

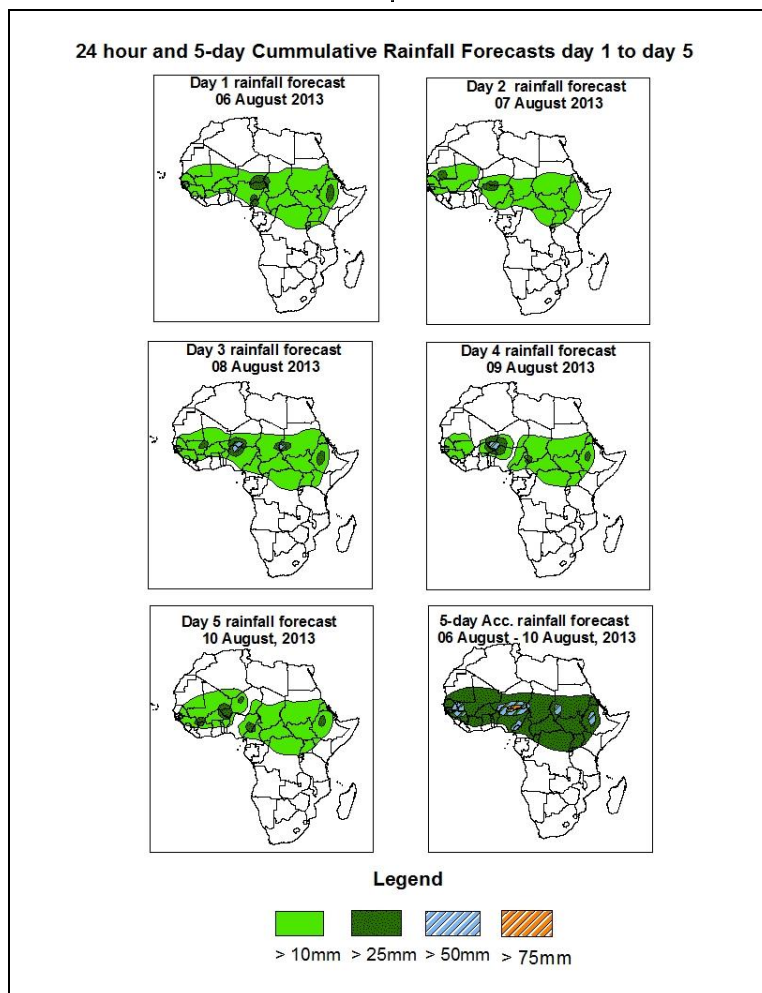


NCEP Contributions to the WMO Severe Weather Forecasting Demonstration Project (SWFDP) and to the African Monsoon Multidisciplinary Analysis (AMMA) Initiative

1.0. Rainfall Forecast: Valid 06Z of 06 August – 06Z of 10 August, 2013. (Issued at 1600Z of 05 August 2013)

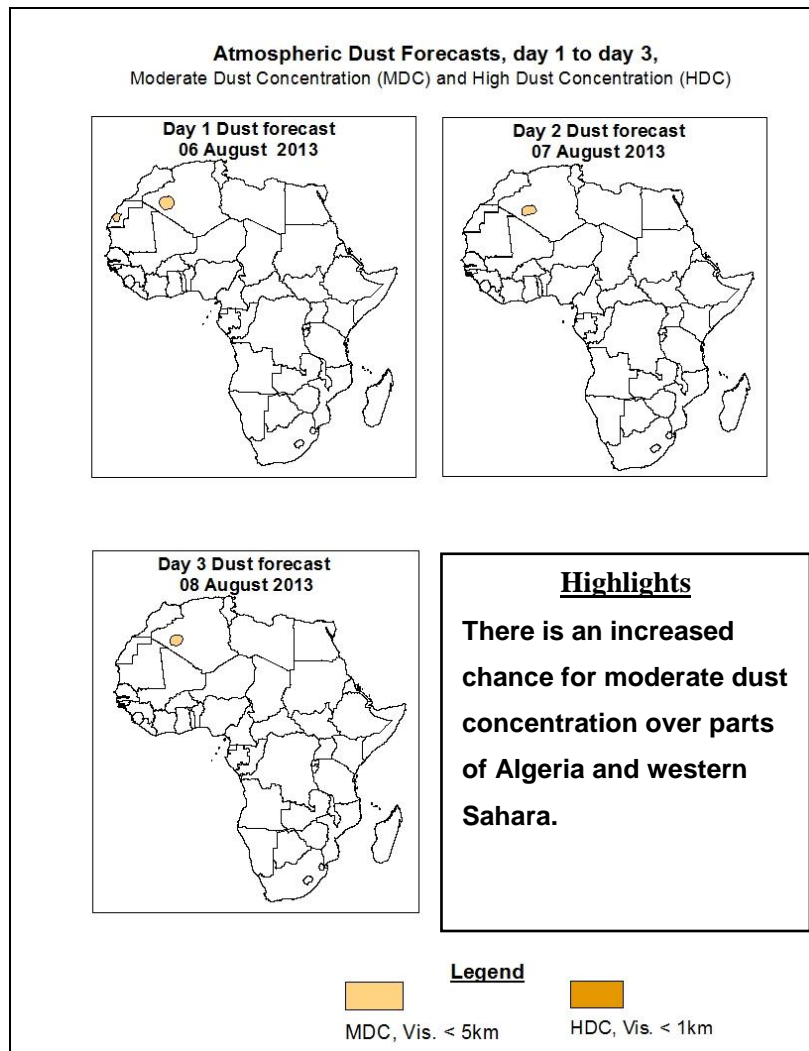
1.1. Twenty Four Hour Cumulative Rainfall Forecasts

