

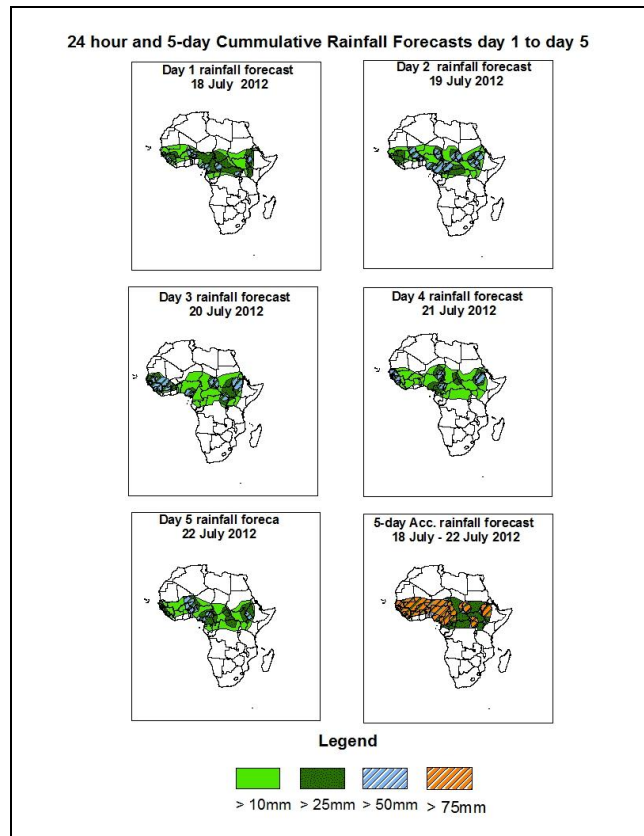


NCEP Contributions to the WMO Severe Weather Forecasting Demonstration Project (SWFDP) and to the African Monsoon Multidisciplinary Analysis (AMMA) Initiative

1.0. Rainfall Forecast: Valid 06Z of July, 18th – 06Z of July, 22nd 2012. (Issued at 14:00Z of July, 17th 2012)

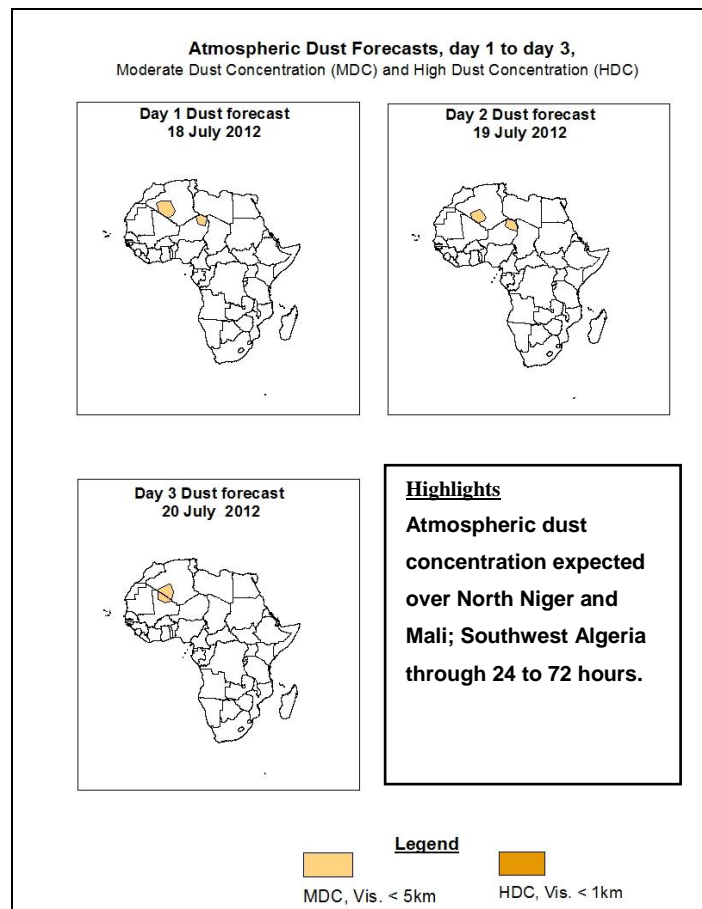
1.1. Twenty Four Hour Cumulative Rainfall Forecasts

