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 March 04, 2020)

1.1. Daily Rainfall and Maximum Heat Index Forecasts (valid: 05 – 09 March, 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>

- Cyclonic through and wind convergences over in portions of southern, eastern and central Africa are expected to enhance rainfall over these areas.
- At least 25mm for two or more days is likely over northern and southern D R Congo, northern Zambia, northern Malawi, southern Tanzania and northern Madagascar.
- There is an increased chance for daily maximum heat index to exceed 40°C over local areas in the Gulf of Guinea.

1.2. Atmospheric Dust Concentration Forecasts (valid: 05 – 07 March, 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: 05 – 09 March 2020

The Azores High Pressure system over Northeast Atlantic and neighboring areas (West Europe and Maghreb) is expected to weaken with his central pressure value decreasing from 1034hPa to 1029hPa during the forecast period.

The St. Helena High Pressure system over the South Atlantic Ocean is expected to slightly weaken with his central pressure value decreasing from 1025hPa to 1023hPa during the forecast period.

The Mascarene High Pressure system over Southwest of Indian Ocean is expected to intensify with his central pressure value increasing from 1025hPa to 1032hPa 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 the Sahel and Sahara region. Zonal wind convergences and cyclonic through are expected to remain active along 10°N and in some parts of central, eastern and southern Africa.

At 850-hPa and 700-hPa levels, wind convergences and cyclonic trough are expected to remain active along 5°N and over some parts of southern, eastern and central Africa.

A trough associated with mid-latitude frontal system is expected to propagate eastward across the eastern Mediterranean region, and is likely to cause increased cloudiness over parts of the Greater Horn of Africa during the forecast period.

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2.0. Previous and Current Day Weather over Africa

2.1. Weather assessment for the previous day (March 03, 2020)

Daily rainfall amount exceeded 25 mm over local areas in northeastern Zambia, northwestern Tanzania and southeastern Nigeria.

2.2. Weather assessment for the current day (March 04, 2020)

Convective clouds are observed across southern, central and eastern Africa.

