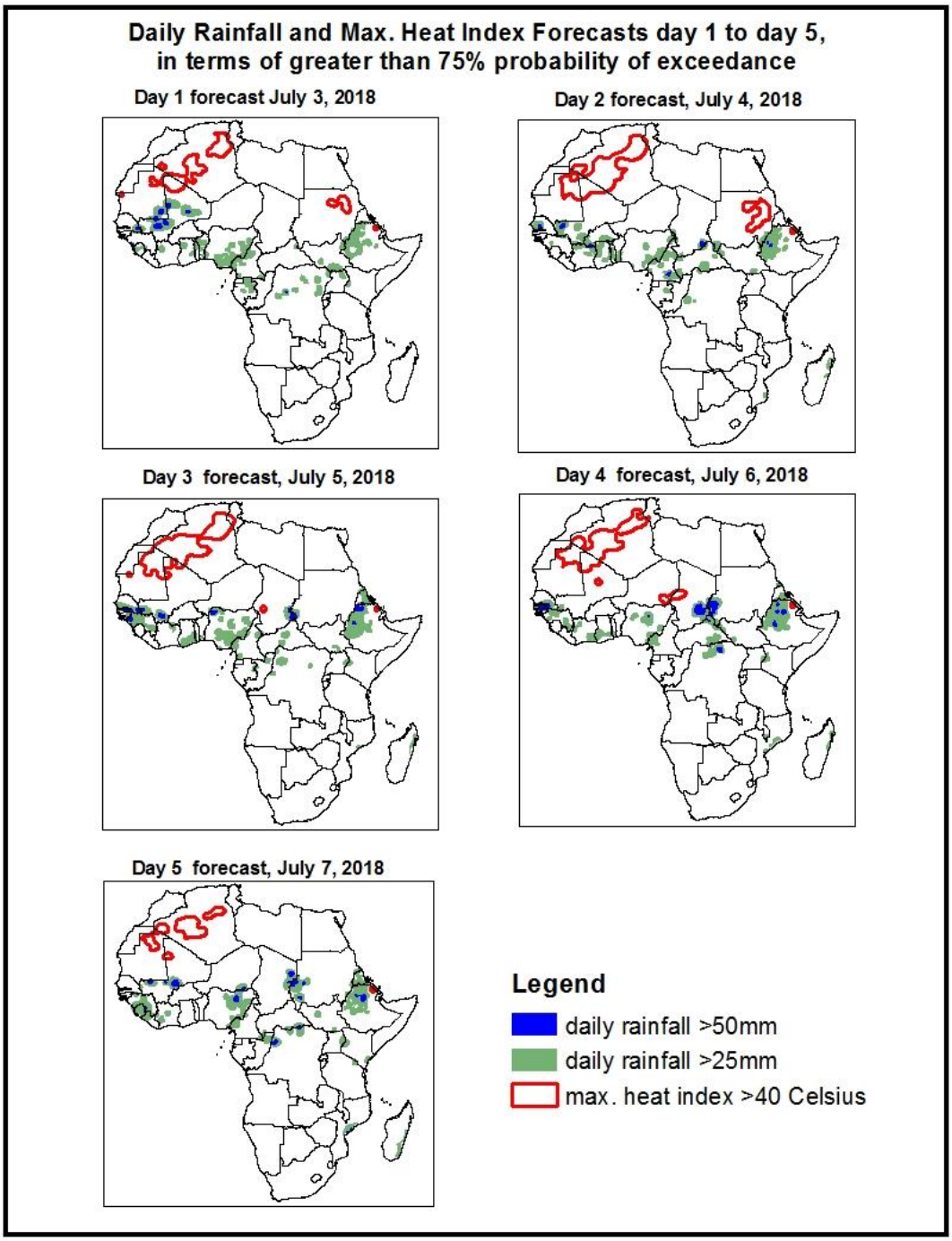
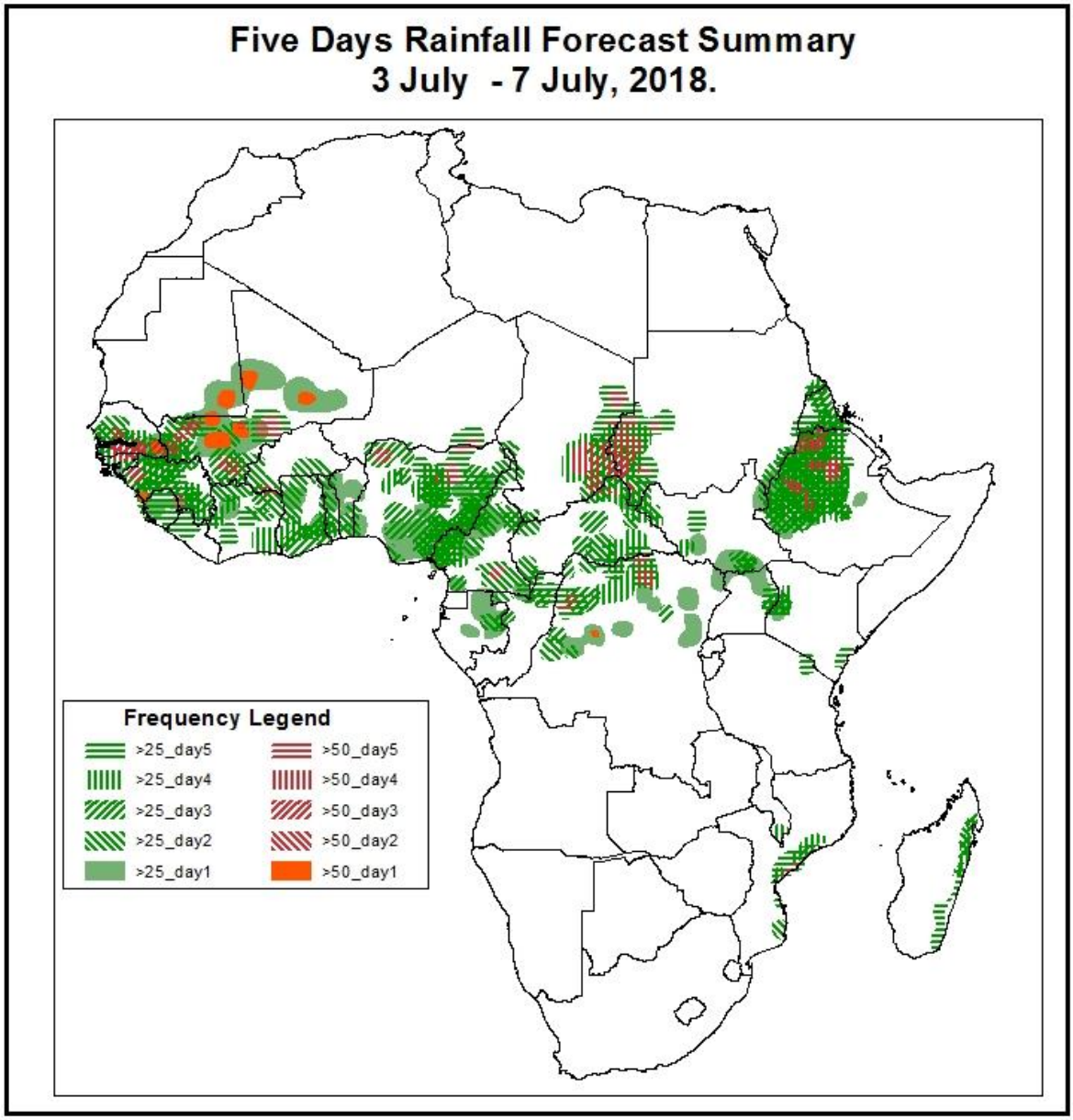
NCEP Contributions to the WMO Severe Weather Forecasting Demonstration Project (SWFDP) and to the African Monsoon Multidisciplinary Analysis (AMMA) Initiative

