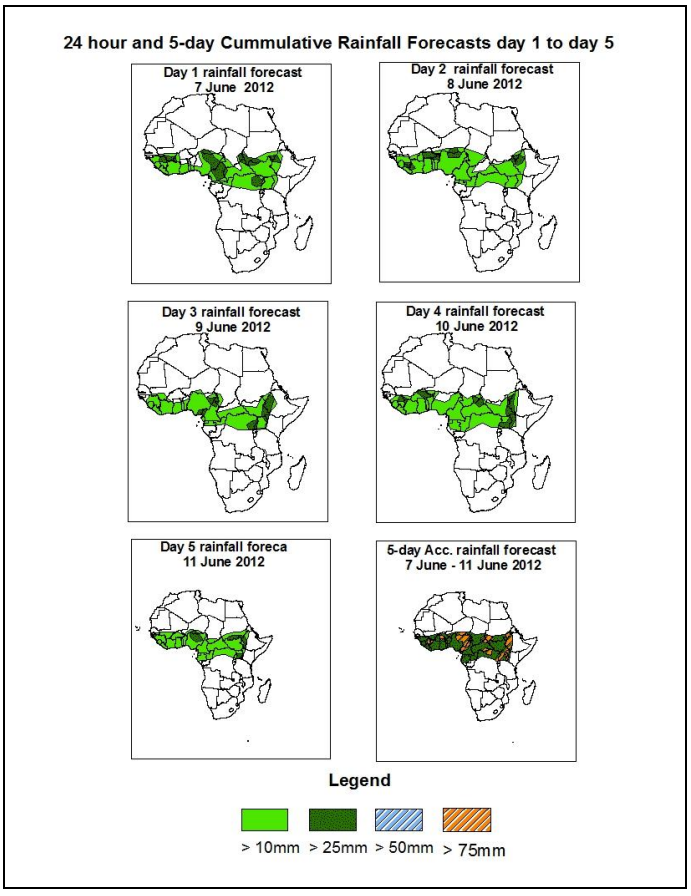
NCEP Contributions to the WMO Severe Weather Forecasting Demonstration Project (SWFDP) and to the African Monsoon Multidisciplinary Analysis (AMMA) Initiative

1.0. Rainfall Forecast: Valid 06Z of 7 June – 06Z of 11 June 2012, (Issued at 18:00Z of 6 June 2012)

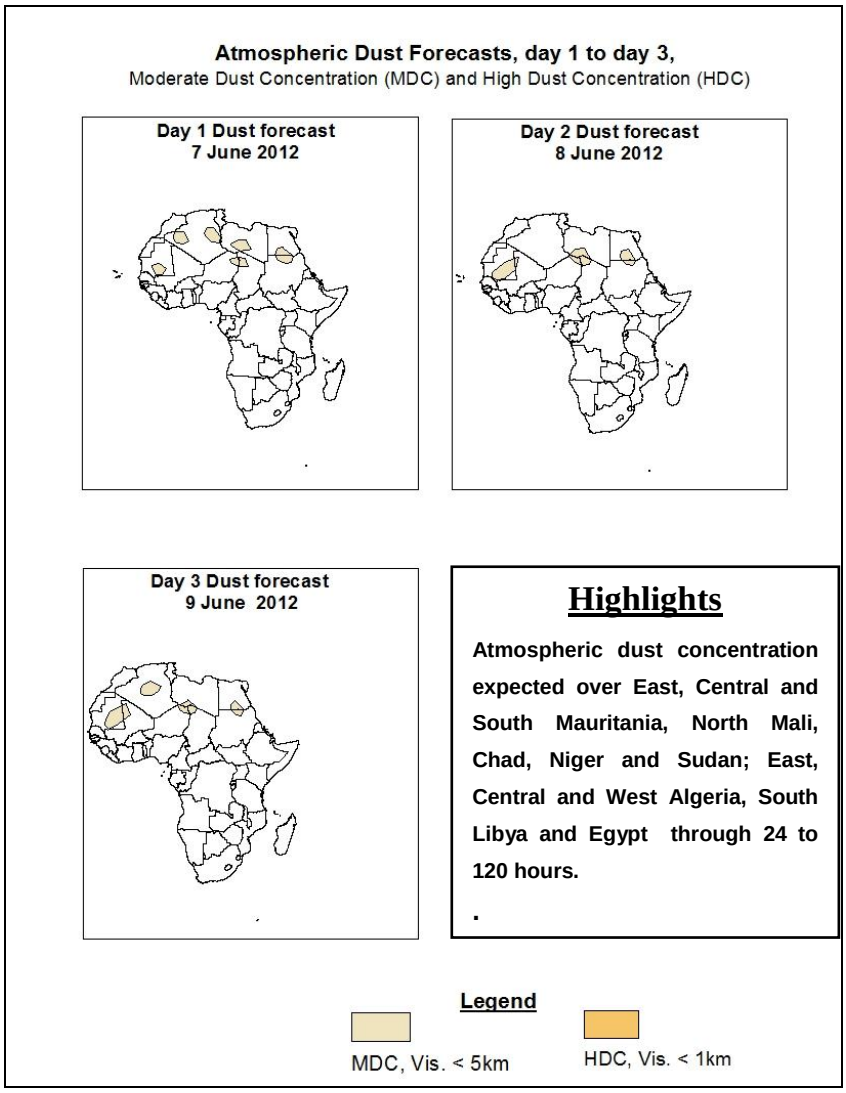
1.1. Twenty Four Hour Cumulative Rainfall Forecasts

