

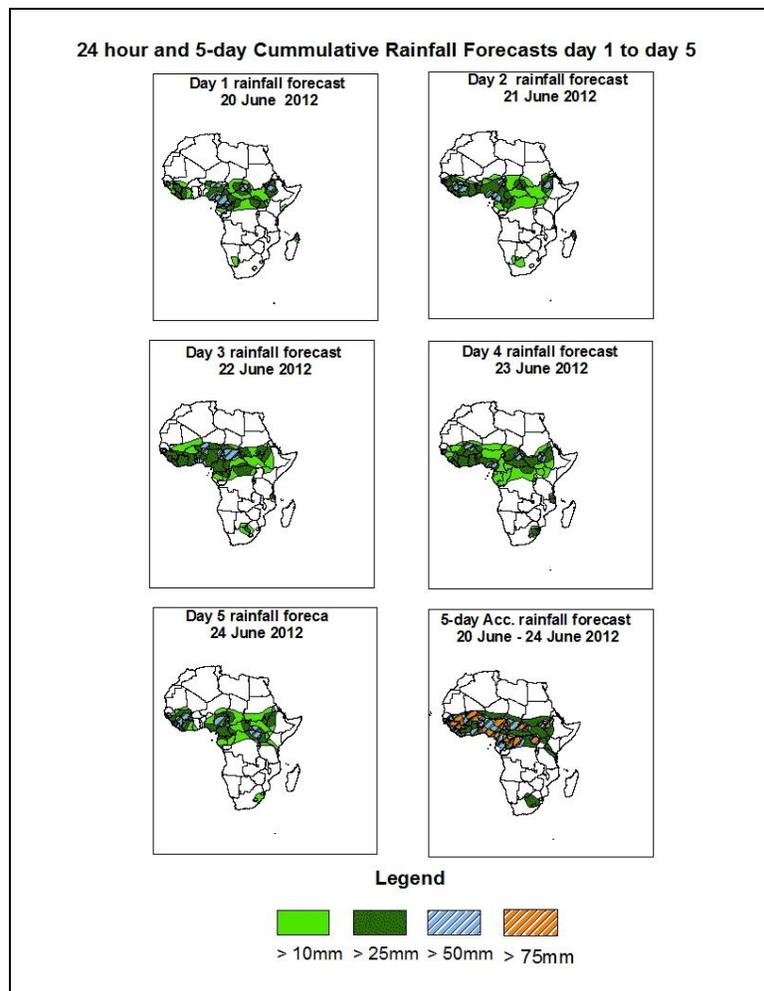


NCEP Contributions to the WMO Severe Weather Forecasting Demonstration Project (SWFDP) and to the African Monsoon Multidisciplinary Analysis (AMMA) Initiative

1.0. Rainfall Forecast: Valid 06Z of 20 June – 06Z of 24 June 2012, (Issued at 13:00Z of 19 June 2012)

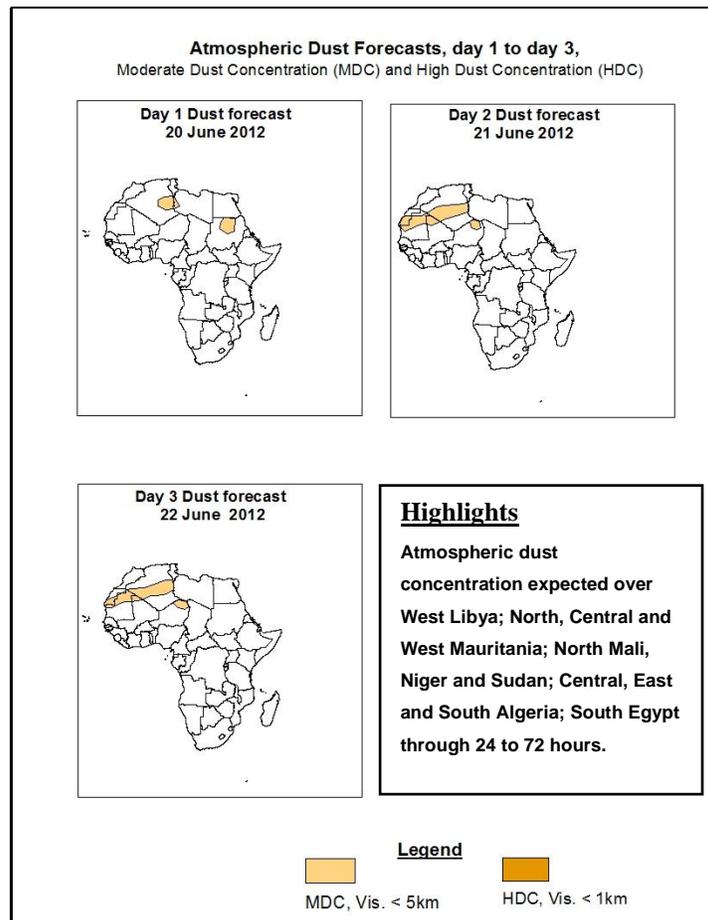
1.1. Twenty Four Hour Cumulative Rainfall Forecasts

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 22°N with significant monsoon inflow and depth within 24 to 120 hours; Also the active TEJ and the relative weakened AEJ associated with pronounced AEW propagation, will enhance rainfall activities over Western Ethiopia; Southern Part of Guinea Gulf Countries; Part of Sahel region and Central Africa.



