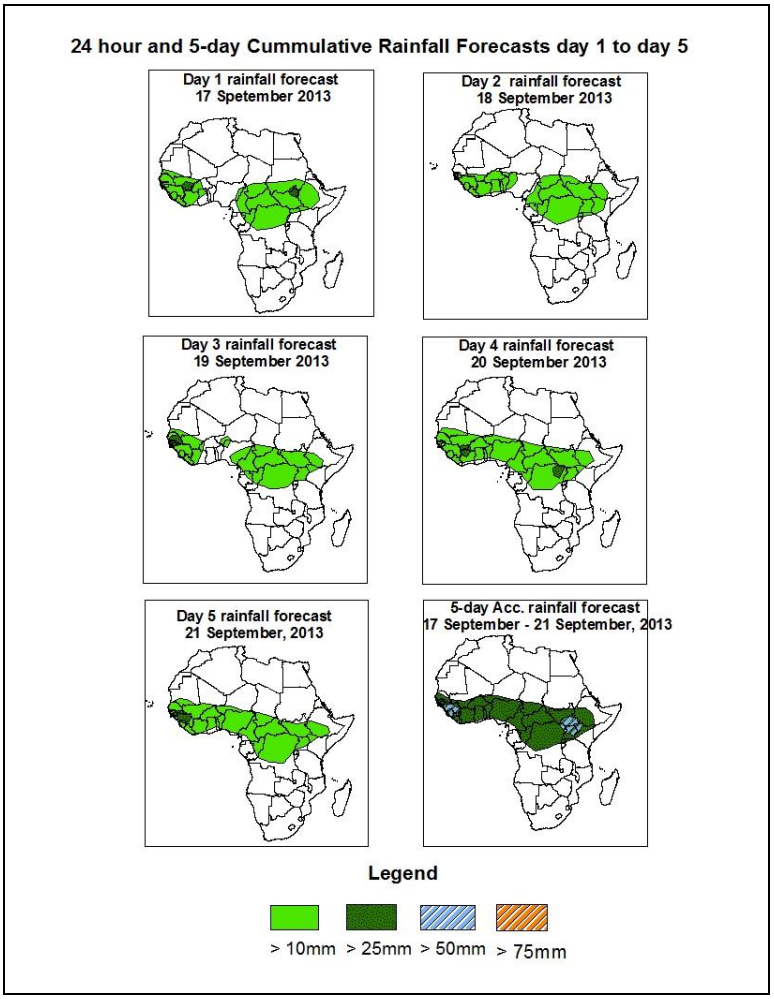
NCEP Contributions to the WMO Severe Weather Forecasting Demonstration Project (SWFDP) and to the African Monsoon Multidisciplinary Analysis (AMMA) Initiative

