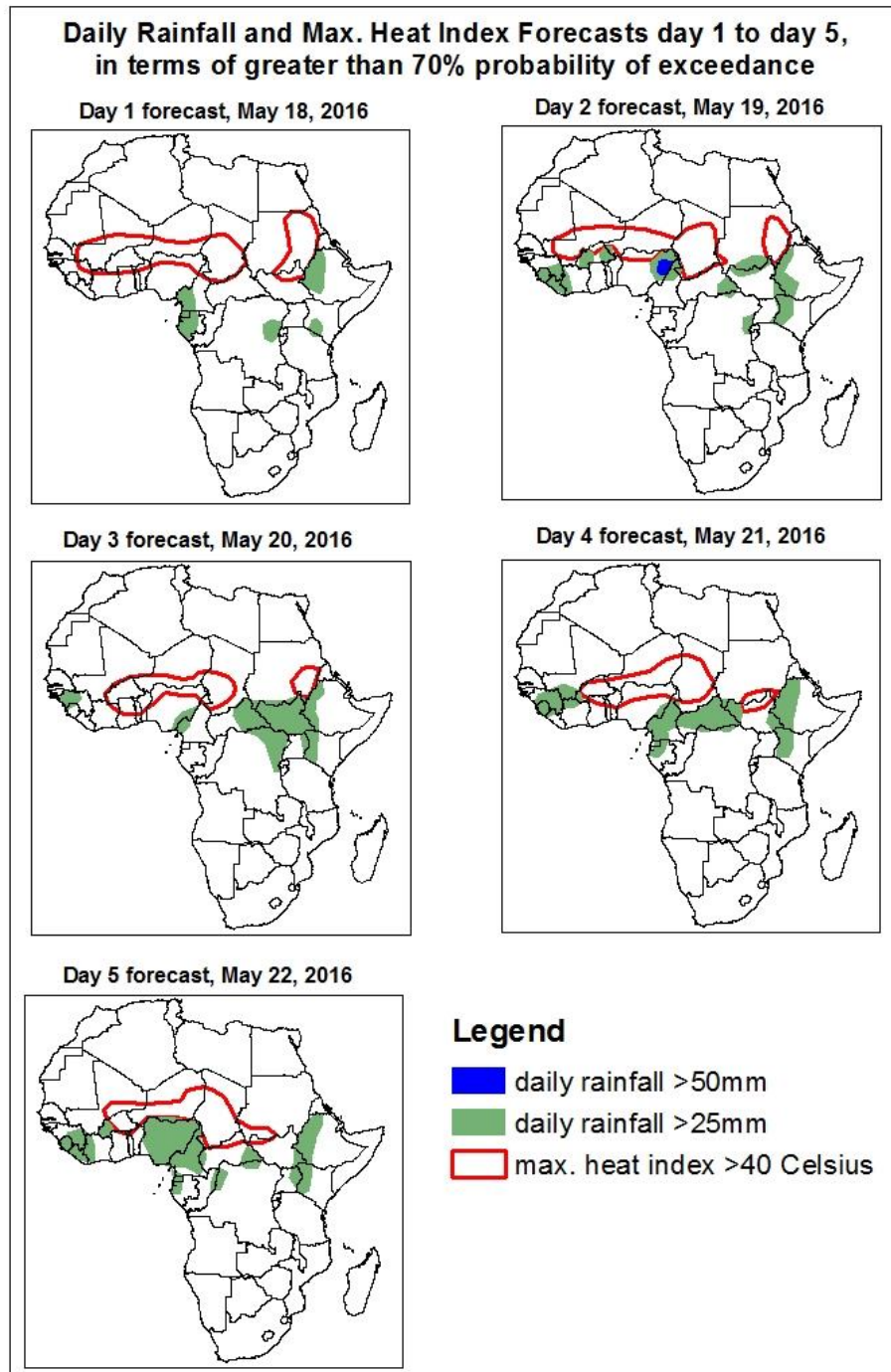


# NCEP Contributions to the WMO Severe Weather Forecasting Demonstration Project (SWFDP) and to the African Monsoon Multidisciplinary Analysis (AMMA) Initiative

