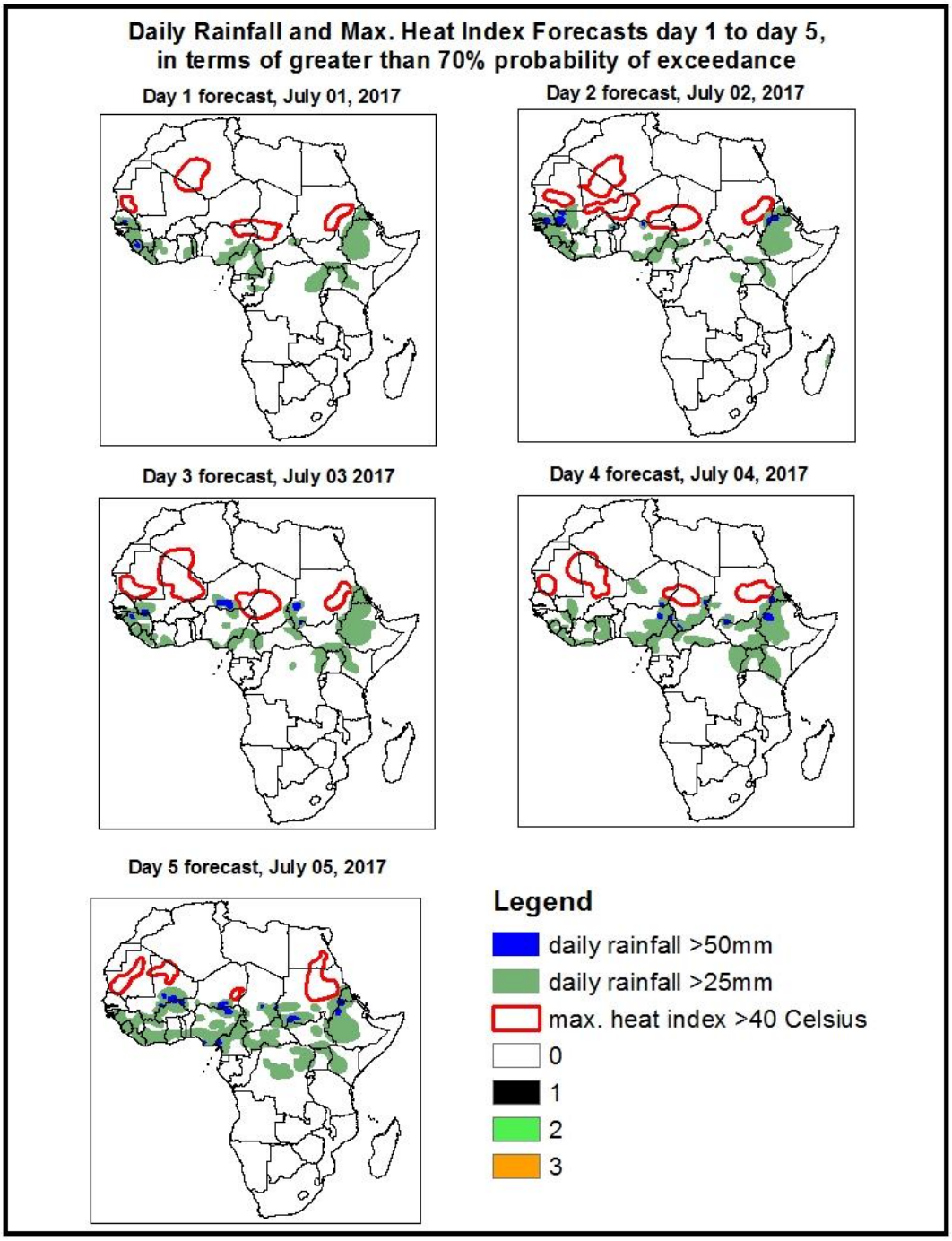
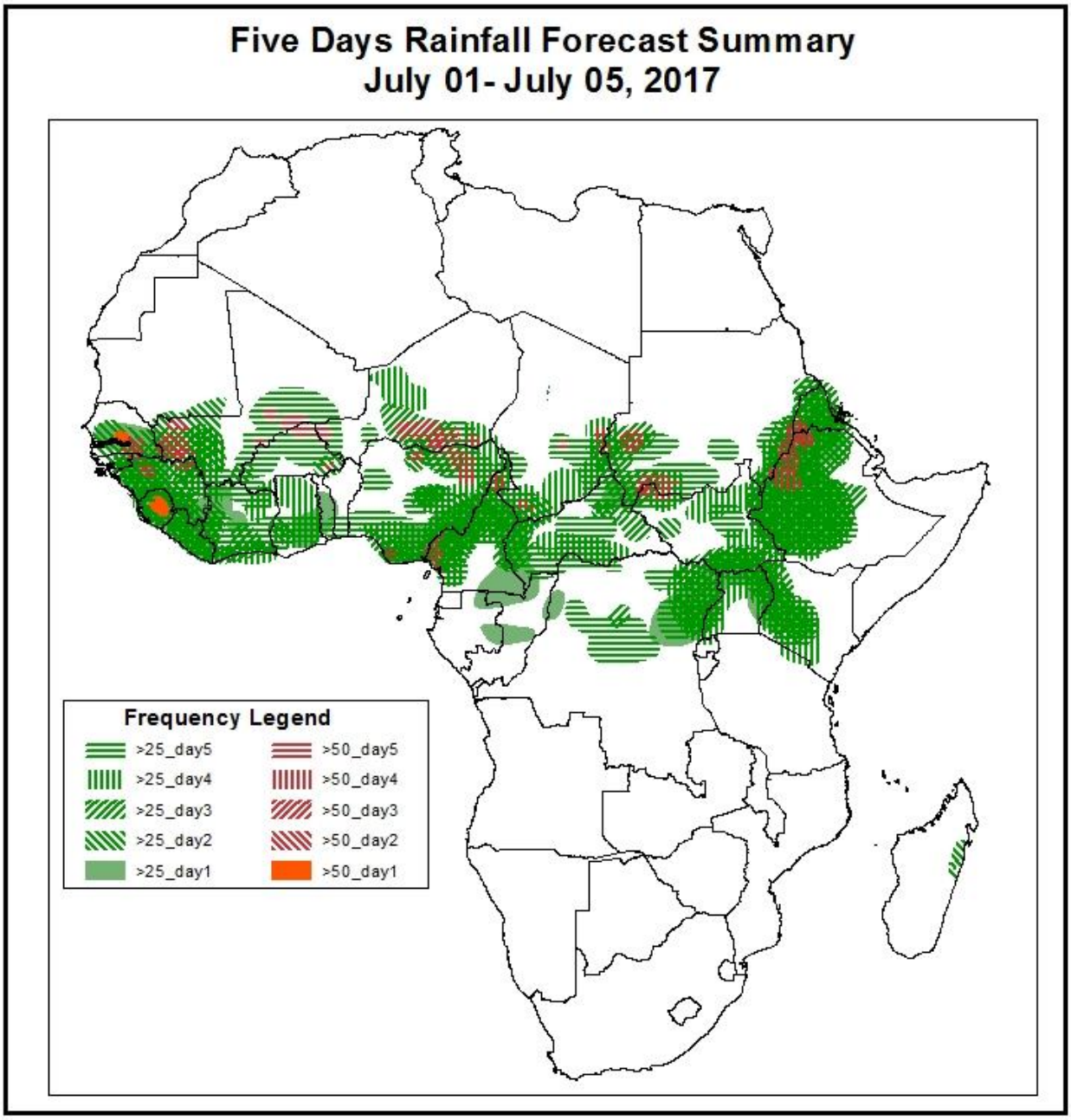
NCEP Contributions to the WMO Severe Weather Forecasting Demonstration Project (SWFDP) and to the African Monsoon Multidisciplinary Analysis (AMMA) Initiative

