



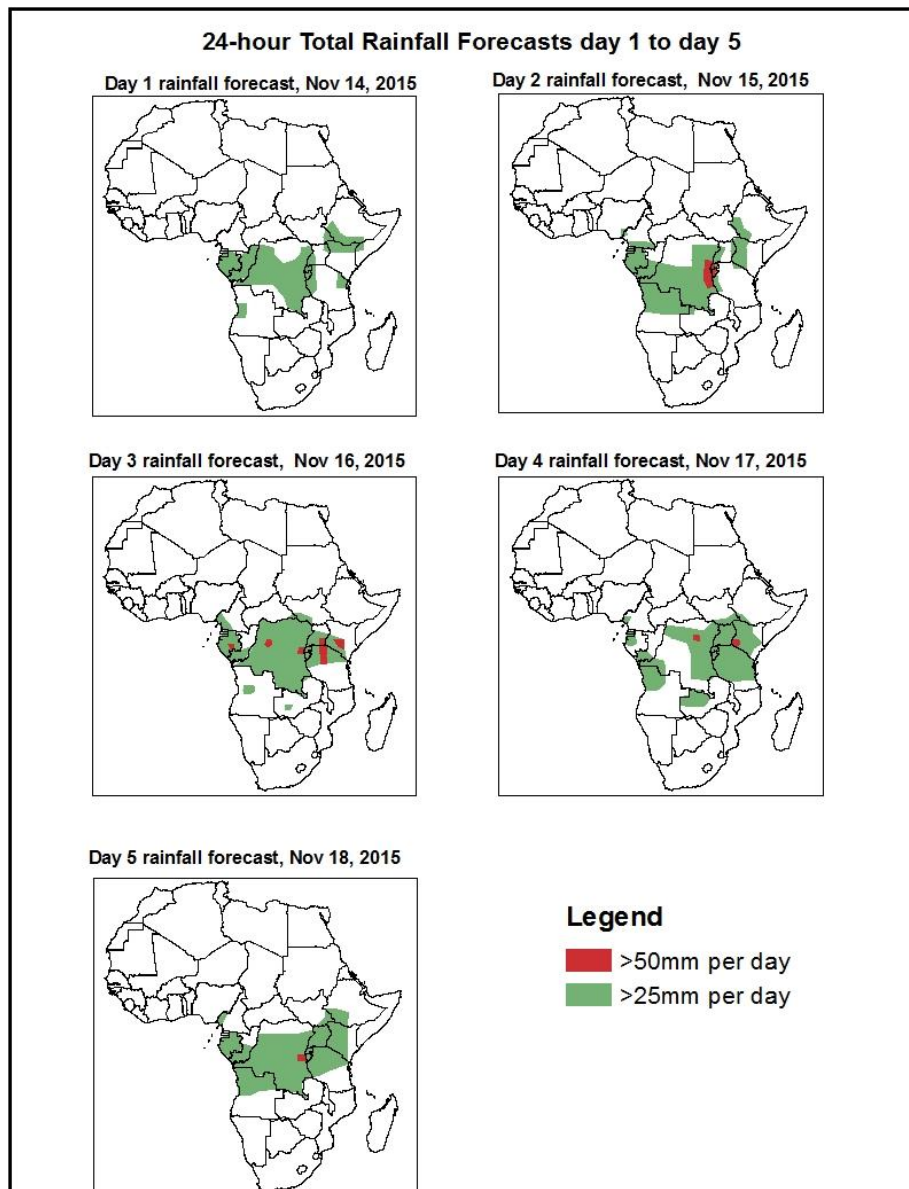
NCEP Contributions to the WMO Severe Weather Forecasting Demonstration Project (SWFDP) and to the African Monsoon Multidisciplinary Analysis (AMMA) Initiative