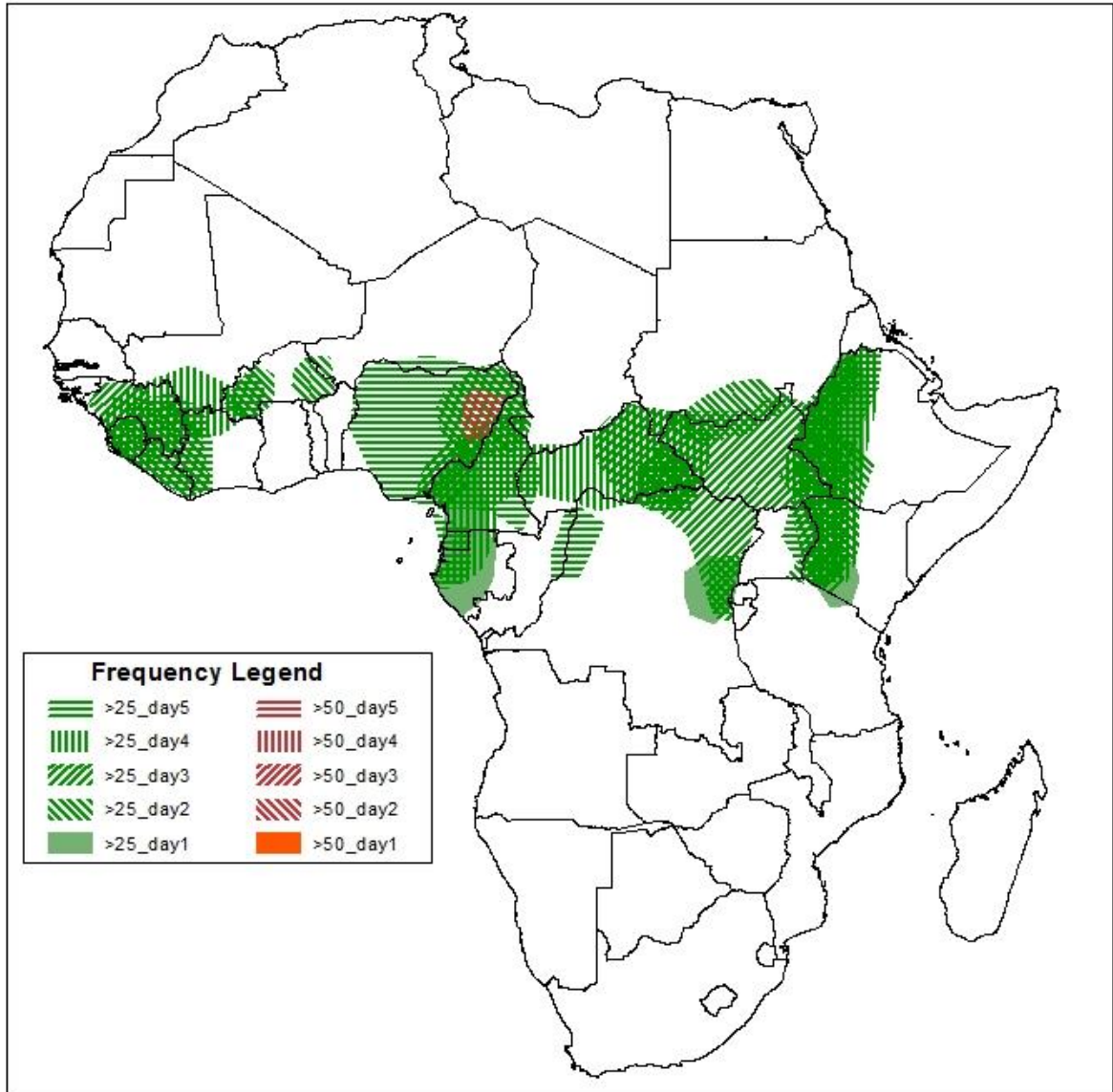
## 1. Rainfall, Heat Index and Dust Concentration Forecasts, (Issued on May 17, 2016)

### 1.1. Daily Rainfall and Maximum Heat Index Forecasts (valid: May 18– May 22, 2016)

The forecasts are expressed in terms of high probability of precipitation (POP) and high probability of maximum heat index, based on the NCEP/GFS, ECMWF and the NCEP Global Ensemble Forecasts System (GEFS) and expert assessment.



