

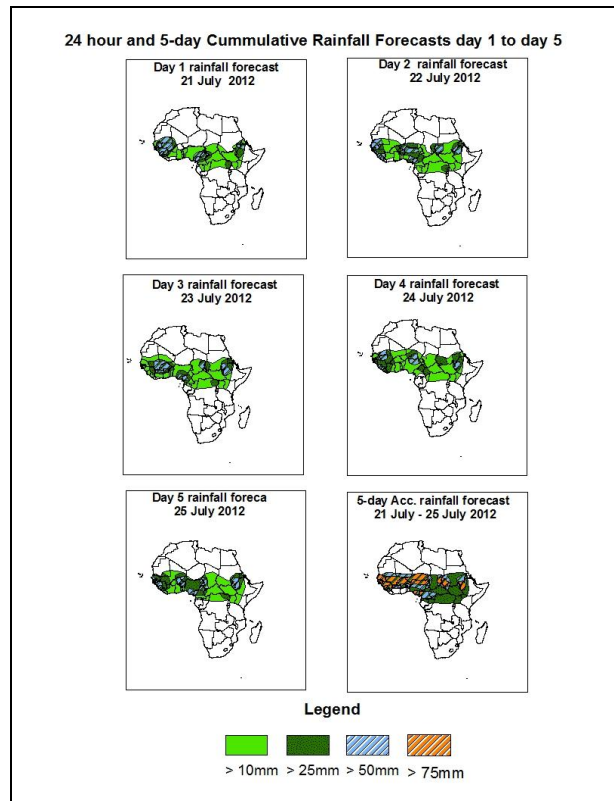


NCEP Contributions to the WMO Severe Weather Forecasting Demonstration Project (SWFDP) and to the African Monsoon Multidisciplinary Analysis (AMMA) Initiative

1.0. Rainfall Forecast: Valid 06Z of July, 21st – 06Z of July, 25th 2012. (Issued at 12:30Z of July, 20th 2012)

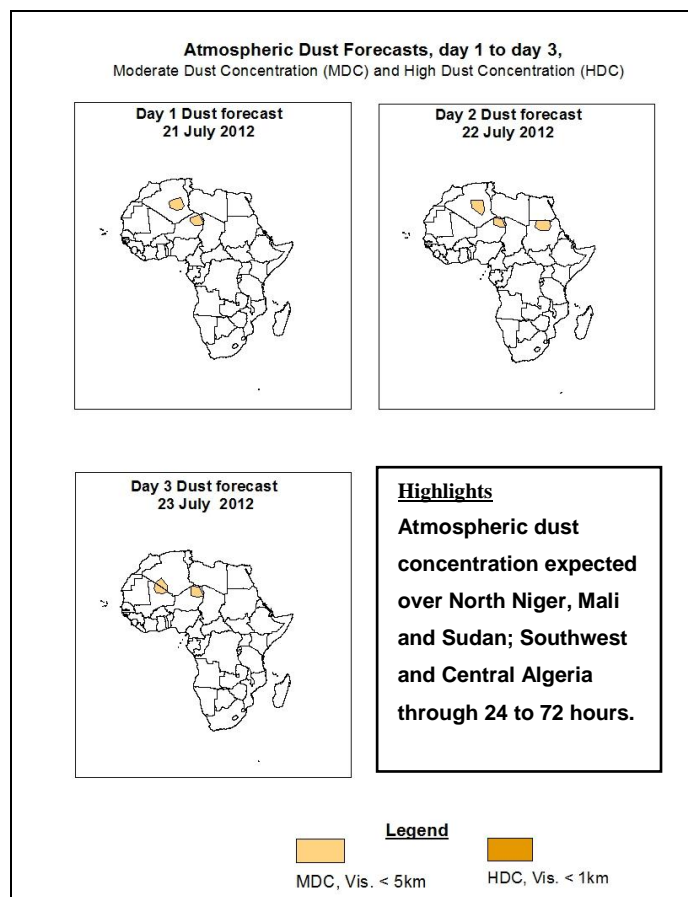
1.1. Twenty Four Hour Cumulative Rainfall Forecasts

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 17°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 South Sudan; East, West and South Chad; North and Southwest Cameroon; North and Southeast Nigeria; Part of Central, West and South Sahel; portion of North Guinea Gulf Countries, Sierra Leone, Central African Republic and Guinea Conakry; West Ethiopia; East South Sudan Republic.



1.3. Model Discussion: Valid from 00Z of July, 20th 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 North Mauritania (1007hpa) in 24 hours is expected to increase its core value to 1011hpa in 48 hours and tends to decrease from 1010hpa to 1005hpa within 72 to 120 hours. The second low over North Mali and South Algeria (1009hpa) in 24 hours is expected to slightly increase its core value to 1010hpa in 48 hours, then decrease from 1006hpa to 1004hpa through 72 to 96 hours and tends to slightly increase to 1005hpa in 120 hours. The third low over North Chad and Niger (1006hpa) in 24 hours is expected to increase its core value to 1010hpa in 48 hours and tends to decrease from 1004hpa to 1003hpa within 72 to 96 hours, then increase to 1005hpa in 120 hours; while the low over North Sudan (1006hpa) through 24 to 72 hours is expected to decrease its core value to 1004hpa in 96 hours and tends to increase to 1006hpa in 120 hours.