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 zone of seasonal and monsoon wind convergence is expected to push further northwards and shift rainfall activities further to the North with chances of organized thunderstorms over the region. Existing conditions along the Gulf of Guinea coast are likely to improve slightly while strong cross equatorial flow, with its associated convergence over the Horn of Africa is expected to modulate rainfall over East Africa. Thus, there an increased chance for moderate to heavy rainfall over Senegal, Guinea, Sierra Leone, Mali, Algeria, Mauritania, Niger, northern Ghana, CIV, Cameroun, southern Chad, CAR, Gabon, Sudan, northern DRC, Uganda, Kenya, Eritrea and Ethiopia.



1.2. Model Discussion: Valid from 00Z of 05 August 2013

Model comparison (Valid from 00Z;05 August, 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 slightly weaken through 24 to 72 hours and intensify thereafter. Its central pressure value is expected to decrease from about 1030hpa to 1027hpa through 24 to 72 hours according to the GFS model, 1029hpa to 1028hpa according to the ECMWF model, 1030hpa to 1029hpa according to the UKMET model and increase thereafter.

The St. Helena High Pressure System over southeast Atlantic Ocean is expected to weaken during the forecast period. Its central pressure value is expected decrease from about 1034hpa to 1027hpa according to the GFS and UKMET models, 1034hpa 1028hpa according to the ECMWF model.

The Mascarene high pressure system over southwestern Indian Ocean is expected to weaken through 24 to 96 hours and intensify thereafter. Its central pressure value is expected to decrease from 1037hpa to 1028hpa through 24 to 96 hours according to the GFS model, 1038hpa 1028hpa according to the ECMWF model, 1038hpa to 1029hpa according to the UKMET model and increase thereafter.

The heat lows over the central Sahel and neighboring areas are expected to deepen during the forecast period. Its lowest values are expected to vary from 1001hpa to 1004hpa according to the GFS model, 1003hpa to 1005hpa according to the ECMWF model, 1000hpa to 1004hpa according to the UKMET model. The seasonal lows across the red sea and its neighboring areas are expected to fill up slightly through 24 to 48 hours and deepen through 72 to 120 hours. Pressure values are likely to vary from 1000hpa to 1003hpa according to the GFS model, 1003hpa to 1006hpa according to the ECMWF, 1002hpa to 1006hpa according UKMET model.

At the 850hPa level, monsoon wind flow is expected to dominate flow across West Africa. Zonal monsoon wind convergence is also expected to dominate the flow across central parts of the Sahel South of latitude 20°N, while meridional wind convergence will dominate flow across Sudan, eastern DRC and Ethiopia. Rainfall along the coast of Liberia, Togo, Ghana, Cote d'Ivoire and southwest Nigeria is expected to remain low as winds diverge from these areas during the forecast period. However, these conditions are likely to improve. The slight increase in number of vortices at this level and wind convergence over the region is expected to increase rainfall over the region with higher rainfall amounts likely over Sudan, Chad, Cameroun Nigeria, Burkina Faso, Mali and Guinea.

At 700hpa level, wind flow is wavy and northeasterly. Broad propagating vortices and extensive northeasterly trough lines from western Sudan to Nigeria and Ghana during the period are expected to facilitate deep convection and westward propagation of potential organized thunderstorms across the region during the period.

