



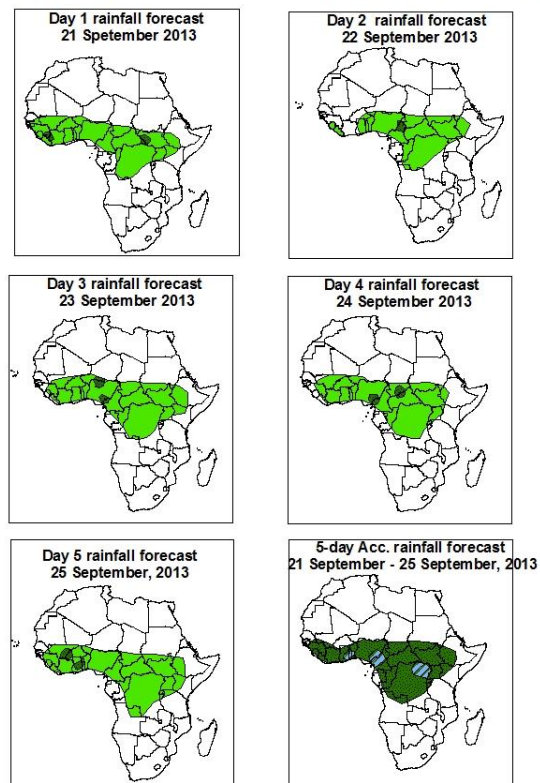
# NCEP Contributions to the WMO Severe Weather Forecasting Demonstration Project (SWFDP) and to the African Monsoon Multidisciplinary Analysis (AMMA) Initiative

## 1.0. Rainfall Forecast: Valid 06Z of 21 September – 06Z of 25 September, 2013. (Issued at 1530Z of 20 September 2013)

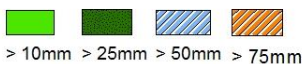
### 1.1. Twenty Four Hour Cumulative Rainfall Forecasts

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.

24 hour and 5-day Cummulative Rainfall Forecasts day 1 to day 5



#### Legend

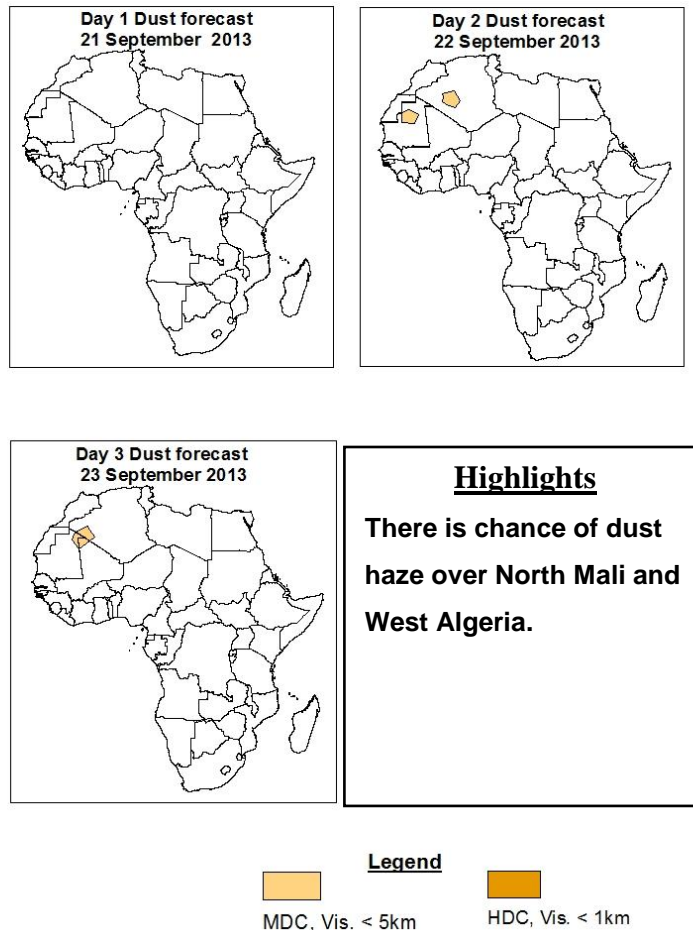


### Summary

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

## 1.2. Atmospheric Dust Forecasts: Valid 21 - 23 September 2013

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



### 1.2. Model Discussion: Valid from 00Z of 20 September 2013

*Model comparison (Valid from 00Z;20 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 intensify during 24 to 72 hours. Its central pressure value is expected to increase during from about 1024hpa to 1030hpa according to GFS and UKMET models, from about 1024hpa to 1029hpa according to ECMWF model.

The St. Helena High Pressure System over southeast Atlantic Ocean is expected to Weaken during the forecast period, its central pressure value is expected to decrease

from about 1033hpa to 1023hpa according to GFS and ECMWF Models, from about 1034hpa to 1024hpa according to UKMET Model.

The Mascarene high pressure system over southwestern Indian Ocean is expected to Weaken during the 24 to 120 hours. Its central pressure value is expected to decrease from about 1029hpa to 1023hpa according to GFS, ECMWF and UKMET Models.

The heat lows over the central Sahel and neighboring areas are expected to slightly fill up according both models during 24 to 72 hours.

The seasonal lows across the red sea and its neighboring areas is expected to deepen during 24 to 72 hours according to both models, its central pressure value is expected to decrease from about 1004hpa to 1003hpa according to GFS, from about 1005hpa to 1004hpa according ECMWF model.

At the 850hPa level, monsoon wind flow continues to move south and it's expected to be 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 Sahel with high to moderate rainfall over north and central to South of 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, 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 be over South Sahel and North of Guinea Gulf Countries. Rainfall activities are also expected over East Africa while suppressed conditions along the Gulf of Guinea coast are expected, to improve due to the retreatment of monsoon to the South. Thus, there is an increased chance for moderate to heavy rainfall over Togo, Benin, Ghana, and Cameroon, d Ivoire, Conakry Guinea, Biso Guinea, Liberia and Sierra Leone.

## (19 September 2013 – 20 September 2013)

### 2.1. Weather assessment for the previous day (19 September 2013)

During the previous day, moderate to heavy rainfall was observed over Sudan, CAR, and north DRC, Senegal, DRC, Cameroon, West Kenya, and Uganda.

**2.2. Weather assessment for the current day (20 September 2013)** over West Ethiopia, Soudan and South Sudan, South DRC, Uganda, Cameroon, North West Niger, South Senegal, South West Mali, South Chad, Benin, Togo, Ghana, Conakry Guinea.

The ITD is located at an average position of latitude 17°N over Africa.