The ECMWF model shows a thermal low over North Mauritania (1009hpa) in 24 hours is expected to increase its core value to 1012hpa in 48 hours and tends to decrease from 1010hpa to 1006hpa through 72 to 120 hours. The second low over North Mali and South Algeria (1010hpa) within 24 to 48 hours is expected to decrease its core value from 1006hpa to 1003hpa through 72 to 96 hours, and then slightly increase to 1005hpa in 120 hours. The third low over North Chad and Niger (1008hpa) within 24 to 48 hours is expected to decrease its core value to 1006hpa through 72 to 96 hours and tends to slightly decrease to 1007hpa in 120 hours; while the low over North Sudan (1006hpa) in 24 hours is expected to maintain almost its core value within 48 to 120 hours.

The UKMET model shows a thermal low over North Mauritania (1006hpa) in 24 hours is expected to increase its core value to 1010hpa in 48 hours and tends to decrease from 1008hpa to 1004hpa through 72 to 96 hours, then increase to 1006hpa in 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 1000hpa within 48 hours to 120 hours. The third low over North Chad and Niger (1005hpa) in 24 hours is expected to slightly increase its core value to 1006hpa in 48 hours and tends to decrease to 1004hpa in 72 hours; then increase to 1006hpa in 96 hours, and finally decrease to 1004hpa in 120 hours; while the low over North Sudan (1006hpa) through 24 to 72 hours is expected to decrease its core value to 1004hpa within 96 to 120 hours.

According to the UKMET model, the St. Helena High pressure system over South Atlantic Ocean with a core value of 1024hpa in 24 hours locates at latitude 20°S is expected to increase from 1026hpa to 1027hpa to 1024hpa by shifting northwards from latitude 30°S to 25°S through 48 to 72 hours and tends to decrease from 1026hpa to 1024hpa by moving to the south from latitude 30°S to 25°S in 120 hours.

According to the ECMWF model, the central pressure value of 1024hpa in 24 hours locates at latitude 25°S is expected to increase from 1026hpa to 1027hpa by maintaining almost the same position around latitude 25°S within 48 to 72 hours and tends to decrease from 1026hpa to 1025hpa by moving to the south from latitude 25°S to 30°S through 96 to 120 hours.

Lastly, according to the GFS model, the central pressure value of 1024hpa in 24 hours locates at latitude 25°S is expected to increase from 1026hpa to 1027hpa by shifting southwards to latitude 30°S in 48 hours and northwards to latitude 25°S in 72 hours, and tends to gradually decrease from 1026hpa to 1024hpa through 96 to 120 hours by moving to the south from latitude 25°S to 30°S.

According to the GFS model, the Azores high pressure system over North Atlantic Ocean with its central pressure value of 1026hpa within 24 to 48 hours and locates at between longitude 50°W and 30°W is expected to slightly increase its core value to 1027hpa in 72 hours, then decrease to 1026hpa in 96 hours by maintaining almost the same position around longitude 30°W and slightly increase to 1027hpa by moving westwards from longitude 30°W to 35°W in 120 hours.

According to the ECMWF model, the central pressure value of 1026hpa in 24 hours and locates at longitude 50°W is expected to decrease its core value to 1025hpa in 48 hours by shifting eastwards to longitude 20°W, then increase to 1026hpa in 72 hours by moving westwards to longitude 25°W and decrease its core value from 1024hpa to 1023hpa by shifting to the west from longitude 25°W to 40°W through 96 to 120 hours.

Lastly, according to the UKMET model, the central pressure value of 1026hpa within 24 hours and locates between longitude 50°W and 30°W is expected to slightly increase its core value to 1027hpa in 72 hours by maintaining the same position around longitude 30°W, then decrease to 1024hpa in 96 hours by moving westwards from longitude 30°W to 35°W and tends increase its core value to 1026hpa in 120 hours by shifting eastwards from longitude 35°W to 30°W.

At 925hpa level, zone of moderate dry Northerly and Northeasterly winds (20 to 50kts) are expected to prevail over North Niger, Mali and Sudan; Southwest and Central 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 15°N 21°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 South

Mauritania; South, North and Central Niger; Coastal Senegal; North Chad; South Sudan and Cameroon; West Burkina Faso; North Cote d'Ivoire; West Mali. 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 and West Mali; East South and West Mauritania; West Niger; Northeast and Central Nigeria; North Burkina Faso; North Cameroon; The African Easterly Waves (AEW) is also expected to propagate westwards waves to affect part of Guinea Gulf Countries and West Africa; portion of Central Africa within 24 to 120 hours.

At 500hpa level, a wave is expected to affect part of Sahel Region, Guinea Gulf Countries and Central African Republic; 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 80 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 17°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 South Sudan; East, West and South Chad; North and Southwest Cameroon; North and Southeast Nigeria; Part of Central, West and South Sahel; portion of North Guinea Gulf Countries, Sierra Leone, Central African Republic and Guinea Conakry; West Ethiopia; East South Sudan Republic.

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

2.0. Previous and Current Day Weather Discussion over Africa

(July, 19th 2012– July, 20th 2012)

2.1. Weather assessment for the previous day (July, 19th 2012)

During the previous day, moderate to heavy rainfall was observed over Southeast Mauritania and Senegal; West Mali; Part of Guinea Conakry and Sierra Leone; East, Central and West Burkina Faso; North Togo; Southeast Nigeria; South Chad; North, Central and South Central African Republic; North Democratic Republic of Congo; West Ethiopia.

2.2. Weather assessment for the current day (July, 20th 2012)

Convective activities observed across Southeast Senegal; West Mali; North Guinea Conakry; Portion of Sierra Leone and ; Northeast and Southeast Nigeria; ; South Sudan and Chad; West Central African Republic; North Cameroon; Northeast Democratic Republic of Congo; West Ethiopia; Southwest South Sudan Republic.

