

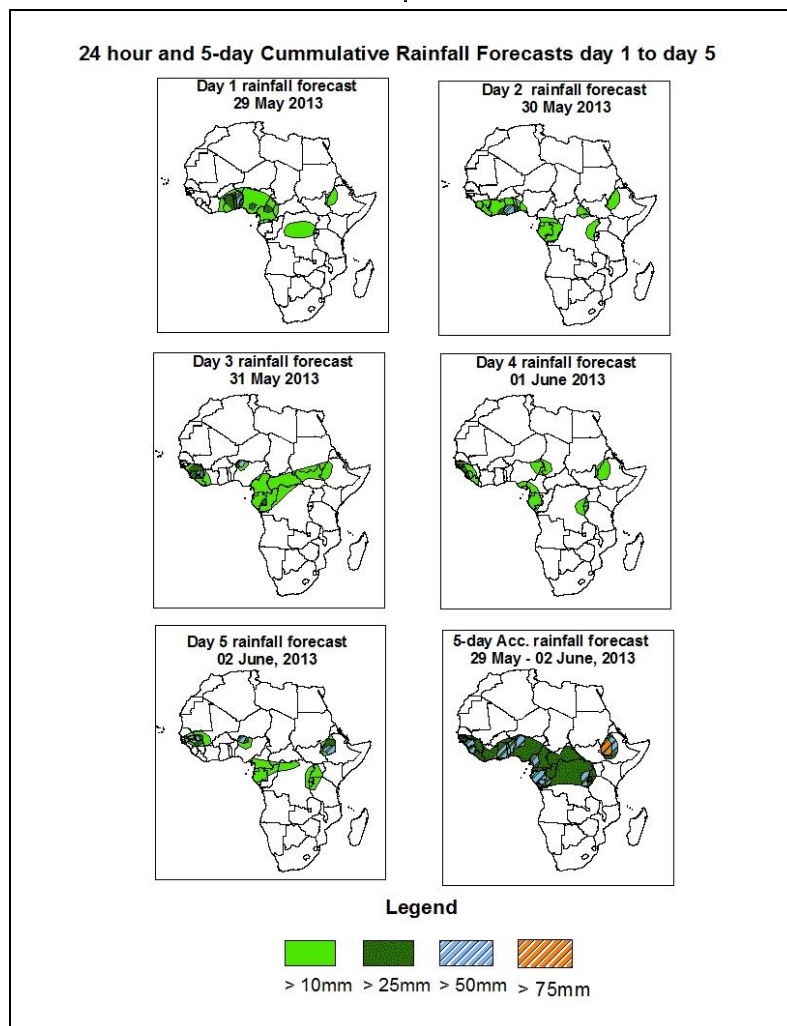


# NCEP Contributions to the WMO Severe Weather Forecasting Demonstration Project (SWFDP) and to the African Monsoon Multidisciplinary Analysis (AMMA) Initiative

## 1.0. Rainfall Forecast: Valid 06Z of 29 May – 06Z of 02 June, 2013. (Issued at 1530Z of 28 May 2013)

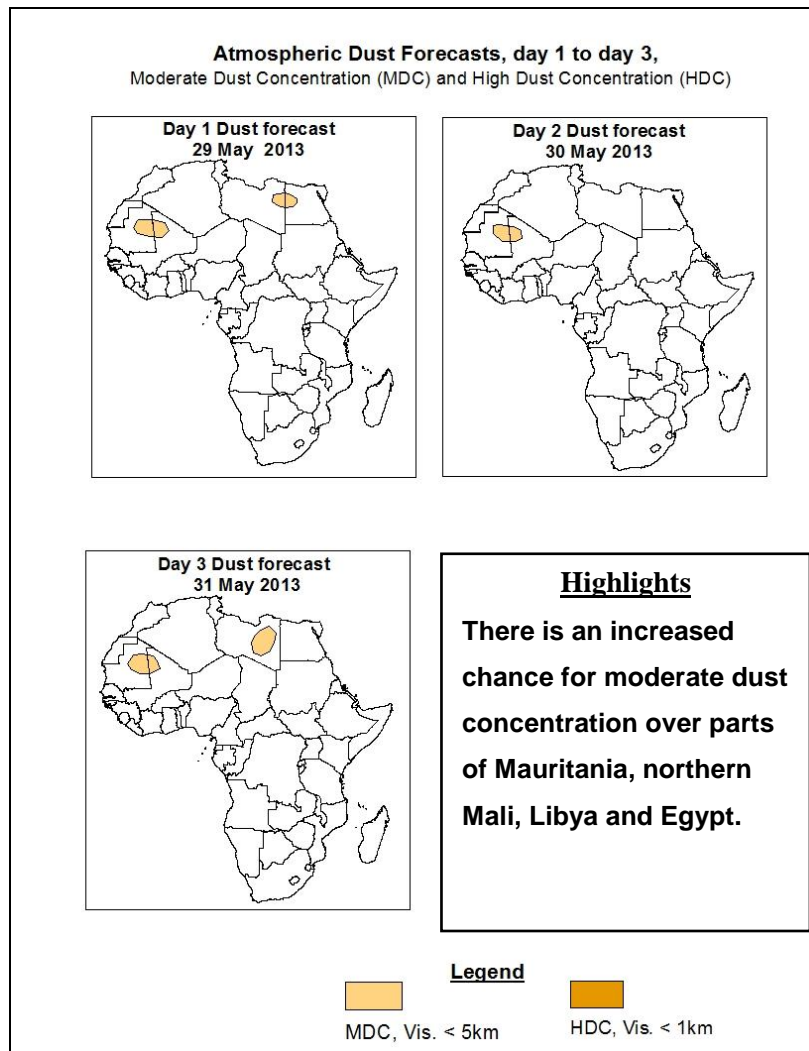
### 1.1. Twenty Four Hour Cumulative Rainfall Forecasts

