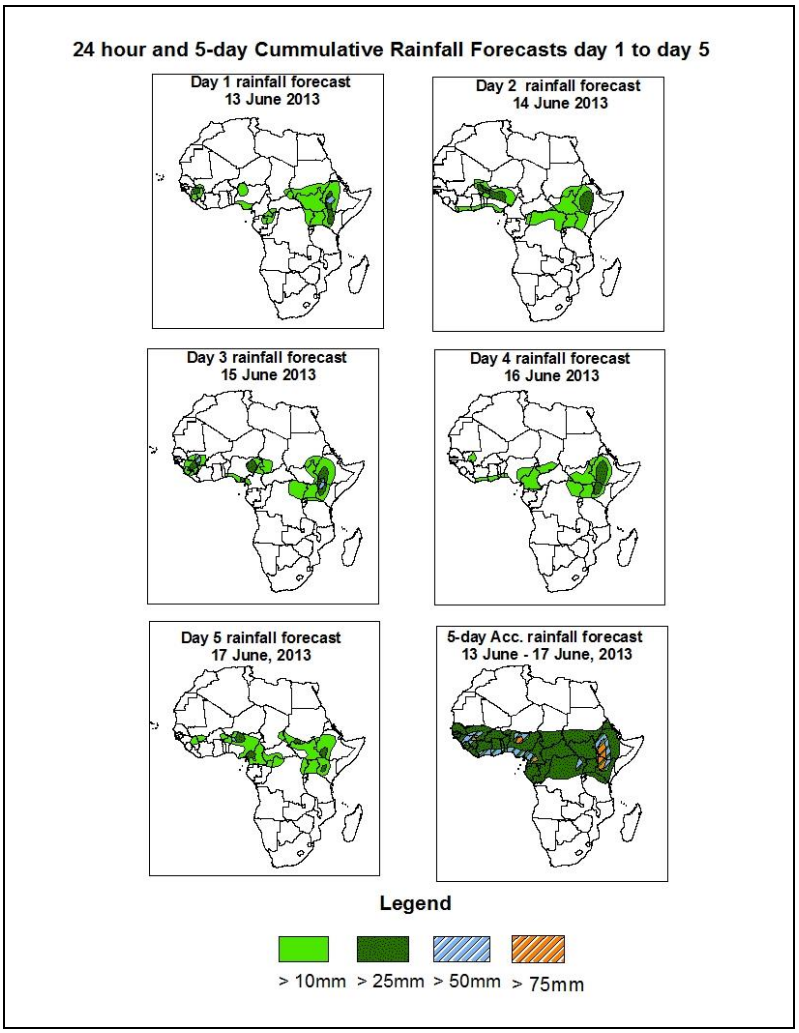
NCEP Contributions to the WMO Severe Weather Forecasting Demonstration Project (SWFDP) and to the African Monsoon Multidisciplinary Analysis (AMMA) Initiative

