



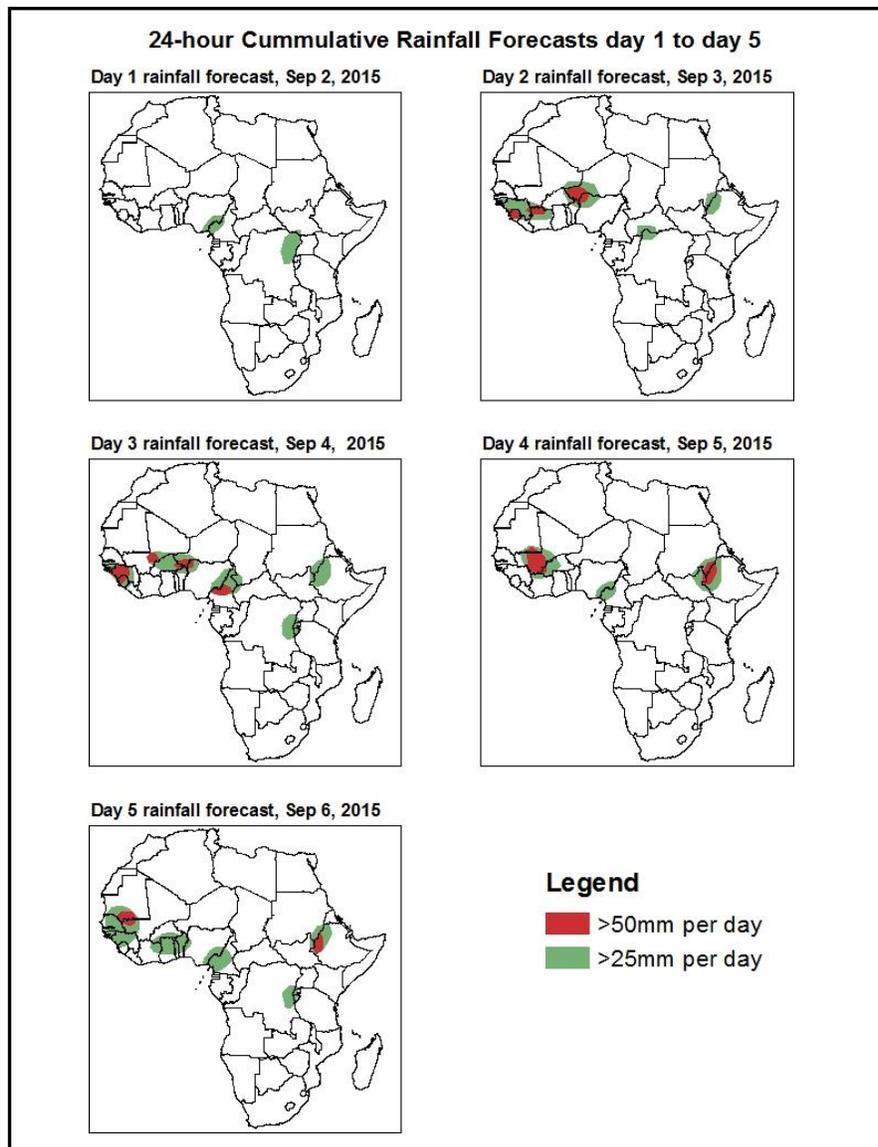
# NCEP Contributions to the WMO Severe Weather Forecasting Demonstration Project (SWFDP) and to the African Monsoon Multidisciplinary Analysis (AMMA) Initiative

