

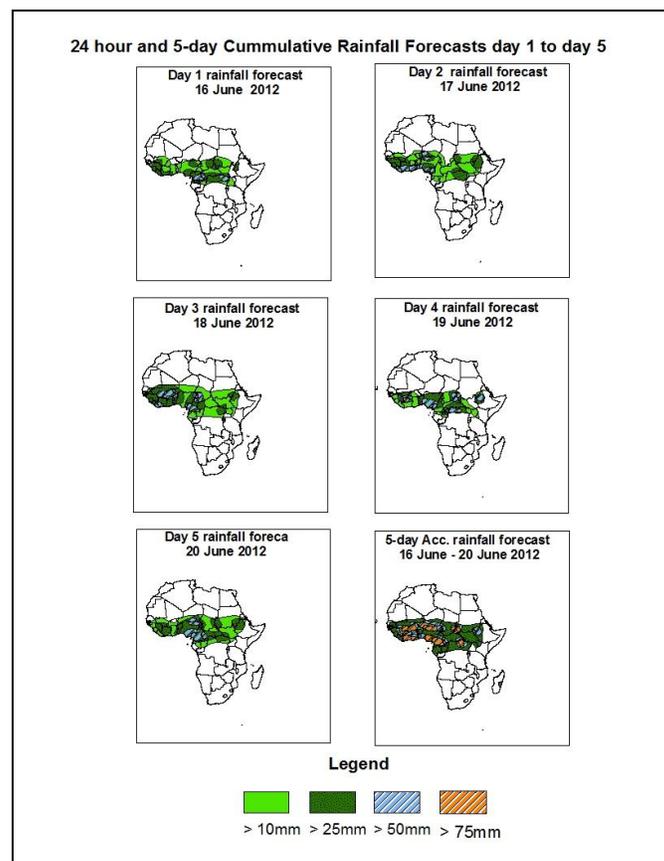


NCEP Contributions to the WMO Severe Weather Forecasting Demonstration Project (SWFDP) and to the African Monsoon Multidisciplinary Analysis (AMMA) Initiative

1.0. Rainfall Forecast: Valid 06Z of 16 June – 06Z of 20 June 2012, (Issued at 13:00Z of 15 June 2012)

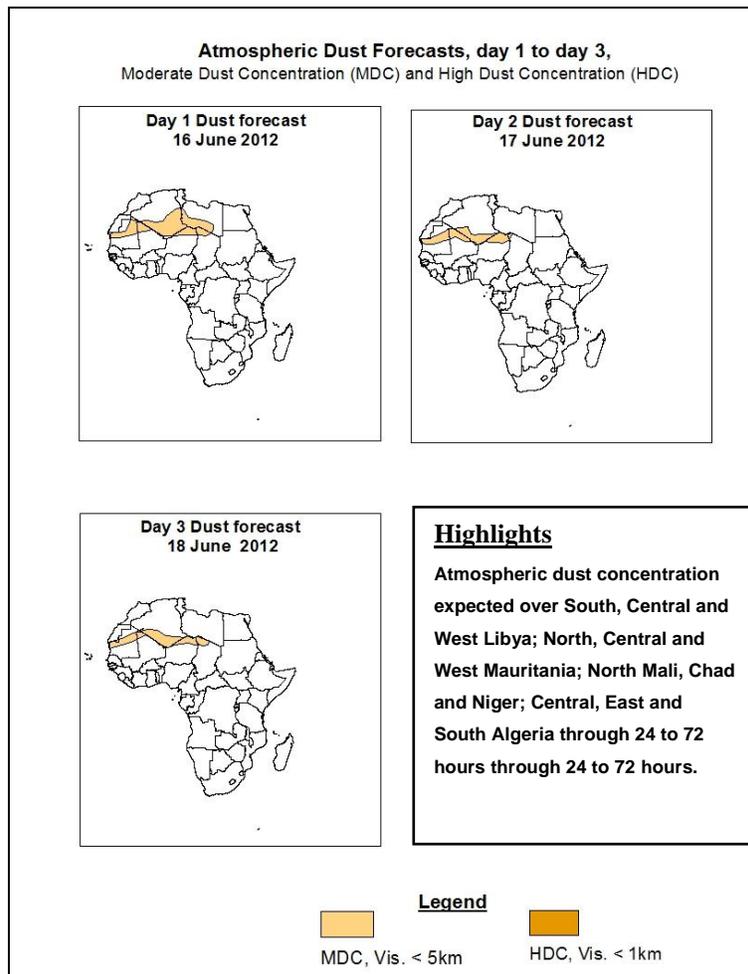
1.1. Twenty Four Hour Cumulative Rainfall Forecasts

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 is expected to maintain its northwards position up to 21°N with significant monsoon inflow and depth within 24 to 120 hours; Also the active TEJ and AEJ associated with AEW propagation, will enhance rainfall activities over Western Ethiopia; Southern Guinea Gulf Countries; Part of Sahel region and Central Africa.