1. Rainfall and Dust Concentration Forecasts

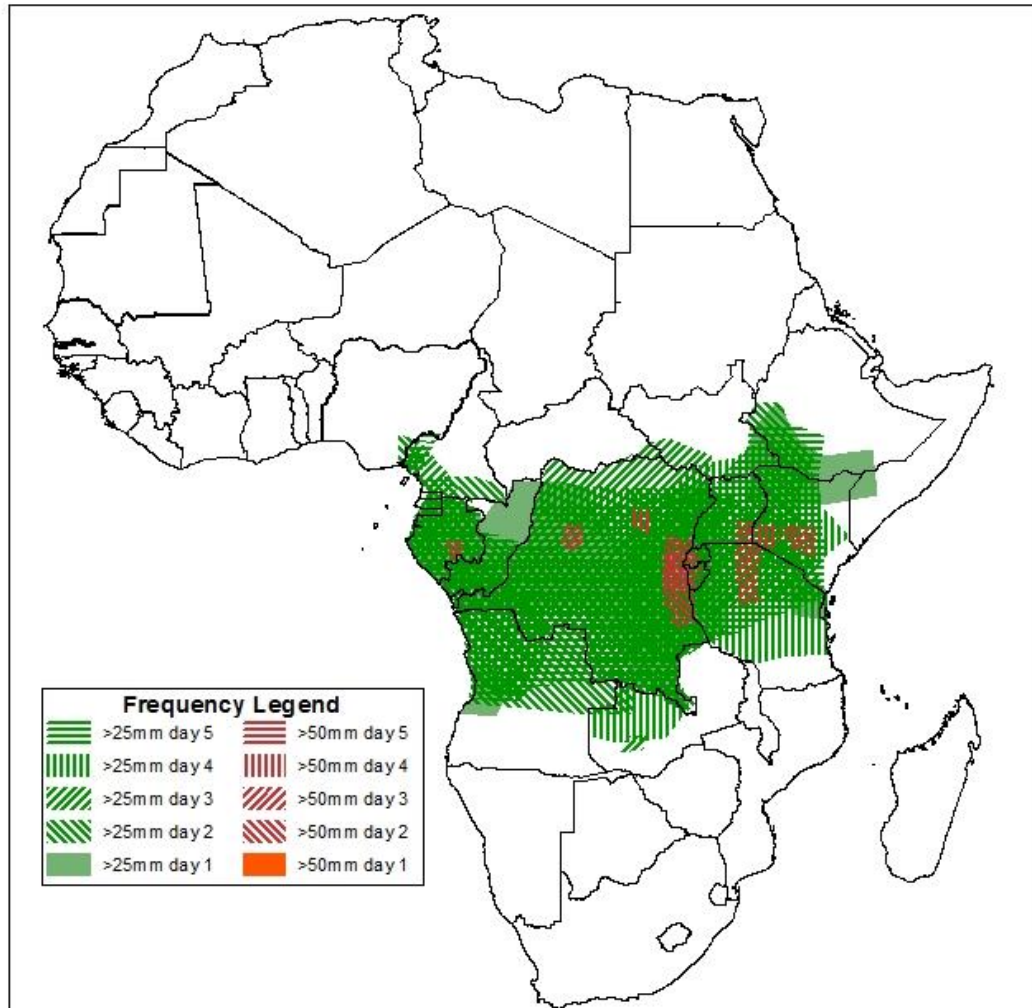
Valid: 06Z of Nov 14 – 06Z of Nov 18, 2015. (Issued on November 13, 2015)

