



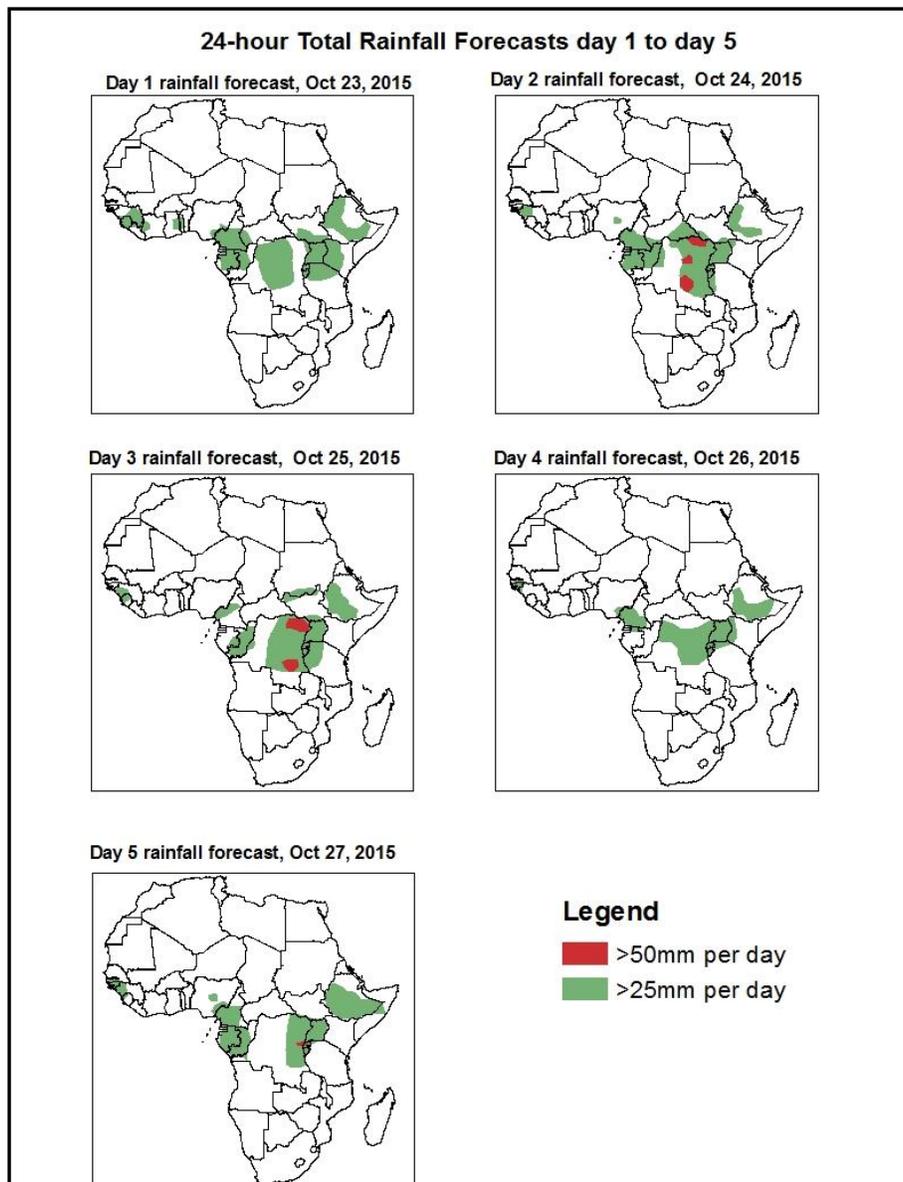
NCEP Contributions to the WMO Severe Weather Forecasting Demonstration Project (SWFDP) and to the African Monsoon Multidisciplinary Analysis (AMMA) Initiative