1.0. Rainfall Forecast: Valid 06Z of 13 June – 06Z of 17 June, 2013. (Issued at 1830Z of 12 June 2013)

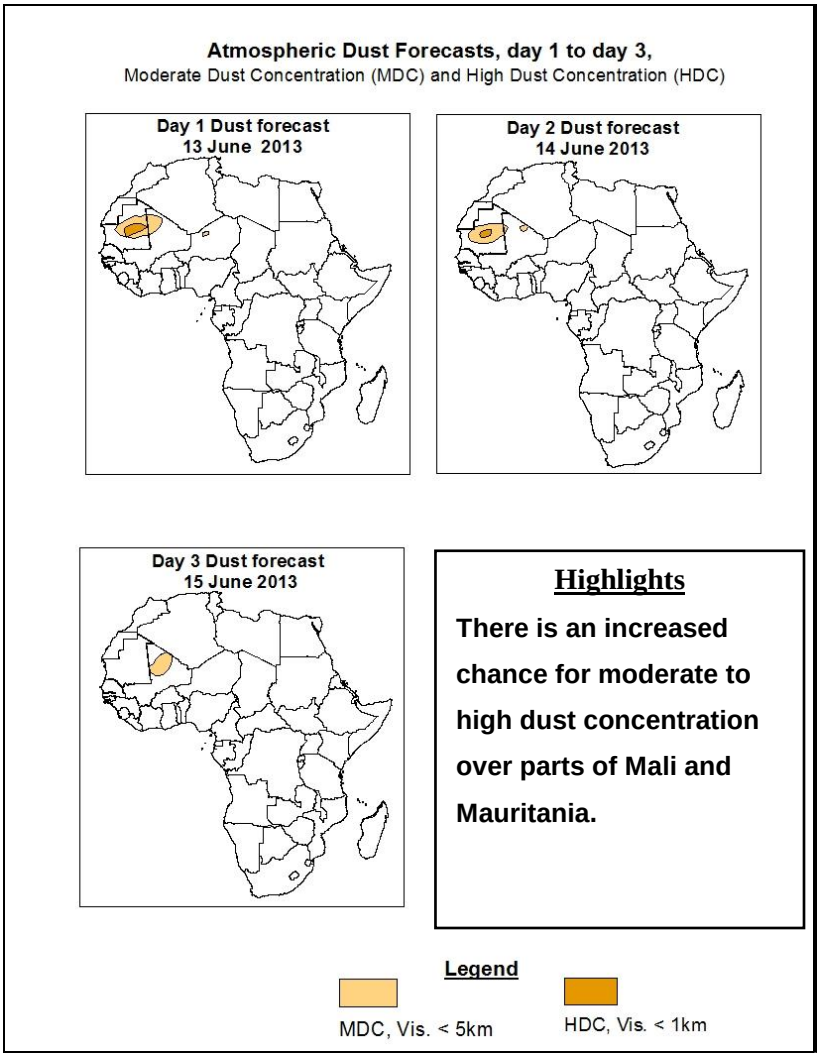
1.1. Twenty Four Hour Cumulative Rainfall Forecasts

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, the monsoon flow across West Africa and the adjacent Central Africa regions, the seasonal wind convergence in Congo Air Boundary (CAB) region, and strong cross equatorial flow, with its associated convergence over the Horn Africa are expected to enhance rainfall in their respective regions. Thus, there is an increased chance for moderate to heavy rainfall over countries along the Gulf of Guinea, southern Chad, southern Sudan, western Ethiopia, western Kenya and Northern DRC.



1.2. Model Discussion: Valid from 00Z of 12 June 2013

Model comparison (Valid from 00Z;12 June, 2013) shows all the three models are in general agreement in terms of depicting positions of the northern and southern hemisphere sub-tropical highs, while they showed slight differences in depicting their intensity.

The Azores High Pressure System over Northeast Atlantic Ocean is expected to decrease slightly through 24 to 96 hours and increase thereafter. Its central pressure value is expected to decrease from 1028hpa to 1027hpa through 24 to 96 hours according to the GFS and from 1029hpa to 1027hpa according to the ECMWF and UKMET models through the same period.

The St. Helena High Pressure System over southeast Atlantic Ocean is expected to increase during the forecast period. Its central pressure values are expected to increase from 1027hpa to 1030hpa according to the GFS model, and 1028hpa to 1030 according to ECMWF and UKMET models.

The Mascarene high pressure system over southwestern Indian Ocean is also expected to decrease through 24 to 72 hours. Its central value is expected to decrease from 1022hpa to 1019hpa through 24 to 72 hours according to the GFS model, 1025hpa to 1020hpa according to the ECMWF model and 1025hpa to 1024hpa according to the UKMET model during the 24 to 72 hours period before increasing slightly from 96 to 120 hours as depicted by all the models.

The heat lows over the central Sahel and neighboring areas are expected to deepen slightly through to 96 hours and tend to fill up thereafter. The lowest central pressure value is expected to decrease from 1005hpa to 1004hpa through 24 to 96 hours according to the GFS model, and from 1006hpa to 1005hpa according to the UKMET model. The seasonal lows across Sudan and the neighboring areas are also expected to remain weak with central pressure values varying from 1004hpa to 1008hpa according to the GFS model, maintain average value of 1008hpa according to the ECMWF and UKMET models.

