

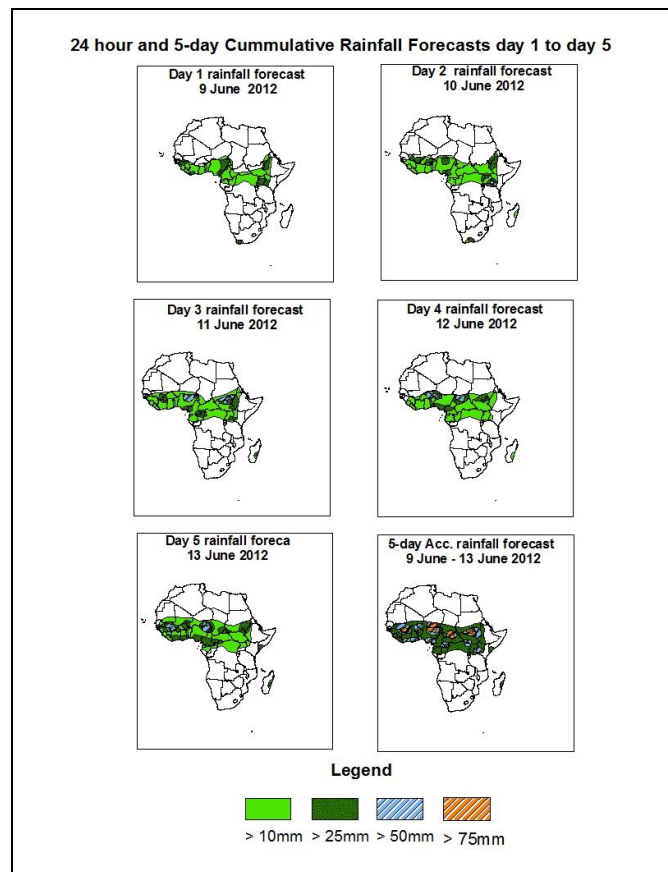


NCEP Contributions to the WMO Severe Weather Forecasting Demonstration Project (SWFDP) and to the African Monsoon Multidisciplinary Analysis (AMMA) Initiative

1.0. Rainfall Forecast: Valid 06Z of 9 June – 06Z of 13 June 2012, (Issued at 13:00Z of 8 June 2012)

1.1. Twenty Four Hour Cumulative Rainfall Forecasts

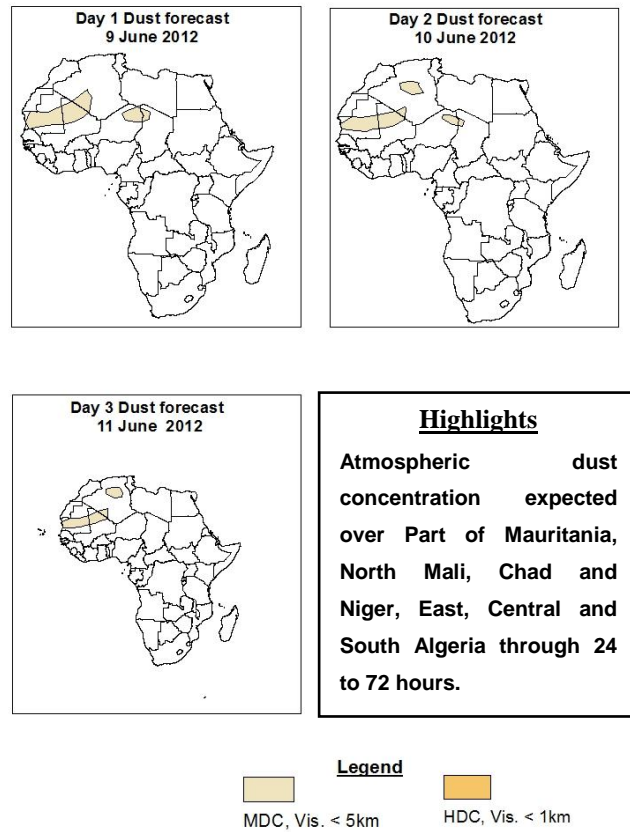
The forecasts are expressed in terms of 75% probability of precipitation (POP) exceeded, based on the NCEP, UK Met Office and the ECMWF NWP outputs, the NCEP global ensemble forecasts system (GEFS) and expert assessment.



Summary

In the next five days, ITD will continue its fluctuation between latitude 14°N and 20°N within 24 to 120 hours; with significant monsoon inflow and depth trough 72 to 120 hours. Also the TEJ, AEW, AEJ will be more less active with rainfall activities over Guinea Gulf Countries, Part of Sahel region, and horn of Africa, Uganda, Kenya and Central Africa.

