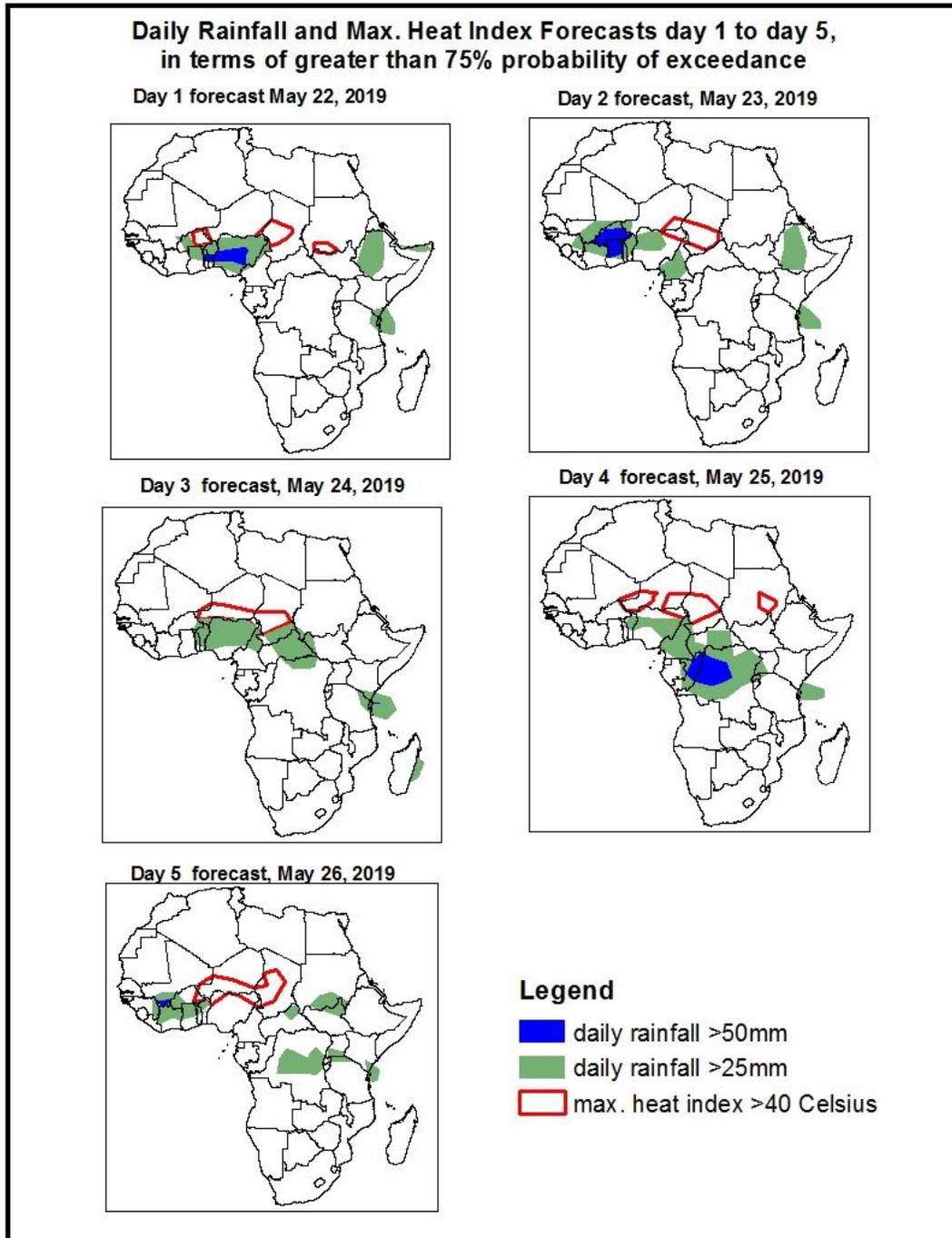


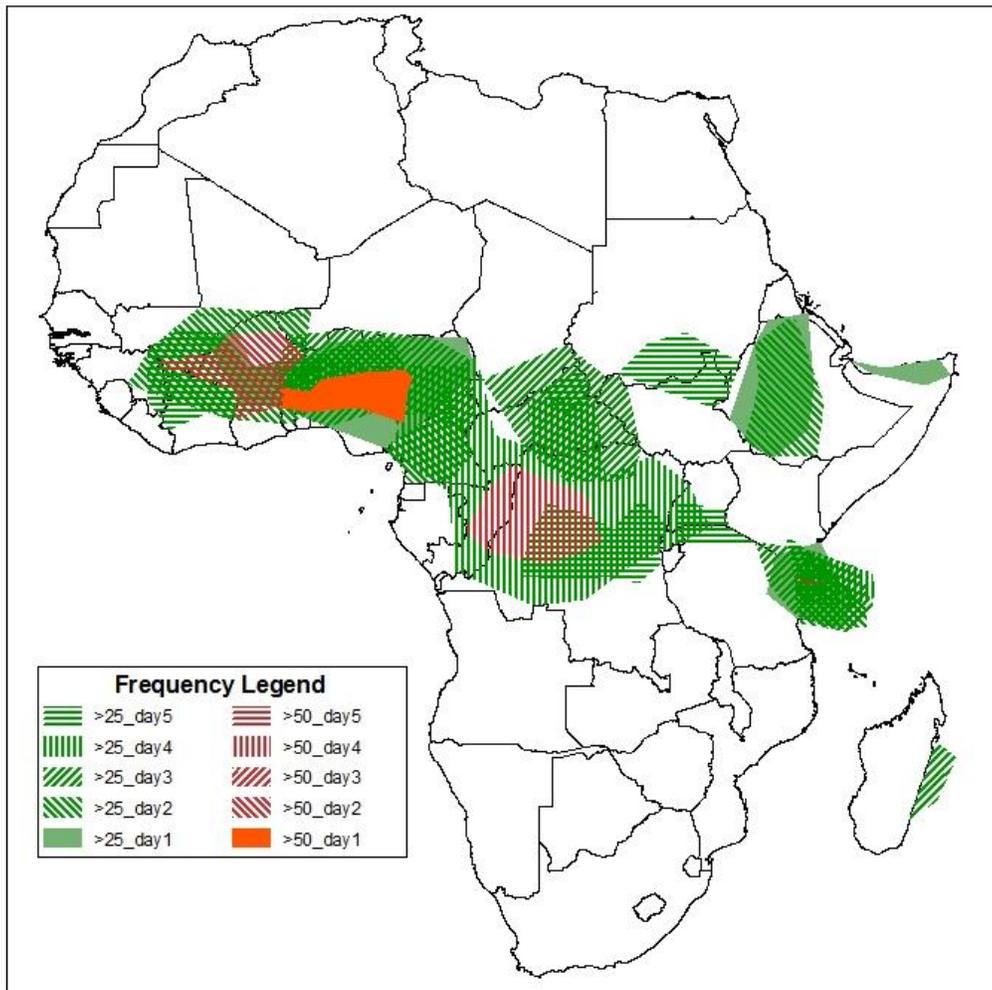
**1. Rainfall, Heat Index and Dust Concentration Forecasts, (Issued on May 21, 2019)**