1.0. Rainfall Forecast: Valid 06Z of 17 September – 06Z of 21 September, 2013. (Issued at 1530Z of 16 September 2013)

1.1. Twenty Four Hour Cumulative Rainfall Forecasts

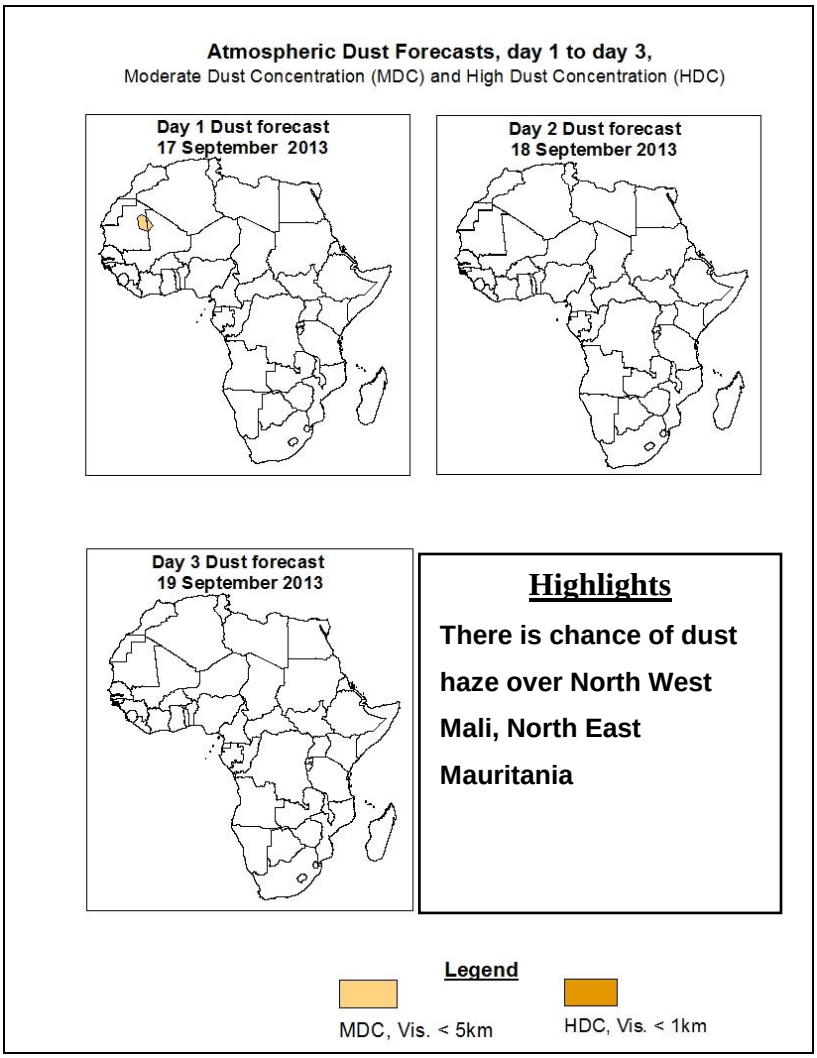
The forecasts are expressed in terms of 75% probability of precipitation (POP) exceeded, based on the NCEP, UK Met Office and the ECMWF NWP outputs, the NCEP global ensemble forecasts system (GEFS) and expert assessment.



Summary

In the next five days, the *ITD is expected to fluctuate between 16 and 19 degree north.* Favorable conditions are expected to move to the south over South Sahel and North of Guinea Gulf Countries Rainfall activities is also expected over East Africa while suppressed conditions along the Gulf of Guinea coast are expected, to slightly improve due to the south movement of ITD. Thus, there is an increased chance for moderate to heavy rainfall over North Togo, North Benin, North Ghana and North and South Nigeria, North Cote d Ivoire, Conakry Guinea, Biso Guinea, Liberia and Sierra Leone.

1.2. Atmospheric Dust Forecasts: Valid 17 - 19 September 2013



1.2. Model Discussion: Valid from 00Z of 16 September 2013

Model comparison (Valid from 00Z;16 September 2013) shows all the three models are in general agreement in terms of depicting positions of the northern and southern hemisphere sub-tropical highs, while they showed slight differences in depicting their intensity.

The Azores High Pressure System over Northeast Atlantic Ocean is expected to weaken during the forecast period. Its central pressure value is expected to decrease from about 1029hpa to 1025hpa according to GFS, from about 1029hpa to 1024hpa according to ECMWF and from about 1030hpa to 1023hpa according to UKMET models.

The St. Helena High Pressure System over southeast Atlantic Ocean is expected to intensify during the 24 to 72 hours, its central pressure value is expected to increase from about 1028hpa to 1042hpa according to GFS model and from about 1028hpa to 1042hpa according to ECMWF and UKMET models,

The Mascarene high pressure system over southwestern Indian Ocean is expected to Intensify during the forecast period. Its central pressure value is expected to increase from about 1024hpa to 1029hpa according to GFS and ECMWF models, from about 1024hpa to 1030hpa according to UKMET model.

The heat lows over the central Sahel and neighboring areas are expected to be stationary during the forecast period in terms of Value and location according to both models, its central pressure value is expected to be around 1008hpa over chad, as well as the seasonal lows across the red sea and its neighboring areas, its central pressure value is expected to be about 1004hpa according both models.

At the 850hPa level, monsoon wind flow continues to dominate flow across South Sahel, over Guinea Gulf Countries and over the Horn of Africa. The inter-tropical front is also expected to fluctuate between 16 and 19 degree north, while meridional wind convergence will dominate flow across East Africa. Suppressed rainfall along Guinea Gulf coast is expected to slightly improve as wind and surface pressure conditions gradually improve over the area during the forecast period. The frequency in number of vortices at this level and wind convergence over the region is expected to reduce over West Africa with high to moderate rainfall over north Guinea Gulf Countries and eastern Africa.

The Frequency of African Easterly Waves (AEW) is also expected to reduce but still propagate westwards waves to affect part of Guinea Gulf Countries, south Sahel and portion of Central Africa within 24 to 120 hours.

