

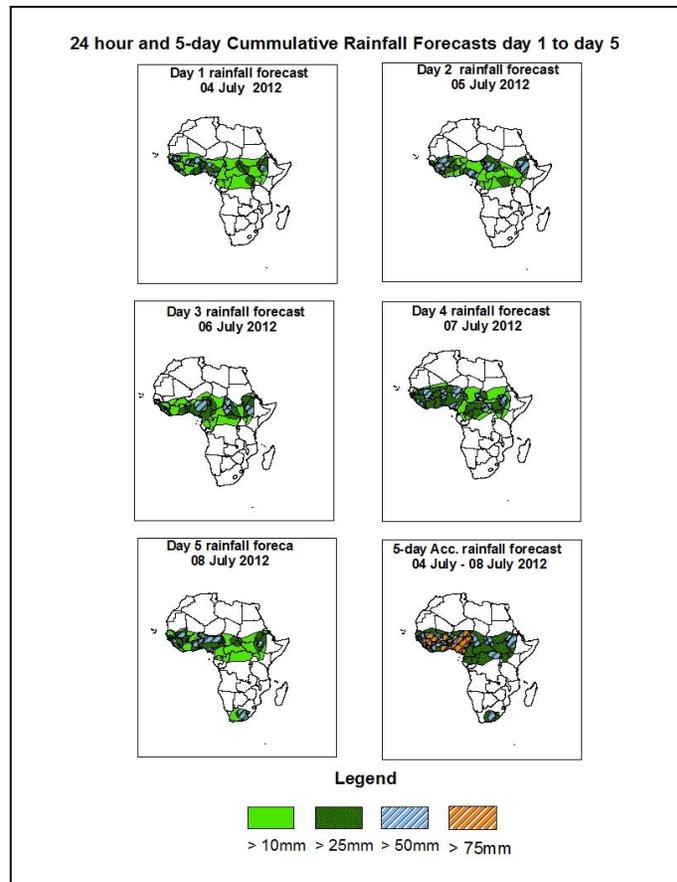


NCEP Contributions to the WMO Severe Weather Forecasting Demonstration Project (SWFDP) and to the African Monsoon Multidisciplinary Analysis (AMMA) Initiative

1.0. Rainfall Forecast: Valid 06Z of July, 04th – 06Z of July, 08th 2012. (Issued at 13:00Z of July, 03rd 2012)

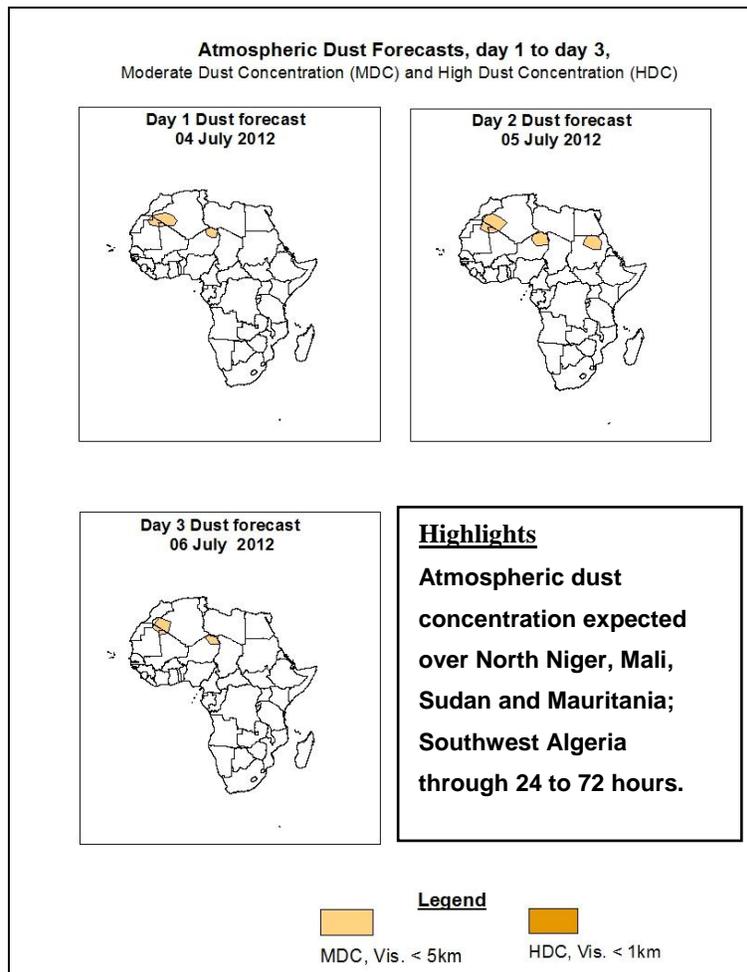
1.1. Twenty Four Hour Cumulative Rainfall Forecasts

