



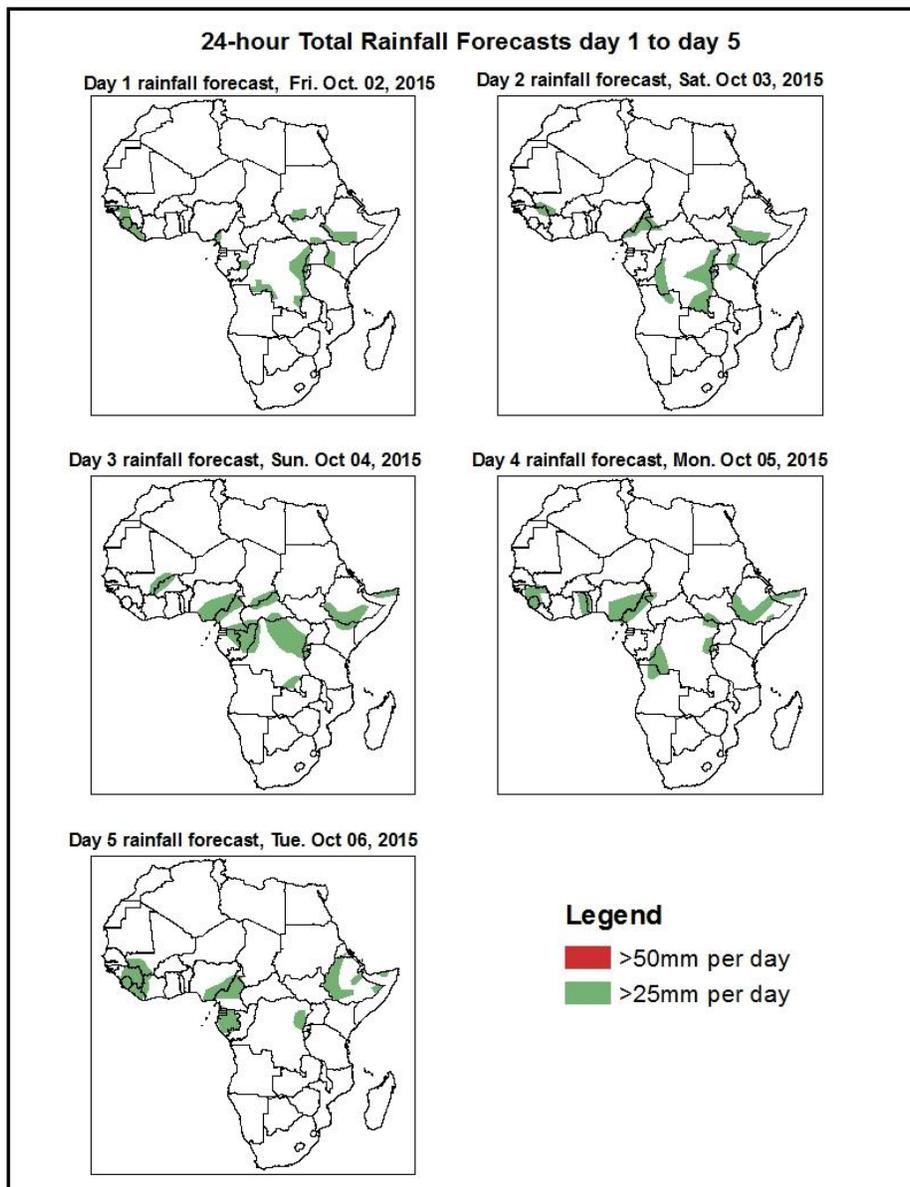
# NCEP Contributions to the WMO Severe Weather Forecasting Demonstration Project (SWFDP) and to the African Monsoon Multidisciplinary Analysis (AMMA) Initiative

