

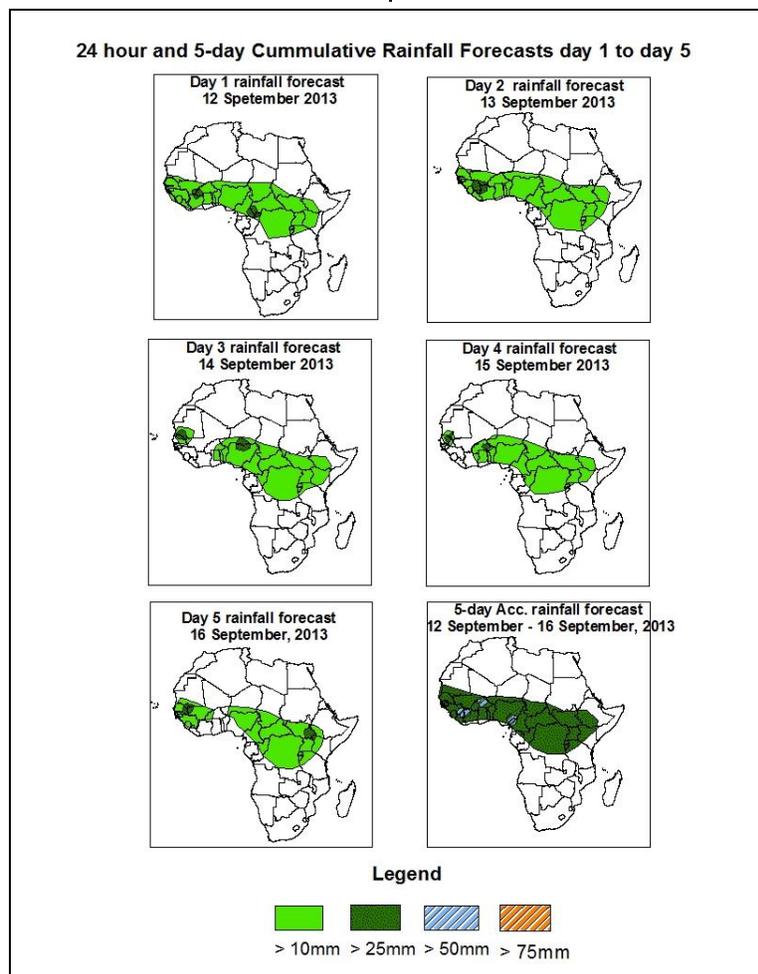


NCEP Contributions to the WMO Severe Weather Forecasting Demonstration Project (SWFDP) and to the African Monsoon Multidisciplinary Analysis (AMMA) Initiative

1.0. Rainfall Forecast: Valid 06Z of 12 September – 06Z of 16 September, 2013. (Issued at 1530Z of 11 September 2013)

1.1. Twenty Four Hour Cumulative Rainfall Forecasts

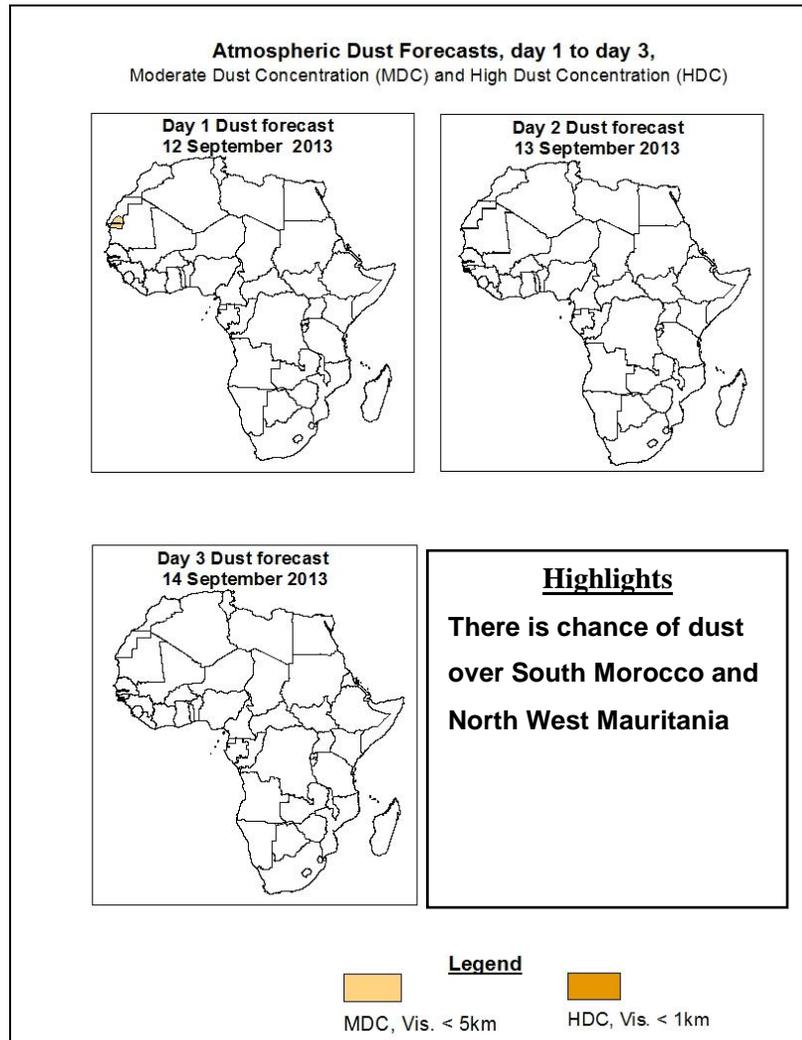
The forecasts are expressed in terms of 75% probability of precipitation (POP) exceeded, based on the NCEP, UK Met Office and the ECMWF NWP outputs, the NCEP global ensemble forecasts system (GEFS) and expert assessment.



