



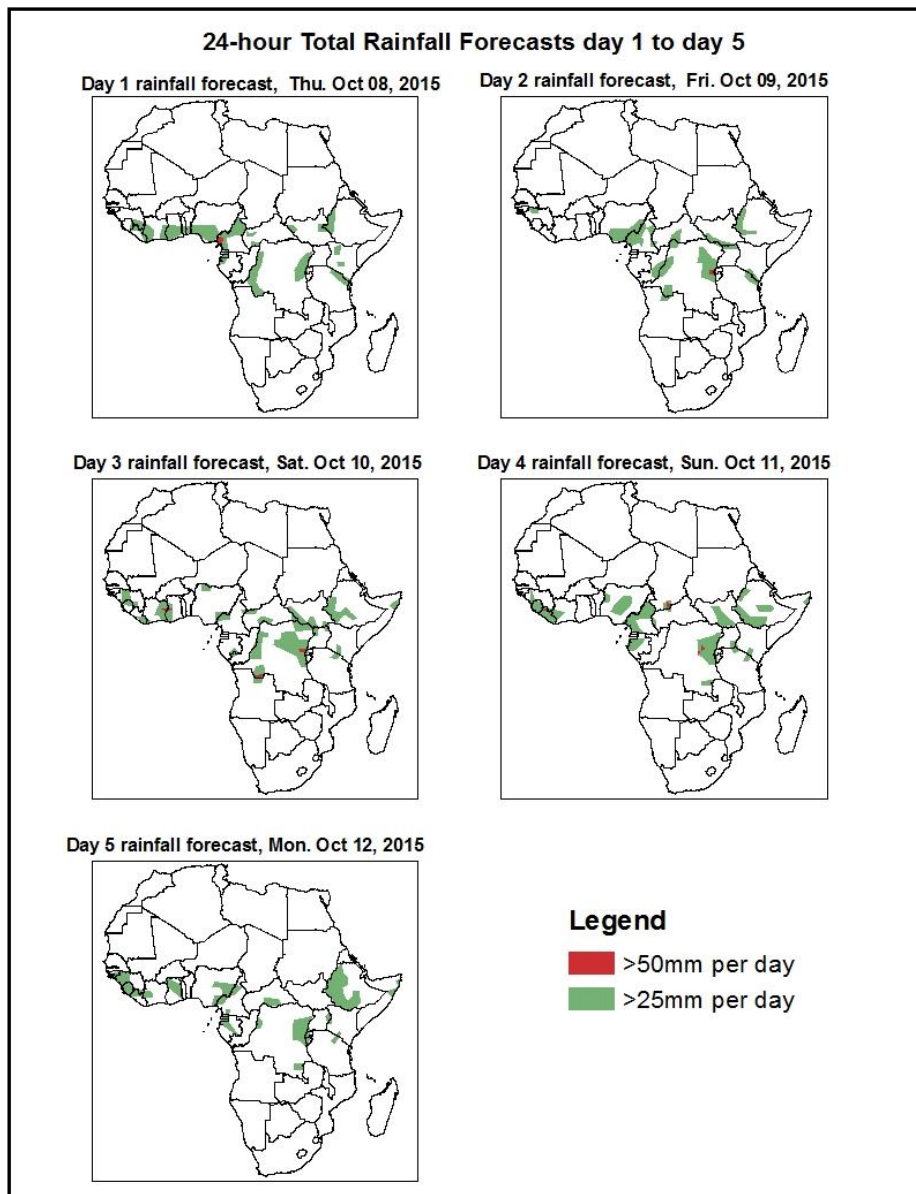
# NCEP Contributions to the WMO Severe Weather Forecasting Demonstration Project (SWFDP) and to the African Monsoon Multidisciplinary Analysis (AMMA) Initiative

