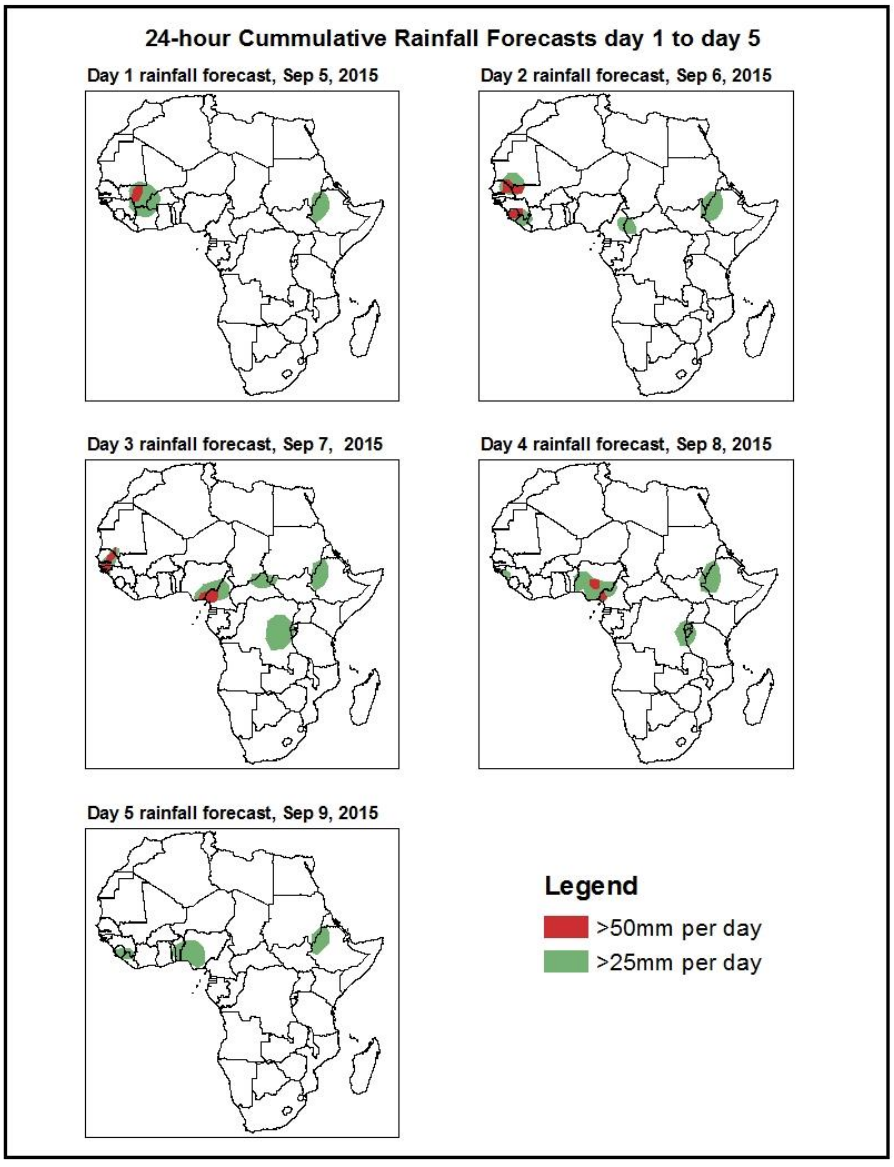
NCEP Contributions to the WMO Severe Weather Forecasting Demonstration Project (SWFDP) and to the African Monsoon Multidisciplinary Analysis (AMMA) Initiative