The forecasts are expressed in terms of 75% probability of precipitation (POP) exceeded, based on the NCEP, UK Met Office and the ECMWF NWP outputs, the NCEP global ensemble forecasts system (GEFS) and expert assessment.



### Summary

In the next five days, westward propagating easterly wave across the Gulf of Guinea region, seasonal wind convergences near the Lake Victoria region and western Ethiopia are expected to enhance rainfall in their respective regions. Thus, there is an increased chance for moderate to heavy rainfall over, Guinea, Sierra Leone, Liberia, southern Cote D'Ivoire, Ghana, Togo, Benin, northern Nigeria, parts of Cameroon, Gabon, local areas in CAR and eastern DRC, and western Ethiopia.



## 1.2. Model Discussion: Valid from 00Z of 28 May 2013

*Model comparison (Valid from 00Z;28 May, 2013) shows all the three models are in general agreement in terms of depicting positions of the southern hemisphere subtropical highs, while they showed slight differences in depicting their intensity.*

The Azores High Pressure System over Northeast Atlantic Ocean is expected to remain intense, maintaining central pressure value ranging from 1034hpa to 1035hpa through 24 to 96 hours according to the GFS model, 1033hpa to 1034hpa according to the ECMWF model and 1033hpa to 1035hpa according to the UKMET model.

The St. Helena High Pressure System over southeast Atlantic Ocean is expected to intensify gradually during the forecast period. Its central pressure value is expected increase from 1024hpa to 1033hpa according to the GFS model, from 1027hpa

1031hpa according to the ECMWF model and from 1025 to 1032hpa according to the UKMET model.

The Mascarene high pressure system over southwestern Indian Ocean is also expected to intensify significantly during the forecast period. Its central pressure value is expected to increase from about 1020hpa to 1037hpa, according to the GFS model, from about 1020hpa to 1039hpa according to the ECMWF model and from 1022hpa to 1040hpa according to the UKMET model.

The heat lows over the central Sahel and neighboring areas are expected to deepen slightly, with their central values decreasing from about 1005hpa to 1003hpa according to the GFS model, from about 1007hpa to 1005hpa according to the ECMWF model and from about 1005hpa to 1003hpa according to the UKMET model. The seasonal lows across South Sudan and the neighboring areas are also expected to deepen with central pressure values becoming as low as 1001hpa according to the GFS model, as low as 1003hpa according to the ECMWF model as low as 1002hpa according to the UKMET model.

At the 850hpa level, broad zonal wind convergence is expected to dominate the flow across the Gulf of Guinea, central Africa, Sudan and Ethiopia. The wind speed associated with the cross-equatorial flow from the Indian Ocean exceeds 20kts over the GHA region and the adjacent areas of the Indian Ocean, gradually strengthening towards end of the forecast period. A lower-level cyclonic vortex is expected to propagate in the region between the northern Nigeria and the Guinea-Conakry coast during the forecast period.

At 700hpa level, a trough in easterly flow is expected to propagate westwards across Nigeria/Cameroon border, southern Burkina Faso/Togo/Benin, Cote D'Ivoire, Sierra Leone and Guinea through 24 to 120 hours.

At 500hpa level, wind speed associated with mid-tropospheric easterly jet exceeds 30kts over many places across the Gulf of Guinea, southern Sahel, central Africa and Sudan, with the stronger winds tending to propagate westwards across the Gulf of Guinea countries..

In the next five days, westward propagating easterly wave across the Gulf of Guinea region, seasonal wind convergences near the Lake Victoria region and western Ethiopia are expected to enhance rainfall in their respective regions. Thus, there is an increased chance for moderate to heavy rainfall over, Guinea, Sierra Leone, Liberia, southern Cote D'Ivoire, Ghana, Togo, Benin, northern Nigeria, parts of Cameroon, Gabon, local areas in CAR and eastern DRC, and western Ethiopia.