Atmospheric Dust Forecasts, day 1 to day 3,
Moderate Dust Concentration (MDC) and High Dust Concentration (HDC)



1.3. Model Discussion: Valid from 00Z of 8 June 2012

According to the GFS, ECMWF and UKMET models the heat lows are expected to deepens and to shift Southward within the region between Southern Mauritania, Northern Mali, Niger, Sudan and Chad through 24 to 48 hours; then tends to move Northwards within 72 to 120 hours.

According to GFS model, a thermal low over South Mauritania (1008hpa) in 24 hours is expected to decrease to 1004hpa through 48 to 120 hours. The second low over North Mali, Niger and Chad with a core value of 1006hpa in 24 hours is expected to slightly decrease to 1005hpa in 48hours and continue to decrease to 1004hpa through 72 to 120 hours.

The ECMWF model shows a thermal low over South Mauritania (1006hpa) in 72 hours is expected to slightly decrease to 1005hpa in 96 hours and increase to 1006hpa in 120 hours by shifting to Northern Mauritania. The second low over North Mali, Niger, Chad and Sudan (1006hpa) in 24 hours is expected to slightly decrease to 1005hpa through 48 to 120 hours.

The UKMET model shows a thermal low over South Mauritania (1009hpa) in 24 hours and tends to decrease to 1004hpa through to 48 to 120 hours. The second low over North Mali, Niger, Chad and Sudan with a core value of 1006hpa in 24 hours is expected to decrease from 1005hpa to 1004pa 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 1031hpa in 24 hours is expected to slightly increase to 1032hpa in 48 hours and decrease to 1029hpa in 72 hours; then tends to increase from 1030hpa to 1036hpa through 96 to 120 hours. According to the ECMWF model, the central pressure value of 1030hpa in 24 hours tends to increase to 1032hpa in 48 hours and decrease to 1029hpa in 72 hours, then tends to increase from 1034hpa to 1038hpa within 96 to 120 hours. According to the GFS model, the central pressure value of 1031hpa in 24 hours tends to slightly increase to 1032hpa in 48hours and decrease to 1029hpa within 72 hours; then tends to increase from 1033hpa to 1036hpa through 96 to 120 hours.

According to the GFS model, the Mascarene high pressure system over South Indian Ocean with its central pressure value of 1031hpa in 24 hours locate at longitude 70°E is expected to increase to 1034hpa in 48 hours by maintaining its position and decrease from 1031hpa to 1026hpa through 72 to 120 hours by shifting Eastwards (from 74°E to 80°E). According to the ECMWF model, the central pressure value of 1031hpa in 24 hours locate around longitude 70°E is expected to maintain almost the same position by increasing its core value to 1033hpa in 48 hours and decrease from 1030hpa to 1025hpa through 72 to 120 hours by shifting Eastwards (from 78°E to 80°E) . Lastly, according to the UKMET model of the Mascarene high pressure system over South Indian Ocean with its central pressure value of 1032hpa in 24 hours locate around longitude 70°E is expected to maintain almost the same position by slightly increasing its core value to 1033hpa and tends to decrease from 1030hpa to 1026hpa through 72 to 120 hours by shifting Eastwards (from 72°E to 80°E).

At 925hpa level, zone of moderate dry Northerly and Northeasterly winds (20 to 50kts) are expected to prevail over Part of Mauritania, North Mali, Chad, Niger and Sudan, East, Central and South Algeria through 24 to 72 hours, thereafter gradually weakens within 96 to 120 hours.

At the 850hpa level, a lower tropospheric wind convergence associated with significant West African Monsoon inflow and depth is expected to prevail over most parts of Western Africa up latitude 20°N through 24 hours to 120 hours. The convergence associated with the meridional arm of the ITCZ is expected remain active across part of Uganda, Southern part of South Sudan Republic, Northeast Democratic Republic of Congo 24 hours to 120 hours.

At 700hpa level, the African Easterly Jet (AEJ) with a core of 30 knots through is expected to slightly weakens and shift Southwards by affecting Southwest Burkina and Most Guinea Gulf Countries. African Easterly Waves appears through 96 to 120 hours over Southwest Mali and Northern Cote d'Ivoire.

At 500hpa level, a wave is expected to affect South Nigeria and Burkina Faso, Part of Togo, Benin, Cote d'Ivoire and Ghana, South Cameroon through 24 to 96 hours.

At 150mb, the Sub-Tropical Westerly Jet still is expected prevail over North Mali, Niger, Chad, Sudan, South Mauritania, Algeria, Libya and most Part of Egypt with a maximum core of 60 Knots. However, the Tropical Easterly Jet with a maximum core of 30 Knots appears from 72 to 120 hours and will affect Southern Part of Guinea Gulf Countries.

In the next five days, ITD will continue its fluctuation between latitude 14°N and 20°N within 24 to 120 hours; with significant monsoon inflow and depth trough 72 to 120 hours. Also the TEJ, AEW, AEJ will be more less active with rainfall activities over Guinea Gulf Countries, Part of Sahel region, and horn of Africa, Uganda, Kenya and Central Africa.