1.3. Model Discussion: Valid from 00Z of June, 19th 2012.

According to the GFS, ECMWF and UKMET models the heat lows are expected to deepen through 24 to 72 hours and tends to fill up within 96 to 120 hours over Mauritania, Algeria, Mali, Niger Chad and Sudan.

According to GFS model, a thermal low over West, Central and North Mauritania (1010hpa) in 24 hours is expected to decrease to 1008hpa in 48 hours and tends to slightly decrease from 1006hpa to 1005hpa through 72 to 120 hours. The second low over North Mali, West and South Algeria (1007hpa) in 24 hours is expected to also decrease to 1003hpa within 48 to 72 hours and tends to increase from 1005hpa to 1008hpa through 96 to 120 hours. Third low over North Chad and Niger (1005hpa) in 24 hours is expected to decrease to 1003hpa within 48 to 72 hours, then increase to 1006hpa in 96 hours and tends to slightly decrease to 1005hpa in 120 hours; while the low over North Sudan(1004hpa) in 24 hours is expected to slightly decrease to 1003hpa through 48 to 72 hours, then slightly increases to 1004hpa within 96 to 120 hours.

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

The UKMET model shows a thermal low over West, Central and North Mauritania (1010hpa) within 24 to 48 hours is expected to decrease from 1008hpa to 1006hpa through 72 to 120 hours. The second low over South Algeria and North Mali (1006hpa) in 24 hours is expected to decrease to 1003hpa within 48 to 72 hours and tends to increase its core value from 1004hpa to 1006hpa through 96 to 120 hours. The third low over North Niger and Chad (1006hpa) in 24 hours is expected to decrease to 1004hpa in 48 hours and tends to increase from 1005hpa to 1008hpa within 72 to 120 hours; while North Sudan (1004hpa) in 48 hours is expected to decrease to 1001hpa in 48hours and tends to increase from 1002hpa to 1006hpa through 72 to 120 hours.

According to the UKMET model, the St. Helena High pressure system over South Atlantic Ocean with a core value of 1039hpa in 24 hours is expected to gradually decrease from 1037hpa to 1029hpa within 48 to 120 hours. According to the ECMWF model, the central pressure value of 1038hpa in 24 hours is also expected to decrease from 1039hpa to 1027hpa through 48 to 120 hours. According to the GFS model, the central pressure value of 1038hpa in 24 hours is expected to gradually decrease its core value from 1034hpa to 1026hpa within 48 to 120 hours.

According to the GFS model, the Mascarene high pressure system over South Indian Ocean with its central pressure value of 1033hpa in 24 hours locate at longitude 80°E is expected to increase its core value from 1034hpa to 1035hpa through 48 to 72 hours by shifting eastwards (from 95°E to 100°E), then slightly decrease to 1034hpa in 96 hours by shifting Eastwards (from 100°E to 115°E) and tends to increase to 1036hpa in 120 hours by shifting Eastwards (from 115°E to 125°E). According to the ECMWF model, the central pressure value of 1033hpa through 24 to 48 hours and locate between

longitudes 80°E and 95°E is expected to slightly increase its core value to 1034hpa in 72 hours by shifting eastwards (from 95°E to 100°E), then slightly decrease to 1033hpa in 96 hours by shifting Eastwards (from 100°E to 120°E) and tends to increase to 1035hpa in 120 hours by shifting eastwards (from 120°E to 130°E). Lastly, according to the UKMET model of the Mascarene high pressure system over South Indian Ocean with its central pressure value of 1033hpa in 24 hours and locates at longitude 80°E is expected to increase from 1033hpa to 1036hpa through 48 to 72hours by shifting Eastwards (from 95°E to 100°E), then decrease to 1034hpa in 96 hours by shifting eastwards (from 100°E to 120°E) and tends to increase its core value to 1038hpa in 120 hours by shifting eastwards (from 120°E to 125°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 Sudan; East, Central and South Algeria; West Libya; South Western Sahara 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 and fluctuate between latitude 14°N 20°N through 24 hours to 120 hours. The convergence associated with the meridional arm of the ITCZ is located over Southern and Western a part of South Sudan Republic; East and South Central African Republic and North Democratic Republic of Congo within 24 hours to 120 hours.