**1.1. Daily Rainfall and Maximum Heat Index Forecasts (valid: May 22 – 26, 2019)**

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 May 22 - 24, 2019

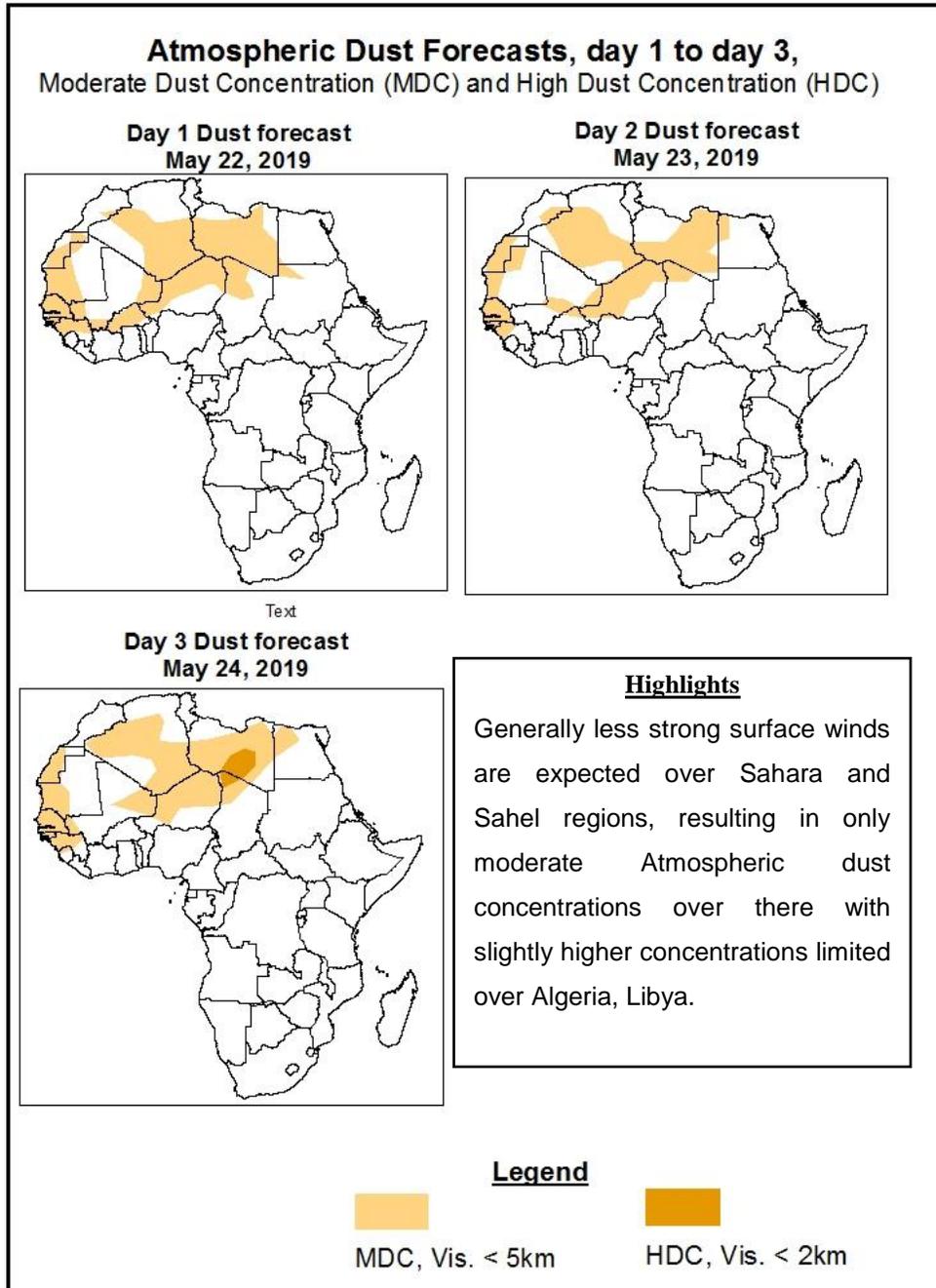


### Highlights

- The Monsoon wind pattern over the Gulf of Guinea is expected to cause moderate to enhanced precipitation over there.
- Low level converging winds at both 850 and 700hPa levels over the Gulf of Guinea, central Africa, parts of the Sahel, GHA (Sudan, South Sudan) and East Africa (coastal areas of Tanzania and Kenya) are likely to cause scattered enhanced precipitation with isolated enhanced ones.
- At least 25mm for two or more days is likely over many areas in the Gulf of Guinea, central Africa, GHA (South Sudan, Sudan and Ethiopia) and few areas along the east African coast (Tanzania and Kenya).
- Few northern areas in the southern areas in Sahel and Sudan are likely to feature increased chance for daily maximum heat index to exceed 40°C.