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, ITD is expected to fluctuate between 16°E and 22°N with moderate to strong monsoon depth within 24 to 120 hours; Also the very active TEJ and the pronounced AEW propagation with 850 to 700hpa vortices are expected to enhance rainfall activities over West Ethiopia; portion of Sahel Region, Central Africa and Guinea Gulf Countries



1.3. Model Discussion: Valid from 00Z of July, 03rd 2012.

According to the GFS, ECMWF and UKMET models the heat lows are expected to deepen through 48 to 72 hours and fill up within 96 to 120 hours over Mauritania, Algeria, Mali, Niger, and Chad; while maintaining almost its core value through 24 to 120 hours over Sudan.

According to GFS model, a thermal low over West, Central and North Mauritania (1004hpa) within 24 to 48 hours is expected to decrease its core value to 1002hpa in 72 hours and tends to increase it from 1003hpa to 1006hpa through 96 to 120 hours. The second low over North Mali and South Algeria (1004hpa) in 24 hours is expected to decrease its core value to 1002hpa within 48 to 72 hours, and then increase it from 1005hpa to 1007hpa through 96 to 120 hours. The third low over North Chad and Niger (1003hpa) in 24 hours is expected to increase to 1005hpa within 48 to 72 hours and tends to decrease its core value from 1003hpa to 1004hpa 96 to 120 hours; while the

low over North Sudan (1004hpa) in 24 hours is expected to maintain almost its core value through 48 to 120 hours.

The ECMWF model shows a thermal low over West, Central and North Mauritania (1008hpa) in 24 hours is expected to decrease its core value to 1004hpa within 48 to 72 hours and tends to increase it from 1005hpa to 1006hpa through 96 to 120 hours. The second low over North Mali and South Algeria (1004hpa) in 24 hours is expected to decrease its core value to 1004hpa within 48 to 72 hours, and then increase it from 1005hpa to 1006hpa through 96 to 120 hours. The third low over North Chad and Niger (1006hpa) within 24 to 72 hours is expected to slightly increase to 1007hpa through 96 to 120 hours; while the low over North Sudan (1004hpa) in 24 hours is expected to maintain almost its core value through 48 to 120 hours.

The UKMET model shows a thermal low over West, Central and North Mauritania (1008hpa) in 24 hours is expected to decrease its core value from 1002hpa to 1001hpa within 48 to 72 hours and tends to increase it to 1003hpa through 96 to 120 hours. The second low over North Mali and South Algeria (1004hpa) in 24 hours is also expected to decrease its core value from 1002hpa to 1001hpa within 48 to 72 hours, and then increase it to 1003hpa through 96 to 120 hours. The third low over North Chad and Niger (1003hpa) within 24 to 48 hours is expected to increase from 1005hpa to 1006hpa through 72 to 120 hours; while the low over North Sudan (1004hpa) in 24 hours is expected to maintain almost its core value through 48 to 120 hours.

According to the UKMET model, the St. Helena High pressure system over South Atlantic Ocean with a core value of 1027hpa in 24 hours locates at latitude 35°S is expected to gradually increase from 1030hpa to 1035hpa by shifting southwards to latitude 40°S in 48 hours and northwards (from latitude 35°S to 30°S) through 72 to 120 hours.

According to the ECMWF model, the central pressure value of 1026hpa in 24 hours locates at latitude 30°S is expected to gradually increase from 1028hpa to 1032hpa by shifting southwards to latitude 40°S in 48 hours and northwards (from latitude 35°S to 30°S) through 72 to 120 hours

Lastly, according to the GFS model, the central pressure value of 1027hpa in 24 hours locates at latitude 35°S is also expected to gradually increase from 1029hpa to 1034hpa by shifting southwards to latitude 40°S in 48 hours and northwards (from latitude 35°S to 30°S) through 72 to 120 hours.

