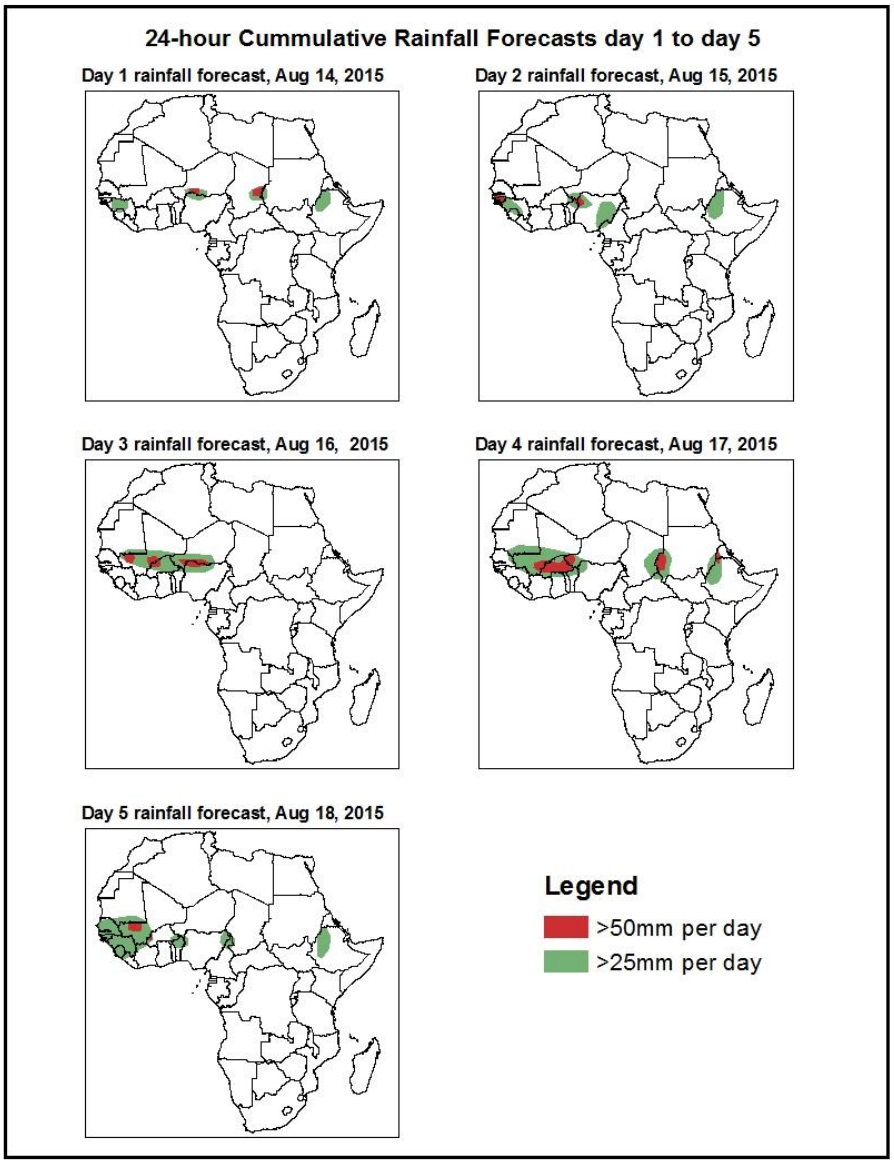
NCEP Contributions to the WMO Severe Weather Forecasting Demonstration Project (SWFDP) and to the African Monsoon Multidisciplinary Analysis (AMMA) Initiative