At 500hpa level, winds associated with mid-tropospheric easterly jet are generally weak with common speeds of 30kts over Niger, Chad, Mali, Senegal, Burkina Faso and Mauritania.

At 150hPa level, tropical easterly jets are slightly strong over West and East Africa. Speeds of 30 to 50kts are common West Africa and Chad while speeds of 50 to 60kts are common over East Africa during the period. Speeds exceeding 70kts are however observed over Ethiopia, southern Sudan and Somalia during the forecast period.

In the next five days, the zone of seasonal and monsoon wind convergence is expected to push further northwards and shift rainfall activities further to the North with chances of line squall over the region. Existing conditions along the Gulf of Guinea coast are likely to improve slightly while strong cross equatorial flow, with its associated convergence over the Horn of Africa is expected to modulate rainfall over East Africa. Thus, there an increased chance for moderate to heavy rainfall over Senegal, Guinea, Sierra Leone, Mali, Algeria, Mauritania, Niger, northern Ghana, CIV, Cameroun, southern Chad, CAR, Gabon, Sudan, northern DRC, Uganda, Kenya, Eritrea and Ethiopia.

2.0. Previous and Current Day Weather Discussion over Africa

(04 August 2013 – 05 August 2013)

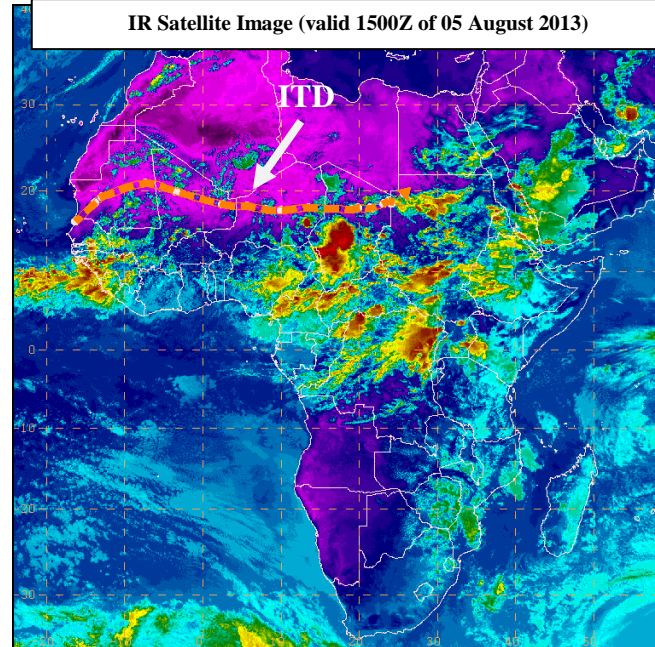
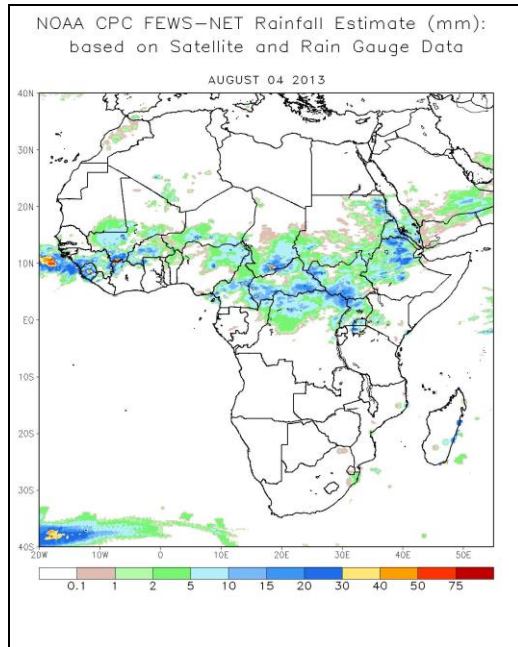
2.1. Weather assessment for the previous day (04 August 2013)

During the previous day, moderate to locally heavy rainfall was observed over Guinea, Sierra Leone, Mali, northern Cote D'Ivoire, northwest Ghana, Burkina Faso, Nigeria, Niger, Cameroun, Chad, CAR, Sudan, Uganda and Ethiopia.

2.2. Weather assessment for the current day (05 August 2013)

Intense clouds were observed over Ethiopia, Eritrea, Uganda, Kenya, Sudan, CAR, DRC, Congo Brazzaville, Cameroun, Nigeria, Chad, Niger Republic, southwest Mali, Senegal, Guinea and Sierra Leone.

The ITD is located at an average position of latitude 19°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