



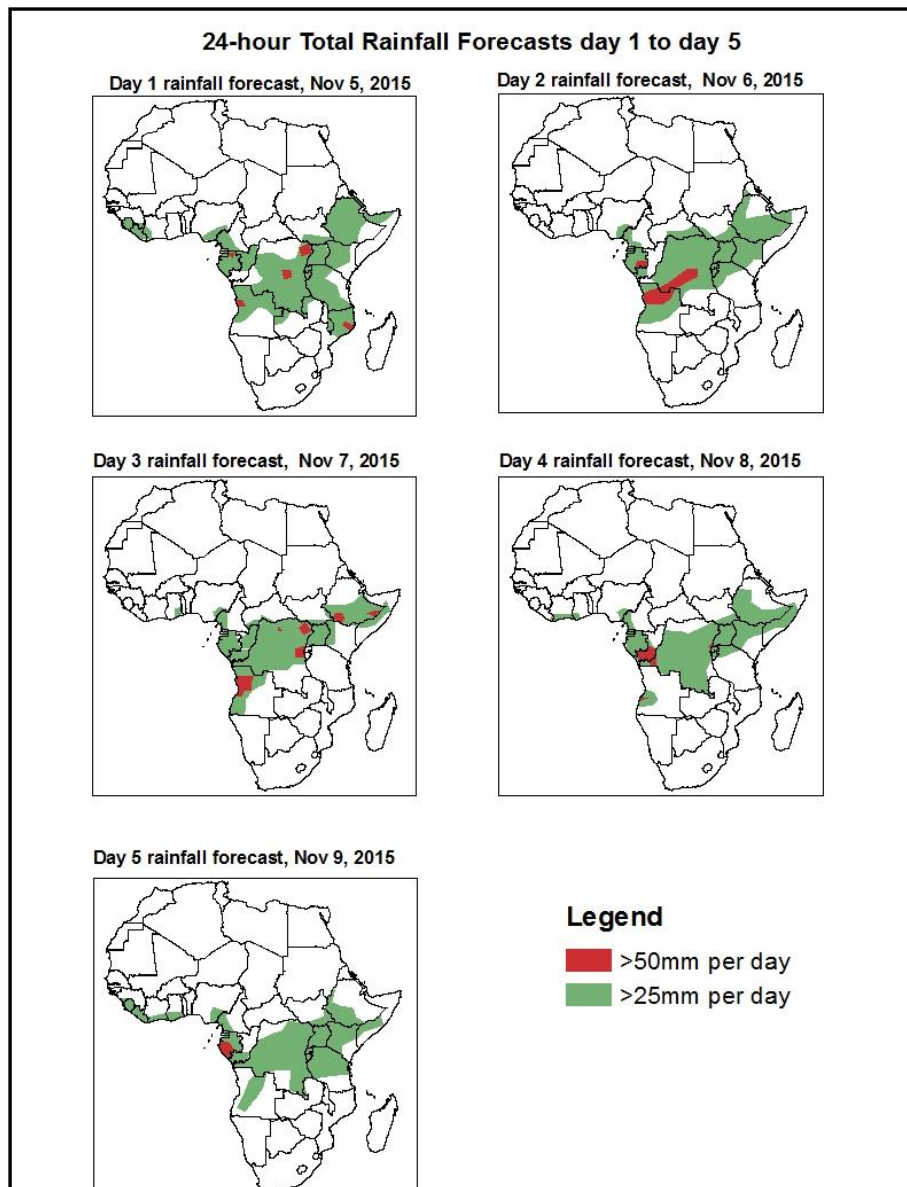
NCEP Contributions to the WMO Severe Weather Forecasting Demonstration Project (SWFDP) and to the African Monsoon Multidisciplinary Analysis (AMMA) Initiative

