

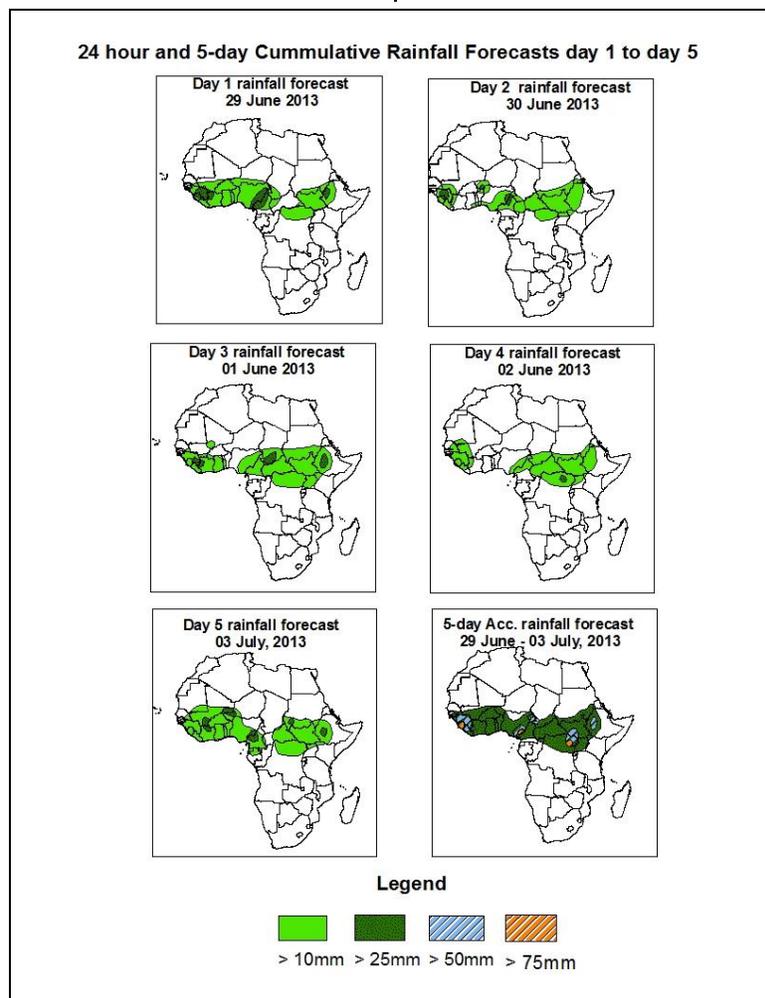


NCEP Contributions to the WMO Severe Weather Forecasting Demonstration Project (SWFDP) and to the African Monsoon Multidisciplinary Analysis (AMMA) Initiative