## 1. Rainfall and Dust Concentration Forecasts

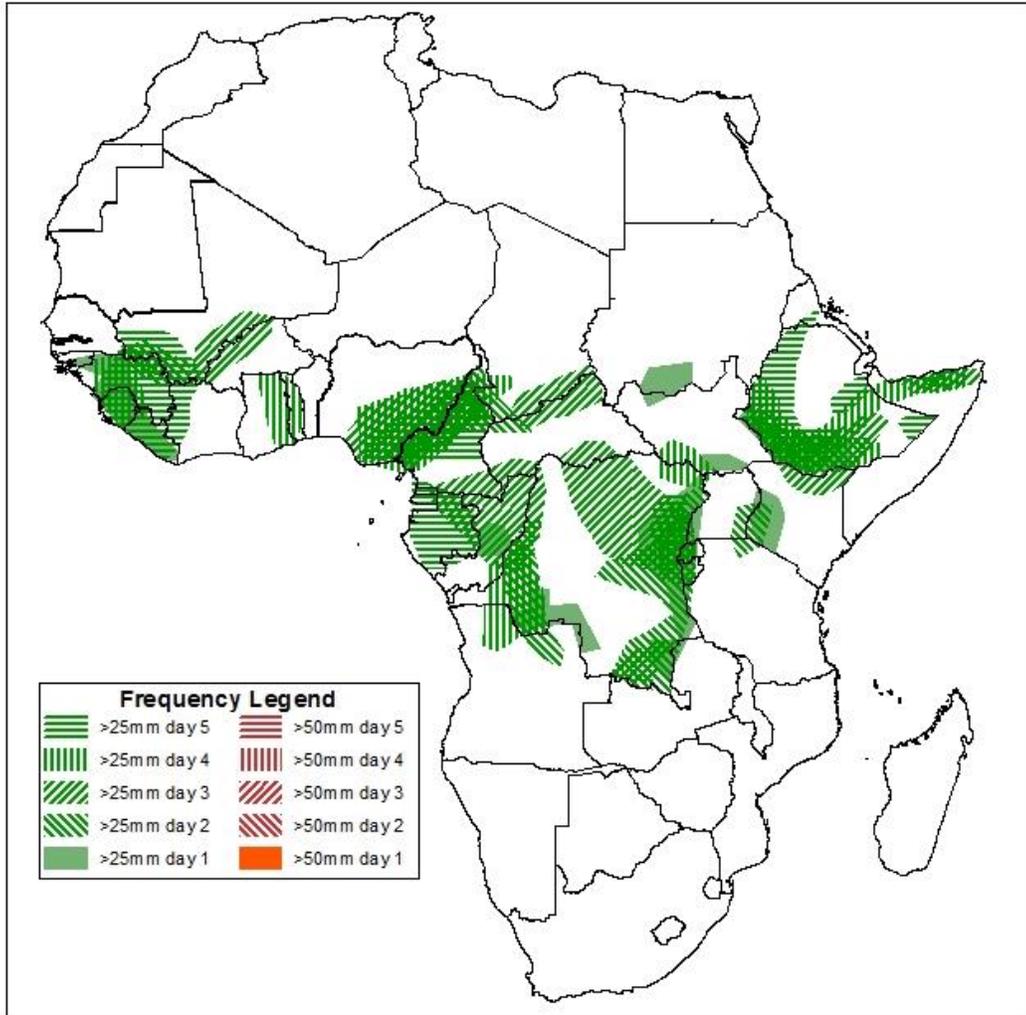
Valid: 06Z of Oct 02 – 06Z of Oct 06 2015. (Issued on October 01, 2015)