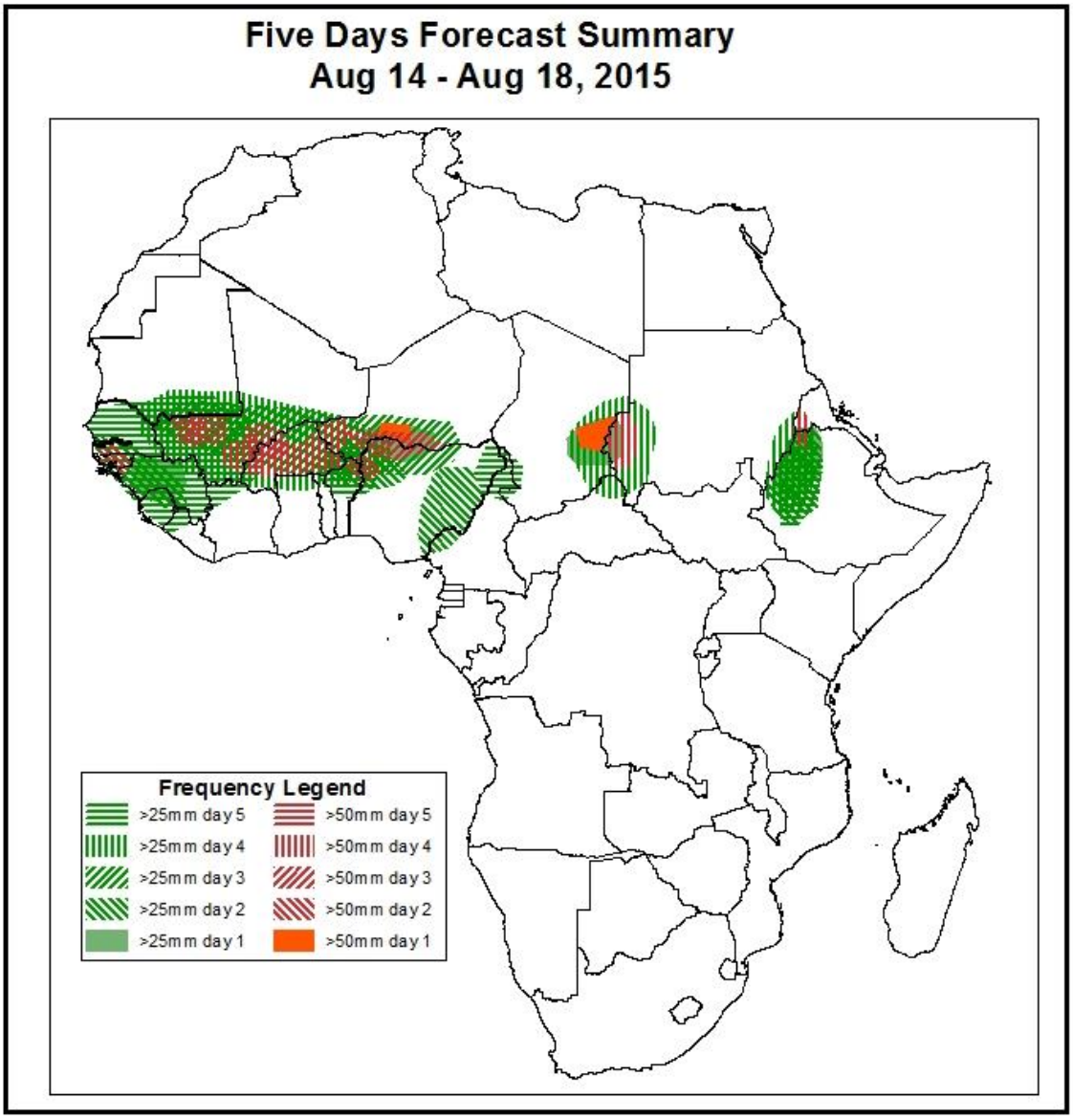
1. Rainfall and Dust Concentration Forecasts

Valid: 06Z of Aug 14 – 06Z of Aug 18 2015. (Issued on August 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.





