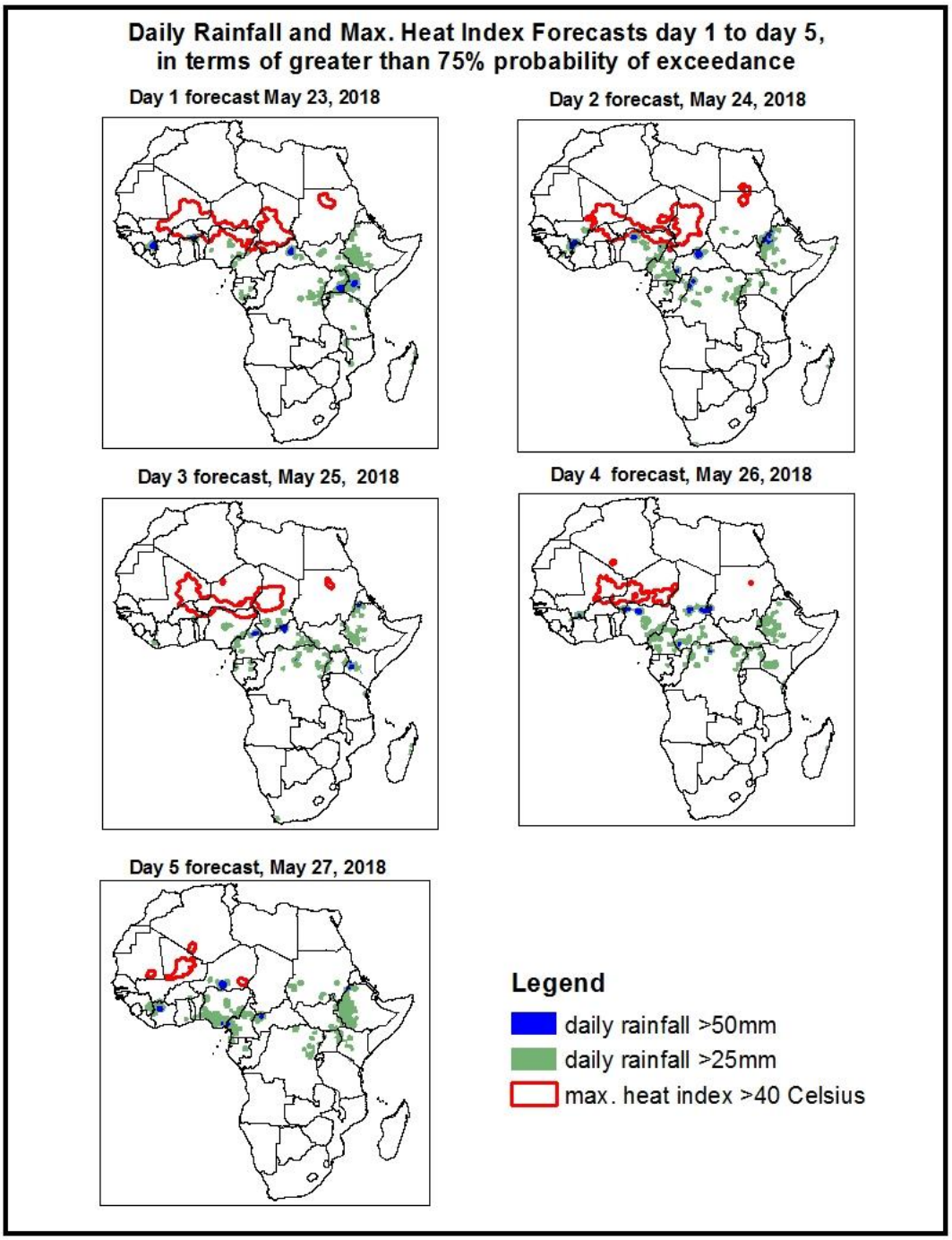
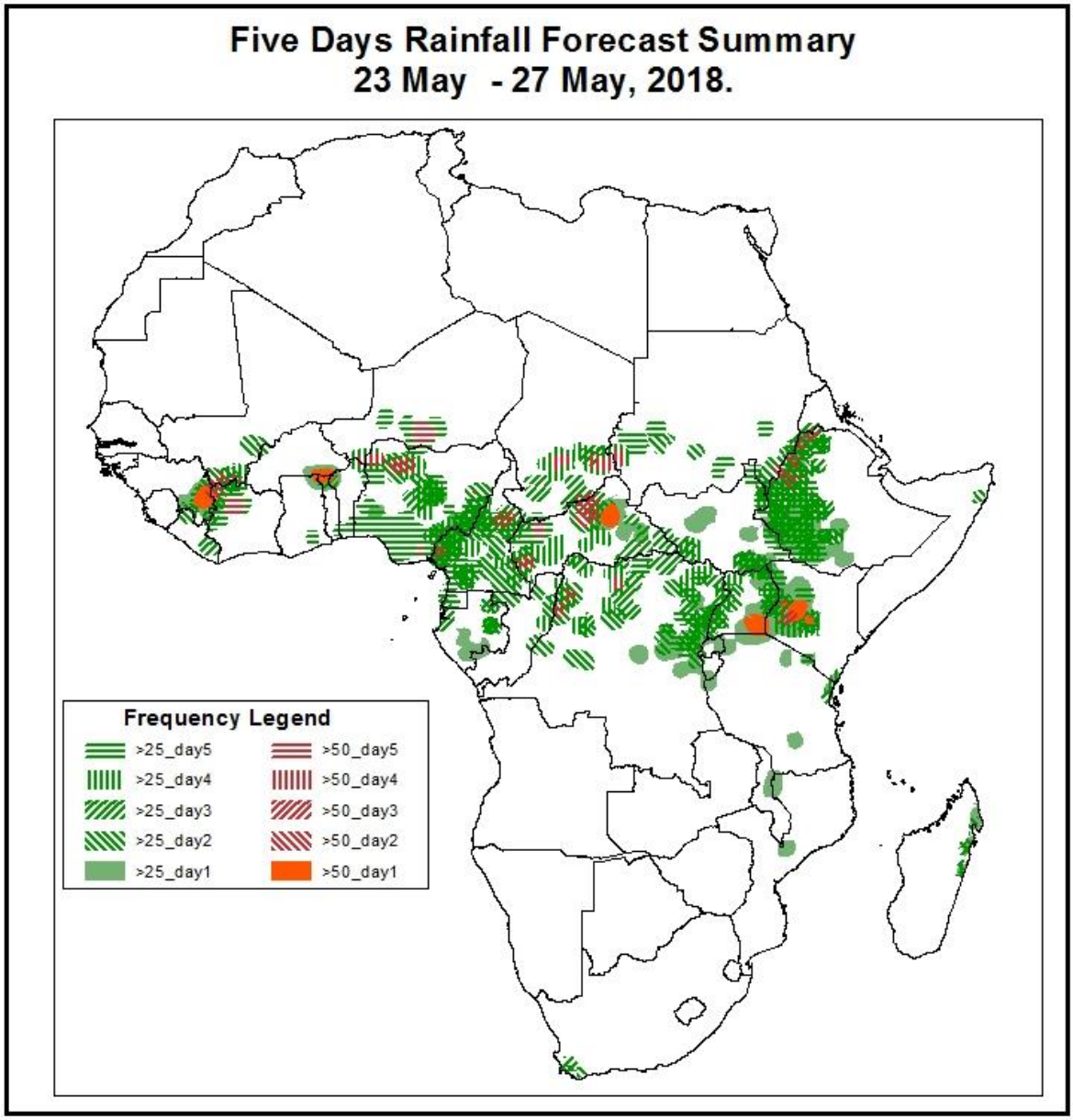
NCEP Contributions to the WMO Severe Weather Forecasting Demonstration Project (SWFDP) and to the African Monsoon Multidisciplinary Analysis (AMMA) Initiative