### 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 02 Oct - 06 October, 2015

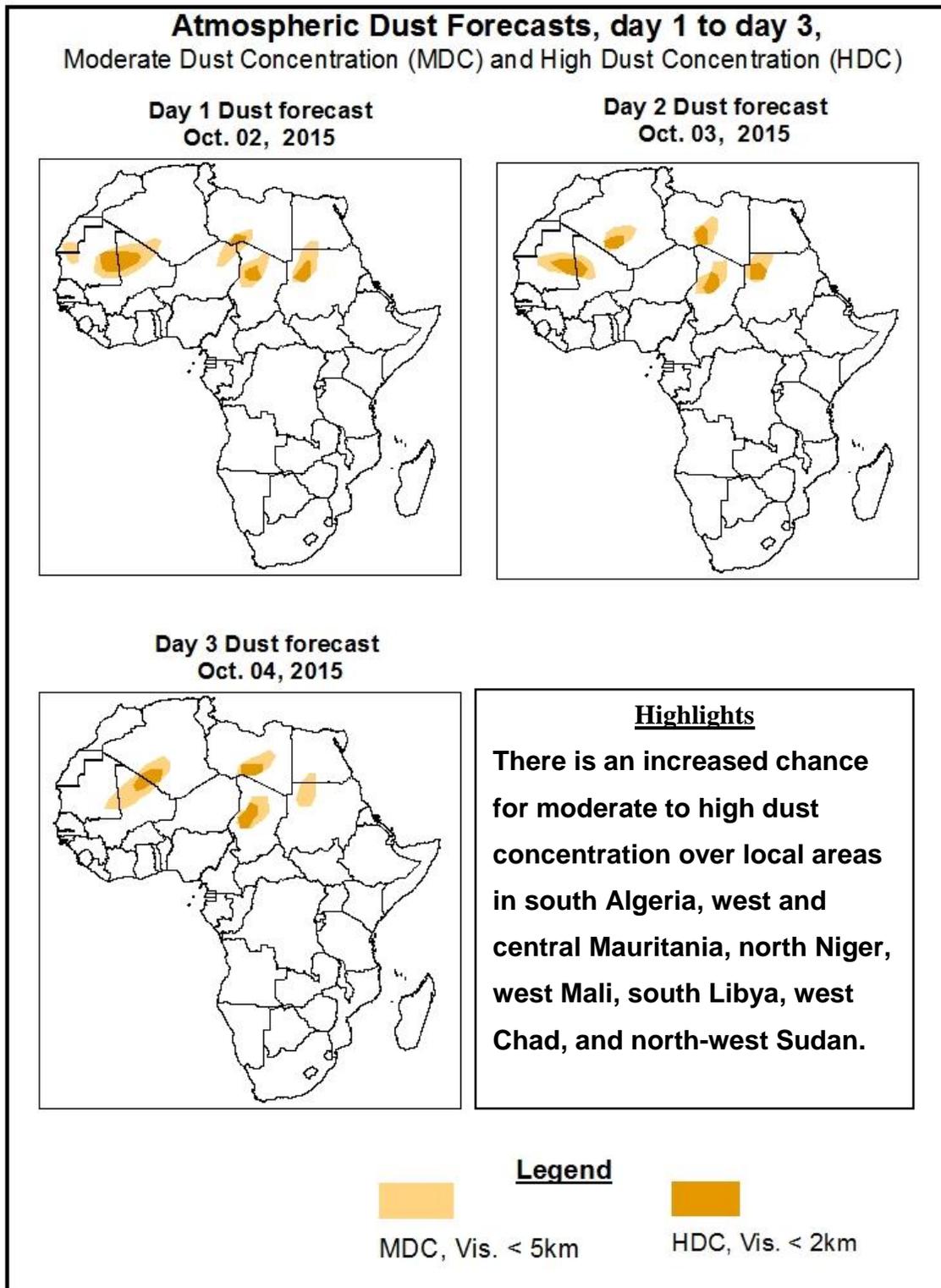


In the coming five days, monsoon flow from the Atlantic Ocean with its associated convergence across West and Central Africa will continue enhancing rainfall in Guinea-Bissau, Guinea-Conakry, Sierra Leone, Liberia, South Mali, West Ivory Coast and Western Ghana, eastern part of Nigeria, large part of Cameroon, Gabon and Congo, 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 Oct 02 – 12Z of Oct 06, 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: 02 – 06 October, 2015**

The Azores high pressure system over Northeast Atlantic Ocean has moved southward to the African continent with a decrease of its central pressure value up to 1019 mb and is expected to increase gradually in 48 hours while moving further southwestward the Atlantic Ocean with a central pressure value of 1022 mb. The High pressure system will continue moving and increasing gradually from its 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 1020 mb and 1029 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 1019 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 1023 mb.