Summary

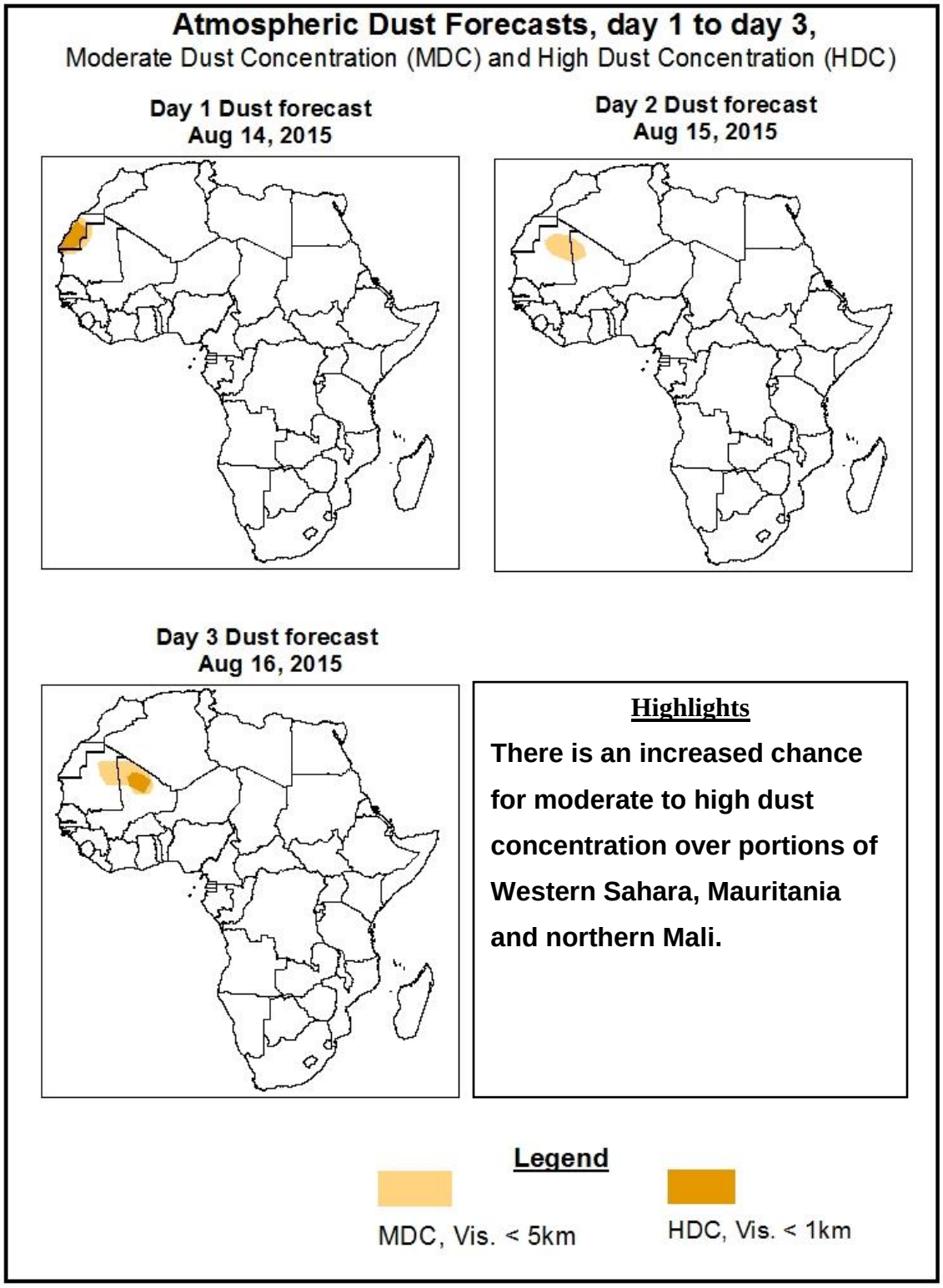
- *In the next five days, westward propagating cyclonic circulation across West Africa, and lower-level wind convergences across the Sahel region and parts of the Greater Horn of Africa are expected to enhance rainfall in their respective regions.*

- *There is an increased chance for frequent moderate to locally heavy rainfall across portions of the Sahel region and western Ethiopia.*

1.2. Atmospheric Dust Concentration Forecasts

Valid: 12Z of Aug 14– 12Z of Aug 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 Discussions, Valid: Aug 14 – Aug 18, 2015

The Azores high pressure system over Northeast Atlantic Ocean is expected to relax, with its central pressure value decreasing from about 1032hpa to 1025hpa 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 is increasing from about 1032hpa to 1035hpa through 24 to 120hours, according to the GFS model.

The Mascarene high pressure system over Southwest Indian Ocean is expected to relax, with its central pressure value decreasing from 1039hpa to 1030 during the forecast period, according to the GFS model.

The low over northern Mali is expected to sift towards Mauritania while deepening slightly, with its central pressure value is expected to decrease from about 1006hpa to 1004hpa during the forecast period. The low over northern Chad is expected to maintain an average central pressure value of 1007 during the forecast period. On the other hand, the heat low over northern Sudan is expected to maintain an average central pressure value of 1006hpa, while the low over the Red is expected to remain quasi-stationary, with an average central pressure value of 1004hpa, during the forecast period.