1. Rainfall and Dust Concentration Forecasts

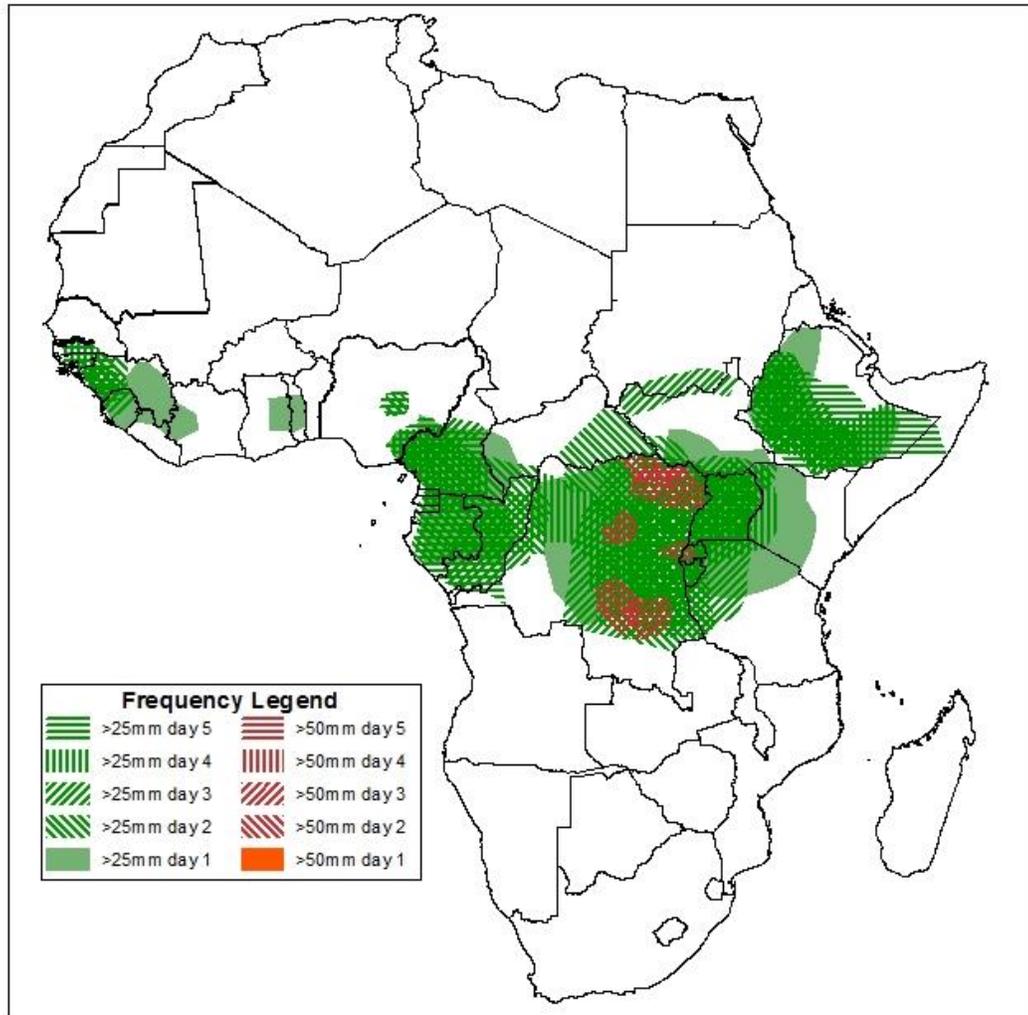
Valid: 06Z of Oct 23 – 06Z of Oct 27 2015. (Issued on October 22, 2015)

