

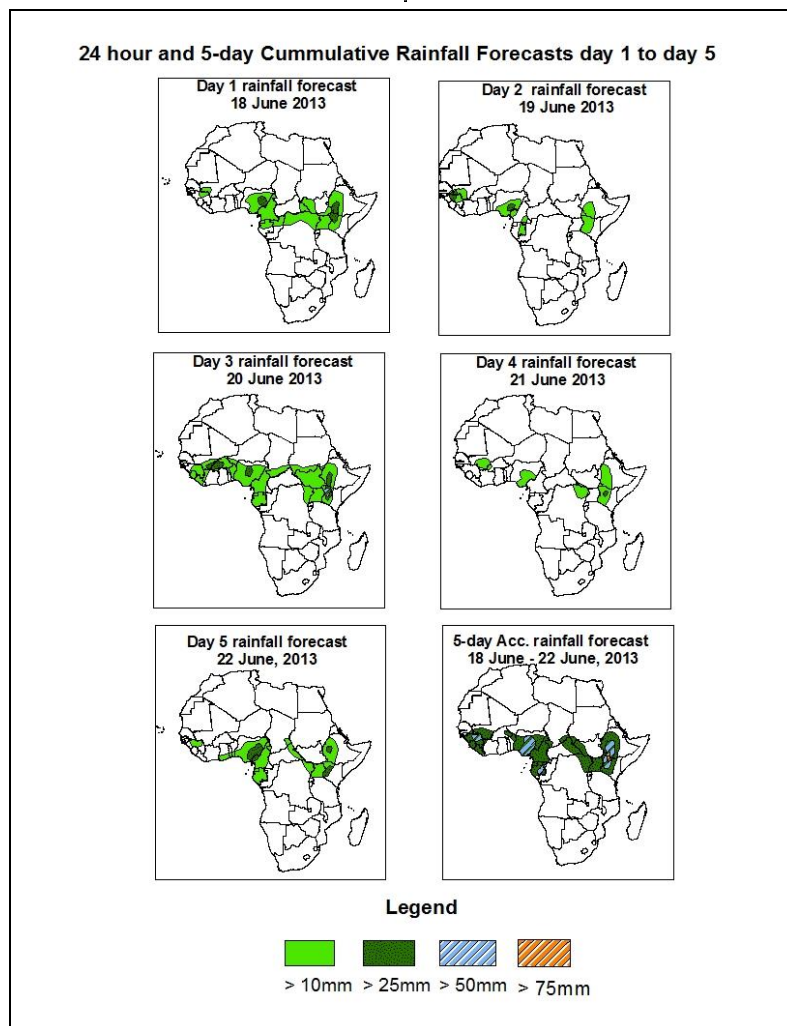


NCEP Contributions to the WMO Severe Weather Forecasting Demonstration Project (SWFDP) and to the African Monsoon Multidisciplinary Analysis (AMMA) Initiative

