



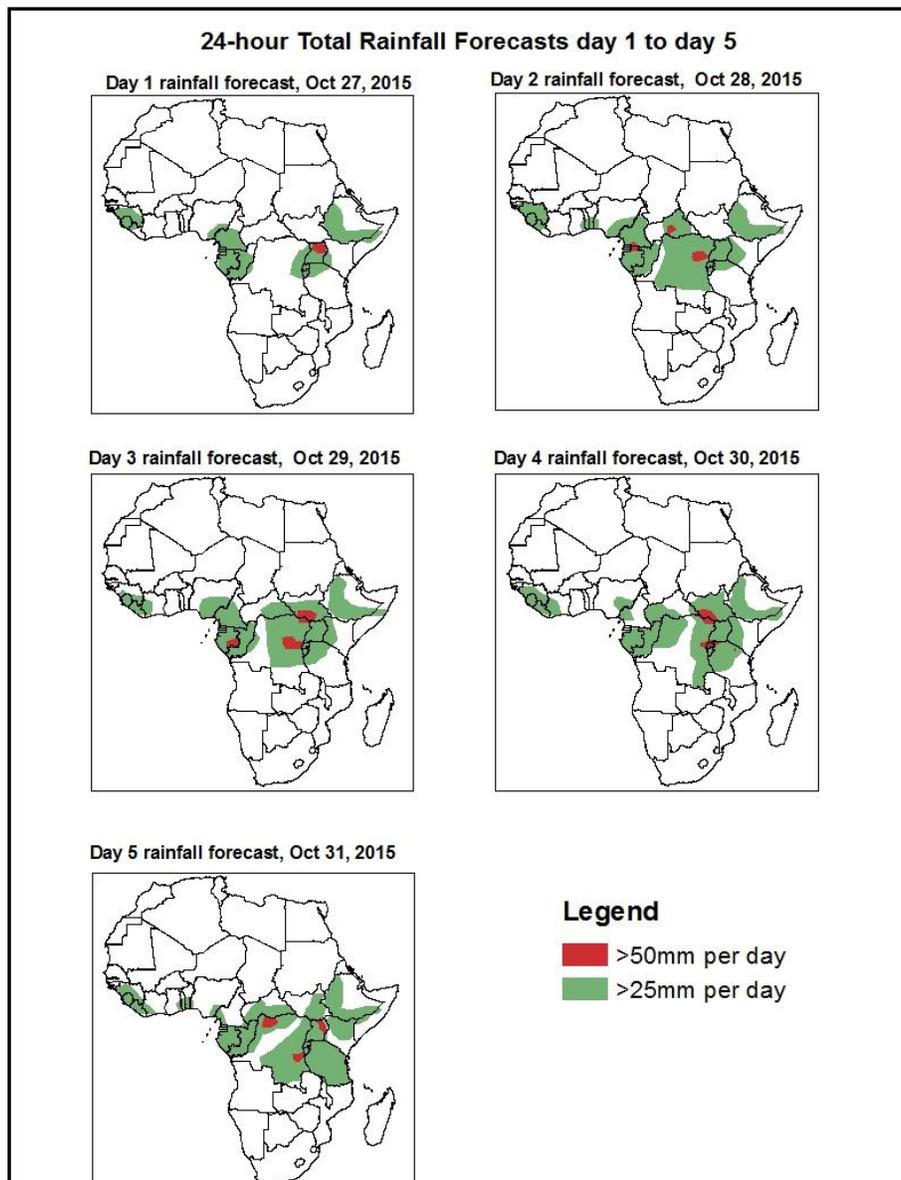
NCEP Contributions to the WMO Severe Weather Forecasting Demonstration Project (SWFDP) and to the African Monsoon Multidisciplinary Analysis (AMMA) Initiative