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 23 Oct - 26 October, 2015

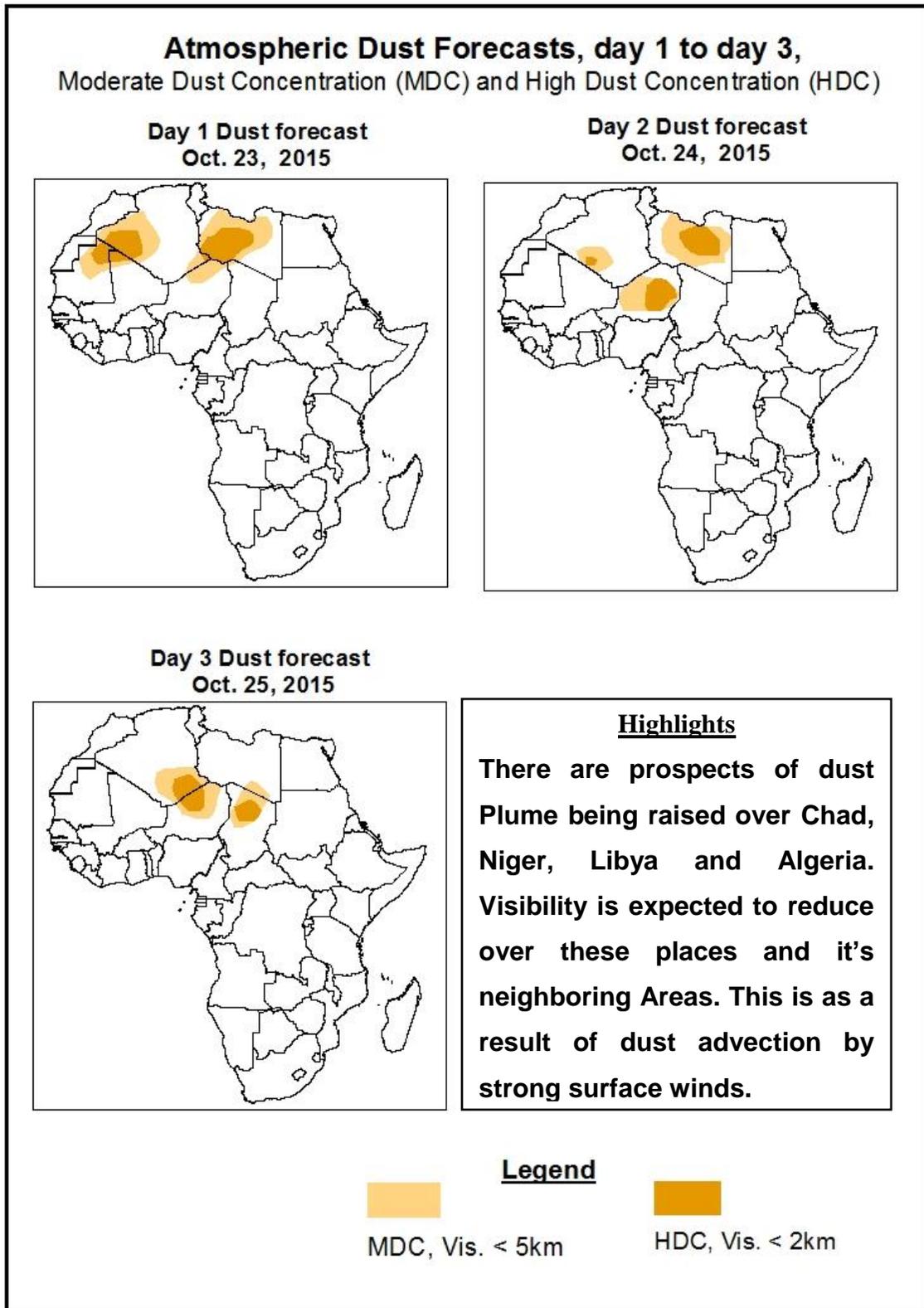


In the upcoming five days, recent updates show that the maritime southwesterly wind flow from the Atlantic Ocean with its associated convergence across West Africa (ITD) is expected to continue to propagate southward towards the Equator. Thereby limiting weather activity mostly to coast, mountain ranges or elevated highlands. The meridional convergence in DRC and neighboring areas, and the East African monsoon convergence over the Horn of Africa are still very much active, 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, Ivory Coast, Liberia, Ghana, Nigeria, Cameroun and 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 23– 12Z of Oct 25, 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: 23– 27 October, 2015

The Azores high pressure system is expected to intensify in the next 48 hours by 5 mb, from 1025 mb to 1030 mb. The High pressure system will weaken in its central pressure value in the next 96 hours by 2 mb there by having a central value of 1028 mb and then weaken further to 1026 mb at the end of the forecast period. Whereas in the next 96 hours it is expected that the extension of the Azores high relatively known as the Libyan high pressure system established itself over Libya with its associated 1016 isobar crossing the 20 degree North latitude, which is mostly an indication to dust raising over the dust source regions in those Areas.

The St Helena high pressure system over the Atlantic Ocean will weaken gradually in 72 hours, by 8 mb with its central pressure values varying from 1032 up to 1024 mb. It will later intensify to 1025 mb. This high pressure system is also expected to retreat southward into the Atlantic Ocean becoming more remote to the coast of West Africa but establishing itself more to the continent of Southern Africa.

The Mascarene high pressure system will intensify gradually within 72 hours with central pressure values varying from 1027 mb to 1031 mb then further increases is expected to occur in the next 96 hours by 2 mb, with the pressure value becoming 1033 mb. It further intensified to 1036 mb at the end of the forecast period according to the GFS model. The influence of this high pressure system is expected to become more prominent as its isobars were observed throughout the forecast period extending well into over East and Southern Africa.

Broad Thermal Equatorial low pressure system was observed lying in phase with the Mid latitude trough in the next 72 hours forecast analysis. In the next 96 hours, the interface between the Equatorial low and mid latitude low pressure System was cut by The Libyan High pressure system. This low pressure system was also observed extending from East Africa through Central Africa up to Liberia in West Africa. Its central pressure value deepened from 1010 mb to 1008 mb over East and Western Africa. At the end of the forecast period the center pressure values was observed to fill back to 1010 mb at the forecast period.

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 and into the inlands of central Africa like Congo, central Africa Republic and DRC. 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 not only restricted to the coast over West Africa but was also observed streaming into Central Africa. At this level, monsoon maritime winds from the Indian Ocean were also observed over the horns of East Africa and Central Africa. A low pressure System was observed also over Northeastern DRC establishing a strong Meridional flow. The winds at this level were predominantly easterlies,

At 700 mb level, a high pressure system observed over Algeria, establishing an anticyclonic flow over most places in West Africa like Mali, Burkina Faso and part of Nigeria. a persistent easterly flow is also expected to propagate westwards in the region between central Sudan toward the gulf of Guinea during the forecast period.

At 250 mb level, Divergent Flow patterns associated with strong winds were observed over most part of West Africa, Central and Eastern Africa. Trough was observed mostly over Chad.

In the upcoming five days, resent updates shows that the maritime southwesterly 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 mostly 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 very much active, so there 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, Ivory Coast, Liberia, Ghana, Nigeria. Cameroun and Congo, Equatorial Guinea, CAR, DRC in Central Africa and Ethiopia and Somalia in the horns of Africa.

2.0. Previous and Current Day Weather over Africa

2.1. Weather assessment for the previous day (October 21, 2015)

Moderate to locally heavy rainfall was observed over Ivory Coast, Ghana, Togo, Nigeria, Cameroon, Gabon, Congo, CAR, DRC, Sudan, south Sudan, Ethiopia and Somalia.

2.2. Weather assessment for the current day (October 22, 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.