1.0. Rainfall Forecast: Valid 06Z of 18 June – 06Z of 22 June, 2013. (Issued at 1730Z of 17 June 2013)

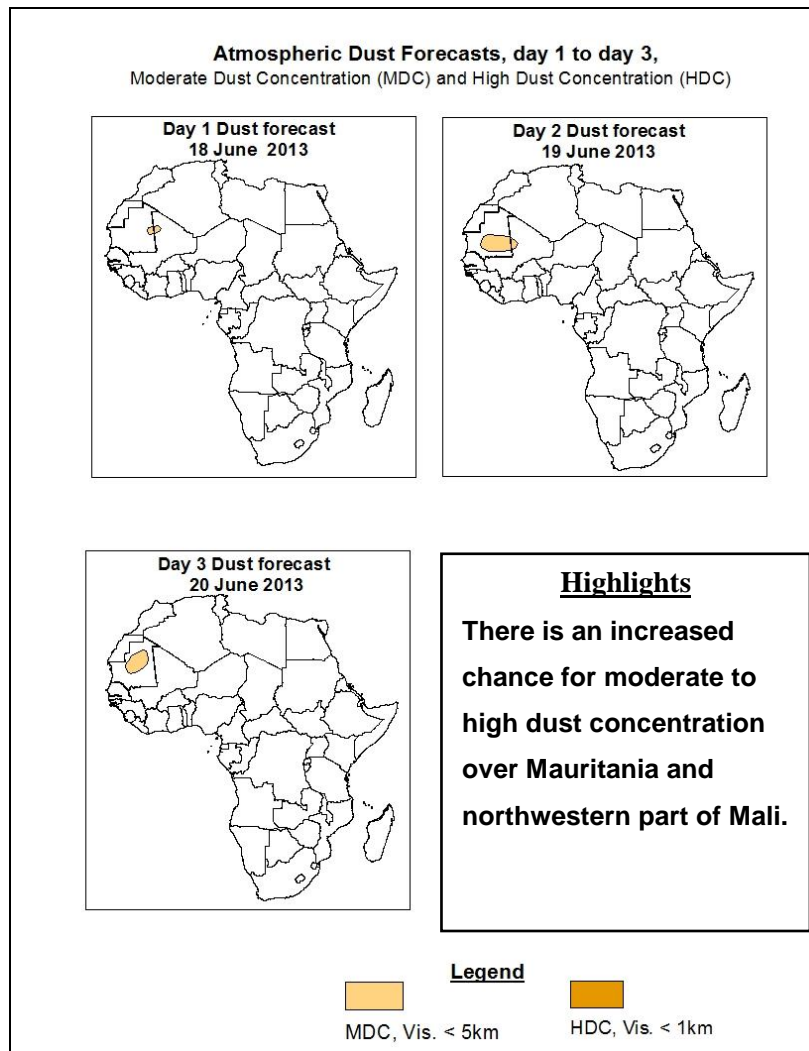
1.1. Twenty Four Hour Cumulative Rainfall Forecasts

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, a gradual and persistent weakness of the African and tropical easterly jets coupled with weak monsoon flow across West Africa, Central Africa regions and weak seasonal wind convergence in Congo Air Boundary (CAB) region is expected to reduce rainfall in these regions. However, strong cross equatorial flow, with its associated convergence over the Horn Africa is expected to enhance rainfall in some regions. Thus, there is an increased chance for moderate to heavy rainfall over western Mali, Guinea Conakry, Sierra Leone, Liberia, Nigeria Cameroun, Gabon, eastern CAR, southern Sudan, northern DRC, western Ethiopia and Kenya.



1.2. Model Discussion: Valid from 00Z of 16 June 2013

Model comparison (Valid from 00Z; 16 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.

Central pressure value associated with the Azores High Pressure System over Northeast Atlantic Ocean is expected to be quasi-stationary through 24 to 72 hours and increase thereafter. Its central pressure value is expected to decrease from 1034hpa to 1033hpa through 24 to 72 hours according to the GFS, maintain average value of 1032hpa according to the ECMWF model and 1034hpa according to UKMET model through 24 to 72 and an increase thereafter.

The St. Helena High Pressure System over southeast Atlantic Ocean is expected to decrease through 24 to 96 hours. Its central pressure values are expected to decrease from 1030hpa to 1022hpa through 24 to 96 hours according to the GFS model, 1030hpa to 1021hpa according to ECMWF model and 1030hpa to 1022hpa according to UKMET models.

The Mascarene high pressure system over southwestern Indian Ocean is also expected to weaken during the forecast period. Its central value is expected to decrease from 1031hpa to 1024hpa through 24 to 120 hours according to the GFS model, 1029hpa to 1023hpa according to the ECMWF model and 1030hpa to 1034hpa according to the UKMET model during the forecast period.

The heat lows over the central Sahel and neighboring areas are expected to deepen slightly through the forecast period. The lowest central pressure value is expected to vary between 1003 and 1005hpa during the forecast period according to the GFS model, 1005hpa to 1006hpa according to the ECMWF model and 1002hpa to 1007hpa according to the UKMET model. The seasonal lows across Sudan and the neighboring areas are also expected to remain weak and maintain central average pressure value of 1008hpa according to all the models. However, slight decrease in the central value is likely.

