected to weaken with its central pressure value decreasing from 1034hPa to 1027hPa 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 1023hPa to 1026hPa during the forecast period.

The Mascarene High Pressure system over the Southwest Indian Ocean is expected to weaken, with its central pressure value decreasing from 1034hPa 1031hPa during the forecast period.

Heat low over central Mali and the neighboring areas is expected to deepen slightly with its central pressure value decreasing from 1007hpa to 1005hpa 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 broad anti-cyclonic circulation is expected to prevail across North Africa and the neighboring areas 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 Northern 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.

Tropical/extratropical interactions across Northeast Africa, lower-level convergences in in the Lake Victoria region, and passage of frontal system across South Africa are expected to

enhance rainfall in these areas. At least 25mm for two or more days is likely over portions of Ethiopia, eastern DRC, and parts of Kenya and Tanzania. There is an increased chance for daily rainfall amount to exceed 50mm over local areas DRC, Ethiopia, Kenya, Tanzania and South Africa. There is an increased chance for daily maximum heat index to exceed 40^{o}C over portions of the Sahel region.

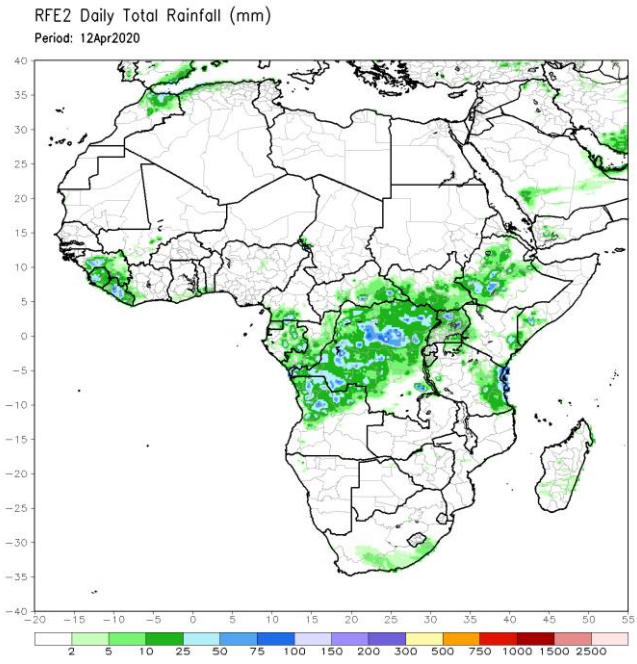
2.0. Previous and Current Day Weather over Africa

2.1. Weather assessment for the previous day (*April 12, 2020*)

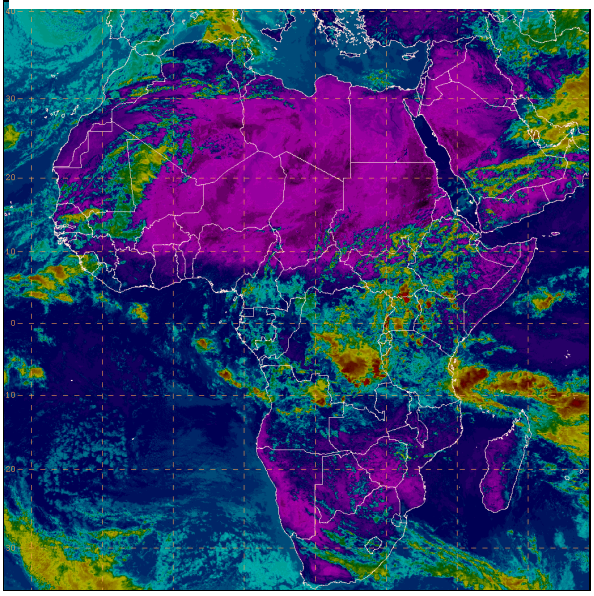
Daily rainfall amount exceeded 25 mm over portions of Guinea, Tog, Liberia, Angola, DRC, Ethiopia and coastal Tanzania.

2.2. Weather assessment for the current day (*April 13, 2020*)

Convective clouds are observed over portions of Central and Eastern Africa.



IR Satellite Image (valid 1500 April 13, 2020)



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