At 925Hpa level, a cyclonic circulation over northern Mali is expected to shift towards Mauritania while deepening through 24 to 120 hours. Zonal wind convergence is expected to prevail near the 18^{o}N latitude, in the region between northern Niger and Sudan during the forecast period.

At 850Hpa level, a cyclonic circulation over northern Mali is expected to shift towards Mauritania while deepening through 24 to 120 hours. Seasonal lower-level wind convergences are expected to remain active across the Sahel region, Sudan, portions of Ethiopia, South Sudan and northeastern DRC.

At 700hpa level, a trough in the easterlies is expected to propagate westwards across the Gulf of Guinea countries, through 48 to 120 hours.

In the next five days, westward propagating cyclonic circulation across West Africa, and lower-level wind convergences across the Sahel region and parts of the Greater Horn of Africa are expected to enhance rainfall in their respective regions. There is an increased chance for frequent moderate to locally heavy rainfall across portions of the Sahel region and western Ethiopia.

2.0. Previous and Current Day Weather over Africa

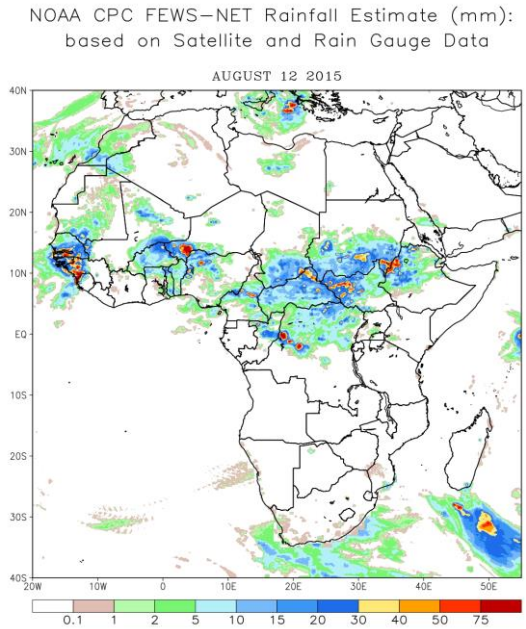
(Valid: 12 – 13 August, 2015)

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

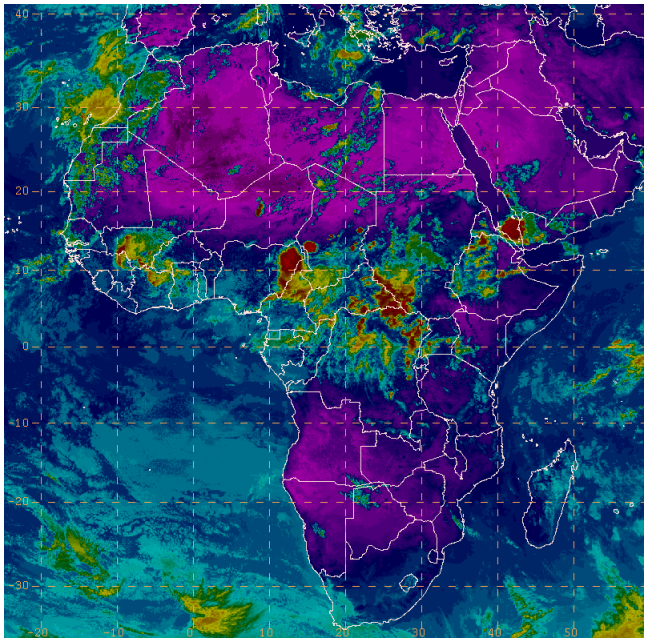
Moderate to heavy rainfall was observed over portions of Senegal, Gambia, Guinea-Bissau, western Guinea-Conakry, local areas in Mauritania and Sierra Leone, portions of Mali, Burkina Faso, southwestern Niger, northwestern Nigeria, local areas in Cameroon, southern Chad, CAR, South Sudan, portions of DRC, eastern Sudan and portions of Ethiopia.

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

Intense clouds were observed over local areas in West Africa, many places in the Central Africa countries, and local areas in Ethiopia.



IR Satellite Image (valid 1430Z of August 13, 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