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 14 - 18th November, 2015

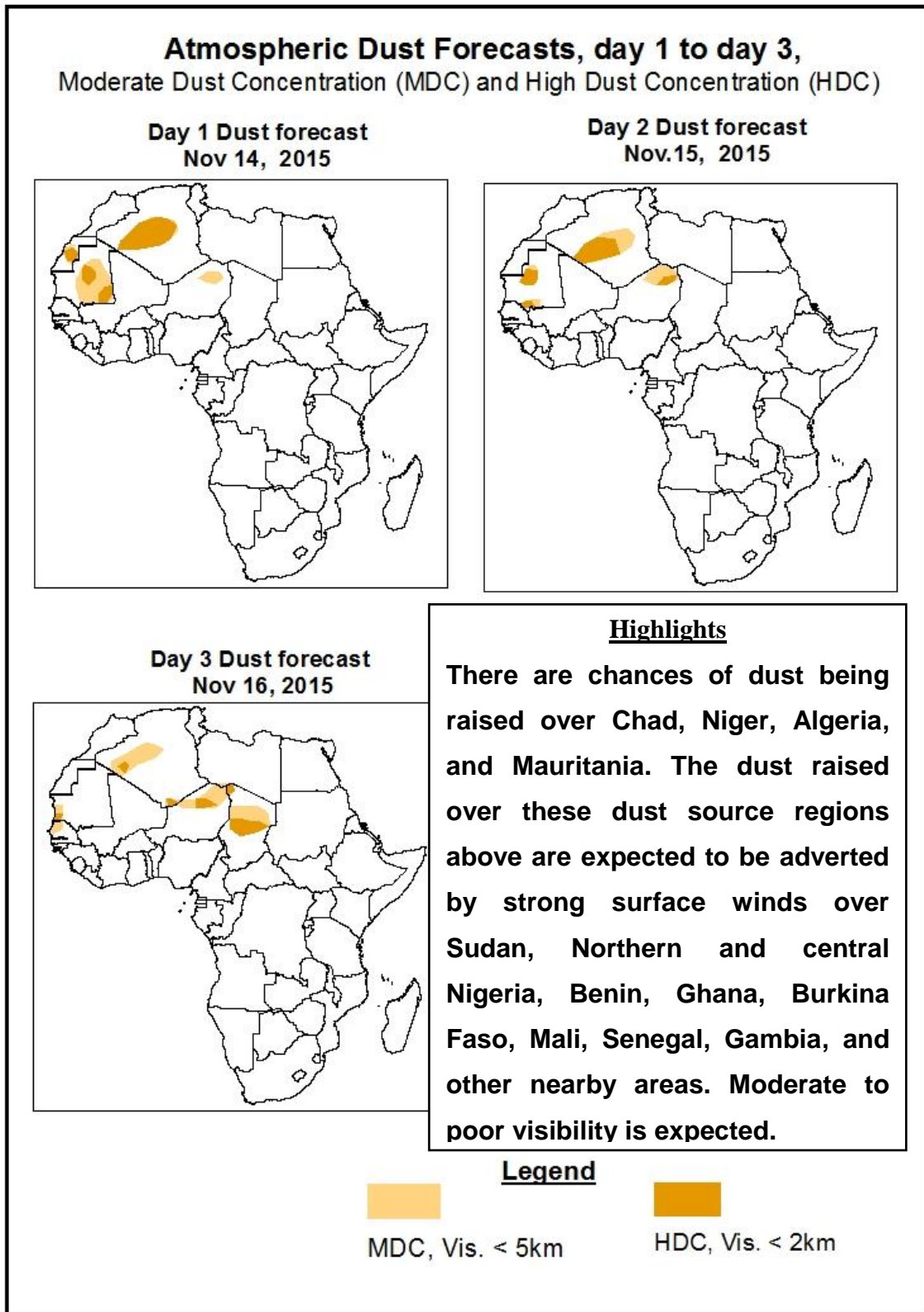


Review of rainfall occurrence and distribution for the next five days over Western, central and Eastern Africa indicates that the Intertropical Discontinuity (ITD) is expected to propagate slightly southwards, as the North easterly trade winds further becomes more resilient and dominant over its counterpart the southwesterly trade wind. The ITD is still expected to propagate between 6 and 8 degrees north of the Equator. In view of above, atmospheric convection leading to formation of weather systems will only occur some distance away from this convergence zone. Therefore rainfall and weather related activities will likely occur over the coastal regions and few high weather trigger zones over the West African region. The meridional convergence over DRC and the East African monsoon are expected to still be active; therefore rainfall is expected to continue over most part of central, Eastern and the Horn of Africa. The following places are expected to have moderate to heavy rainfall. Guinea, Sierra Leone, Liberia, Parts of southern Nigeria in West Africa. Southern Cameroun, Gabon, Congo, Equatorial Guinea, CAR, DRC in Central Africa and South Sudan, Kenya, Uganda, Rwanda, Burundi, Tanzania, Zambia and Angola in East Africa and Ethiopia and Somalia in the horns of Africa.

1.2. Atmospheric Dust Concentration Forecasts

Valid: 12Z of Nov 14– 12Z of Nov 16, 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: 14 – 18 November, 2015

The Azores high pressure system is expected to weaken in the next 48 hours, its center value will increase from 1035 mb to 1027 mb. This High pressure system will then weaken by 1 mb in the next 72 hours, thereby having a central pressure value of 1026 mb. This high pressure system will then intensify from 1026 to 1027 mb at the end of the forecast period according to GFS models.

The Libyan high pressure system which is an extension of Azores or a cut off High from Azores high pressure system is expected to maintain its current position, at approximately 14 and 15 degrees north of the Equator just like the previous days. Therefore, widespread dust is expected over the dust source regions of West and Northern Africa during the upcoming days. The dust raised will be propagated by relatively moderate to strong Northeasterly trade winds towards areas and zones along their trajectory. This development is a strong indication that active weather activities are moving towards the southern hemisphere.