## 1. Rainfall and Dust Concentration Forecasts

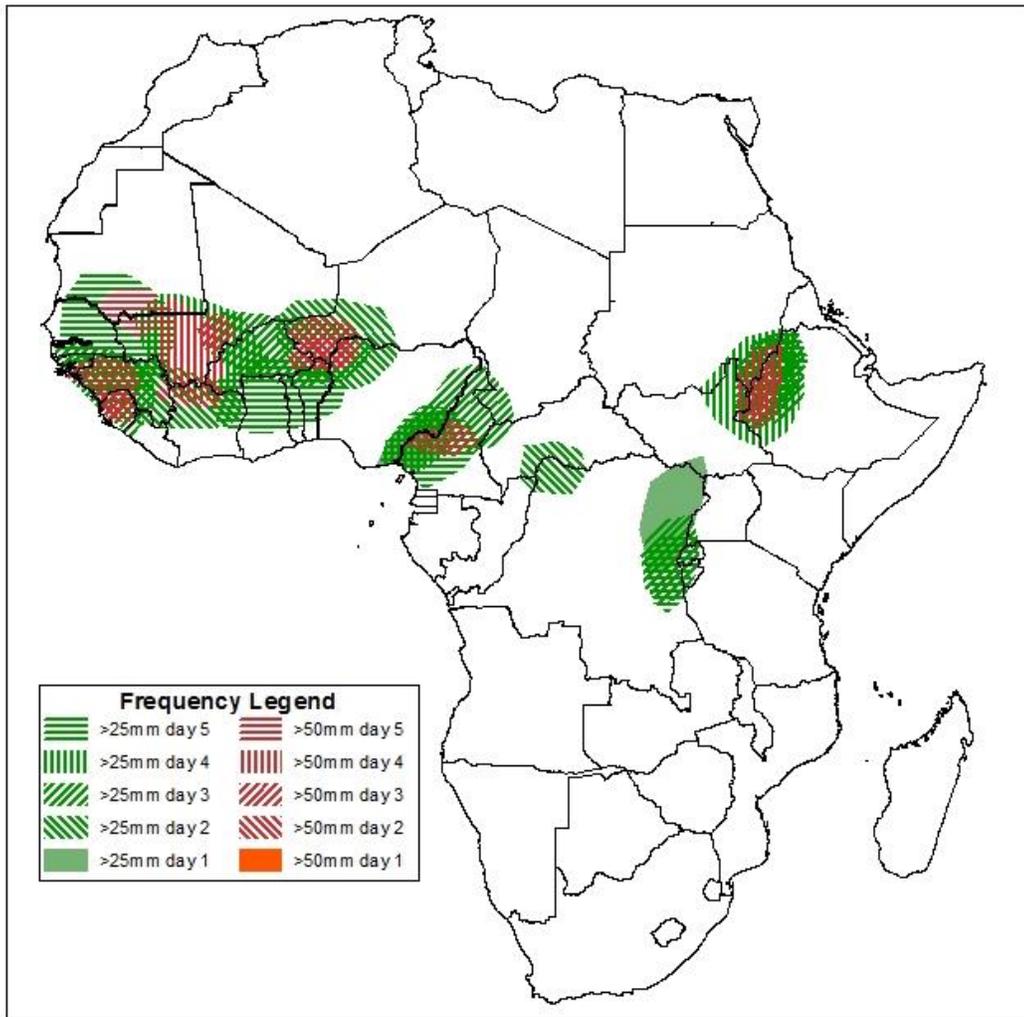
Valid: 06Z of Sep 2 – 06Z of Sep 6 2015. (Issued on September 1, 2015)

### 1.1. 24-hour Cumulative Rainfall Forecasts

The forecasts are expressed in terms of high probability of precipitation (POP), based on the NCEP/GFS, ECMWF and the NCEP Global Ensemble Forecasts System (GEFS) and expert assessment.