## 1. Rainfall and Dust Concentration Forecasts

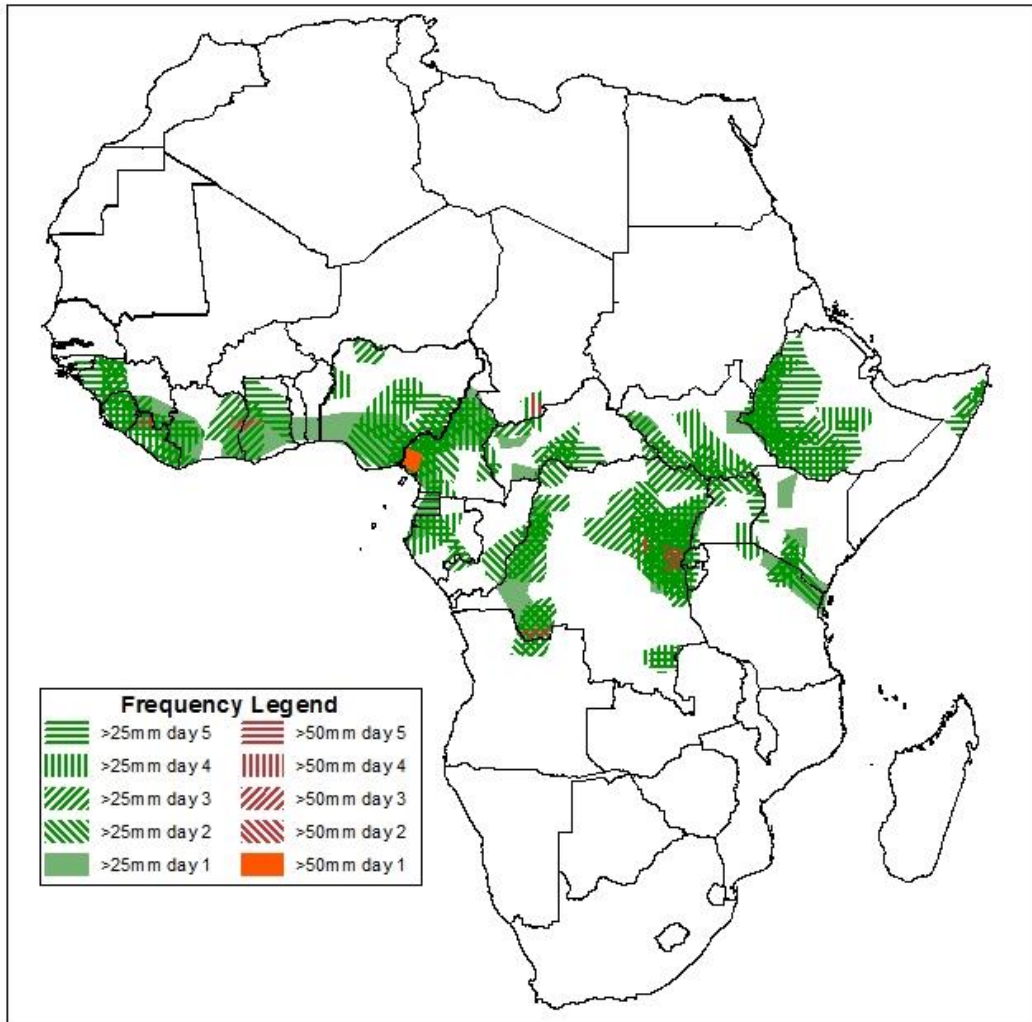
Valid: 06Z of Oct 08 – 06Z of Oct 12 2015. (Issued on October 07, 2015)