1.0. Rainfall Forecast: Valid 06Z of 29 June – 06Z of 03 July, 2013. (Issued at 1700Z of 28 June 2013)

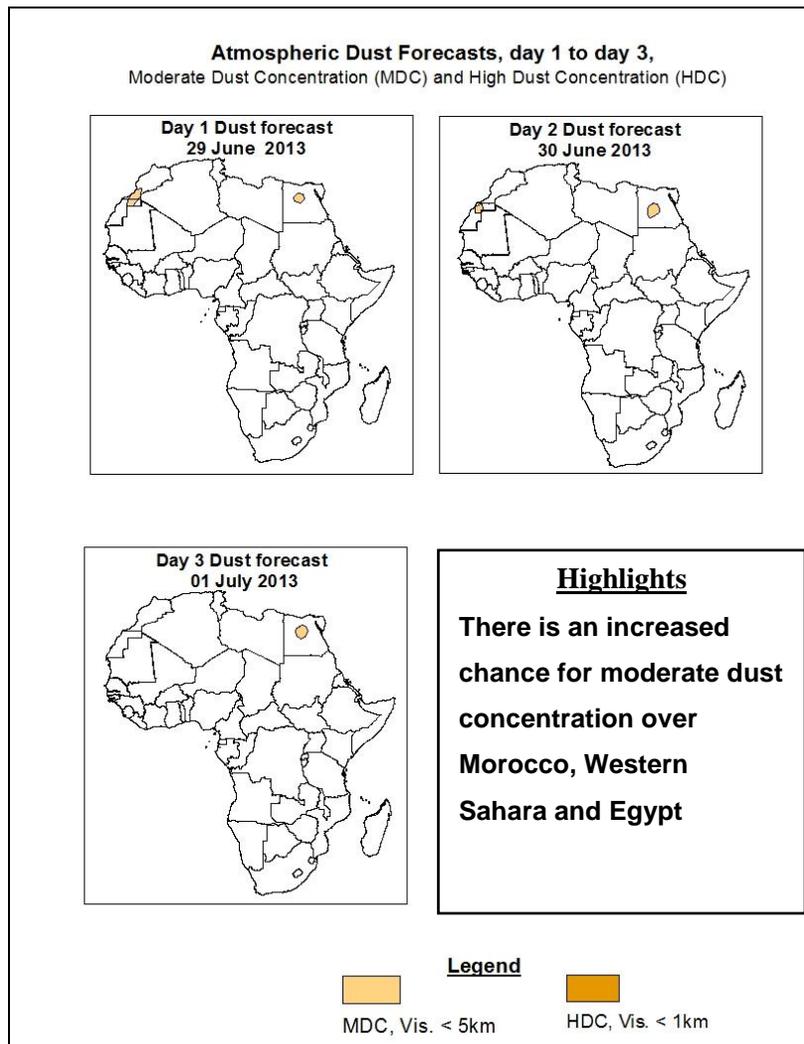
1.1. Twenty Four Hour Cumulative Rainfall Forecasts

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, moisture convergence over West Africa, Central Africa regions and the seasonal wind convergence in Congo Air Boundary (CAB) region is generally expected to increase rainfall in these regions. Strong cross equatorial flow, with its associated convergence over the Horn of Africa is expected to shift rainfall activities slightly northwards over East and West Africa and enhance precipitation in these regions. There is an increased chance for moderate to heavy rainfall over western Senegal, Guinea, Sierra Leone, Liberia, Mali, Burkina Faso, Cote d'Ivoire, Togo, Benin Republic, Nigeria, Cameroun, Chad, CAR, southern Sudan, northern DRC and western Ethiopia.



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

Model comparison (Valid from 00Z;28 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 weaken during the forecast period. Its central pressure value is expected to decrease from 1035hPa to 1029hPa during the forecast period according to the GFS model, 1034hpa to 1029hPa according to the ECMWF model, 1035hPa 1030hPa according to the UKMET model.

The St. Helena High Pressure System over southeast Atlantic Ocean is expected to intensify through 24 to 72 hours and weaken thereafter. Its central pressure value is expected to be increase from 1025hPa to 1030hPa through 24 to 72 hours according to the GFS model, 1026hPa to 1029hPa according to the ECMWF model, 1026hPa to 1030hPa according to UKMET model and then decrease through 96 to 120 hours.

The Mascarene high pressure system over southwestern Indian Ocean is also expected to weaken slightly during the forecast period. Its central value is expected to decrease from 1023hPa to 1019hPa according to the GFS model, 1027hPa to 1023hPa according to the ECMWF model, 1027hPa to 1024hPa according to the UKMETF model.

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 1004 and 1007hPa during the forecast period according to the GFS model, 1006hPa to 1008hPa according to the ECMWF model and 1004hPa to 1007hpa according to the UKMET model. The seasonal lows across the Red sea and its neighboring areas are expected to deepen slightly with values varying from 1001hPa to 1003hPa according to the models.

At the 850hPa level, zonal monsoon wind convergence is expected to dominate the flow across western and central parts of the Sahel South of latitude 16°N, while meridional wind convergence will dominate flow across Sudan, eastern DRC and Ethiopia. Periodically, anticyclone over Nigeria during 48 and 120 hours is expected to reduce coastal rainfall activities in the area. The increase in number of vortices at this level coupled with the predominant Moist southwesterly to westerly flow over West Africa and its associated convergence over western Ethiopia is expected to maintain moderate to heavy rainfall over the region.