Atmospheric dust concentration expected over Part of Mauritania, North Mali, Chad and Niger, East, Central and South Algeria through 24 to 72 hours.

2.0. Previous and Current Day Weather Discussion over Africa

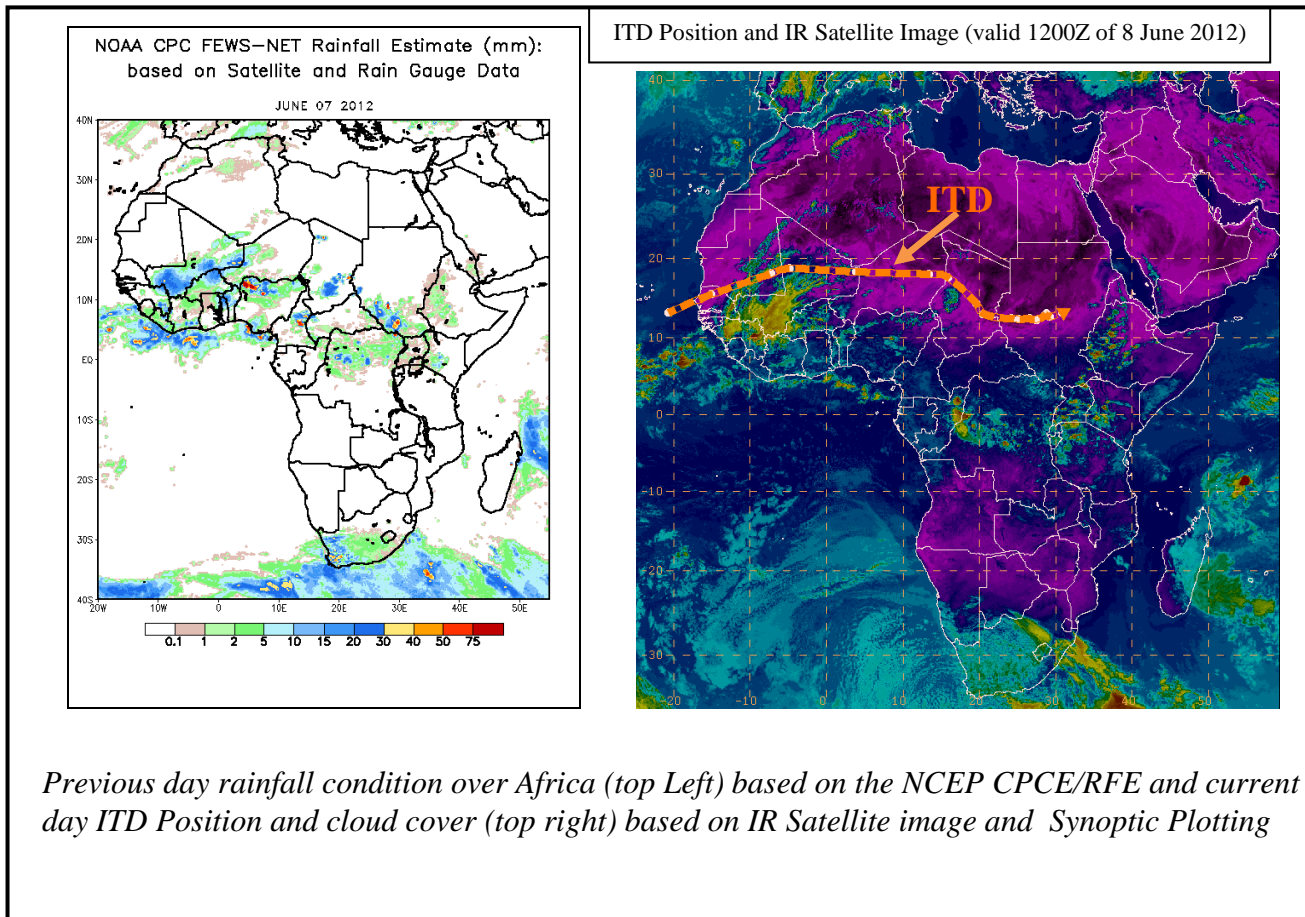
(7 June – 8 June 2012)

2.1. Weather assessment for the previous day (7 June 2012)

During the previous day, moderate to heavy rainfall was observed across Coastal Sierra Leone and Liberia; South and West Mali; North Burkina Faso; South Cote d'Ivoire and Chad; North Togo and Benin; Central Cameroon; North and South Nigeria; West South Sudan Republic; North DRC; West Coast of South Africa.

2.2. Weather assessment for the current day (8 June 2012)

Convective activities observed across Southeast Senegal, Part of Guinea Conakry, Western Mali and Ethiopia, North and Congo, Northwest DRC, Central and South Uganda, Southwest Kenya.



Previous day rainfall condition over Africa (top Left) based on the NCEP CPCE/RFE and current day ITD Position and cloud cover (top right) based on IR Satellite image and Synoptic Plotting

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