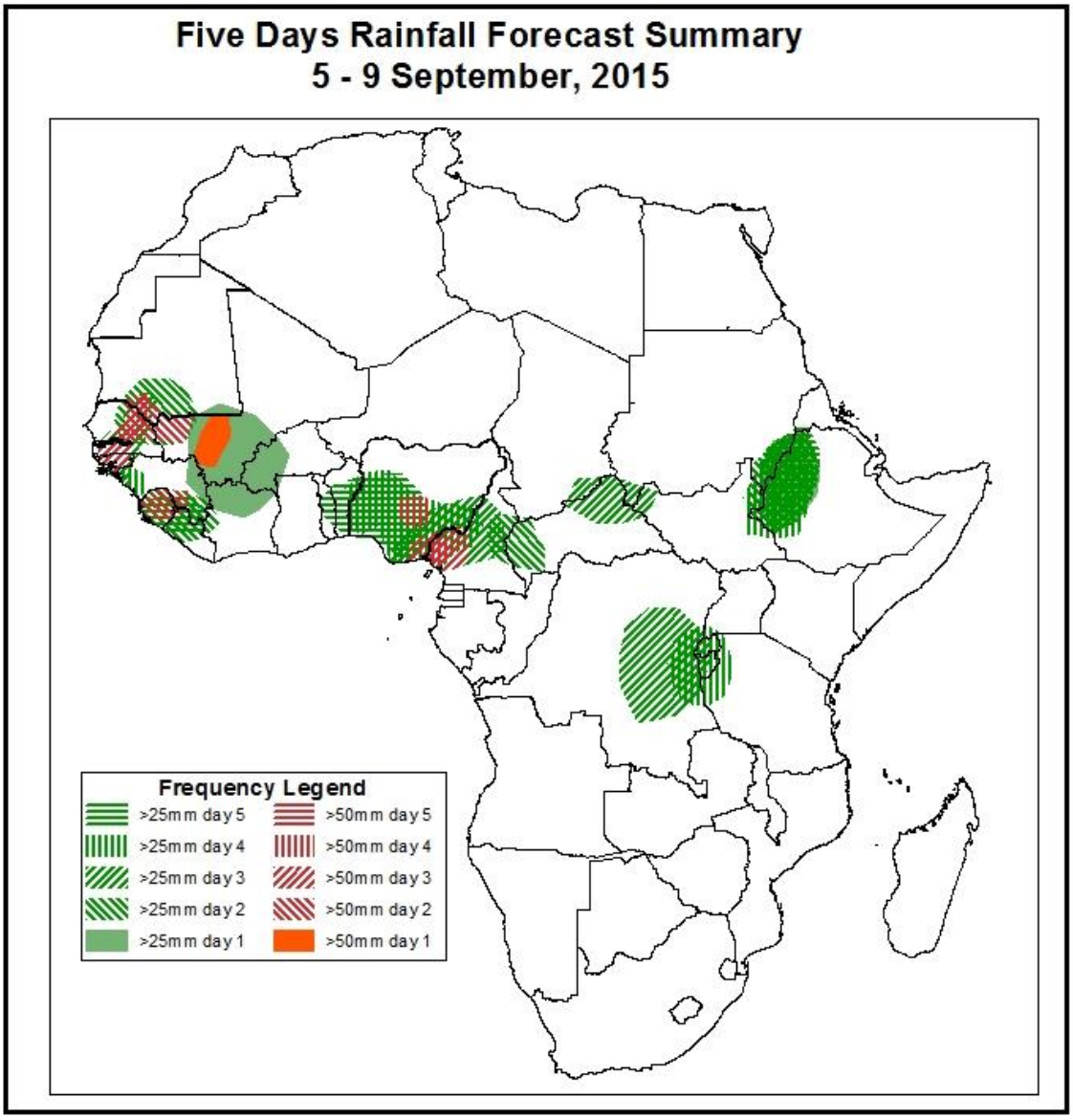
1. Rainfall and Dust Concentration Forecasts

Valid: 06Z of Sep 5 – 06Z of Sep 9 2015. (Issued on September 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.