At the 850hpa level, broad zonal wind convergence is expected to dominate the flow across central parts of the Sahel South of latitude 16°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, a slight weakening of the broad subtropical anticyclone located at about Latitude 25°N in the Northern and Southern hemispheres are expected to maintain weak jets and favor northeasterly flow over west and central Africa during the forecast period

At 500hpa level, wind speed associated with mid-tropospheric easterly jets are still generally very weak and show common speeds of 30kts only around Niger, Mali, northern Nigeria, mali, Guinea Conakry, Burkina Faso and Senegal during the period.

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

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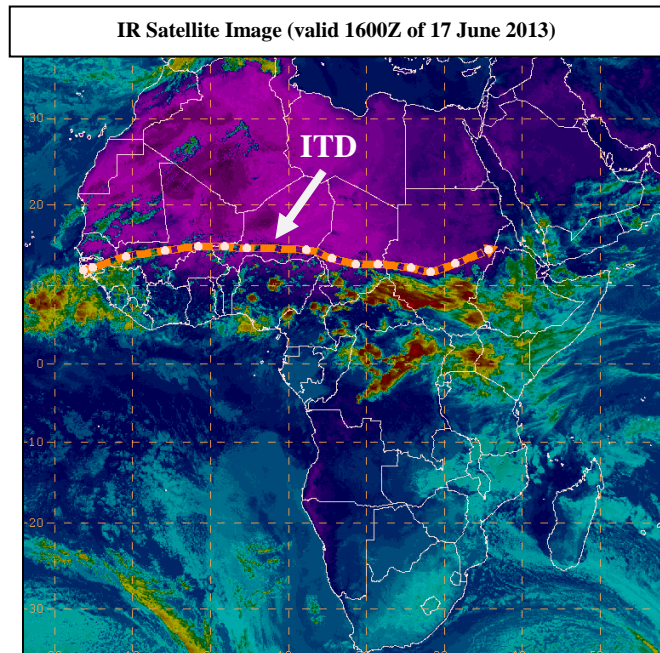
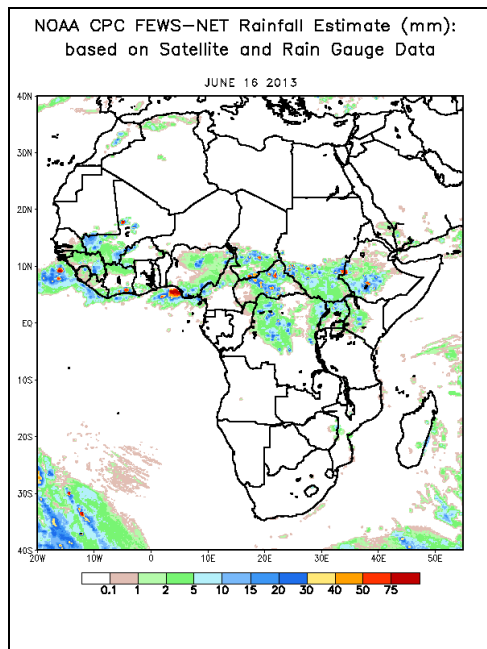
2.0. Previous and Current Day Weather Discussion over Africa (16 June 2013 – 17 June 2013)

2.1. Weather assessment for the previous day (16 June 2013)

During the previous day, moderate to locally heavy rainfall was observed over western Ethiopia, southern Sudan, northern Uganda, CAR, southern Chad, Nigeria, Mali, Guinea Conakry, Cote d'Ivoire.

2.2. Weather assessment for the current day (17 June, 2013)

Intense clouds were observed over most parts of East Africa south of latitude 16°N, Nigeria, southern Chad, Cameroun, Guinea, Sierra Leone and Liberia. The ITD is located at an average position of latitude 15°N extending from Senegal 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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