The St Helena high pressure system at the beginning of the forecast period had a central pressure value of 1029 mb. This high pressure system is expected to weaken in the next 48 hours, by 4 mb with its central pressure value decreasing from 1031 to 1027 mb. It will weaken further from 1027 to 1024 mb in the next 72 hours. By the end of the forecast period it is expected that this high pressure system will weaken to 1020 mb according to GFS Models. This pressure system was observed to have retreated remarkably from the coast of Western Africa and moved over the tips of southern Africa, towards the end of the forecast period.

The Mascarene high pressure system is expected to intensify in the next 48 hours by 2 mb with central pressure values varying from 1022 mb to 1024 mb, and intensify further in its central value by 5 mb in the next 72 hours. At the end of the forecast period, the high pressure center is expected to weaken from 1029 to 1026 mb, according to the GFS model. This high pressure system was observed to have retreated from southern African and moved more into the Indian Ocean. Its current position has given room for maritime winds and active convection to start taking over that region.

Isolated cut off Equatorial low pressure systems were observed over West, Central and Eastern Africa. Its central pressure values did not respond remarkably to thermal heating thereby causing their central values to remain stationary. Their center values deepen from 1010 mb to 1008 mb over East and Western Africa. At the end of the forecast period the center pressure values these isolated thermal low was observed to fill back from 1008 to 1011 mb at the end of the forecast period.

At 925 mb streamlines; Maritime winds from the Atlantic Ocean were still observed streaming into some countries in West Africa namely Sierra Leone, Liberia, Ivory Coast, Ghana, Togo, Benin Republic, and Southern Nigeria. Maritime winds were also observed streaming into Cameroun, Equatorial Guinea, Gabon and into the inlands of central Africa like, Angola, and DRC. Maritime wind flow patterns from the Indian Ocean were also observed streaming into the inlands of Kenya, Uganda, Somalia, South Sudan and Ethiopia thereby establishing the Congo boundary convergence. Whereas The Northeasterly continental wind flow pattern was predominantly over Senegal, Guinea, Burkina Faso, Mali, Chad, Niger, Northern and central Nigeria, Central African Republic and Sudan.

At 850 mb streamlines; continental flows, predominant North easterly trade winds were observed over most parts of West Africa namely Senegal, Gambia, Mauritania, Sierra Leone, Liberia, Burkina Faso, Ghana, Togo, Niger, Chad, Nigeria and Cameroun. A high pressure system was also observed over the Indian Ocean, this induced maritime wind flows patterns to stream into Congo, Southern Sudan and DRC in Central Africa and Kenya. Uganda, Ethiopia and Somalia in East Africa. Also a low pressure system was observed over central DRC. Maritime winds from the Atlantic Ocean were also observed over Equatorial Guinea and Gabon.

At 700 mb streamlines; High pressure systems were also observed Mauritania and Northern Chad, establishing anticyclonic flow patterns over Mauritania, Senegal, Guinea, Sierra Leone, Ghana, Benin, Burkina Faso, Chad, Niger, Nigeria, Sudan, and Central African Republic. The easterly jets are expected to propagate westwards from central Sudan toward the Gulf of Guinea during the forecast period. Strong maritime winds flow pattern were also observed streaming into East and central Africa from the Indian Ocean.

At 200 mb streamlines; Anticyclonic flow patterns were observed over West, central and Eastern Africa. The jets associated with this flow pattern had moderate to strong wind speeds. Meridional Flow patterns were observed at this level over West and, Central Africa.

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2.0. Previous and Current Day Weather over Africa

2.1. Weather assessment for the previous day (November 12, 2015)

Assessment of daily total rainfall for the previous day over Africa revealed that few countries in West Africa had cases of moderate to heavy rainfall, because raining season is at its cessation stage in that part of the continent. They are Guinea, and Ivory Coast. In central Africa, the countries that recorded moderate to heavy rainfall are; Cameroun, Equatorial Guinea, DRC and Angola, while same was recorded in Uganda, Tanzania, in east Africa and Ethiopia and Somalia in the horn of Africa.

2.2. Weather assessment for the current day (November 13, 2015)

Convective and dense clouds with small and large ice particles observed over few countries in West Africa and mostly countries in Central and Eastern Africa, namely Sierra Leone, Liberia, Ivory Coast, Ghana, Togo, Benin, Sothern Nigeria, Cameroon, Equatorial Guinea, Gabon, Congo, Angola and DRC in central Africa and South Sudan, Kenya, Uganda, Tanzania, Somalia and Ethiopia in East Africa. Dust plume observed over Senegal, Gambia, Western Sahara, Algeria, Southern Mauritania, Guinea, Mali, Burkina Faso, Ghana, Niger, Benin, Togo, Northern and central Nigeria, Chad and Sudan.