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 23°N with moderate to strong monsoon depth within 24 to 120 hours; Also the TEJ, AEJ and the AEW propagation with 850 to 700hpa vortices are expected to enhance rainfall activities over West Sudan; East, West and South Chad; North and Southwest Cameroon; North and Southeast Nigeria; Portion Central and South Sahel; North Guinea Gulf Countries; Part of Western Sahel, Sierra Leone and Guinea Conakry.



1.3. Model Discussion: Valid from 00Z of July, 17th 2012.

According to the GFS, ECMWF and UKMET models the heat lows are expected to deepen, remain quasi-stationary, and then fill up and vice versa through 24 to 120 hours over Mauritania, Mali, Algeria, Niger, Chad and Sudan.

According to GFS model, a thermal low over West, Central and North Mauritania (1008hpa) within 24 to 72 hours is expected to decrease its core value to 1006hpa in 96 hours and tends to increase to 1008hpa in 120 hours. The second low over North Mali and South Algeria (1008hpa) in 24 hours is also expected to decrease its core value from 1007hpa to 1004hpa through 48 to 72 hours, then increases from 1006hpa to 1008hpa within 96 to 120 hours. The third low over North Chad and Niger (1005hpa) in 24 hours is expected to slightly decrease its core value to 1004hpa in 48 hours and tends to increase it from 1006hpa to 1007hpa through 72 to 96 hours, then decreases it to 1005hpa in 120 hours; while the low over North Sudan (1002hpa) in 24 hours is

expected to increase its core value from 1004hpa to 1006hpa through 48 72 hours and tends to decrease to 1003hpa in 96 hours , then slightly increases it to 1004hpa in 120 hours.

The ECMWF model shows a thermal low over West, Central and North Mauritania (1009hpa) in 24 hours is expected to increase its core value to 1010hpa in 48 hours and tends to decrease it to 1007hpa to 1006hpa in 72 hours, then increases it to 1010hpa in 96 hours and finally decrease to 1007hpa in 120 hours. The second low over North Mali and South Algeria (1009hpa) in 24 hours is also expected to decrease its core value from 1008hpa to 1006hpa within 48 to 72 hours, and then increase to 1008hpa through 96 to 120 hours. The third low over North Chad and Niger (1010hpa) in 24 hours is expected to decrease its core value to 1007hpa within 48 to 72 hours and tends to increase from 1009hpa to 1010hpa through 96 to 120 hours; while the low over North Sudan (1006hpa) 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 gradually decrease its core value from 1006hpa to 1003hpa within 48 to 72 hours and tends to increase from 1004hpa to 1006hpa through 96 to 120 hours. The second low over North Mali and South Algeria (1008hpa) in 24 hours is expected to gradually decrease its core value from 1006hpa to 1005hpa within 48 to 72 hours and tends to increase to 1006hpa in 96 hours, and then slightly decrease to 1005hpa in 120 hours. The third low over North Chad and Niger (1008hpa) in 24 hours is expected to decrease its core value to 1005hpa through 48 to 72 hours and tends to slightly increase to 1006hpa in 96 hours, then decrease to 1005hpa in 120 hours; while the low over North Sudan (1004hpa) in 24 hours is expected to maintain almost its core value within 48 to 120 hours.

According to the UKMET model, the St. Helena High pressure system over South Atlantic Ocean with a core value of 1033hpa in 24 hours locates at latitude 55°S is expected to slightly increase to 1034hpa in 48 hours by shifting northwards around latitude 50°S and tends to gradually decrease from 1029hpa to 1027hpa within 72 to 120 hours by moving to the north from latitude 50°S to 35°S.

According to the ECMWF model, the central pressure value of 1032hpa in 24 hours locates at latitude 55°S is expected to slightly increase to 1034hpa in 48 hours by shifting northwards around latitude 50°S and tends to gradually decrease from 1028hpa to 1027hpa through 72 to 120 hours by moving to the north from latitude 50°S to 30°S.