The Mascarene high pressure system will decrease slightly within 24 hours with central pressure value varying from 1029 mb up to 1030 mb then no significant change will be expected while moving toward western Indian Ocean with the central pressure value will be 1030 mb at the end of the forecast period.

A thermal low with central pressure value between 1006 mb and 1011 mb are expected to propagate westward through 24 to 120 hours the low over Chad with central pressure reaching a value of 1008 mb in 48 hours will slightly filling up and covering region between Mali, Niger and Sudan with a central pressure value of 1011 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 in Guinea-Bissau, Guinea-Conakry, Sierra Leone, Liberia, South Mali, West Ivory Coast and Western Ghana, eastern part of Nigeria, large part of Cameroon, Gabon and Congo, 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 30, 2015)**

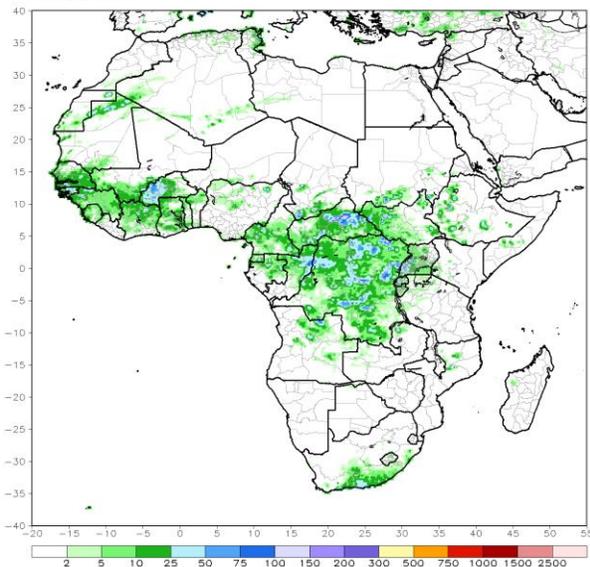
Moderate to locally heavy rainfall was observed over southern Mali, in Liberia, Burkina Faso, western Cameroon, central Congo, western Chad and northern CAR.

### **2.2. Weather assessment for the current day (October 01, 2015)**

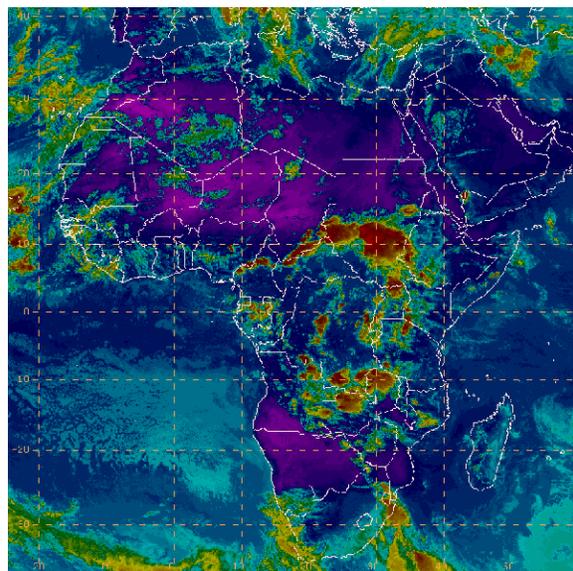
Intense clouds are observed portions of West Africa and cent

ral Africa, in Burkina Faso, South, south Senegal, east CAR, east Congo, and many places in east African countries: East of DRC, Rwanda, Burundi and Uganda.

RFE2 Daily Total Rainfall (mm)  
Period: 30Sep2015



IR Satellite Image (valid 1630 of October 01, 2015)



*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: Innocent Dudu** (Burundi Hydro-meteorological Department / CPC-African Desk); [innocent.dudu@noaa.gov](mailto:innocent.dudu@noaa.gov)