At 700hpa level, wind flow maintains northeasterly to easterly flow pattern between few vortices and trough lines also are expected to occur from East to west with lest intensification compare to the last week and this is likely to facilitate westward propagation of systems across the region during the period.

At 500hpa level, winds associated with mid-tropospheric easterly jet are expected to have common speeds of about 20 to 25kts over Sahel.

150mb, the Tropical Easterly Jet with a maximum core of 35 to 60 Knots is weakening and the main effect is restricted over Part of Ethiopia and Central African Republic through 24 to 120 Hours period. Speeds exceeding 55kts are observed over Ethiopia, eastern Sudan and Somalia during the forecast period.

In the next five days, the ITD is expected to fluctuate between 16 and 19 degree north. Favorable conditions are expected to move to the south over South Sahel and North of Guinea Gulf Countries Rainfall activities is also expected over East Africa while suppressed conditions along the Gulf of Guinea coast are expected, to slightly improve due to the south movement of ITD. Thus, there is an increased chance for moderate to heavy rainfall over North Togo, North Benin, North Ghana and North and South Nigeria, North Cote d Ivoire, Conakry Guinea, Biso Guinea, Liberia and Sierra Leone.

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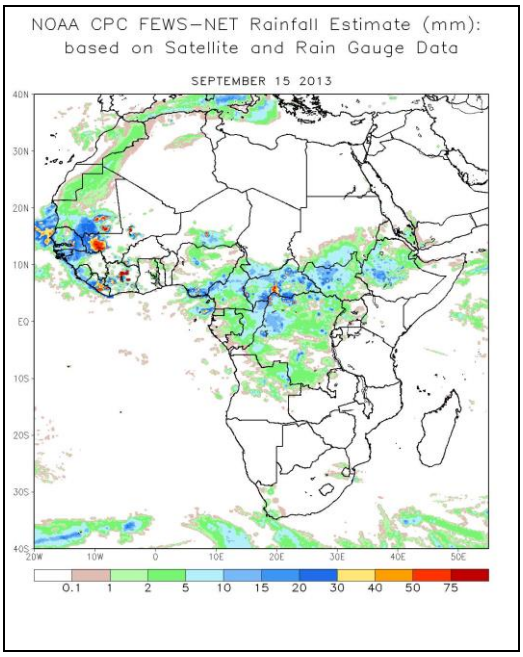
(15 September 2013 – 16 September 2013)

2.1. Weather assessment for the previous day (15 September 2013)

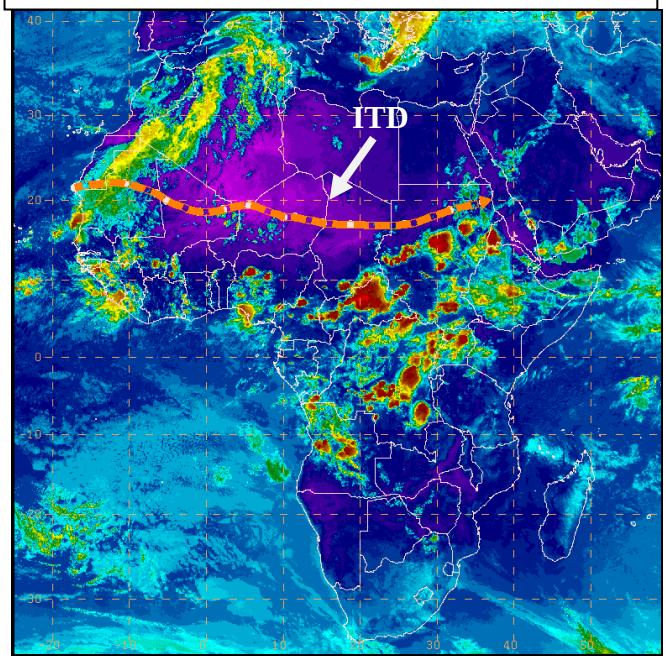
During the previous day, moderate to heavy rainfall was observed over South Chad Sudan, CAR, North DRC, North Congo, Cameroon, South east Nigeria, north West Mali, South Mauritania and East Senegal.

2.2. Weather assessment for the current day (16 September 2013) North Ethiopia, Soudan, DRC, South Congo, Central Nigeria, East Senegal South Mauritania

. The ITD is located at an average position of latitude 18^{o}N over Africa.



IR Satellite Image (valid 1630Z of 16 September 2013)



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

Author: **Kassimou Abdou**, (ACMAD / CPC-African Desk); kassimou.abdou@noaa.gov