1. Rainfall and Dust Concentration Forecasts

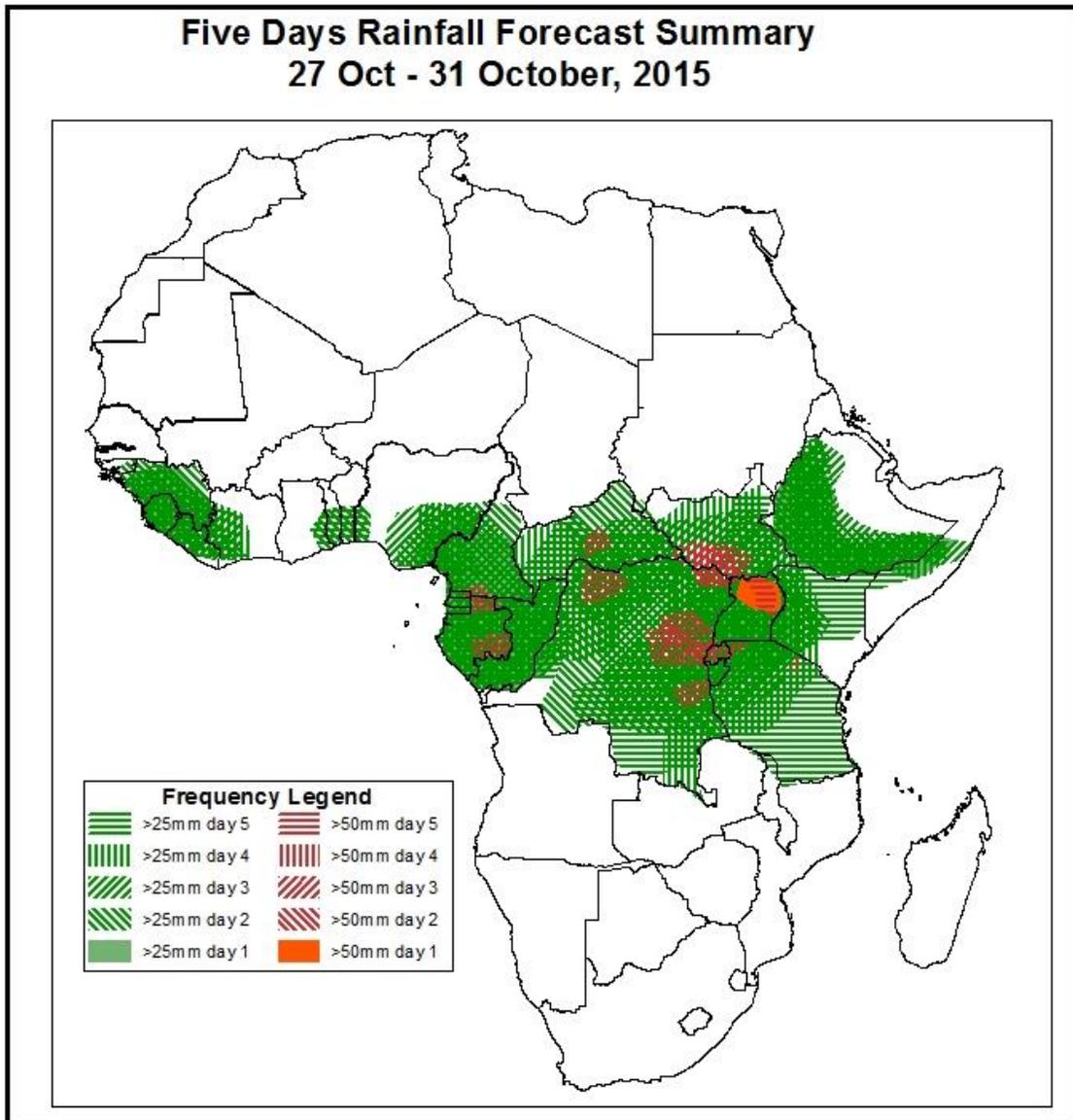
Valid: 06Z of Oct 27 – 06Z of Oct 31 2015. (Issued on October 26, 2015)