1. Rainfall, Heat Index and Dust Concentration Forecasts, (Issued on June 30, 2017)

1.1. Daily Rainfall and Maximum Heat Index Forecasts (valid: July 01– 04 July, 2017)

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



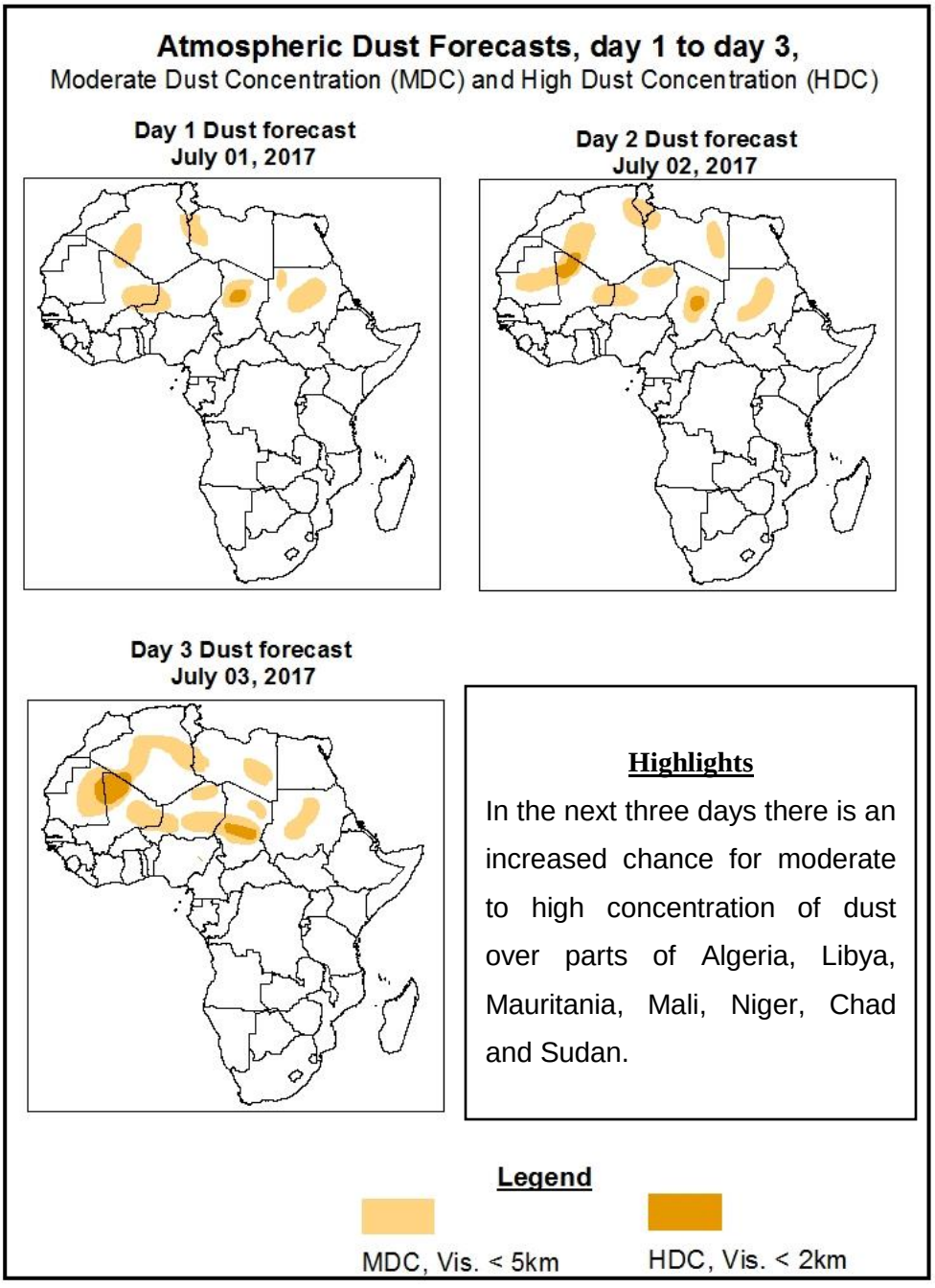


Highlights

In the next five days, a strong monsoon flow from the Atlantic Ocean across West and Central Africa combined with a lower-level cyclonic circulation propagating across the Sahel and Gulf of Guinea countries is expected to enhance rainfall over many places in West and Central Africa. Lower level wind convergence is expected to enhance rainfall over Sudan and Ethiopia. As a result, there is an increased chance for two or more days of moderate to heavy rainfall over many places in the Gulf of Guinea and parts of the Sahel countries, and portions of South Sudan, Sudan, northeastern DRC, western Kenya, northern Uganda and Ethiopia.

1.2. Atmospheric Dust Concentration Forecasts (valid: July 01–03, 2017)

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 01– July 05, 2017*

The Azores High Pressure system over the North Atlantic Ocean is expected to weaken with its central pressure value decreasing from 1033hPa to 1028hPa through 120 hours.

The St. Helena High Pressure system over the Southeast of the Atlantic Ocean is expected to intensify, with its central pressure value increasing from 1023hPa to 1026hPa in the next 72 hours and weaken with central pressure value to 1019 hPa during the forecast period.

The Mascarene High Pressure system over the Southwest Indian Ocean is expected to intensify, with its central pressure value increasing from 1029hPa to 1036hPa through 48 hours and weaken with pressure value to 1030hPa during the forecast period.