1. Rainfall, Heat Index and Dust Concentration Forecasts, (Issued on July 2, 2018)

1.1. Daily Rainfall and Maximum Heat Index Forecasts *(valid: July3, – July 7, 2018)*

The forecasts are expressed in terms of high probability of precipitation (POP) and high probability of maximum heat index, based on the NCEP/GFS and the NCEP Global Ensemble Forecasts System (GEFS) and expert assessment.



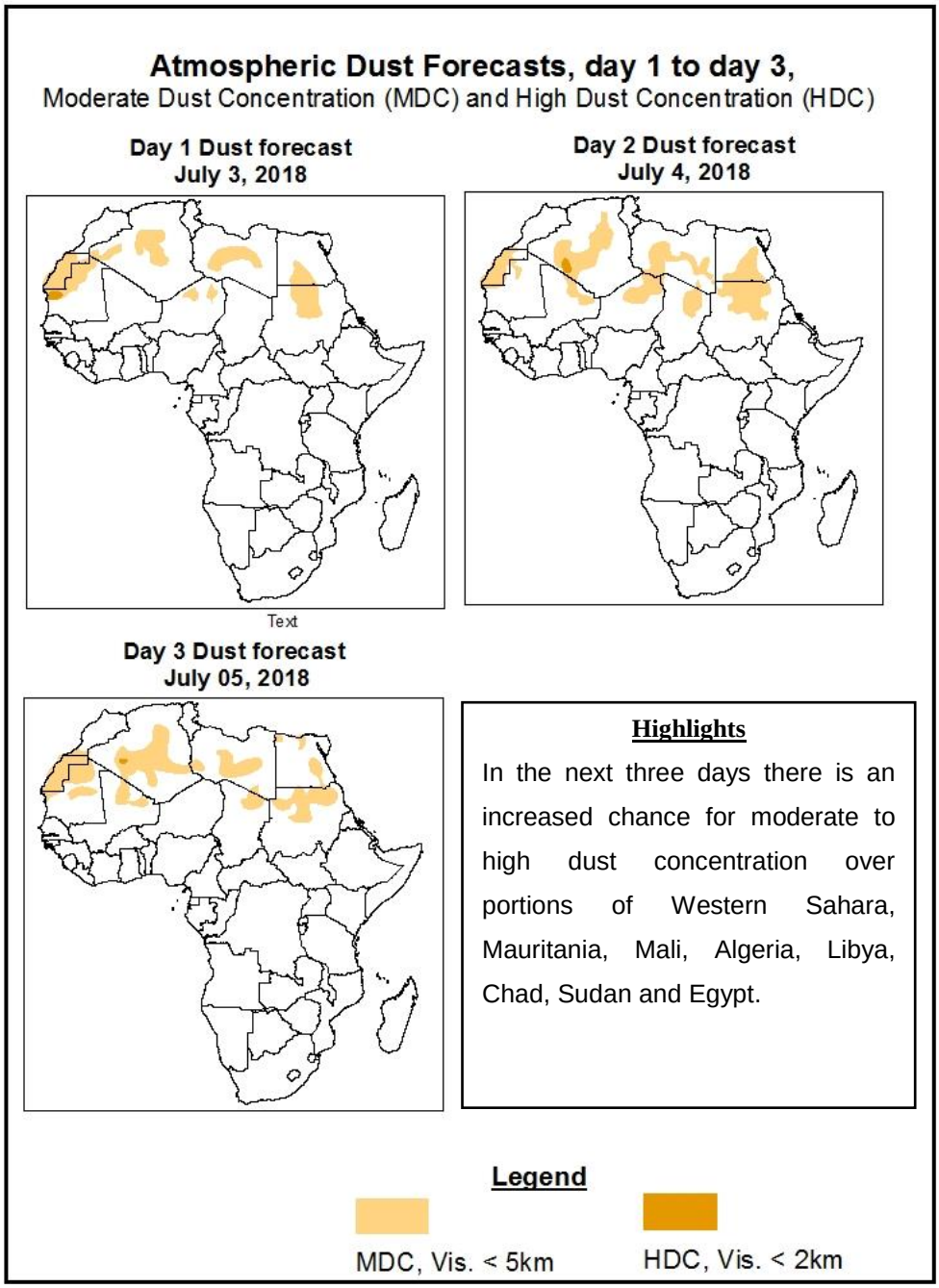


Highlights

In the next five days, areas of anomalous lower-level convergence and upper level divergence over parts of East Africa, Central Africa and Gulf of Guinea Countries are expected to enhance rainfall in these regions during the forecast period. As a result, there is an increased chance for two or more days of moderate to heavy rainfall over portions of Senegal, Gambia, Mauritania, Mali, Guinea, Sierra Leone, Liberia, Ivory Coast, Ghana, Togo, Niger, Nigeria, Cameroon, Chad, Gabon, Congo, CAR, DRC, Sudan, Kenya, Eritrea, Ethiopia, Mozambique and Madagascar.

1.2. Atmospheric Dust Concentration Forecasts (valid: July 3 – July 5, 2018)

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: July 3 – July 7, 2018*

The Azores High Pressure system over the North Atlantic Ocean is expected to weaken during the forecast period. The central pressure decreased from 1031hPa to 1026hPa in the forecast period.

