



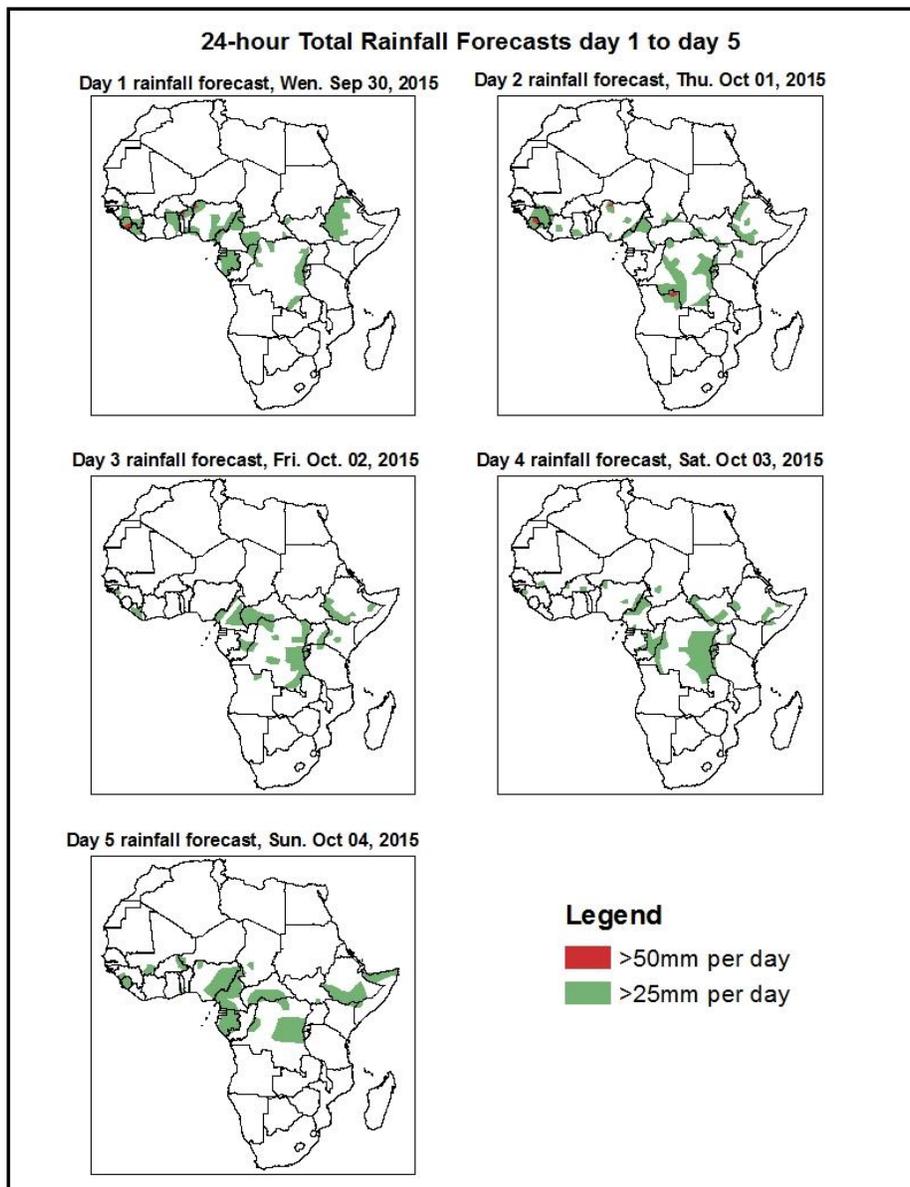
# NCEP Contributions to the WMO Severe Weather Forecasting Demonstration Project (SWFDP) and to the African Monsoon Multidisciplinary Analysis (AMMA) Initiative