According to the GFS model, the Azores high pressure system over North Atlantic Ocean with its central pressure value of 1030hpa in 24 hours and locates at longitude 35°W is expected to gradually increase its core value from 1031hpa to 1032hpa within 48 to 120 hours by maintaining almost its position around longitude 35°W.

According to the ECMWF model, the central pressure value of 1028hpa within 24 to 48 hours and locates between longitude 40°W and 35°W is expected to decrease its core value from 1031hpa to 1029hpa by maintaining almost its position around longitude 35°W through 72 to 120 hours.

Lastly, according to the UKMET model, the central pressure value of 1030hpa in 24 hours and locates at longitude 40°W is expected to gradually decrease its core value from 1031hpa to 1028hpa by moving eastwards to longitude 30°W within 48 to 96 hours and westwards to longitude 35°W in 120 hours.

At 925hpa level, zone of moderate dry Northerly and Northeasterly winds (20 to 50kts) are expected to prevail over North Niger, Mali, Sudan and Mauritania; Southwest Algeria through 24 to 120 hours.

At the 850hpa level, a lower tropospheric wind convergence associated with significant West African Monsoon inflow and depth between latitude 13°N 20°N is expected to prevail over parts of Sudan, Cameroon, Chad, Central African Republic and Western Africa through 24 hours to 120 hours. Vortices are expected over Central, East and West Mauritania; South Chad; part of Central African Republic, Central Guinea Conakry. The convergence associated with the meridional arm of the ITCZ is located over part of South Sudan Republic; North Democratic Republic of Congo; West Uganda; East and South Central African Republic through 24 hours to 120 hours.

At 700hpa level, A pronounce African Easterly Waves propagating westwards is expected to affect portion of Central Africa and Sahel Region; part of Guinea Gulf Countries within 24 to 120 hours.

At 500hpa level, a wave is expected to affect South Chad and Sudan; South and West; part of Central African Republic, Cameroon and Cote d'Ivoire; North Guinea Gulf Countries; West Mali; East Senegal through 24 to 120 hours.

At 150mb, a strong Tropical Easterly Jet with a maximum core of 30 to 70 Knots will affect Southern Chad and Sudan; Part of Guinea Gulf Countries and Central African Republic through 24 to 120 Hours. Easterly winds flow will also continue to affect most part of Sahel Region.

In the next five days, ITD is expected to fluctuate between 16°E and 22°N with moderate to strong monsoon depth within 24 to 120 hours; Also the very active TEJ and the pronounced AEW propagation with 850 to 700hpa vortices are expected to enhance rainfall activities over West Ethiopia; portion of Sahel Region, Central Africa and Guinea Gulf Countries.

Atmospheric dust concentration expected over North Niger, Mali, Sudan and Mauritania; Southwest Algeria through 24 to 72 hours.