1. Rainfall, Heat Index and Dust Concentration Forecasts, (Issued on May 22, 2018)

1.1. Daily Rainfall and Maximum Heat Index Forecasts (valid: May 23, – May 27, 2018)

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



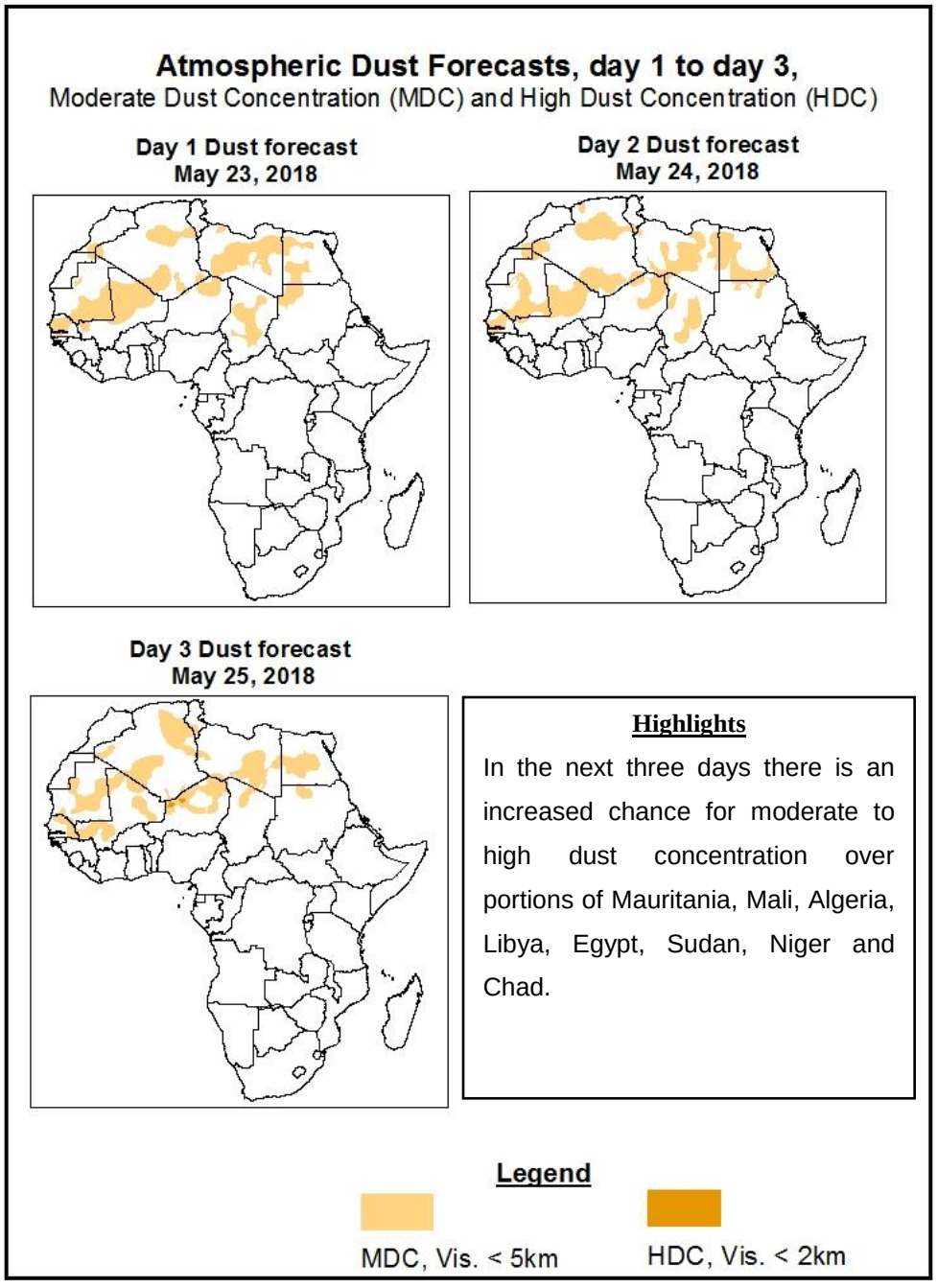


Highlights

In the next five days, lower-level wind divergence across part of Gulf of Guinea countries and lower-level convergence over part of Nigeria, Cameroon and the eastern Africa are expected to enhance rainfall in Nigeria, Cameroon and part of the eastern Africa then a reduction of rainfall over the western Africa. As a result, there is an increased chance for two or more days of moderate to heavy rainfall over portions of Guinea, Ivory Coast, Burkina Faso, Niger, Nigeria, Cameroon, Chad, Sudan, Equatorial Guinea, DRC, CAR, South Sudan, Uganda, Kenya and Ethiopia.

1.2. Atmospheric Dust Concentration Forecasts (valid: May 23 – May 25, 2018)

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 23– May 27, 2018*

The Azores High Pressure system over the North Atlantic Ocean is expected to weaken during the forecast period. The central pressure values ranges from about 1026 hPa to 1022 hPa during the forecast period.

The St. Helena High Pressure system over the Southeast Atlantic Ocean is expected to weaken during the forecast period. The central pressure values ranges from about 1023 hPa to 1022 hPa during the forecast period.

The Mascarene High Pressure system over the Southwest Indian Ocean is expected to weaken during the forecast period. The central pressure values ranges from about 1034 hPa to 1031 hPa during the forecast period.