## 1. Rainfall and Dust Concentration Forecasts

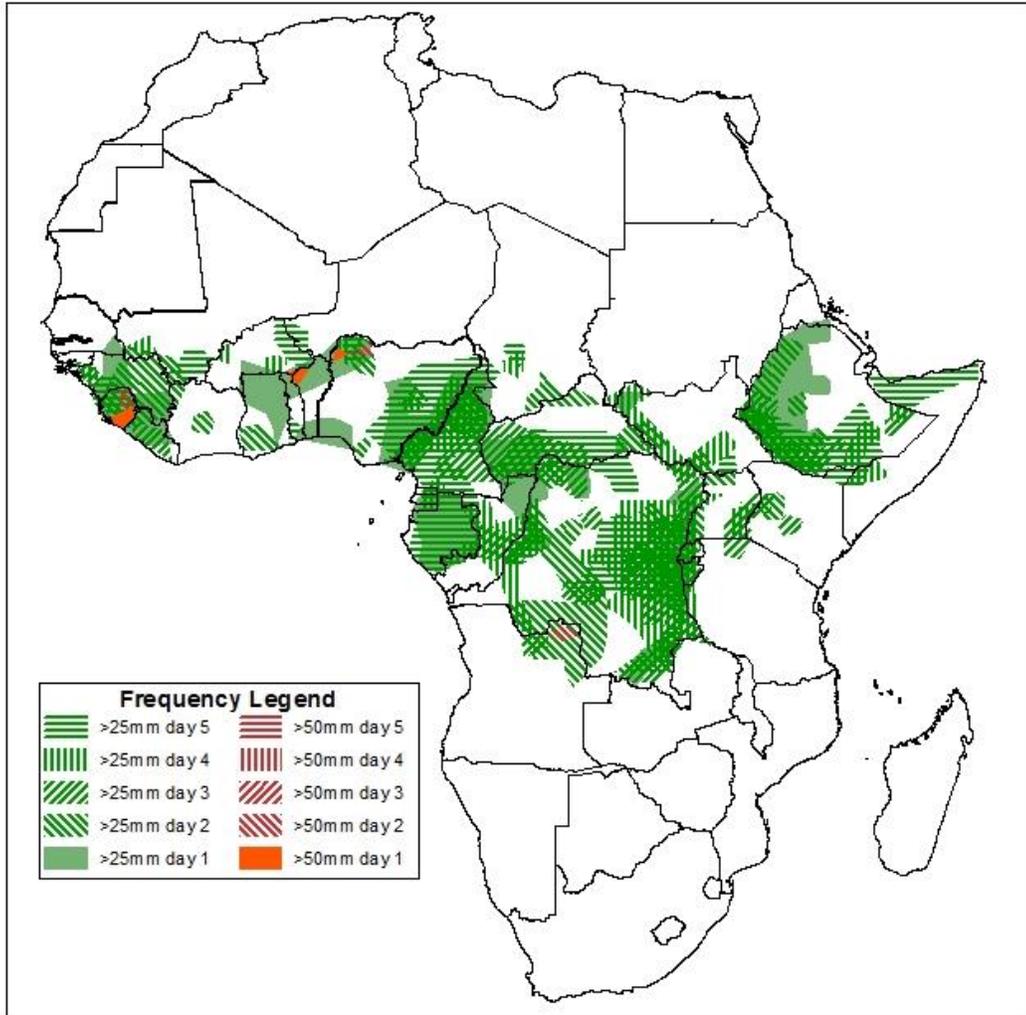
Valid: 06Z of Sep 30 – 06Z of Oct 04 2015. (Issued on September 29, 2015)