1.3. Model Discussion: Valid from 00Z of June, 15th 2012.

According to the GFS, ECMWF and UKMET models the heat lows are expected to maintain their core values through 24 to 48 hours over Mauritania, Algeria, Mali, Niger, Chad and Sudan thereafter fill up within 72 to 120 hours.

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

The ECMWF model shows a thermal low over East and North Mauritania (1006hpa) in 24 hours is expected to decrease to 1005hpa in 48 hours and tends to increase from 1006hpa to 1008hpa through 73 to 120 hours. The second low over South Algeria and North Mali (1006hpa) in 24 hours is expected to slightly decrease to 1005hpa in 48 hours and tends to gradually increase from 1006hpa to 1008hpa within 72 to 120 hours. The third low over Niger and Chad (1006hpa) in 24 hours is expected to increase from 1007hpa to 1008hpa through 24 to 120 hours; while the low over North Sudan (1004hpa) within 24 to 48 hours is expected to gradually increase from 1006hpa to 1008hpa through 72 to 120 hours.

The UKMET model shows a thermal low over East and North Mauritania (1006hpa) in 24 hours is expected to decrease 1003hpa in 48 hours and tends to gradually increase from 1004hpa to 1006hpa through 72 to 120 hours. The second low over South Algeria and North Mali (1004hpa) in 24 hours is expected to decrease to 1003hpa and tends to increase its core value from 1004hpa to 1006hpa within 48 to 120 hours. The third low over North Niger and Chad (1005hpa) through 24 to 48 hours is expected to slightly increase to 1006hpa within 72 to 120 hours; while North Sudan (1004hpa) is expected to maintain almost its core value through 24 to 120 hours.

According to the UKMET model, the St. Helena High pressure system over South Atlantic Ocean with a core value of 1032hpa is expected to maintain almost its core value through 24 to 96 hours and tends to increase to 1036hpa in 120 hours. According to the ECMWF model, the central pressure value of 1031hpa through 24 to 48 hours is expected to slightly increase from 1032hpa to 1037hpa within 72 to 120 hours. According to the GFS model, the central pressure value of 1031hpa in 24 hours is expected to slightly decrease to 1031hpa in 48 hours and tends to gradually increase from 1033hpa to 1034hpa through 72 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 50°E is expected to increase its core value from 1032hpa to 1034hpa through 48 to 96 hours by shifting Eastwards (from 60°E to 80°E) and slightly decreases to 1033hpa in 120 hours by maintain almost its position at longitude 80°E. According to the ECMWF model, the central pressure value of 1031hpa in 24 hours and locate at longitude 50°E is expected to slightly decrease its core value to 1030hpa in 48 hours by shifting Eastwards (from 50°E to 60°E) and tends to increase to 1034hpa through 72 to 96 hours by shifting

Eastwards (from 60°E to 70°E); then decreases to 1032hpa in 120 hours by shifting eastwards (from 70°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 and locates at longitude 50°E is expected to slightly decrease to 1031hpa in 48 hours by shifting Eastwards (from 50°E to 60°E) and tends to increase its core value to 1035hpa within 72 to 96 hours by shifting Eastwards (from 70°E to 80°E); then decreases to 1032hpa in 120 hours by maintain almost its position at longitude 80°E.

At 925hpa level, zone of moderate dry Northerly and Northeasterly winds (20 to 50kts) are expected to prevail over North, Central and West Mauritania; North Niger, Mali and Chad; East, Central and South Algeria; West, South and Central Libya through 24 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 parts of Cameroon, Chad, Central African Republic and Western Africa up latitude 21°N through 24 hours to 120 hours. The convergence associated with the meridional arm of the ITCZ is located over Western part of South Sudan Republic; East and South Central African Republic, West Uganda and North Democratic Republic of Congo 24 hours to 120 hours.