## Five Days Rainfall Forecast Summary May 18 - May 22, 2016

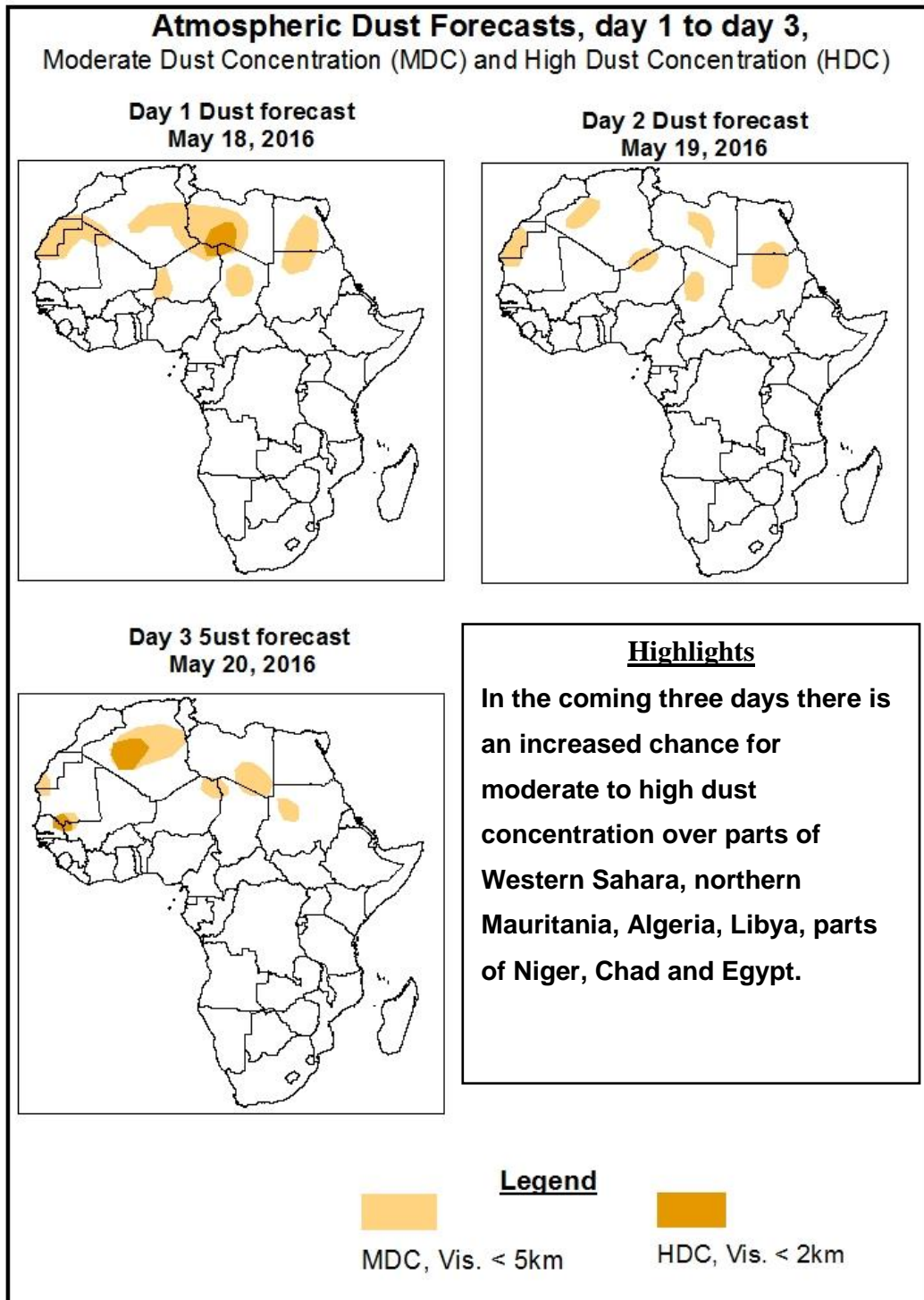


### Highlights

In the coming five days, monsoon flow from the Atlantic Ocean with its associated lower level convergence is expected to enhance rainfall across portions of West Africa. Local wind convergences across central Africa, western Ethiopia, and active meridional wind convergences near the Lake Victoria region are expected to enhance rainfall in their respective areas. Therefore, there is an increased chance for two or more days of moderate to heavy rainfall over Guinea, Sierra Leone, Liberia, western Cote d'Ivoire, western Burkina Faso, eastern Nigeria, Cameroon, Equatorial Guinea, western Gabon, CAR, eastern DRC, South Sudan, western Ethiopia, western Kenya and parts of Uganda.

## 1.2. Atmospheric Dust Concentration Forecasts (valid: May 18 – May 20, 2016)

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: May 18 – May 22, 2016**

The Azores high pressure system over the Northeast Atlantic Ocean is expected to weaken gradually with its central pressure value decreasing from about 1020hPa to 1024hPa during the forecast period.

The St. Helena High pressure system over the Southeast Atlantic Ocean is expected to intensify while shifting eastwards, with its central pressure value is expected to increase from 1025hPa to 1035hPa through 24 to 72 hours.

The Mascarene high pressure system over the Southwest Indian Ocean is expected to intensify while shifting eastwards, with its central pressure value is expected to increase from 1035hPa to 1040hPa through 48 hours, and it is expected to decrease significantly to 1028hPa while shifting eastwards.

Central pressure values associated with heat lows across the Sahel and Sudan are expected to remain in the range between 1006hpa to 1009hpa during the forecast period.

At 925HPa level, strong dry northeasterly to easterly flow (>20kts) is expected to prevail across Morocco, Western Sahara, Senegal, Mauritania, Algeria, Libya, Chad, Egypt and northern Sudan, which may lead to enhanced atmospheric dust activity, over portions of these places. On the other hand, moist southwesterly monsoon flow is expected to prevail across the Gulf Guinea countries during the forecast period.