Lastly, according to the GFS model, the central pressure value of 1033hpa in 24 hours locates at latitude 55°S is expected to slightly increase to 1034hpa in 48 hours by shifting northwards around latitude 50°S and tends to gradually decrease from 1027hpa to 1025hpa within 72 to 120 hours by moving to the north from latitude 50°S to 35°S.

According to the GFS model, the Azores high pressure system over North Atlantic Ocean with its central pressure value of 1030hpa through 24 to 48 hours and locates between longitude 30°W to 40°W is expected to gradually decrease its core value from 1028hpa to 1026hpa within 72 to 96 hours by shifting westwards from longitude 40°W to 50°W, and tends to slightly increase its core value to 1027hpa by moving to east from longitude 50°W to 30°W in 120 hours.

According to the ECMWF model, the central pressure value of 1031hpa in 24 hours and locates at longitude 30°W is also expected gradually decrease its core value from 1030hpa to 1025hpa by shifting westwards from longitude 40°W to 50°W through 48 to 96 hours and eastwards from longitude 50°W to 30°W in 120 hours.

Lastly, according to the UKMET model, the central pressure value of 1030hpa within 24 to 48 hours and locates between longitude 30°W to 40°W is expected to decrease its core value from 1028hpa to 1026hpa in 48 hours by shifting eastwards from longitude 40°W to 30°W through 48 to 96 hours, and tends increase its core value to 1028hpa by maintaining almost the same position around longitude 30°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 and Mali; Southwest Algeria through 24 to 72 hours.

At the 850hpa level, a lower tropospheric wind convergence associated with strong and significant West African Monsoon inflow and depth between latitude 14°N 20°N is expected to prevail over parts of Sudan, Cameroon, Chad, Central African Republic and Western Africa within 24 hours to 120 hours. Vortices are expected over East and Central Mauritania; North and East Mali; North and Central and West Central African Republic; North, East and Central Niger; West Chad. 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, the African Easterly Jet (AEJ) is expected to affect South; North and East Senegal; North Benin; The African Easterly Waves (AEW) is also expected to propagate westwards waves to affect portion of Guinea Gulf Countries and Central Africa; part of West Africa; South Chad; within 24 to 120 hours.

At 500hpa level, a wave is expected to affect part of Sahel Region, portion of Guinea Gulf Countries; West Sudan; East, West and South Chad through 24 to 120 hours.

At 150mb, the Tropical Easterly Jet with a maximum core of 35 to 70 Knots will affect Southern Chad and Sudan; Part of Ethiopia, Guinea Gulf Countries and Central African Republic through 24 to 120 Hours. Easterly winds flow will also continue to affect most part of West Africa.

In the next five days, ITD is expected to fluctuate between 16°E and 23°N with moderate to strong monsoon depth within 24 to 120 hours; Also the TEJ, AEJ and the AEW propagation with 850 to 700hpa vortices are expected to enhance rainfall activities over West Sudan; East, West and South Chad; North and Southwest Cameroon; North and Southeast Nigeria; Portion Central and South Sahel; North Guinea Gulf Countries; Part of Western Sahel, Sierra Leone and Guinea Conakry.

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

2.0. Previous and Current Day Weather Discussion over Africa

(July, 16th 2012– July, 17th 2012)

2.1. Weather assessment for the previous day (July, 16th 2012)

During the previous day, moderate to heavy rainfall was observed over West and Southeast Senegal; West and Southeast Mali; East, North and West Guinea Conakry; North and West Liberia; West Sierra Leone; North Nigeria and Congo; North and West Central African Republic; North democratic Republic of Congo; South Sudan; East South Sudan Republic; West Ethiopia.

2.2. Weather assessment for the current day (July, 17th 2012)

Convective activities observed across West Chad; North Cameroon; East and North Nigeria; East Central African Republic and Congo; Southeast Sudan; West Ethiopia; South, Central and West South Sudan Republic; North, West and East Democratic Republic of Congo; Northwest Uganda.

