



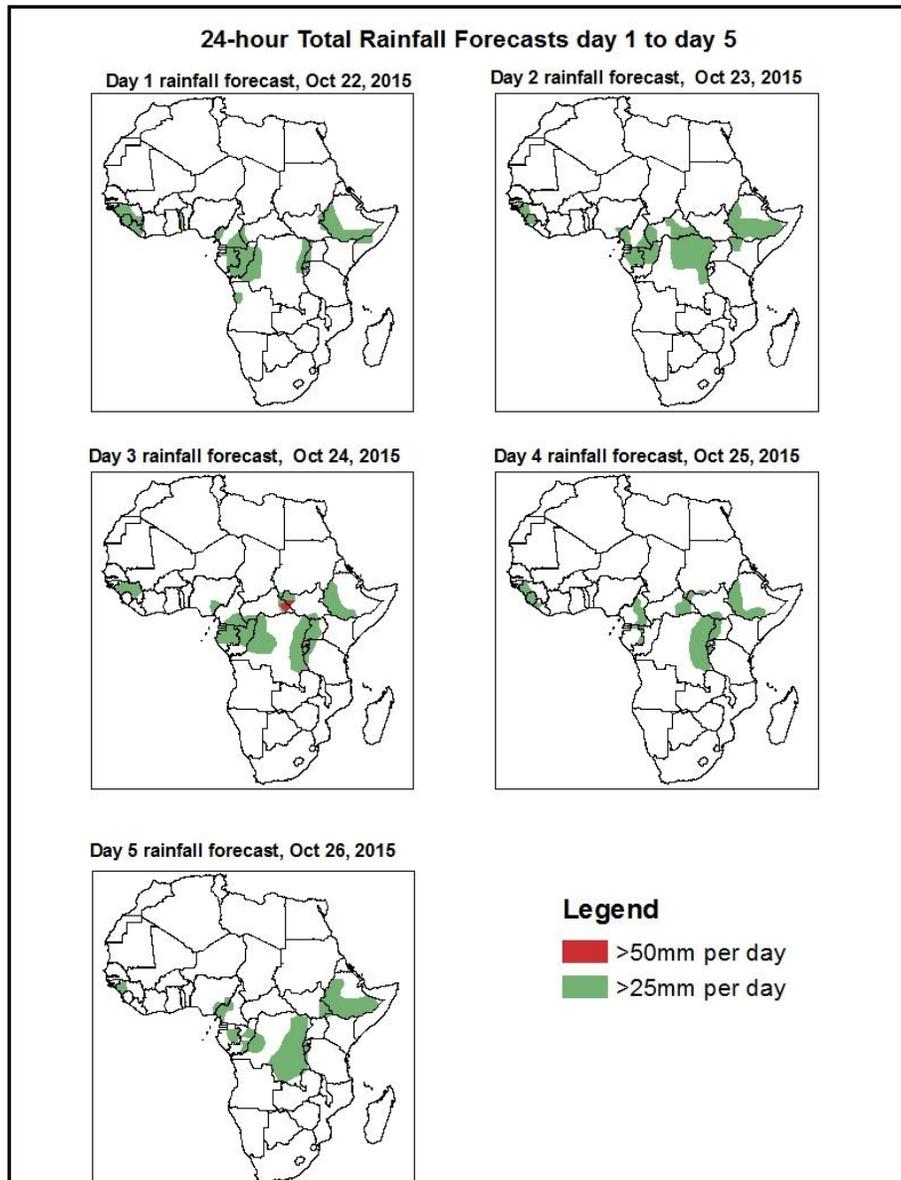
# NCEP Contributions to the WMO Severe Weather Forecasting Demonstration Project (SWFDP) and to the African Monsoon Multidisciplinary Analysis (AMMA) Initiative