Summary

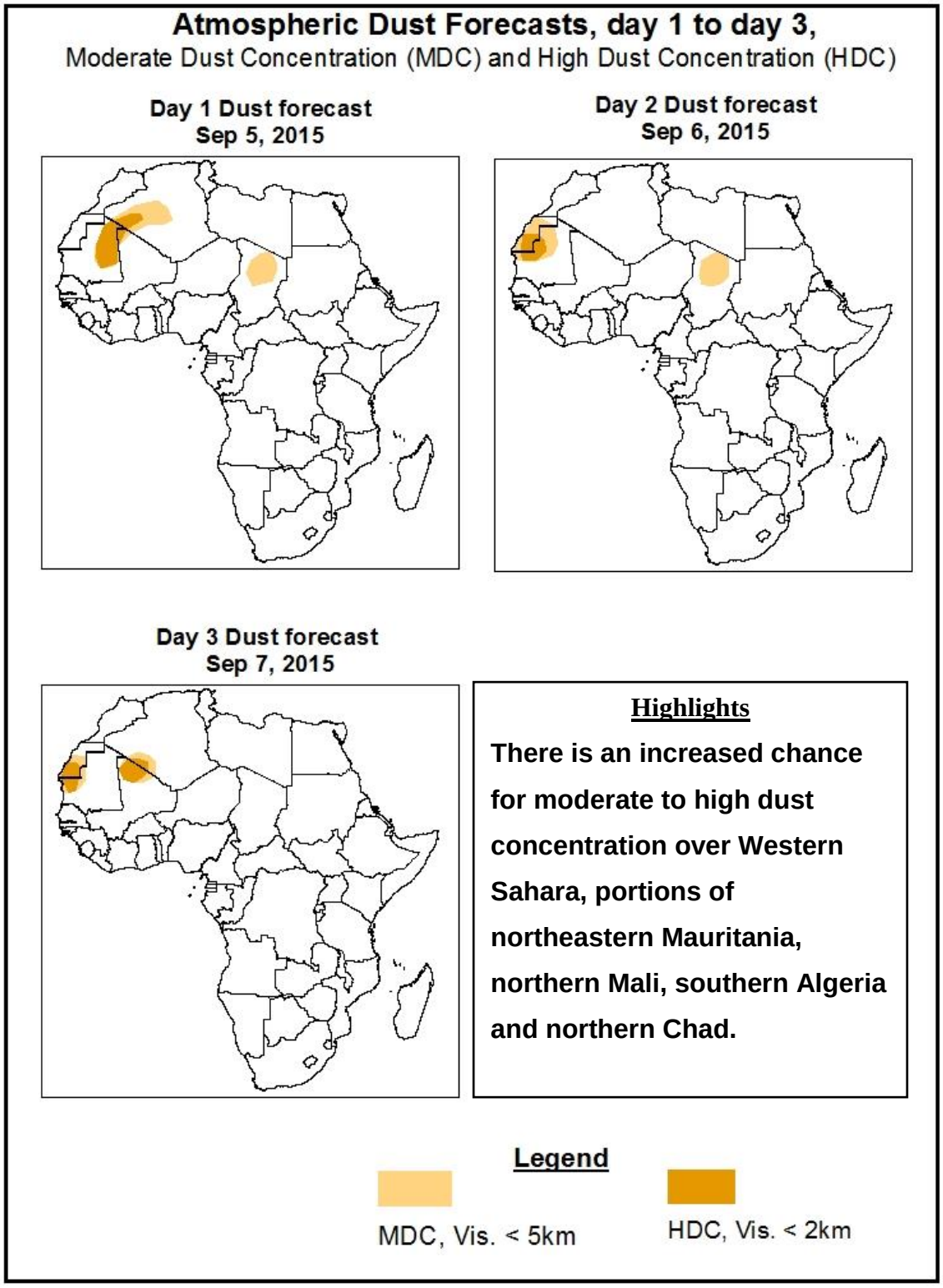
- *In the coming five days, the seasonal monsoon systems will remain active across West and Central Africa. Lower level wind convergences are expected to prevail over the Lake Victoria region and portions of the Greater Horn of Africa.*

- *There is an increased chance for one or two days of heavy rainfall (>50 per day) over portions of southern Mauritania, Senegal, Gambia, Guinea-Bissau, Sierra Leone, southern Mali, southern local areas in Guinea, Guinea, portions of Nigeria and southwestern Cameroon.*

1.2. Atmospheric Dust Concentration Forecasts

Valid: 12Z of Sep 5– 12Z of Sep 7, 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: Sep 5 – Sep 9, 2015

The Azores high pressure system over Northeast Atlantic Ocean is expected to relax, with its central pressure value decreasing from about 1034hpa to 1030hpa during the forecast period, according to the GFS model.

The St Helena high pressure system over the Southeast Atlantic Ocean is expected to intensify, with its central pressure value increasing from about 1025hpa to 1036hpa, through 24 to 120 hours.

The Mascarene high pressure system over Southwest Indian Ocean is expected to intensify slightly, with its central pressure value increasing from about 1030hpa to 1034hpa during the forecast period, according to the GFS model.

A low over Mauritania is expected to shift westward, leaving the West Africa coast in 24 hours. Another thermal low over Niger is expected to shift towards northern Mali, while deepening. Its central pressure value is expected to decrease from 1008hpa in 24 hours to 1005hpa in 120 hours.