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 is expected to maintain its position between latitude 15^{o}N and 18^{o}N with significant monsoon inflow depth. 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 and Central Africa.



1.3. Model Discussion: Valid from 00Z of 6 June 2012

According to the GFS, ECMWF and UKMET models the heat lows are expected to shift northward in the region between southern Mauritania, West and South Algeria, Northern Mali, Niger, Sudan and Chad.

According to GFS model, a thermal low is expected over Western Algeria (1007hpa) through 24 to 48 hours and increase to 1009hpa in 72hours and South Mauritania (1006hpa) in 120 hours. The second low over North Mali, Niger and Chad with a core value of 1006hpa through 24 to 72 hours is expected to slightly decrease to 1005hpa through 96 to 120 hours.

The ECMWF model shows thermal low over Western Algeria (1009hpa) within 24 hours and North Mali (1008hpa) in 48 hours and slightly decrease to 1006hpa through 72 to 120 hours. The second low over West Chad (1007hpa), East and North Niger

(1008hpa) through 24 to 72 hours tends to slightly decrease to 1005hpa through 96 to 120 hours.

The UKMET model shows thermal low over South Mauritania (1008hpa) through 24 to 48 hours. The second low over North Mali, Niger, Chad and Sudan with a core value of 1007hpa in 24 hours is expected to slightly decrease from 1006hpa to 1004hpa 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 deepen with its central pressure value tends to slightly decrease to 1030hpa in 48hours and increase from 1031 to 1033hpa through 72 to 96 hours and tends to slightly decrease to 1032hpa within 120 hours. According to the ECMWF model, the central pressure value of 1030hpa in 24 hours tends to slightly decrease to 1029hpa within 48 hours and increase from 1030 to 1032 through 72 to 120 hours. According to the GFS model, the central pressure value of 1031hpa in 24 hours tends to slightly decrease to 1030hpa through 48 to 72 hours and tends to increase to 1032 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 1027hpa in 24 hours is expected to shift Eastwards (about 64^{o}E to 70^{o}E) through 24 to 48 hours and slightly decrease to 1026hpa, then tends to increase from 1030hpa to 1034hpa through 72 to 96 hours by maintaining its position at 70^{o}E and decrease to 1031hpa in 120 hours at 70^{o}E. According to the ECMWF model, the central pressure value of 1027hpa in 24 hours is expected to shift Eastwards (about 62^{o}E to 70^{o}E) through 24 to 48 hours by maintaining its core value at 1027hpa, then tends to increase from 1031hpa to 1038hpa through 72 to 96 hours by maintaining its position at 70^{o}E and decrease to 1029hpa in 120 hours at 70^{o}E. Lastly, according to the UKMET model of the Mascarene high pressure system over South Indian Ocean with its central pressure value of 1027hpa in 24 hours is expected to shift Eastwards (about 62^{o}E to 70^{o}E) through 24 to 48 hours and slightly decrease to 1026hpa, then tends to increase from 1030hpa to 1033hpa through 72 to 96 hours by maintaining its position at 70^{o}E and decrease to 1029hpa in 120 hours at 70^{o}E.

At 925hpa level, zone of moderate and dry northerly and easterly winds (35kts) are expected to prevail over East, Central and South Mauritania, North Mali, Chad, Niger and Sudan, East, Central and West Algeria, South Libya and Egypt through 24 to 120 hours.

At the 850hpa level, a lower tropospheric wind convergence associated with deep West African Monsoon depth is expected to prevail over parts of Western Africa about latitude 13^{o}N to 18^{o}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, North Tanzania, Western Kenya during 24 hours to 120 hours.