## 1. Rainfall and Dust Concentration Forecasts

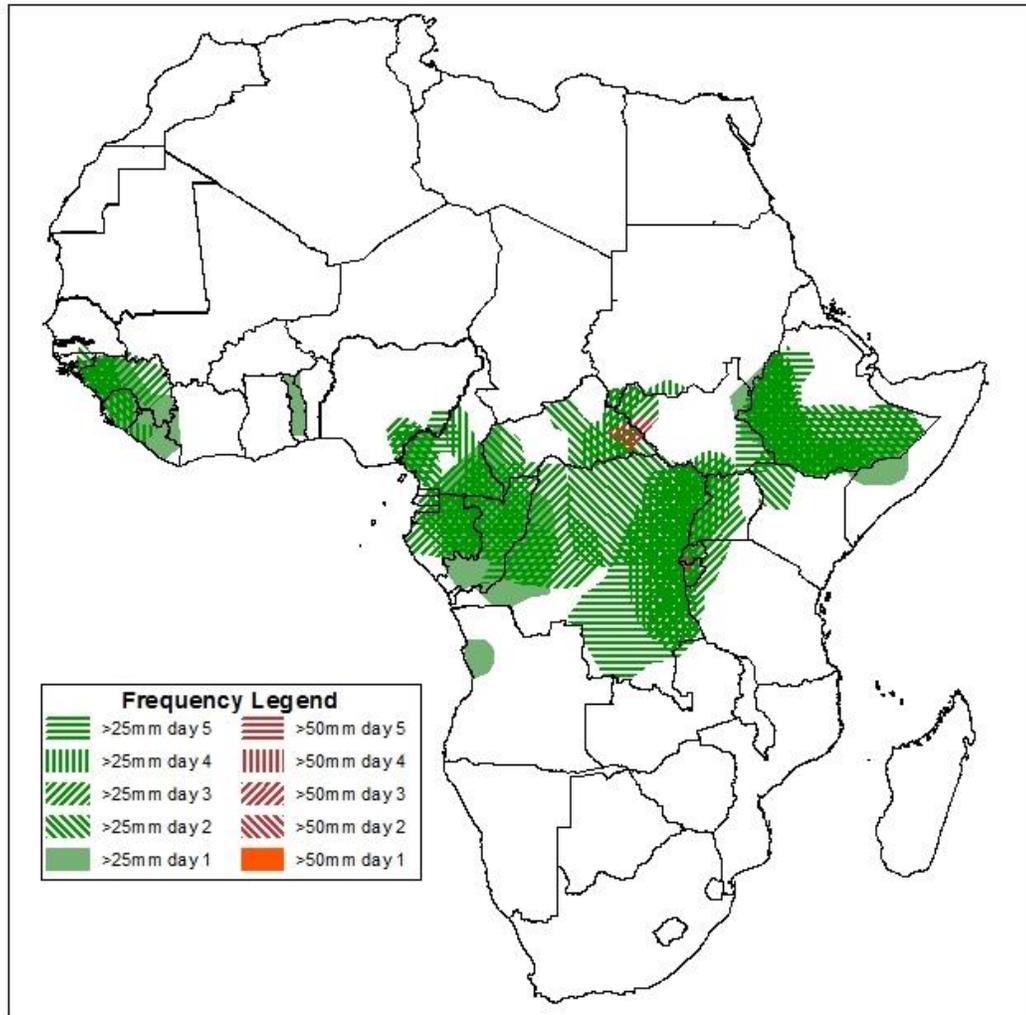
Valid: 06Z of Oct 22 – 06Z of Oct 26 2015. (Issued on October 21, 2015)

