

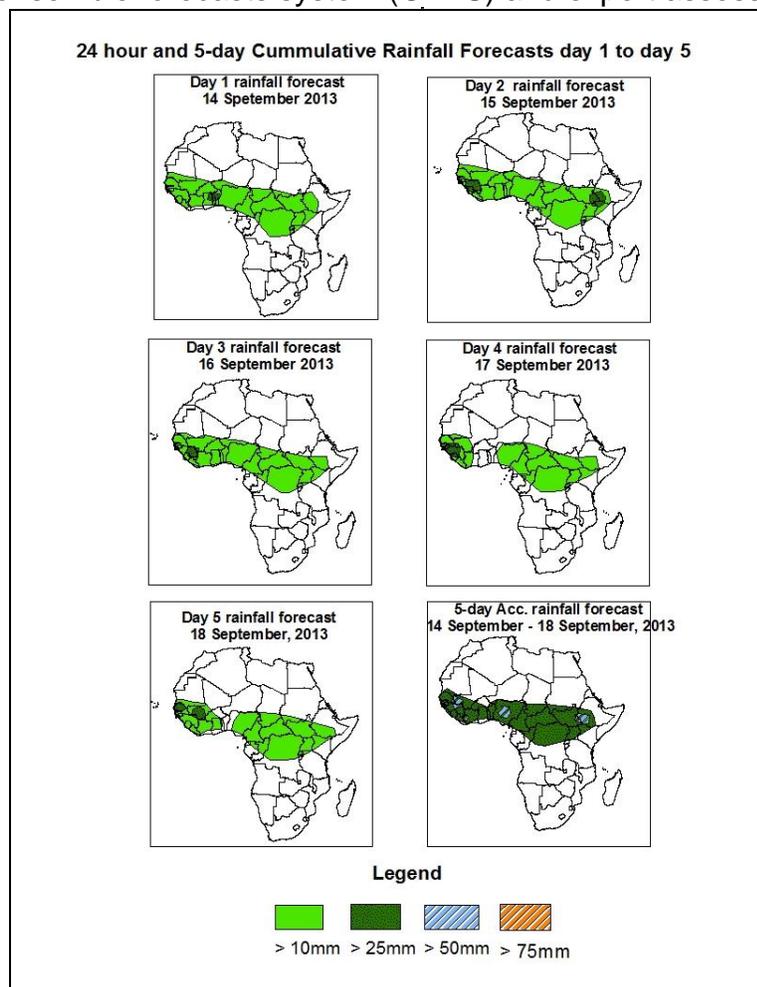


# NCEP Contributions to the WMO Severe Weather Forecasting Demonstration Project (SWFDP) and to the African Monsoon Multidisciplinary Analysis (AMMA) Initiative