## 1.2. Atmospheric Dust Concentration Forecasts (valid: May 22 – 24 2019)

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 22 – 26 2019**

During the forecast period, the Azores High Pressure system over the North of Atlantic is expected to intensify significantly from 1022hPa to as high as 1029hPa at the end of the period. This is likely to temporarily hinder or even reverse the migration of the ITCZ towards north, during the period, and thus keeping precipitation over the Gulf of Guinea and southern extremes of the Sahel region.

During the forecast period, the St. Helena High Pressure system over Southeast Atlantic Ocean is expected to migrate towards east while relaxing from 1028hPa down to 1019hPa. This is likely to maintain the Meridional component of the ITCZ over southwest of Africa and keep precipitation over central Africa (DRC).

During the first half of the forecast period, the Mascarene High Pressure system over Southwest Indian Ocean is expected to intensify from 1025hPa to 1031hPa. However, during the second period, the system is expected to relax significantly due to the presence of the frontal low. The system, however, is likely to maintain moist southeasterly winds towards the east African coast and keep moderate to enhanced precipitation along the east African coast.

At 925hPa level, generally weak winds are expected during the forecast period, only occasionally becoming strong over Libya and Chad. This translates to less Atmospheric dust concentrations over the Sahara and Sahel. On the other hand, the converging Monsoon winds associated are expected to lie and influence precipitation of the Gulf of Guinea towards southern extremities of the Sahel region. Frequent moderate to occasional enhanced, precipitation is likely over there, especially at the start of the period. Converging, moist southeasterly winds towards East Africa are likely to maintain occasionally enhanced to heavy precipitation over there, particularly along the coastal areas of Tanzania and Kenya.

At 850hPa, converging winds over coastal areas of East Africa (Tanzania and Kenya) and a closed cyclonic flow along the Somali coast are likely to maintain moderate to occasionally enhanced precipitation over these areas. Also, converging winds are expected over southern Sahel region, northern parts of the Gulf of Guinea, much of central Africa, GHA (Sudan,

South Sudan), Uganda and LVB. These areas are likely to feature significant to enhanced precipitation with chances of heavy precipitation over few areas.

At 700hPa, mainly easterly wind pattern is expected to be maintained, converging over much of central Africa, Gulf of Guinea and parts of east Africa (northern Kenya and Uganda) and Great Horn of Africa (Ethiopia) as well as South Sudan. This is likely to favor deep convection over some of these areas which are also expected to feature low level (850hPa) convergence i.e. Sudan, South Sudan and CAR and much of the Gulf of Guinea.

Flow at 500hPa is expected to be mainly easterly during the period over many parts which are expected to feature convective activities. This is likely to favor advection of convective activities towards west.

During the period, a Subtropical Westerly Jet at 200hPa is expected to feature occasional strong winds (>130kts) with a sharp bending (trough) during the period, influencing increased precipitation over the GHA.

The Monsoon wind pattern over the Gulf of Guinea is expected to cause moderate to enhanced precipitation over there. Low level converging winds at both 850 and 700hPa levels over the Gulf of Guinea, central Africa, parts of the Sahel, GHA (Sudan, South Sudan) and East Africa (coastal areas of Tanzania and Kenya) are likely to cause scattered enhanced precipitation with isolated enhanced ones. At least 25mm for two or more days is likely over many areas in the Gulf of Guinea, central Africa, GHA (South Sudan, Sudan and Ethiopia) and few areas along the east African coast (Tanzania and Kenya). Few northern areas in the southern areas in Sahel and Sudan are likely to feature increased chance for daily maximum heat index to exceed 40°C.

## 2.0. Previous and Current Day Weather over Africa

### 2.1. Weather assessment for the previous day (May 20, 2019)

Daily rainfall totals exceeding 25mm have been observed over some areas over the Gulf of Guinea (Ghana, Benin, Nigeria and Cameroon), Sahel region (southern Niger), GHA (South Sudan and Ethiopia), east of Lake Victoria and central Africa (DRC).

### 2.2. Weather assessment for the current day (May 21, 2019)

Convection clouds are observed over DRC, parts of the Gulf of Guinea and Ethiopia.