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 27 Oct - 31 October, 2015

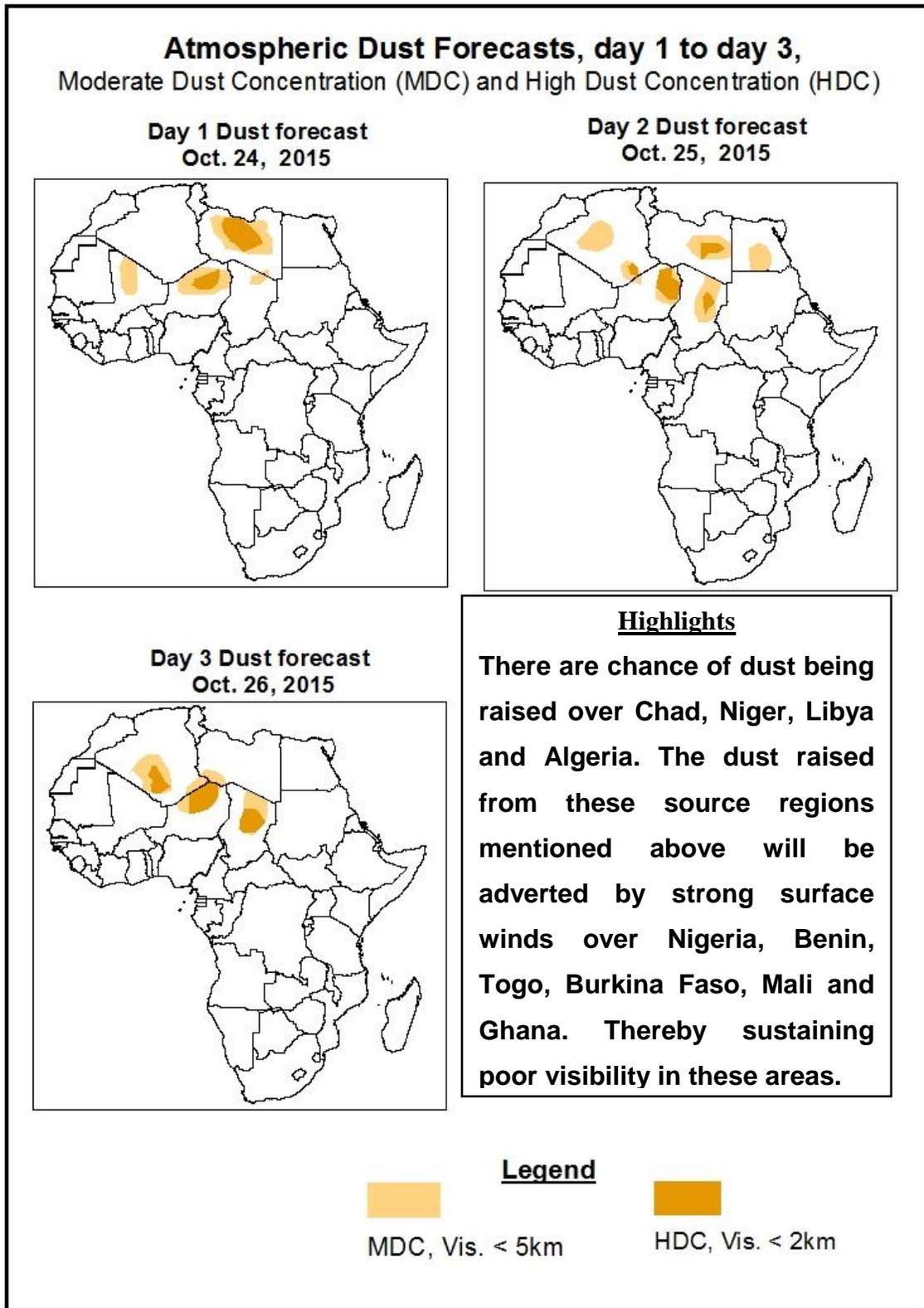


Evaluation of current updates for the upcoming five days reveals that the Intertropical Discontinuity (ITD), which is the maritime southwesterly wind flow from the Atlantic Ocean with its associated convergence with Northeasterly trade wind across West Africa, is expected to continue its southward movement towards the Equator. As a result of this phenomenon, weather activities will most likely be limited to the coast, mountain ranges or elevated highlands over the West African region. The meridional convergence over DRC and the East African monsoon over the Horn of Africa are still dynamic, so their influence is expected to enhance rainfall in their respective regions. Therefore the following places are expected to have moderate to heavy rainfall. Guinea, Sierra Leone, Liberia, Ghana, Togo, Benin, Nigeria, Cameroun and Congo, Equatorial Guinea, Gabon, CAR, DRC in Central Africa and South Sudan, Kenya, Uganda, Rwanda, Tanzania, in East Africa and Ethiopia and Somalia in the horns of Africa.

1.2. Atmospheric Dust Concentration Forecasts

Valid: 12Z of Oct 27– 12Z of Oct 29, 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: 27– 31 October, 2015

The Azores high pressure system is expected to maintain its central value of 1030 mb during the next 48 hours. The High pressure system will weaken in its central pressure value in the next 72 hours by 3 mb there by having a central value of 1027 mb and maintain 1027 mb till the end of the forecast period.