The heat low over western Sahel is expected to deepen slightly with the lowest central pressure value of 1003 hPa through 120 hours.

At 925 hPa, strong dry northerly to southeasterly flow across northern Africa leading increased dust activity in the region.

At 850 hPa, a cyclonic circulation over western Niger is expected to propagate towards Mali across the Sahel region in 120hours. A zonal wind convergence is expected to prevail in the region between eastern Mauritania and Nigeria during the forecast period.

At 700 hPa, a zonal easterly flow is expected to prevail across the Gulf of Guinea region 24 through 72 hours, and a trough in easterlies is expected to form near the Nigeria/Guinea towards end of the forecast period.

At 500 hPa, a zone of strong wind (>30ts) associated African easterly Jet is expected to propagate westwards across the western portion of West Africa.

In the next five days, a strong monsoon flow from the Atlantic Ocean across West and Central Africa combined with a lower-level cyclonic circulation propagating across the Sahel and Gulf of Guinea countries is expected to enhance rainfall over many places in West and

Central Africa. Lower level wind convergence is expected to enhance rainfall over Sudan and Ethiopia. As a result, there is an increased chance for two or more days of moderate to heavy rainfall over many places in the Gulf of Guinea and parts of the Sahel countries, and portions of South Sudan, Sudan, northeastern DRC, western Kenya, northern Uganda and Ethiopia.

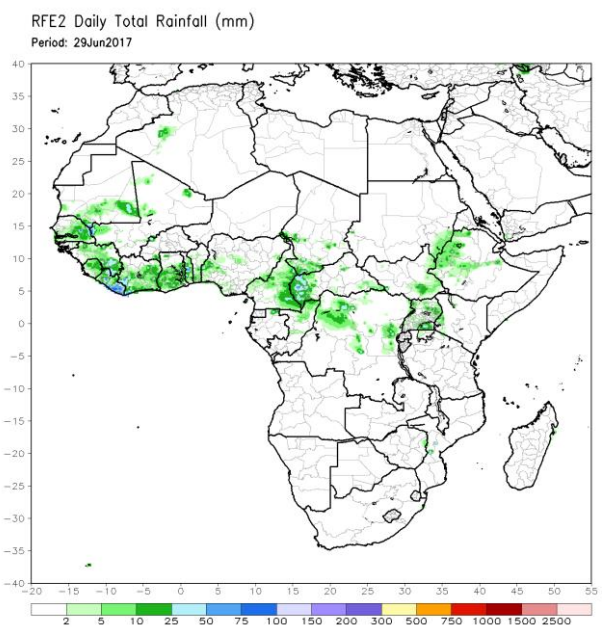
2.0. Previous and Current Day Weather over Africa

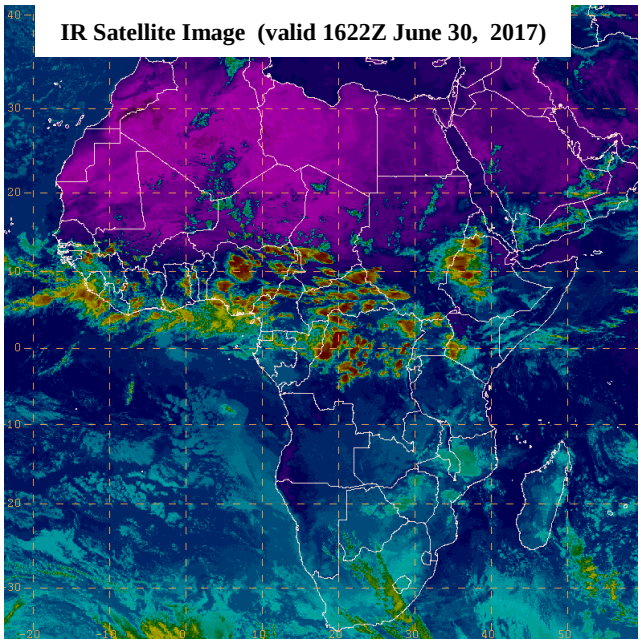
2.1. Weather assessment for the previous day (June 29, 2017)

Light to moderate rainfall was observed over parts of Mauritania, Senegal, Guinea, Liberia, Cote d'Ivoire, Togo, Cameroon, northern DRC, eastern South Sudan, western Ethiopia and Uganda.

2.2. Weather assessment for the current day (June 30, 2017)

Intense convective clouds are observed over eastern Gulf of guinea and Central African countries, and western Ethiopia.





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

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