At the 850hpa level, broad zonal wind convergence is expected to dominate the flow across central parts of the Sahel South of latitude 15^{o}N, and Meridional wind convergence over Sudan, eastern DRC and Ethiopia. Moist southwesterly to southerly flow over places along the Gulf of Guinea and its associated convergence over western Ethiopia is expected to maintain moderate to heavy rainfall over the region.

At 700hpa level, very strong and broad subtropical anticyclone located at about Latitude 25^{o}N in the Northern and Southern hemispheres are expected to persist and maintain northeasterly trajectory of winds during the forecast period.

At 500hpa level, wind speed associated with mid-tropospheric easterly jets are still generally weak and show common speeds of 30kts over West and East Africa. The

zone of maximum wind is expected to gradually shift westwards during the forecast period.

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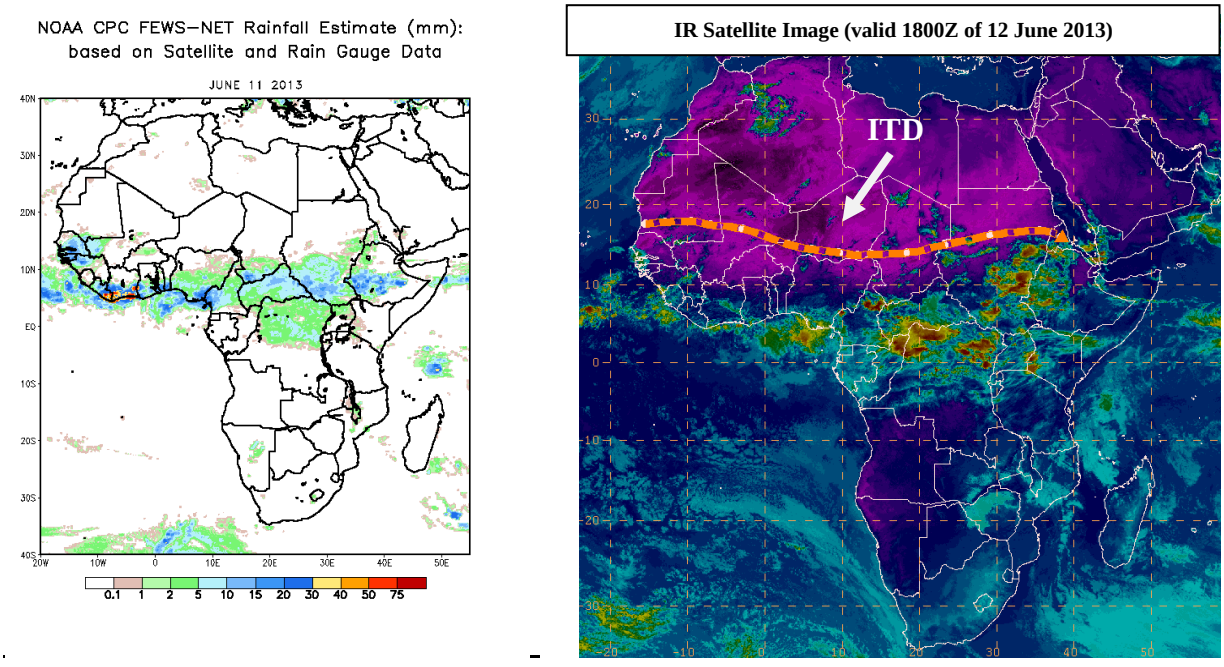
2.0. Previous and Current Day Weather Discussion over Africa (11 June 2013 – 12 June 2013)

2.1. Weather assessment for the previous day (11 June 2013)

During the previous day, moderate to locally heavy rainfall was observed over southern Nigeria, southern Chad, CAR, southern Sudan, western Ethiopia and other places along the Gulf of Guinea.

2.2. Weather assessment for the current day (12 June, 2013)

Intense clouds were observed across the coastal regions of the Gulf of Guinea and parts of central and East Africa located south of latitude 15^{o}N. The ITD is located at an average position of latitude 16^{o}N extending from Mauritania to Sudan.



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

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