## 1.0. Rainfall Forecast: Valid 06Z of 14 September – 06Z of 18 September, 2013. (Issued at 1530Z of 13 September 2013)

### 1.1. Twenty Four Hour Cumulative Rainfall Forecasts

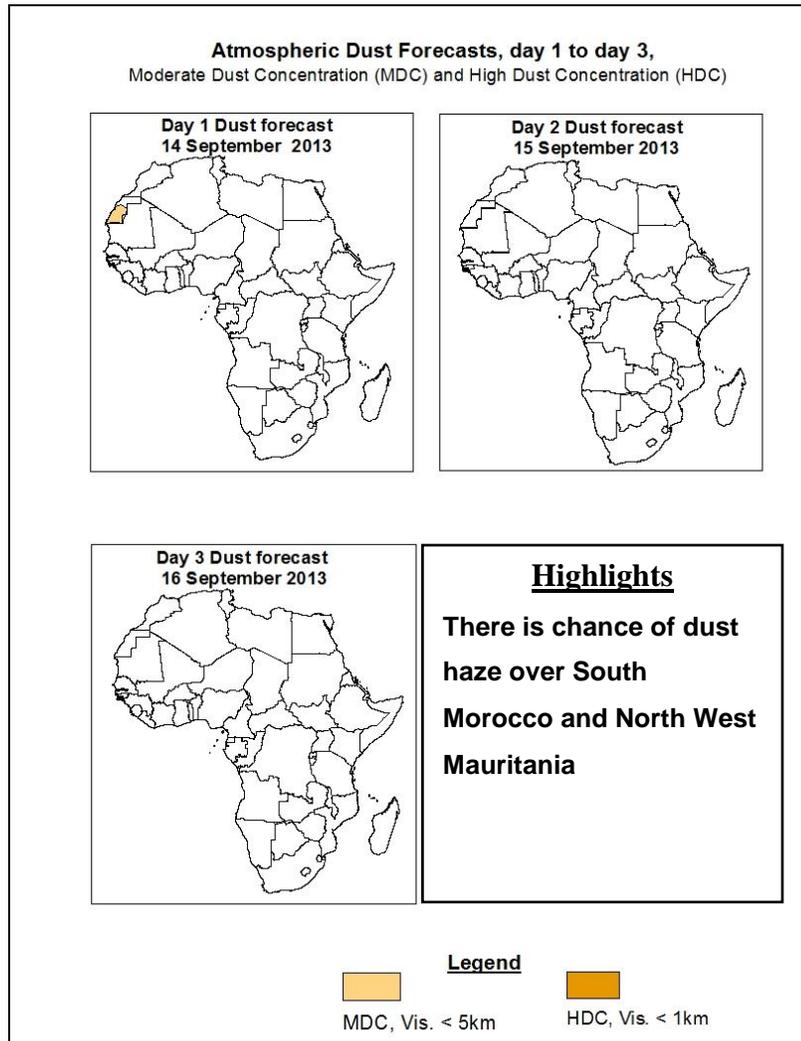
The forecasts are expressed in terms of 75% probability of precipitation (POP) exceeded, based on the NCEP, UK Met Office and the ECMWF NWP outputs, the NCEP global ensemble forecasts system (GEFS) and expert assessment.



### Summary

In the next five days, the *ITD* is expected to fluctuate between 17 and 19 degree north. Favorable conditions are expected over South Sahel and North of Guinea Gulf Countries and 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, Senegal and Sierra Leone.

## 1.2. Atmospheric Dust Forecasts: Valid 14 - 16 September 2013



### 1.2. Model Discussion: Valid from 00Z of 13 September 2013

*Model comparison (Valid from 00Z; 13 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 48 hours period, before decreasing again from 72 to 120 Hours. For the first period its central pressure value is expected to increase from about

1033hpa to 1036hpa according to GFS, from about 1032hpa to 1035hpa according to ECMWF and from about 1033hpa to 1036hpa according to UKMET models.

The St. Helena High Pressure System over southeast Atlantic Ocean is expected to weaken slightly during the 24 to 96 hours, its central pressure value is expected to decrease from about 1028hpa to 1027hpa according to GFS model and from about 1028hpa to 1026hpa according to ECMWF model, from about 1029hpa to 1027hpa according to UKMET model.

The Mascarene high pressure system over southwestern Indian Ocean is expected to Intensify during 24 and then Weaken during 48 to 120 hours. Its central pressure value is expected to increase during the 24 hours from about 1027hpa to 1032hpa according to GFS model, from about 1027hpa to 1031hpa according to ECMWF model, from about 1028hpa to 1032hpa according to UKMET model.

The heat lows over the central Sahel and neighboring areas are expected to be stationary during the forecast period especially according to both models, its central pressure value is expected to be around 1008hpa according to GFS and UKMET models.

The seasonal lows across the red sea and its neighboring areas are expected to deepen during the forecast period; its central pressure value is expected to decrease from about 1008hpa to 1004hpa according both models.

At the 850hPa level, monsoon wind flow continues to dominate flow across South Sahel and the Horn of Africa. The inter-tropical front is also expected to fluctuate between 17 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 African Easterly Waves (AEW) is also expected to 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 less intensification compare to the last week and 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 65 Knots is weakening and is expected to affect Southern Chad and South Sudan; Part of Ethiopia and Central African Republic through 24 to 120 Hours period. Speeds exceeding 60kts are observed over Ethiopia, eastern Sudan and Somalia during the forecast period.

In the next five days, the ITD is expected to fluctuate between 17 and 19 degree north. Favorable conditions are expected over South Sahel and North of Guinea Gulf Countries and 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, Senegal and Sierra Leone.

## (12 September 2013 – 13 September 2013)

### 2.1. Weather assessment for the previous day (12 September 2013)

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

**2.2. Weather assessment for the current day (13 September 2013)** North Ethiopia, South east Soudan, DRC, North Congo, Central Nigeria, East Senegal and Cameroon.

The ITD is located at an average position of latitude 18°N over Africa.