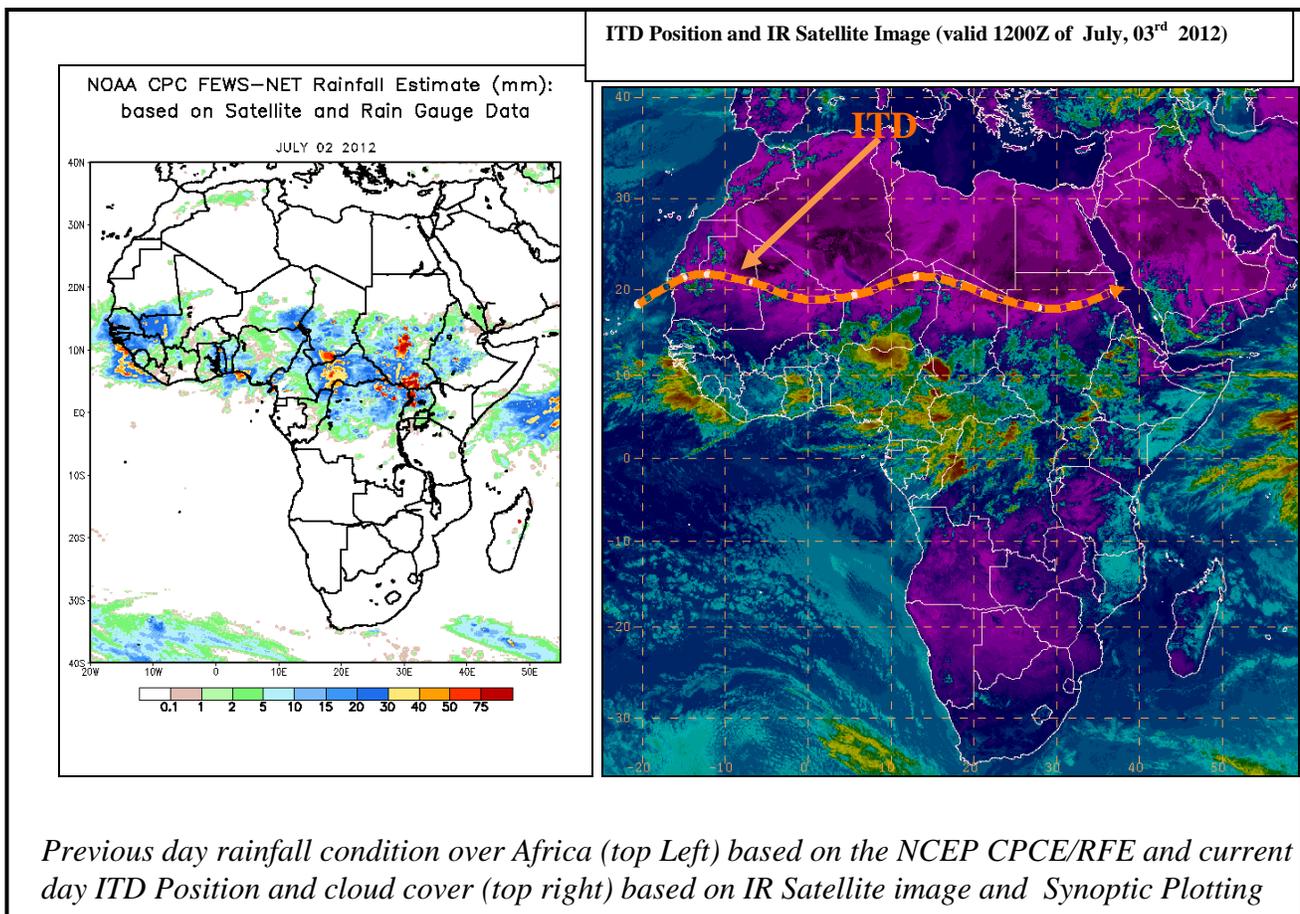
2.0. Previous and Current Day Weather Discussion over Africa (July, 02nd 2012– July, 03rd 2012)

2.1. Weather assessment for the previous day (July, 02nd 2012)

During the previous day, moderate to heavy rainfall was observed over part of Senegal, Guinea Bissau, Guinea Conakry and the Gambia; Coast Sierra Leone and Liberia; West Mali; South Mauritania; North and Central Togo; East Ghana; South and Central Benin; Central Burkina Faso; Southeast Niger; East, Northeast and South Nigeria; North, West and South Cameroon; South Chad; part of Central African and South Sudan Republic; North and Central west Democratic Republic of Congo; North and West Uganda; South Sudan; West Ethiopia.

2.2. Weather assessment for the current day (July, 03rd 2012)

Convective activities observed across south Mauritania; West Mali; East Senegal; Northeast and Coastal Guinea Conakry, and Sierra Leone; Central and North Ghana; South Niger; North and South Nigeria; Southwest Chad; North and East and West Cameroon; South Chad; West Central African Republic; South and West of South Sudan Republic; North Democratic Republic of Congo; West Ethiopia and East Congo.



Authors: Abdou Adam Abdoul-Aziz Abebe, (Direction de la Meteorologie Nationale du Niger/ACMAD / CPC-African Desk); abdoul.adam@noaa.gov
Eugene V. S. Gar-Glahn, (Liberia Meteorological Service / CPC-African Desk); eugene.gar-glahn@noaa.gov