Throughout the forecast period, the extension of the Azores high relatively known as the Libyan high pressure system maintained its position over Libya, with its associated 1016 isobar crossing the 20 degree north of the equator. This is mostly an indication that more dust may be raised over the dust source regions of West and Northern Africa, although in contrast to above mentioned synoptic feature, There was a weakening of the central value of the Azores High pressure System during the forecast period.

The St Helena high pressure system over the Atlantic Ocean is expected to weaken in the next 72 hours, by 10mb with its central pressure value decrease from 1032 to 1022 mb. It will later intensify from 1029 to 1032 mb in the next 96 hours. This high pressure system is expected to merge with Mascarene high pressure in the next 72 hours. This merger will cover the whole of southern Africa and extend up to the South eastern boarders of Nigeria, Cameroun, DRC, Kenya, and Somalia. This synoptic feature persisted till the end of the forecast period according to GFS models.

The Mascarene high pressure system will intensify remarkably within the next 72 hours with central pressure values varying from 1034 mb to 1036 mb, then weaken in the next 96 hours by 7 mb, with the pressure value decreasing to 1029 mb. It further weakens to 1026 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 extending over East and Southern Africa.

The Equatorial low pressure system was observed over West, Central and East Africa. Extending from East Africa through Central Africa up to Liberia in Western Africa. Its central pressure values filled from 1008 mb to 1009 mb over East and Western Africa. At the end of the forecast period the center pressure values this broad thermal low was observed to fill to 1010 mb at the end of the forecast period.

At 925 mb, Maritime winds 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. Also an Anticyclone was observed over the Indian Ocean pushing maritime wind into the inlands of Kenya, Uganda, Somalia, South Sudan and Ethiopia thereby

establishing the Congo boundary convergence. The Northeasterly continental wind flow was observed at this 925 mb level, to be predominantly over Mali, Niger and Southern Chad.

At 850 mb level, Continental wind flows dominated over West Africa, whereas maritime wind flow patterns were also observed streaming into Congo, CAR and DRC in Central Africa and Kenya, Uganda, Ethiopia and Somalia in East Africa. A low pressure System was observed over South and central Nigeria, Congo and Northeastern DRC, thereby establishing a strong Meridional flow. The winds at this level were predominantly easterlies,

At 700 mb level, a high pressure system was observed over Mali, establishing an anticyclonic flow over most places in West Africa like Guinea, Liberia, Burkina Faso and Northern Nigeria. A persistent easterly jets 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 East, Central and most part of West Africa, with exception of Senegal, Guinea, Mali and Burkina Faso. Cyclonic flow patterns were also observed over most places in West Africa.

Evaluation of current updates for the upcoming five days reveals that the Intertropical Discontinuity (ITD), which is the maritime southwesterly wind flow from the Atlantic Ocean with its associated convergence with Northeasterly trade wind across West Africa, is expected to continue its southward movement towards the Equator. As a result of this phenomenon, weather activities will most likely be limited to the coast, mountain ranges or elevated highlands over the West African region. The meridional convergence over DRC and the East African monsoon over the Horn of Africa are still dynamic, so their influence is expected to enhance rainfall in their respective regions. Therefore the following places are expected to have moderate to heavy rainfall. Guinea, Sierra Leone, Liberia, Ghana, Togo, Benin, Nigeria, Cameroun and Congo, Equatorial Guinea, Gabon, CAR, DRC in Central Africa and South Sudan, Kenya, Uganda, Rwanda, Tanzania, in East 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 25, 2015)

Moderate to locally heavy rainfall was observed over Guinea, Burkina Faso, Ivory Coast, Ghana, Togo, Nigeria, Cameroun, Gabon, Congo, CAR, DRC, Uganda, Angola, South Sudan, Ethiopia and Somalia.

2.2. Weather assessment for the current day (October 26, 2015)

Convective clouds observed over most parts of West Africa, Central and East Africa, namely Guinea, Sierra- Leone, Liberia, Ivory Coast, Burkina Faso, Ghana, Togo, Benin, central and Southern Nigeria in West Africa and Cameroon, Southern Chad, Gabon, Congo, Angola. CAR, DRC in central Africa and Sudan, South Sudan, Kenya, Uganda, Tanzania, Somalia, Ethiopia in East Africa. Dust plume observed over Algeria, Mali, Northern Burkina Faso, Niger, Northern Nigeria and Chad.