At 700hpa level, the African Easterly Jet (AEJ) with a core of 25 to 40 knots over West Mali; Part of Guinea Conakry, Gambia and Guinea Bissau; South Senegal; North Sierra Leone and Cote d'Ivoire through 24 to 48 hours is expected to weakens. An African Easterly Waves propagating westwards will be affecting most part of Guinea Gulf Countries; South, Central and West Sahel; West and South Central African Republic within 24 to 120 hours.

At 500hpa level, a wave is expected to affect part of Nigeria, Benin, Togo, Cote d'Ivoire, Ghana, Guinea Conakry, The Gambia, Liberia, Sierra Leone, Central African Republic and Nigeria; South and West Mali, Burkina Faso and Niger; South Senegal and Chad.

At 150mb, the Tropical Easterly Jet with a maximum core of 30 to 60 Knots will affect Southern Chad and Sudan; Part of Guinea Gulf Countries and Central African Republic through 24 to 120 Hours. Easterly winds flow will also affect South, Central and West Sahel.

In the next five days, ITD is expected to maintain its northwards position up to 22°N with significant monsoon inflow and depth within 24 to 120 hours; Also the active TEJ and the relative weaken AEJ associated with pronounced AEW propagation, will enhance rainfall activities over Western Ethiopia; Southern Part of Guinea Gulf Countries; Part of Sahel region and Central Africa.

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

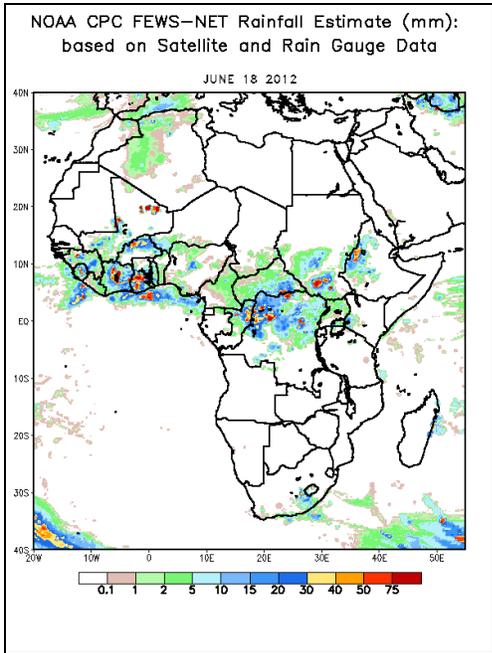
2.0. Previous and Current Day Weather Discussion over Africa (June, 18th 2012– June, 19th 2012)

2.1. Weather assessment for the previous day (June, 18th 2012)

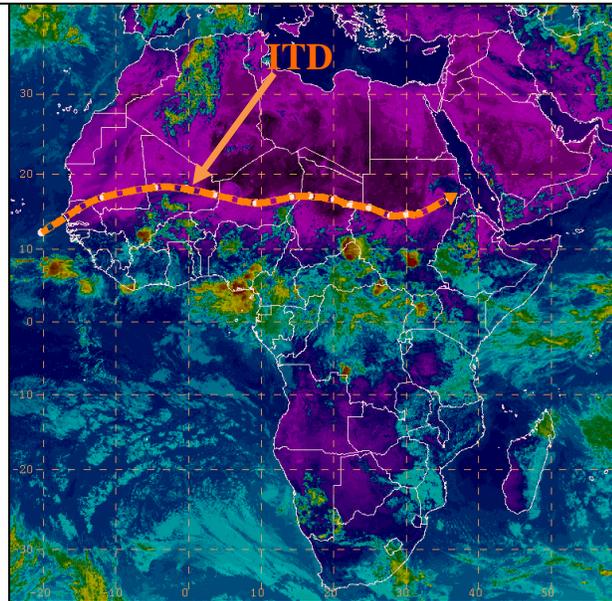
During the previous day, moderate to heavy rainfall was observed over South and Central Guinea Conakry; West, East and South Mali; North and Central Sierra Leone; North and East Burkina Faso; Part of Cote d'Ivoire; South and Central Nigeria and Ghana; South Togo and Central African Republic; North Congo; ; Southern and Northern part of South Sudan Republic; West Ethiopia; North Democratic Republic of Congo.

2.2. Weather assessment for the current day (June, 19th 2012)

Convective activities observed across Southwest Mali; Southeast Liberia; South Nigeria and Cameroon; West, Northeast and Southeast Central African Republic; North and Southwest Democratic Republic of Congo; West Uganda; North South Sudan Republic; .



ITD Position and IR Satellite Image (valid 1200Z of June, 19th 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

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