At 700hpa level, the African Easterly Jet (AEJ) with a core of 30 to 40 knots over West and south Benin; Part of Ghana, Togo, Sierra Leone, Liberia, Guinea Conakry and Cote d'Ivoire through 24 to 48 hours is expected to weaken within 72 to 120 hours. An African Easterly Waves propagating westwards will be affecting part of Guinea Gulf Countries, South and West Sahel; West Central African Republic through 24 to 120 hours.

At 500hpa level, a wave is expected to affect West and South Mali and Niger, part of Burkina Faso, Benin, East Senegal and Guinea Conakry; North Nigeria; West Central African Republic and South Mauritania within 24 to 120 hours.

At 150mb, No more Sub-Tropical Westerly Jet locate through 24 to 120 hours. However, the Tropical Easterly Jet with a maximum core of 30 to 50 Knots will affect Southern Chad and Sudan; Part of Guinea Gulf Countries through 24 to 120 Hours.

In the next five days, ITD is expected to maintain its northwards position up to 21°N with significant monsoon inflow and depth within 24 to 120 hours; Also the active TEJ and AEJ associated with AEW propagation, will enhance rainfall activities over Western Ethiopia; Southern Guinea Gulf Countries; Part of Sahel region and Central Africa.

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

2.0. Previous and Current Day Weather Discussion over Africa (June, 14th 2012– June, 15th 2012)

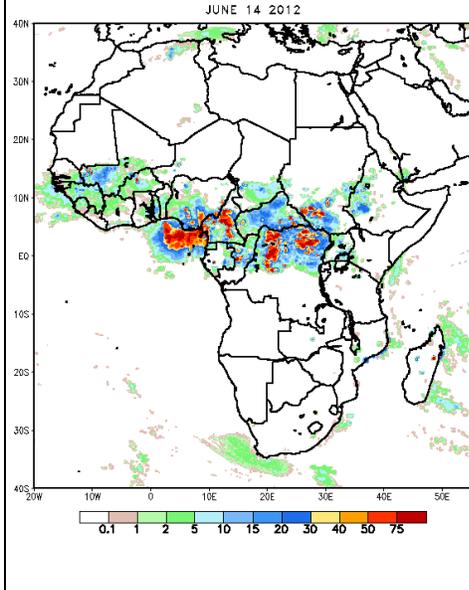
2.1. Weather assessment for the previous day (June, 14th 2012)

During the previous day, moderate to heavy rainfall was observed over West Mali; North and Central Burkina Faso; North and South Nigeria; Part of Cameroon and Central African Republic; South Chad; North Congo; West South Sudan Republic and Ethiopia; North Democratic Republic of Congo.

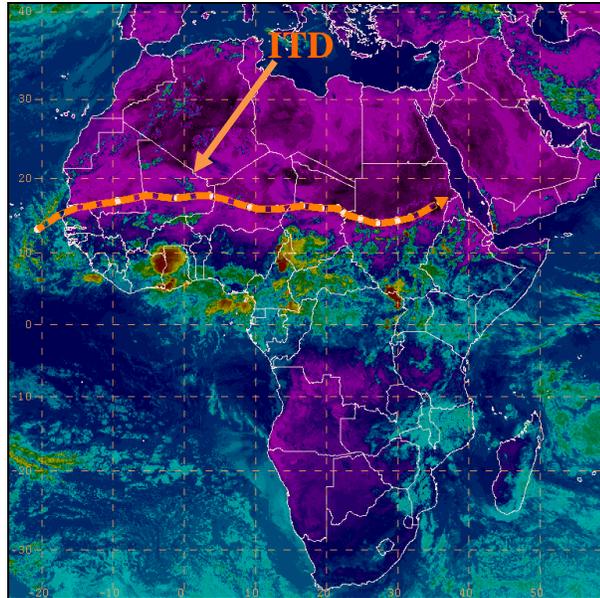
2.2. Weather assessment for the current day (June, 15th 2012)

Convective activities observed across Southeast and Northeast Cote d'Ivoire, Southwest Burkina Faso and Chad, Part of Ghana, North and Southeast Cameroon, Southwest South Sudan Republic, Northeast Nigeria, North Democratic Republic of Congo.

NOAA CPC FEWS-NET Rainfall Estimate (mm):
based on Satellite and Rain Gauge Data



ITD Position and IR Satellite Image (valid 1200Z of June, 15th 2012)



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