1. Rainfall and Dust Concentration Forecasts

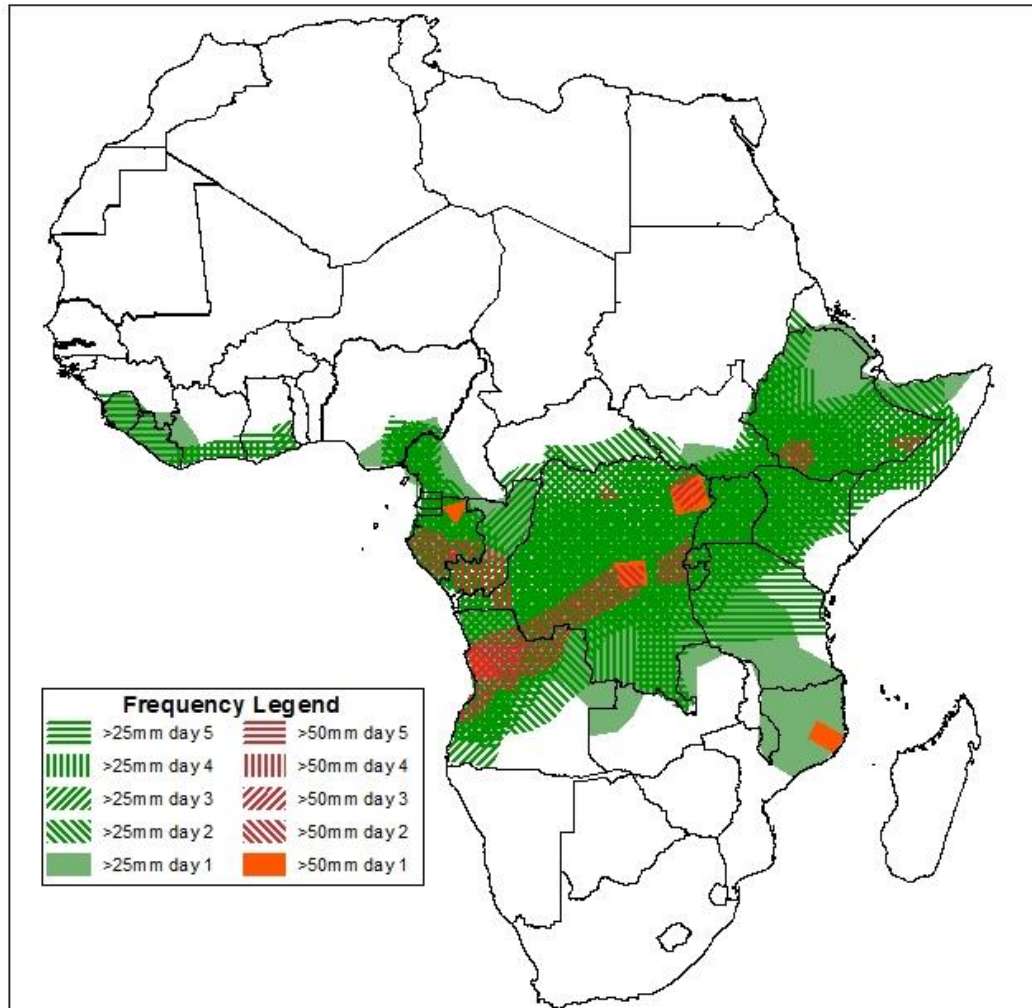
Valid: 06Z of Nov 5 – 06Z of Nov 9, 2015. (Issued on November 4, 2015)