At 925Hpa, a cyclonic circulation over Mauritania is expected to propagate westward leaving the West Africa coast in 72hours. Zonal wind convergence is expected to prevail across the Central and eastern Sahel with embedded cyclonic circulations over Mali, Niger and Chad. Meridional wind convergence is expected to remain active in the region between southern Sudan and the Lake Victoria region during the forecast period.

At 850Hpa level, a broad area of cyclonic circulation near Burkina Faso is expected to propagate towards Mauritania during the forecast period. The seasonal monsoon trough is expected to remain active across the Sahel region, with embedded cyclonic circulations over southern Mauritania, Mali, Niger, Chad and Sudan during the forecast period.

At 700hpa level, a deep trough in the easterlies is expected to propagate westward between the longitudes of Mali/Cote d’Ivoire and Mauritania through 24 to 72 hours, and it is expected to leave the West Africa coast by 96hours.

In the coming five days, the seasonal monsoon systems will remain active across West and Central Africa. Lower level wind convergences are expected to prevail over the Lake Victoria region and portions of the Greater Horn of Africa. There is an increased chance for one or two days of heavy rainfall (>50 per day) over portions of southern Mauritania, Senegal, Gambia, Guinea-Bissau, Sierra Leone, southern Mali, southern local areas in Guinea, Guinea, portions of Nigeria and southwestern Cameroon.

2.0. Previous and Current Day Weather over Africa

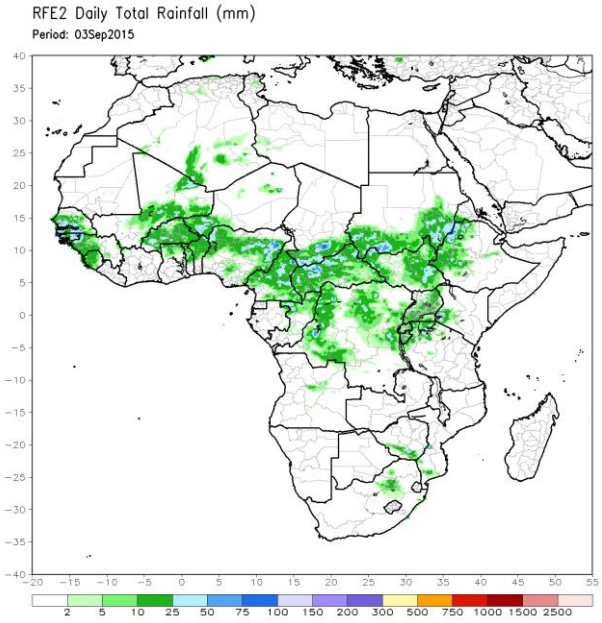
(Valid: 3 – 4 September, 2015)

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

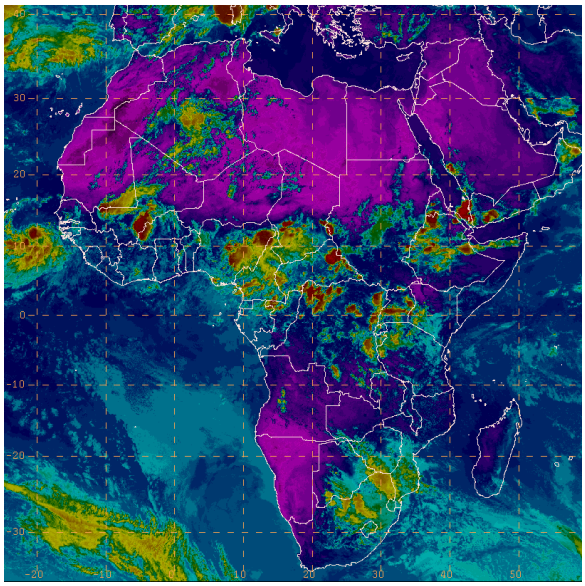
Moderate to locally heavy rainfall was observed over Senegal, Guinea-Bissau, Burkina Faso, central Mali, southwestern Niger, northern Nigeria, Cameroon, southern Chad,, CAR, southern and eastern Sudan, portions of Ethiopia and South Sudan, and local areas in DRC.

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

Intense clouds are observed over local areas in West Africa, and many places of Central and East Africa.



IR Satellite Image (valid 1430 of September 4, 2015)



Previous day rainfall condition over Africa (top Left) based on the NCEP CPCE/RFE and current day cloud cover (top right) based on IR Satellite image