## 2.0. Previous and Current Day Weather Discussion over Africa

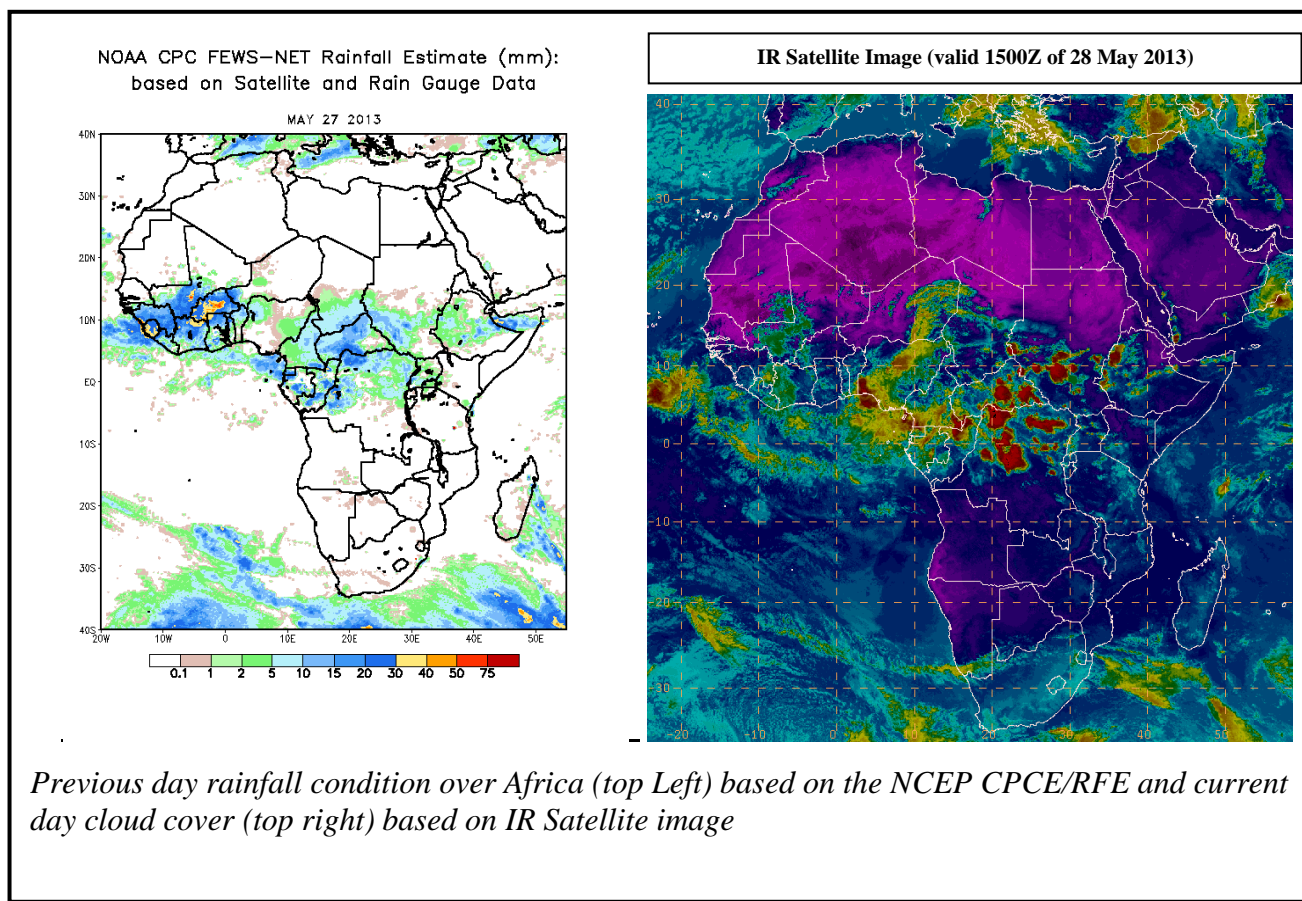
(27 May 2013 – 28 May 2013)

### 2.1. Weather assessment for the previous day (27 May 2013)

During the previous day, moderate to localized heavy rainfall was observed over parts of Guinea, Mali, Cote d'Ivoire, Burkina Faso, Togo, Benin, Nigeria, Cameroon, Gabon, Congo, CAR, DRC, south Sudan and Ethiopia.

### 2.2. Weather assessment for the current day (28 May, 2013)

Intense patches of clouds are observed over parts of Nigeria, Niger, Cameroon, Gabon, Congo, CAR, DRC, southern Sudan and Ethiopia.



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