The St. Helena High Pressure system over the Southeast Atlantic Ocean is expected to weaken on the third day and then intensifies in the subsequent days of the forecast period. The central pressure value decreased from 1033hPa to 1028hPa and increased to 1030hPa in the forecast period.

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The Mascarene High Pressure system over the Southwest Indian Ocean is expected to intensify on the second day and then weaken in the subsequent days of the forecast period. The central pressure increased from 1041hPa to 1044hPa and decreased to 1040hPa in the forecast period.

At 925hPa, dry strong northeasterly to easterly wind is expected to prevail across northern Africa and portions of the Sahel region.

At 850hPa, in West Africa, it is expected that the Inter Tropical Convergence Zone will oscillate above the Gulf of Guinea countries while the area of wind convergence remain active over Mali, Chad, DRC and Sudan.

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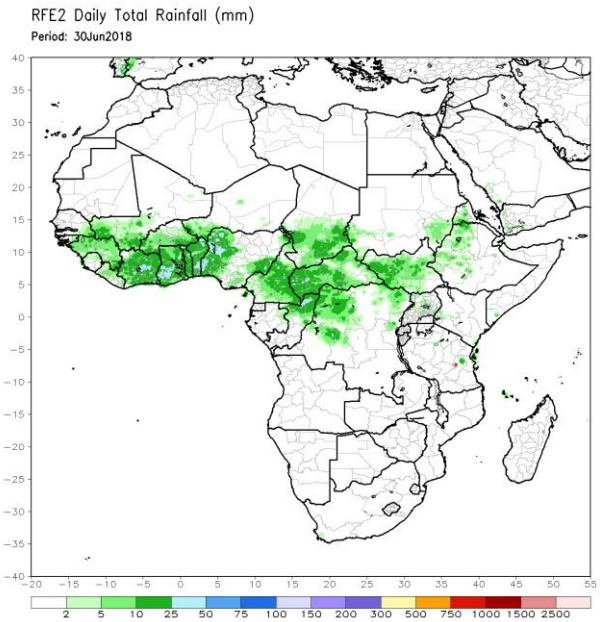
2.0. Previous and Current Day Weather over Africa

2.1. Weather assessment for the previous day (July 1, 2018)

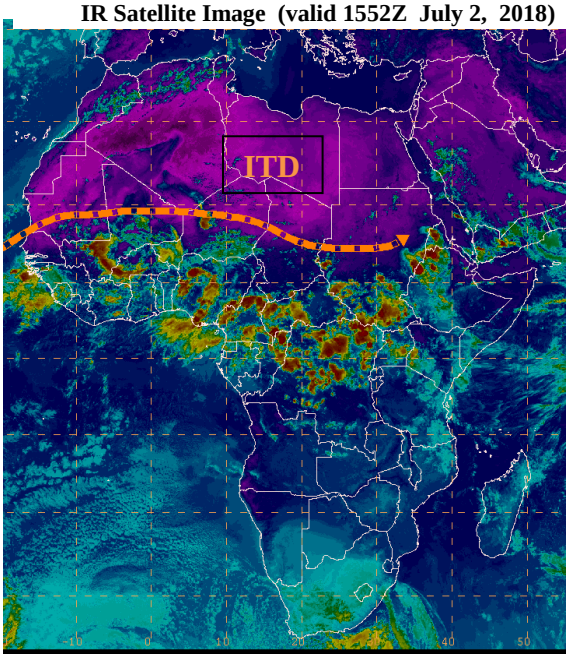
Moderate to locally heavy rainfall was observed over parts of Mali, Guinea, Burkina Faso, Ivory Coast, Ghana, Togo, Benin, Nigeria, Cameroon, Congo, CAR, DRC, South Sudan, and Sudan.

2.2. Weather assessment for the current day (July 2, 2018)

Intense convective clouds are observed over parts of Mali, Ivory Coast, Burkina Faso, Niger, Nigeria, Cameroon, Chad, Congo, CAR, DRC, Uganda, Kenya, Sudan, South Sudan, Eritrea and Ethiopia.



IR Satellite Image (valid 1552Z July 2, 2018)



Previous day rainfall condition over Africa (Left) based on the NCEP CPCE/RFE and current day cloud cover and ITD (right) based on IR Satellite image and 925hPa wind.

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