### 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 22 Oct - 25 October, 2015

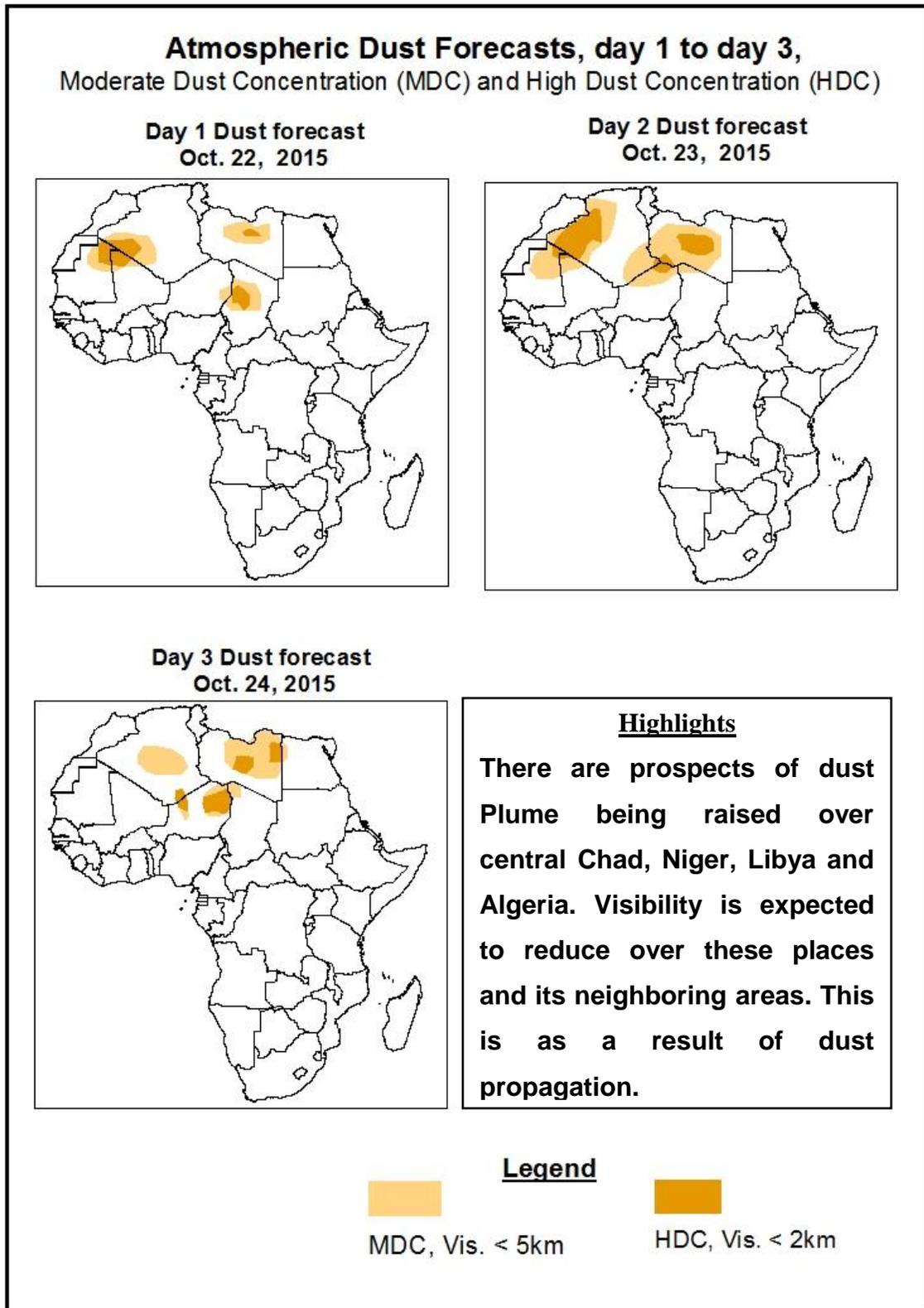


In the coming five days, current review shows that the moist westerly wind flow from the Atlantic Ocean with its associated convergence across West Africa (ITD) is expected to continue to propagate southward towards the Equator. Thereby limiting weather activity to coast, mountain ranges or elevated highlands. The meridional convergence in DRC and neighboring areas, and the East African monsoon convergence over the Horn of Africa are still present, so their influence is also expected to enhance rainfall in their respective regions. Therefore the following places are expected to have moderate to heavy rainfall. Guinea, Sierra Leone, Liberia, Benin, Nigeria, Cameroun, Congo, Equatorial Guinea, CAR, DRC in Central Africa and Ethiopia and Somalia in the horns of Africa.

## 1.2. Atmospheric Dust Concentration Forecasts

Valid: 12Z of Oct 22– 12Z of Oct 24, 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: 22– 26 October, 2015**

The Azores high pressure system is expected to maintain its central value in next 72 hours with a central pressure value of 1030 mb. The High pressure system will weaken in its central pressure value in the next 96 hours by 6 mb there by having a central value of 1024 mb and then intensify to 1026 mb at the end of the forecast period according to the GFS model.

The St Helena high pressure system over the Atlantic Ocean will weaken gradually in 72 hours, by 10 mb with its central pressure values varying from 1031 up to 1021. It will continue to weaken and retreat southward into the Atlantic Ocean becoming more remote to the coast of West Africa It Later intensified by 4 mb , from 1021 to 1025 mb at the end of the forecast period with a central pressure value of 1022 mb.

The Mascarene high pressure system will intensify gradually within 72 hours with central pressure values varying from 1023 mb to 1029 mb then increases is expected to occur in 96 hours by 1 mb, with pressure value of 1029 mb then intensifying to 1030.It further intensified to 1031 mb at the end of the forecast period according to the GFS model. The influence of this high pressure system became more prominent as its isobars were observed extending well into over East and Southern Africa.

Broad Thermal Equatorial lows pressure system was observed extending from East Africa through Central Africa up to Liberia in West Africa. Its central pressure value filling from 1008 mb to 1010 mb then deepen by 1 mb in the next 96 hours. This Centre pressure values was maintained throughout the forecast period. The are expected to propagate westward between 24 to 120 hours.

At 925 mb, Maritime winds flow from the Atlantic Ocean was observed over places like Guinea, Liberia, Ivory Coast, Ghana, Togo, Benin Republic, Nigeria, Gabon, and Cameroun. Whereas an Anticyclone situated over the Indian Ocean directs moist wind into the inlands of Kenya, Uganda, Somalia, South Sudan and Ethiopia thereby establishing Congo boundary convergence

At 850 mb level, maritime wind flow patterns are restricted to the coast over west Africa At these level monsoon maritime winds from the Indian Ocean were also observed over the horns of East Africa and Central Africa . The winds at this level are predominantly easterlies,

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 20, 2015)

Moderate to locally heavy rainfall was observed over Sierra Leone, Guinea Conakry, Ghana, Togo, Cameroon, Gabon, CAR, Sudan, south Sudan and Somalia.

### 2.2. Weather assessment for the current day (October 21, 2015)

Intense clouds are observed in some parts of West Africa and central Africa, Sierra Leone, Ivory Coast, Ghana, Nigeria, Cameroon, Angola. CAR, DRC and some places in east Africa, South Sudan, Kenya, Somalia and Ethiopia.