## Five Days Forecast Summary Sep 2 - Sep 6, 2015



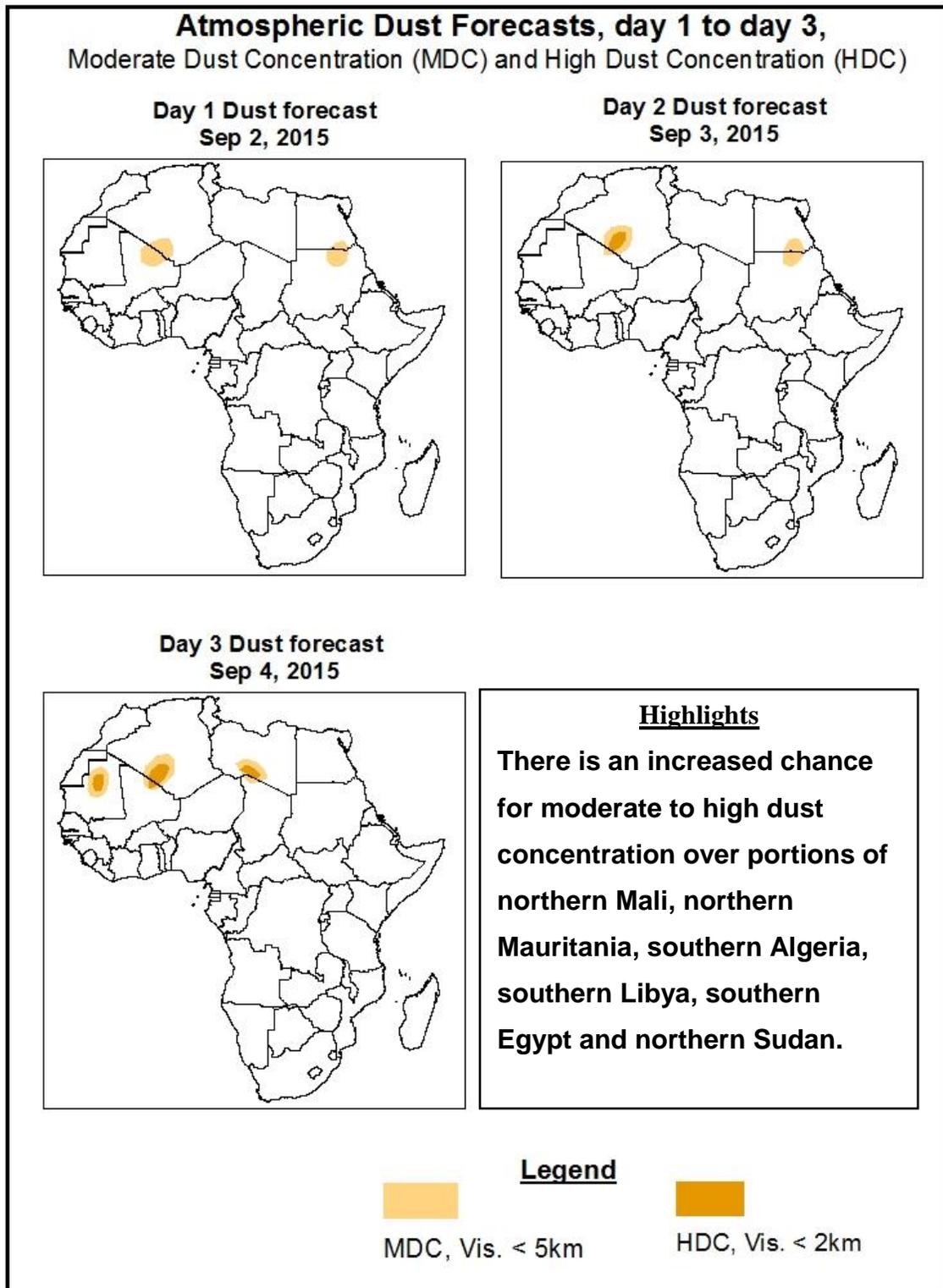
### **Summary**

*In the next five days, westward propagating cyclonic circulations across West Africa, and lower-level wind convergences across portions of Central and East Africa are expected to enhance rainfall in their respective regions. Thus, many places in West Africa and portions of the Greater Horn of Africa are expected to receive moderate to heavy rainfall. There is an increased chance for daily rainfall to exceed 50mm for two or more days over western Guinea, Sierra Leone, portions of Mali, northern Cote d'Ivoire, southwestern Niger, and northwestern Nigeria, parts of Cameroon, western Ethiopia and portions of eastern Sudan.*

## 1.2. Atmospheric Dust Concentration Forecasts

Valid: 12Z of Sep 2– 12Z of Sep 4, 2015

The forecasts are expressed in terms of high probability of dust concentration, based on the Navy Aerosol Analysis and Prediction System, NCEP/GFS lower-level wind forecasts and expert assessment.



### **1.3. Model Discussion, Valid: Sep 2 – Sep 6, 2015**

The Azores high pressure system over Northeast Atlantic Ocean is expected to intensify, with its central pressure value increasing from about 1030hpa to 1034hpa through 24 to 120 hours, according to the GFS model.

The St Helena high pressure system over the Southeast Atlantic Ocean is expected to intensify slightly while shifting eastward into southern coast of West Africa through 24 72 hours, and it is expected to shift further into Southwest Indian Ocean towards end of the forecast.

The Mascarene high pressure system over Southwest Indian Ocean is expected to relax while shifting eastwards, with its central pressure value decreasing from 1032hpa to 1028 during the forecast period, according to the GFS model.

A thermal low over northern Mali is expected to shift towards Mauritania while maintaining an average central pressure value of 1007hpa during the forecast period. Another thermal low over Niger is expected to shift towards northern Mali during the forecast period. Thermal low over Sudan is expected to fill up gradually during the forecast period.

At 925Hpa, a cyclonic circulation over northern Mali is expected to propagate westwards between northern Mali and Mauritania while deepening, during the Forecast period. Zonal wind convergence is expected to prevail near the 15°N latitude, in the region between Niger and Sudan. Meridional wind convergence is expected to remain active in the region between southern Sudan and northeastern DRC during the forecast period.

At 850Hpa level, a broad area of cyclonic circulation near Cote d'Ivoire and the neighboring areas is expected to propagate northwestward, towards Mauritania during the forecast period. Seasonal lower-level wind convergences are expected to remain active across the Sahel region, Sudan, portions of Ethiopia, South Sudan and northeastern DRC.

At 700hpa level, a deep trough in the easterlies is expected to propagate westward between the longitudes of Nigeria and western Mauritania during the forecast period.

In the next five days, westward propagating cyclonic circulations across West Africa, and lower-level wind convergences across portions of Central and East Africa are expected to enhance rainfall in their respective regions. Thus, many places in West Africa and portions of the Greater Horn of Africa are expected to receive moderate to heavy rainfall. There is an increased chance for daily rainfall to exceed 50mm for two or more days over western Guinea, Sierra Leone, portions of Mali, northern Cote d'Ivoire, southwestern Niger, and northwestern Nigeria, parts of Cameroon, western Ethiopia and portions of eastern Sudan.

## 2.0. Previous and Current Day Weather over Africa

(Valid: 31 August – 1 September, 2015)

### 2.1. Weather assessment for the previous day (August 31, 2015)

Moderate to heavy rainfall was observed over portions of southern Mauritania, southwestern Mali, southern Chad, and local areas in DRC.

### 2.2. Weather assessment for the current day (September 1, 2015)

Intense clouds are observed across portions of the Sahel region, central Africa countries, the Lake Victoria region, and portions of the Greater Horn of Africa countries.