At 700hpa level, Establishment of the AEJ with a core of 30 to 35 knots over East and West Niger, South Burkina Faso, Benin, West Togo, North Nigeria, Ghana, Cote d`Ivoire, Mali, Sierra Leone, Liberia, Gambia, Guinea Bissau, South and West Guinea Conakry and associated with African Easterly Waves over Togo, Ghana and South Burkina Faso from 24 to 120 hours.

At 500hpa level, a wave appears over Nigeria within 48 hours.

At 150mb, the Sub-Tropical Westerly Jet still is prevailing over North Mali, Mauritania, Niger, Chad, Sudan and most Part of Algeria, Libya and Egypt with a maximum core of 80 Knots. However, the Tropical Easterly Jet with a maximum core of 40 Knots will extend from South Sudan Republic and Central African Republic to South and Central Guinea Gulf Countries through 24 to 96 hours.

In the next five days, ITD will is expected to maintain its position between latitude 15^{o}N and 18^{o}N with significant monsoon inflow depth. 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 and Central Africa.

Atmospheric dust concentration expected over East, Central and South Mauritania, North Mali, Chad, Niger and Sudan; East, Central and West Algeria, South Libya and Egypt through 24 to 120 hours.

2.0. Previous and Current Day Weather Discussion over Africa

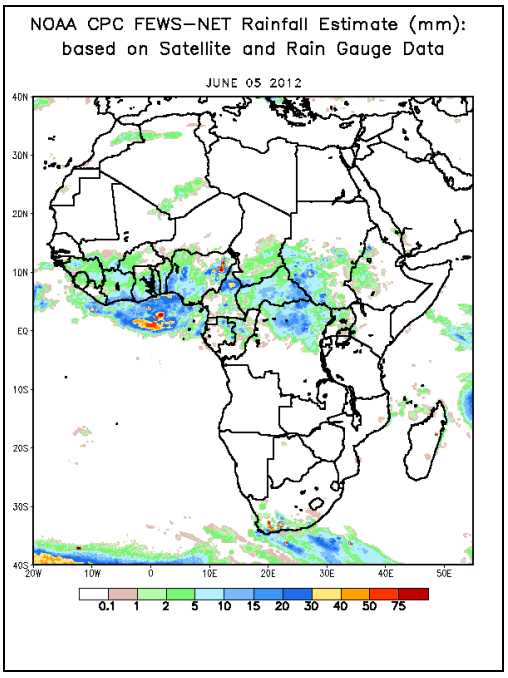
(5 June – 6 June 2012)

2.1. Weather assessment for the previous day (5 June 2012)

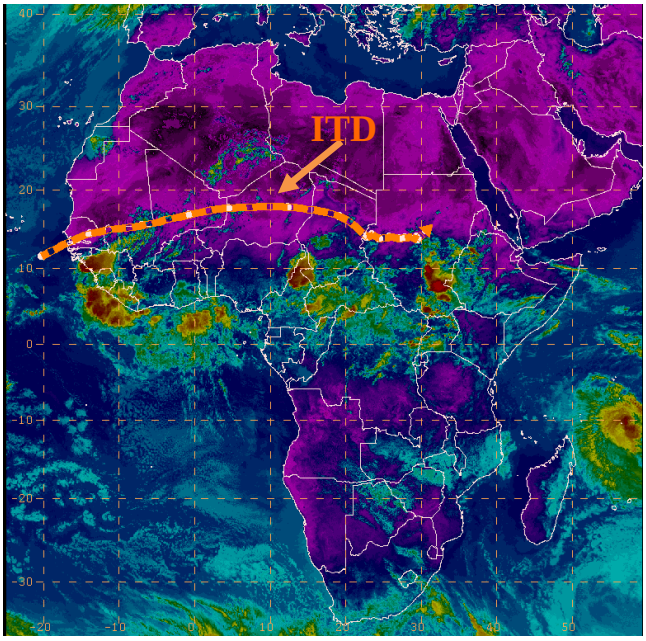
During the previous day, moderate to heavy rainfall was observed across North and Southeast Guinea Conakry, Southwest Mali, South of Guinea Gulf Countries, Northeast, West and South Nigeria, Central and South Cameroon, North and East Gabon, North Congo and DRC, Part of CAR, Southwest South Sudan Republic, Northwest Ethiopia, South Sudan.

2.2. Weather assessment for the current day (6 June 2012)

Convective activities observed across Part of Guinea Conakry and Liberia, North and Coastal Sierra Leone, North Cameroon, Northeast Nigeria, Southwest Chad, Part of CAR South Sudan Republic, Northeast DRC, West Uganda, Northwest Ethiopia, South Sudan.



ITD Position and IR Satellite Image (valid 1200Z of 6 June 2012)



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

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