### 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  
08 Oct - 12 October, 2015**

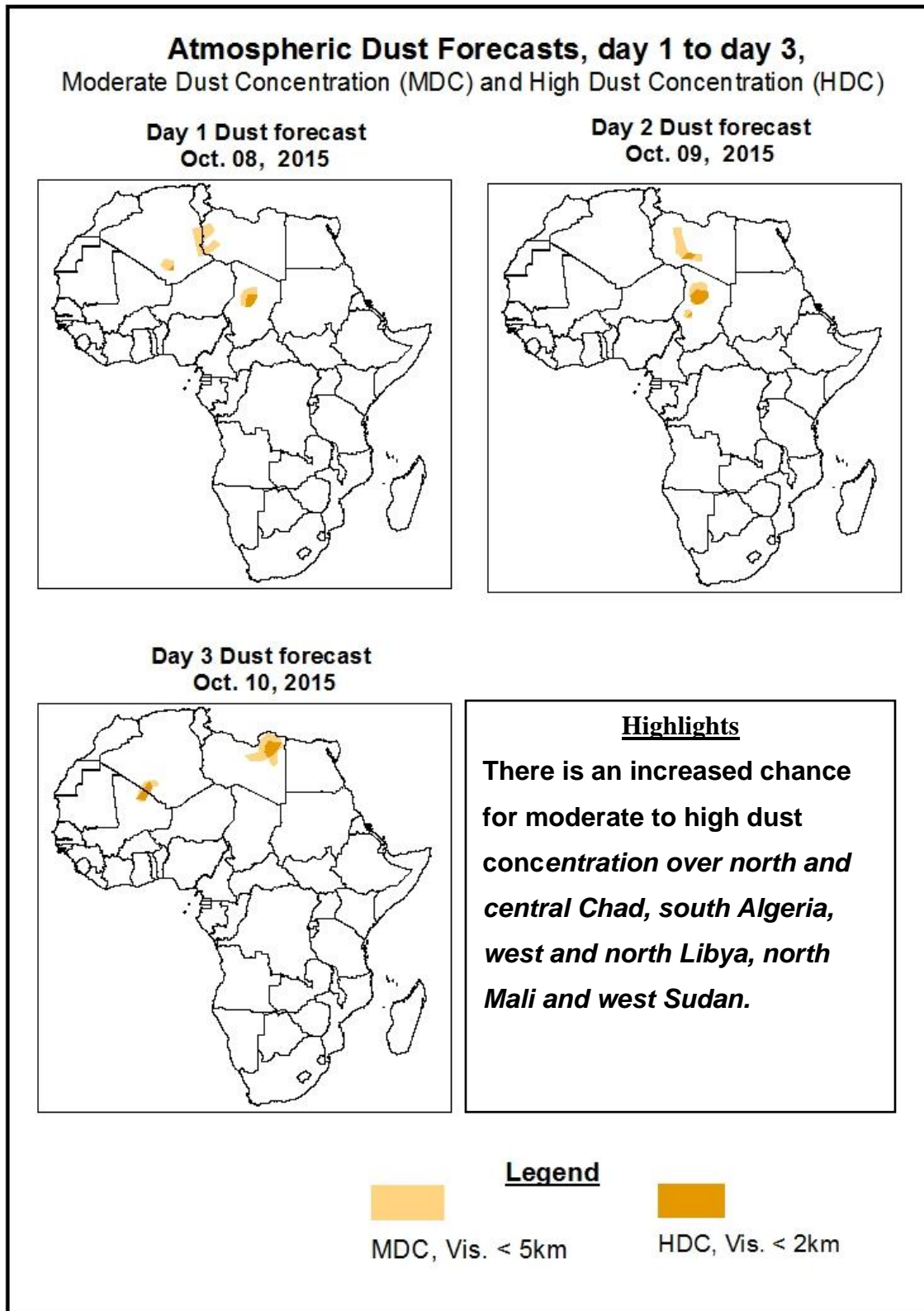


In the coming five days, monsoon flow from the Atlantic Ocean with its associated convergence across West and Central Africa will continue enhancing rainfall in Guinea-Bissau, Guinea-Conakry, Sierra Leone, Liberia, large part of Ivory Coast and Ghana, southeastern part and central Nigeria, large part of Cameroon, Gabon and west Congo, portions of CAR, and some parts of Southern Sudan, large area of DRC will receive rainfall. Seasonally moderate to heavy rainfall is also expected to continue across eastern Africa, portion of Tanzania, Uganda and Kenya, west and central of Ethiopia and east of Somalia, Rwanda and Burundi.

## 1.2. Atmospheric Dust Concentration Forecasts

Valid: 12Z of Oct 08 – 12Z of Oct 10, 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: 08 – 12 October, 2015**

The Azores high pressure system over Northeast Atlantic Ocean is in his climatological position with a central pressure value of 1022 mb and is expected to decrease slightly in 48 hours while moving further northeastward the Atlantic Ocean with a central pressure value of 1020 mb. The High pressure system will continue moving far away from its climatological position with a slight increase of the central pressure value in 120 hours up to 1022 mb at the end of the forecast period according to the GFS model.

Pressure values of the ridge associated with the St Helena high pressure system over the Southeast Atlantic Ocean are expected to vary abruptly due to an anticyclone located far to southwest of the Atlantic Ocean with pressure value of 1032 mb ridging towards south of the African continent; in 72 hours central pressure values are expected to vary from 1020 up to 1031. It will continue to extend its influence to southwestern Indian Ocean weather patterns by changing its position and will weaken gradually before the subtropical high pressure systems resume their climatological position towards the end of the forecast period with a central pressure value reaching 1022 mb.

The Mascarene high pressure system will increase gradually within 48 hours with central pressure values varying from 1022 mb up to 1024 mb then its intensification is expected to occur while moving toward western Indian Ocean; the central pressure value is expected to rise up to 1028 mb in 96 hours before reaching 1032 mb at the end of the forecast period according to the GFS model.

A thermal lows with central pressure value varying between 1009 mb and 1011 mb are expected to propagate westward through 24 to 120 hours. The low pressures over Sudan and Mali will gradually filling up in 96 hours and covering region between Mali, Niger and Sudan with expected central pressure values respectively of 1010 mb towards the end of the forecast period while move 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 Chad, Niger 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 areas of Senegal by passing through Niger and Mali during the forecast period.