Summary

In the next five days, the *ITD* is expected to fluctuate between 17 and 20 degree north. Favorable conditions are expected to be over South Sahel and North of Guinea Gulf Countries, while suppressed conditions along the Gulf of Guinea coast are expected, to slightly improve due to the south movement of *ITD*, the Strong cross equatorial flow, with its associated convergence over the Horn of Africa is expected to increase rainfall over East Africa. 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 12 - 14 September 2013



1.2. Model Discussion: Valid from 00Z of 11 September 2013

Model comparison (Valid from 00Z; 11 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 24 to 48 hours period, before increasing again from 72 to 120 Hours. For the first period its central pressure value is expected to decrease from about

1029hpa to 1027hpa according to GFS, from about 1029hpa to 1028hpa according to ECMWF and from about 1035hpa to 1028hpa according to UKMET models.

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 1030hpa to 1026hpa according to GFS model, from about 1030hpa to 1025hpa according to ECMWF model, from about 1031hpa to 1025hpa according to UKMET model.

The Mascarene high pressure system over southwestern Indian Ocean is expected to Intensify slightly during the forecast period. Its central pressure value is expected to increase from about 1022hpa to 1032hpa according to GFS model, from about 1022hpa to 1031hpa according to ECMWF model, from about 1022hpa to 1032hpa according to UKMET model.

The heat lows over the central Sahel and neighboring areas are expected to Weaken during 24 to 96 hours especially over Chad and Mali, its value is expected to be increased from about 1006hpa to 1012hpa, according to both models. The seasonal lows across the red sea and its neighboring areas are expected to fill up; its central pressure value is expected to increase from about 1004hpa to 1006hpa according to GFS, from about 1006hpa to, 1008hpa, according to ECMWF, from about 1004hpa to 1006hpa according to UKMET.

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 20 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.

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 least 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 20 degree north. Favorable conditions are expected to be over South Sahel and North of Guinea Gulf Countries, while suppressed conditions along the Gulf of Guinea coast are expected, to slightly improve due to the south movement of ITD, the Strong cross equatorial flow, with its associated convergence over the Horn of Africa is expected to increase rainfall over East Africa. 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.

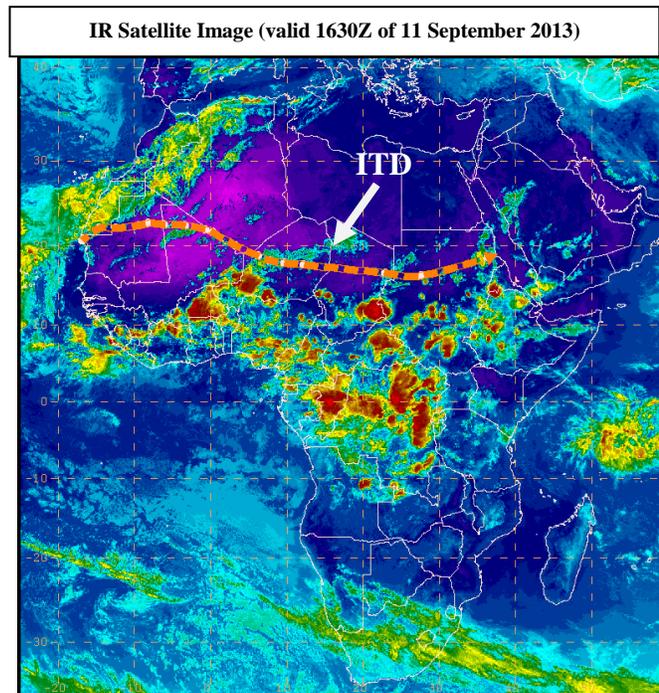
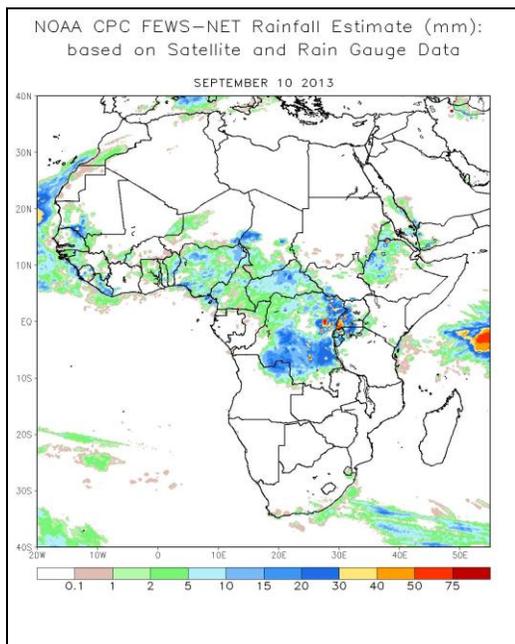
(10 September 2013 – 11 September 2013)

2.1. Weather assessment for the previous day (10 September 2013)

During the previous day, moderate to heavy rainfall was observed over South Mauritania, East Ghana, North Nigeria, North CAR, South DRC, South Chad, , West Ethiopia, West Uganda, East Senegal..

2.2. Weather assessment for the current day (11 September 2013) west Niger, Burkina Faso, North Ghana, DRC, Cameroon, Congo, West CAR, Central Ethiopia, South West Mali.

The ITD is located at an average position of latitude 19°N over Africa.



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