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 5th - 9th November, 2015

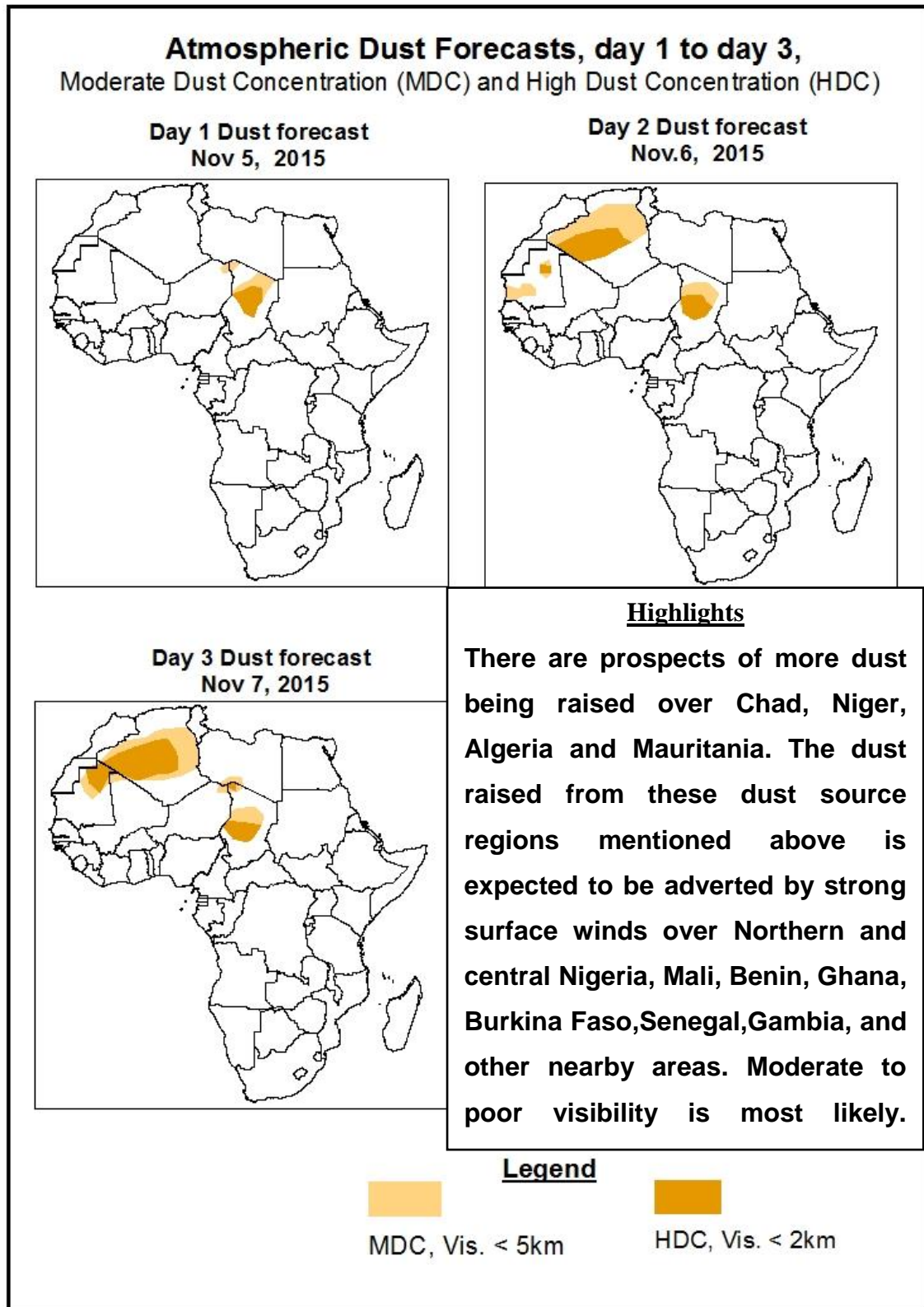


Analysis of rainfall occurrence for the next five days over Western, central and Eastern Africa shows that the Intertropical Discontinuity (ITD) is expected to maintain its current position. The ITD will likely propagate between 8 and 10 degrees north of the Equator. In view of above, atmospheric convection leading to formation of weather systems will only occur southwards of the ITD, thereby limiting weather occurrence to the coastal regions, mountain ranges, elevated highlands and other weather high trigger zones over the West African region. The meridional convergence over DRC and the East African monsoon are expected to intensify further and remain very active; therefore enhance rainfall is expected to continue over central, Eastern and the Horn of Africa. The following places are expected to have moderate to heavy rainfall. Guinea, Sierra Leone, Liberia, Ghana, Togo, Benin and Southern Nigeria in West Africa. Southern Cameroun, Congo, Equatorial Guinea, Southern CAR, DRC in Central Africa and South Sudan, Kenya, Uganda, Rwanda, Burundi, Tanzania and Angola in East Africa and Ethiopia and Somalia in the horns of Africa. Also Zambia and Malawi.