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

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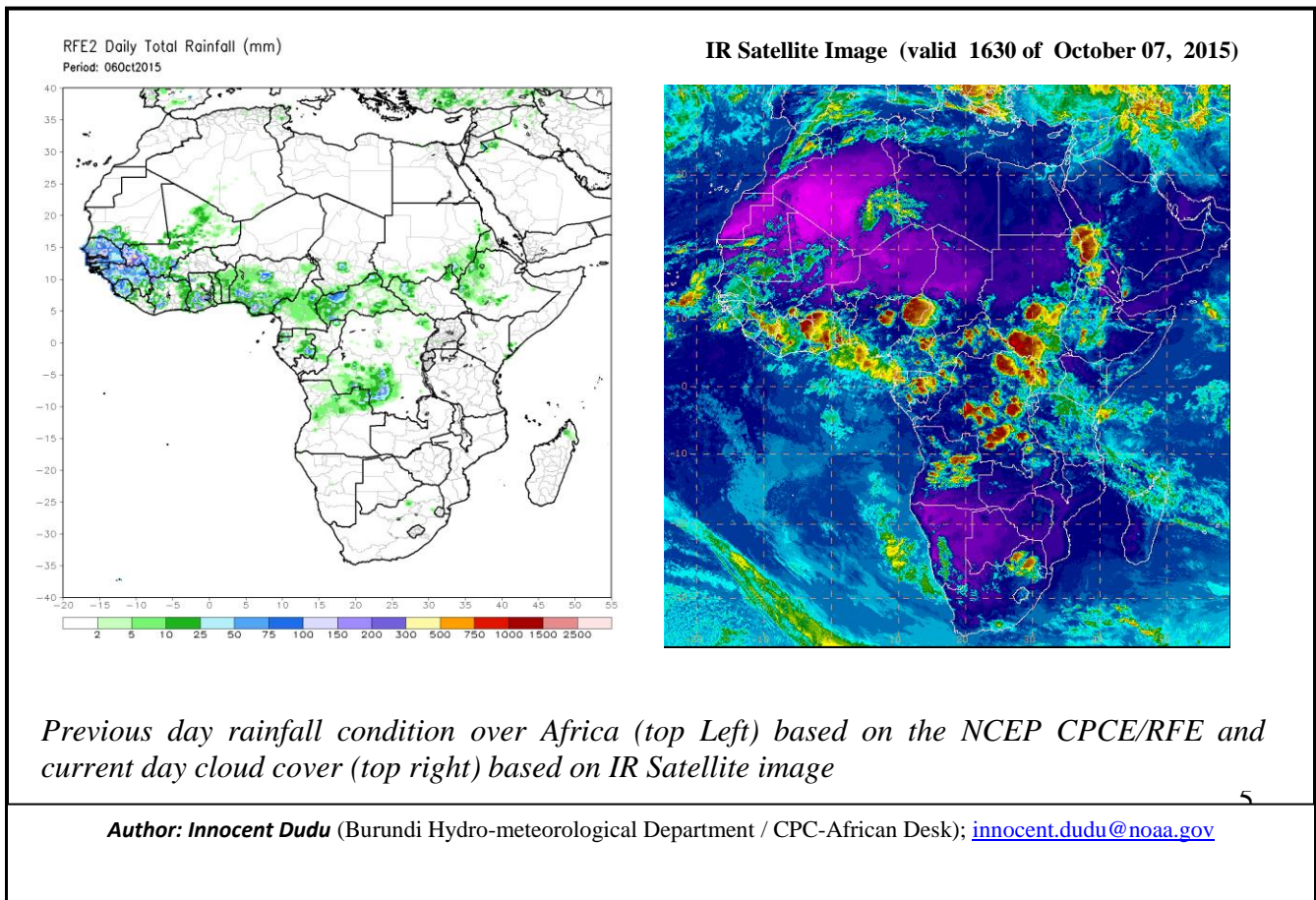
## **2.0. Previous and Current Day Weather over Africa**

### **2.1. Weather assessment for the previous day (October 06, 2015)**

Moderate to locally heavy rainfall was observed over Senegal, south Mali, Guinea, Sierra Leone, Ivory Coast, south Ghana, south and central Nigeria, west CAR, west Cameroon, west and east South Sudan, south DRC, east Gabon and west Ethiopia.

### **2.2. Weather assessment for the current day (October 07, 2015)**

Intense clouds are observed in some parts of West Africa and central Africa, south-east Guinea Conakry, Ivory Coast and Ghana, west and central Nigeria, north and west Cameroon, Gabon, Congo, central CAR and some places in east African countries: Eastern and southern South Sudan, central and southeast of DRC and southwest Ethiopia.



*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*