At 700hPa level, a weakening of the broad subtropical anticyclones located at about latitude 30° in the northern and southern hemisphere is expected to favour northeasterly to easterly flow over West and central Africa during the period.

At 500hpa level, wind speed associated with mid-tropospheric easterly jet are generally weak and show common speeds of 30kts only around isolated places in Mali, Mauritania, Guinea Conakry and Senegal during the forecast period.

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

At 150hPa level, tropical easterly jets are building up gradually and show wind speeds of 50kts West and East Africa during the forecast period. However, wind speeds exceeding 70kts are common over Ethiopia, Somalia and Sudan during 72 to 120 hours period.

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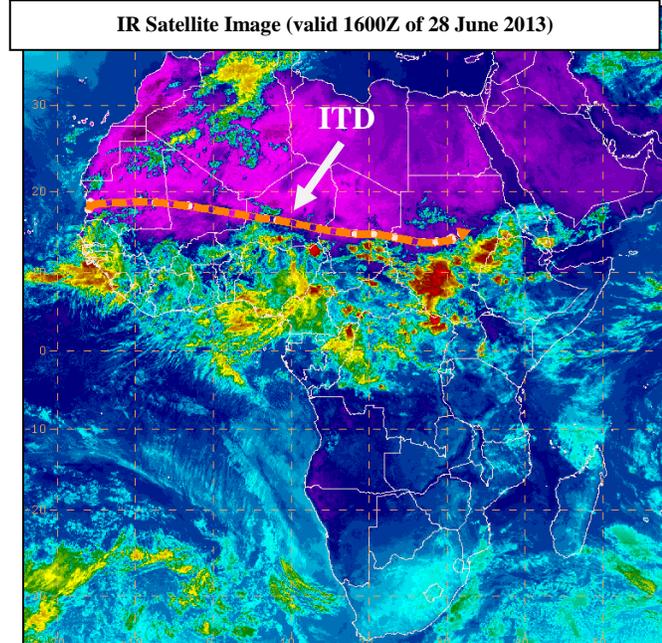
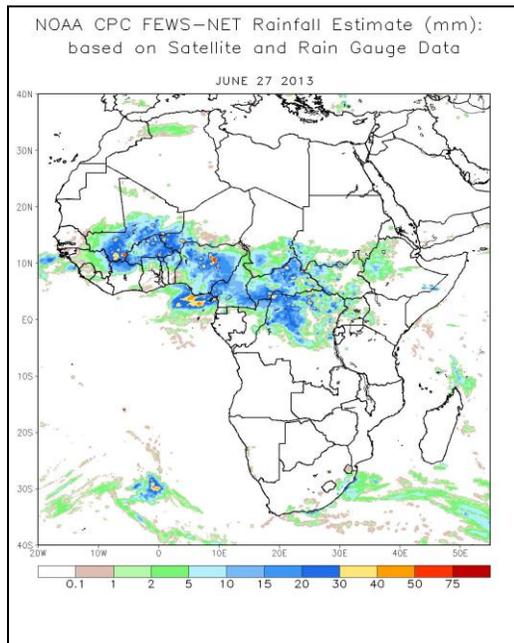
2.0. Previous and Current Day Weather Discussion over Africa (27 June 2013 – 28 June 2013)

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

During the previous day, moderate to locally heavy rainfall was observed over western Ethiopia, Southern Sudan, CAR, northern DRC, Cameroun, Nigeria, Benin, Togo, Chad, Burkina Faso, Mali and Cote d'Ivoire.

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

Intense clouds were observed over Ethiopia, western Sudan, CAR, northern DRC, Cameroun, Nigeria, southern Chad, Mali and Guinea. The ITD is located at an average position of latitude 16°N over Africa.



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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