At 925hPa, dry strong northeasterly to easterly wind is expected to prevail across northern Africa and portions of the Sahel region.

At 850hPa, in West Africa, it is expected the oscillation of the Inter Tropical Convergence Zone above the Gulf of Guinea countries while the area of wind convergence remain active in CAR and Southern part of Chad during the forecast period.

In the next five days, lower-level wind divergence across part of Gulf of Guinea countries and lower-level convergence over part of Nigeria, Cameroon and the eastern Africa are expected to enhance rainfall in Nigeria, Cameroon and part of the eastern Africa then a reduction of rainfall over the western Africa. As a result, there is an increased chance for two or more days of moderate to heavy rainfall over portions of Guinea, Ivory Coast, Burkina Faso, Niger, Nigeria, Cameroon, Chad, Sudan, Equatorial Guinea, DRC, CAR, South Sudan, Uganda, Kenya and Ethiopia.

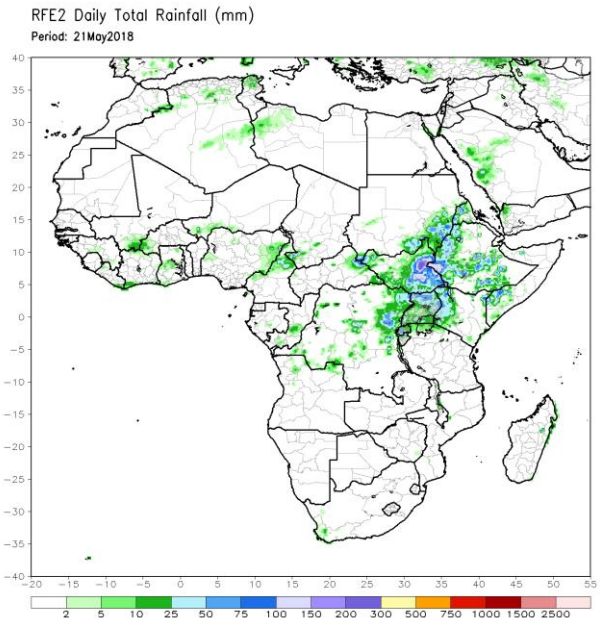
2.0. Previous and Current Day Weather over Africa

2.1. Weather assessment for the previous day (May 21, 2018)

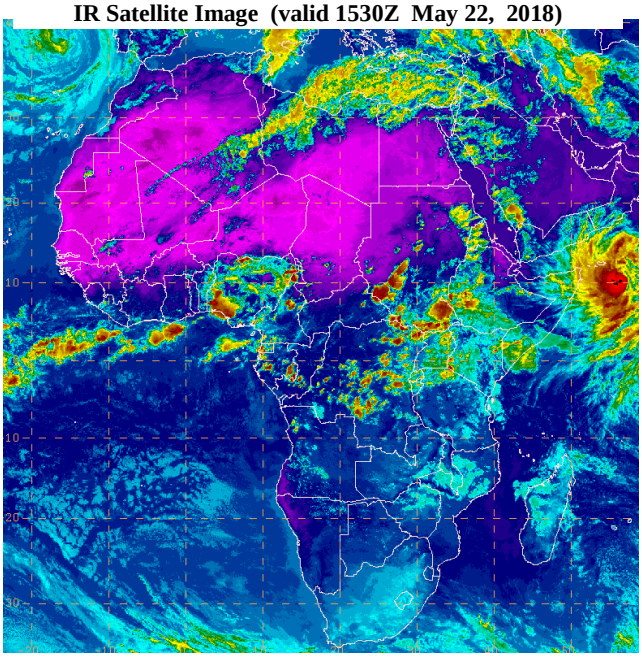
Moderate to locally heavy rainfall was observed over parts of Cameroon, chad, Sudan, South Sudan, CAR, DRC, Rwanda, Uganda, Kenya, Ethiopia, Somalia and Eritrea.

2.2. Weather assessment for the current day (May 22, 2018)

Intense convective clouds are observed over across most parts of East Africa.



IR Satellite Image (valid 1530Z May 22, 2018)



Previous day rainfall condition over Africa (Left) based on the NCEP CPCE/RFE and current day cloud cover (right) based on IR Satellite image.

Authors: Boris Polynice Anato (National Meteorological Agency —METEO BENIN) / CPC-African Desk;*.boris.anato@noaa.gov*