At 850hPa level, a zonal wind convergence is expected to prevail in the region between central Mali and Sudan, with a feeble cyclonic circulation propagating westwards between western Sudan and Niger across the Sahel during the forecast period. A broad area of southeasterly flow is expected to prevail across eastern and central Africa. Meridional wind convergence near the Lake Victoria region is also expected to maintain seasonal rainfall in the region.

At 700hPa level, a broad area of anti-cyclonic ridge is expected to prevail in the region between Senegal and northern Chad, across northern Mali and Niger during the forecast

period. Northeasterly to easterly flow is expected to prevail across central and eastern Gulf of Guinea region during the forecast period.

In the coming five days, monsoon flow from the Atlantic Ocean with its associated lower level convergence is expected to enhance rainfall across portions of West Africa. Local wind convergences across central Africa, western Ethiopia, and active meridional wind convergences near the Lake Victoria region are expected to enhance rainfall in their respective areas. Therefore, there is an increased chance for two or more days of moderate to heavy rainfall over Guinea, Sierra Leone, Liberia, western Cote d'Ivoire, western Burkina Faso, eastern Nigeria, Cameroon, Equatorial Guinea, western Gabon, CAR, eastern DRC, South Sudan, western Ethiopia, western Kenya and parts of Uganda.

There is also an increased chance for maximum heat index values to exceed 40°C over portions of Mali, Burkina Faso, northern Ghana, Togo, Nigeria, Niger, Chad, parts of CAR, eastern and southern Sudan, and portions of South Sudan Republic.

## 2.0. Previous and Current Day Weather over Africa

### 2.1. Weather assessment for the previous day (May 16, 2016)

Moderate to locally heavy rainfall was observed over portions of Gulf of Guinea, parts of Central Africa countries, western Ethiopia and northeastern South Africa.

### 2.2. Weather assessment for the current day (May 17, 2016)

Intense convective clouds are observed across portions of Gulf of Guinea, South Sudan, central African countries and western Ethiopia.