1.2. Atmospheric Dust Concentration Forecasts

Valid: 12Z of Nov 5– 12Z of Nov 8, 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: 5 – 9 November, 2015

The Azores high pressure system is expected to remain constant in the next 48 hours, its center value will be 1024 mb within that period. The High pressure system will intensify in its central pressure value in the next 72 hours by 5 mb, thereby having a central pressure value of 1029 mb and still intensify further to 1032 mb at the end of the forecast period according to GFS models.

Throughout the forecast period, the extension of the Azores high relatively known as the Libyan high pressure system, will propagate southward unlike the previous days, reposition at approximately 15 degrees north of the Equator, Therefore, more dust is expected to be raised in the upcoming days over the dust source regions of West and Northern Africa. This dust will most likely be propagated towards surrounding environs. This development is a strong indication that active weather activities are moving towards the southern hemisphere.

The St Helena high pressure system over the Atlantic Ocean is expected to weaken in the next 48 hours, by 2 mb with its central pressure value decreasing from 1032 to 1030 mb. It will weaken further from 1030 to 1018 mb in the next 72 hours. By the end of the forecast period it is expected that this high pressure system will intensify from 1018 to 1021 mb according to GFS Models. This high pressure system unlike other days retreated remarkably from the coast of Western Africa and moved closer to southern Africa within the forecast period.

The Mascarene high pressure system is expected to weaken within the next 48 hours with central pressure values varying from 1032 mb to 1024 mb, and weaken further in the next 72 hours by 5 mb, to have a center pressure value of 1019 mb. At the end of the forecast period, the pressure center is expected to intensify to 1029 mb, according to the GFS model. This high pressure system is also expected to merge with St Helena high pressure system forming a board high pressure system throughout the forecast period.

The Equatorial low pressure system was observed over West, Central and East Africa. Extending from Eastern Africa through Central Africa up to Liberia in Western Africa. Its central pressure values filled from 1010 mb to 1012 mb over East and Western Africa. At the end of the forecast period the center pressure values this broad thermal low was observed to deepen from 1012 to 1011 mb at the end of the forecast period.

At 925 mb, at this level, Maritime winds from the Atlantic Ocean were still observed streaming over some countries in West Africa namely Sierra Leone, Liberia, Ivory Coast, Ghana, Togo, Benin Republic, and Southern Nigeria. Maritime winds were also observed over Cameroun, Equatorial Guinea, and Gabon and into the inlands of central Africa like Congo, central Africa Republic, Angola, and DRC. Maritime wind flow pattern from the Indian Ocean was 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 Nigeria, and Sudan.

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

At 700 mb level, Jet streams were observed over the coastal areas of western Africa. High pressure systems were also observed over Mauritania, Mali and Libya, establishing anticyclonic flow patterns over Mauritania, Senegal, Sierra Leone, Mali, chad, Niger, Northern Nigeria, Northern Sudan, and Northern DRC. 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 level, Strong Meridional wind flow was observed over West and Eastern Africa. The jets associated with this meridional flow had wind speeds ranging from 25 to 50 Knots. Divergent Flow patterns were observed at this level over East, Central and Western Africa.

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2.0. Previous and Current Day Weather over Africa

2.1. Weather assessment for the previous day (November 3, 2015)

Assessment of daily total rainfall for the previous day over Africa revealed that moderate to heavy rainfall was recorded over few countries in West Africa because raining season is ending in that part of the continent, and most countries in central and East Africa. These countries are as follows, Guinea, Ivory Coast, Ghana, CAR, DRC, Uganda, Burundi, Kenya, Tanzania, Rwanda, Zambia, Malawi, Tanzania, South Sudan, Ethiopia, Zimbabwe and Mozambique.

2.2. Weather assessment for the current day (November 4, 2015)

Convective clouds with small and large ice particles observed over few countries in West Africa and mostly countries in Central and Eastern Africa, namely Guinea, Ghana, Southern Nigeria, Cameroon, Equatorial Guinea, Gabon, Congo, Angola, CAR and DRC in central Africa and South Sudan, Kenya, Uganda, Rwanda, Burundi, Tanzania, Somalia, Ethiopia in East Africa and Malawi and Zambia. Dust plume observed over Algeria, Southern Mauritania, Senegal, Mali, Burkina Faso, Ghana, Niger, Benin, Togo, Northern and central Nigeria, Chad and Sudan.