### 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 Rainfall Forecast Summary 30 Sept - 04 October, 2015

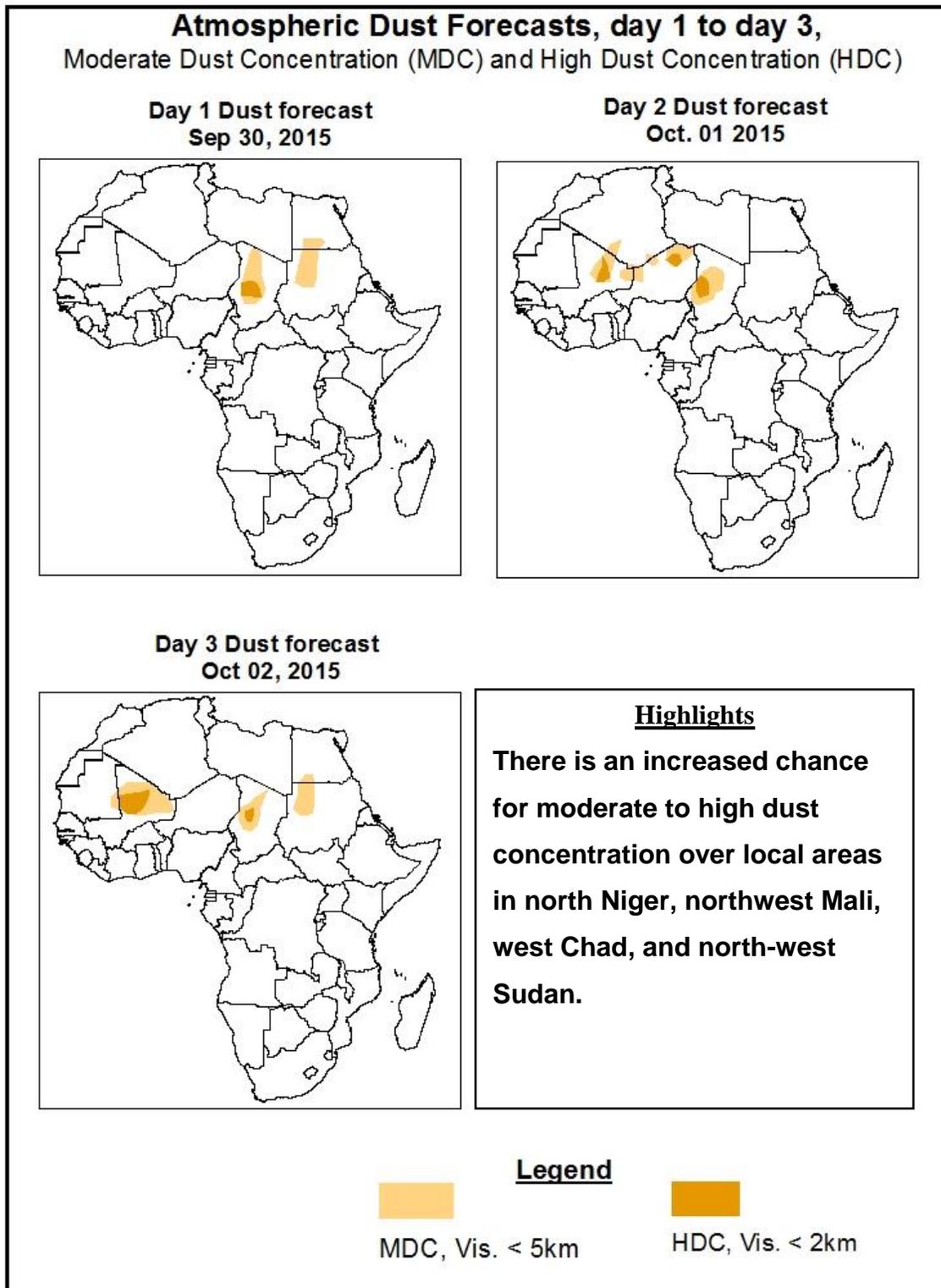


In the coming five days, monsoon flow from the Atlantic Ocean with its associated convergence across West and Central Africa will continue enhancing rainfall over southern Senegal, Guinea-Bissau, Guinea-Conakry, Sierra Leone, Liberia, South Mali, central Ivory Coast, major part of Ghana, north and eastern part of Nigeria, large part of Cameroon, south CAR, portions of south Chad and some parts of Southern Sudan. Seasonally moderate to heavy rainfall is also expected to continue across western Ethiopia and part of Somalia, large area of DRC and major part of Rwanda and Burundi.

## 1.2. Atmospheric Dust Concentration Forecasts

Valid: 12Z of Sep 30 – 12Z of Oct 04, 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: 30 – 04 October, 2015**

The Azores high pressure system over Northeast Atlantic Ocean has moved far northward to the European continent with its central pressure value of 1042 mb and is expected to weaken in 48 hours while moving further southwestward the Atlantic Ocean with a central pressure value of 1037 mb. The High pressure system will continue moving and decreasing gradually from the northern position toward its climatological position at the end of the forecast period according to the GFS model with a central pressure value of 1025mb.

The ridge associated with the St Helena high pressure system over the Southeast Atlantic Ocean is expected to vary between 1025 mb and 1027 mb in 48 hours. It will continue to extend its influence to southwestern Indian Ocean weather pattern by changing its position where the central pressure value decreased up to 1021 mb in 72 hours before the subtropical high pressure systems resume their climatological position towards the end of the forecast time period with a central pressure value reaching 1025 mb.

The Mascarene high pressure system will decrease slightly within 48 hours with central pressure value varying from 1033 mb up to 1030 mb then will gradually increase while moving toward western Indian Ocean with expected central pressure value of 1035 mb at the end of the forecast period.

A thermal low with central pressure value between 1007 mb and 1009 mb are expected to propagate westward through 24 to 120 hours while slightly filling up and covering region between Mali, Niger and Sudan with a central pressure value of 1010 mb towards the end of the forecast period while moving westward.

At 925 mb, a cyclonic circulation over Niger is expected to propagate towards the coastal area of Senegal across Mali through 24 to 120 hours. Strong Zonal wind convergence is expected to prevail across Sudan and Mali during the forecast period. Meridional wind convergence is expected to remain active in the region between Sudan and Northeast DRC towards western coast of Ethiopian region during the forecast period.

At 850 mb level, a large cyclonic circulation over Niger is expected to propagate towards coastal area of Senegal by passing through Mali during the forecast period.

At 700 mb level, an easterly flow is expected to propagate westwards in the region between central Sudan toward the gulf of Guinea during the forecast period.

In the coming five days, monsoon flow from the Atlantic Ocean with its associated convergence across West and Central Africa will continue enhancing rainfall over southern Senegal, Guinea-Bissau, Guinea-Conakry, Sierra Leone, Liberia, South Mali, central Ivory Coast, major part of Ghana, north and eastern part of Nigeria, large part of Cameroon, south CAR, portions of south Chad and some parts of Southern Sudan. Seasonally moderate to heavy rainfall is also expected to continue across western Ethiopia and part of Somalia, large area of DRC and major part of Rwanda and Burundi.

## **2.0. Previous and Current Day Weather over Africa**

### **2.1. Weather assessment for the previous day (September 28, 2015)**

Moderate to locally heavy rainfall was observed over southern Mali, in Liberia, Burkina Faso, western Cameroon, central Congo, western Chad and northern CAR.

### **2.2. Weather assessment for the current day (September 29, 2015)**

Intense clouds are observed portions of West Africa and central Africa, in Sierra Leone, northern Ivory Coast, east part of South Sudan, central CAR, west of Ethiopia, many places in east African countries: East of DRC, Rwanda, Burundi and Uganda.

