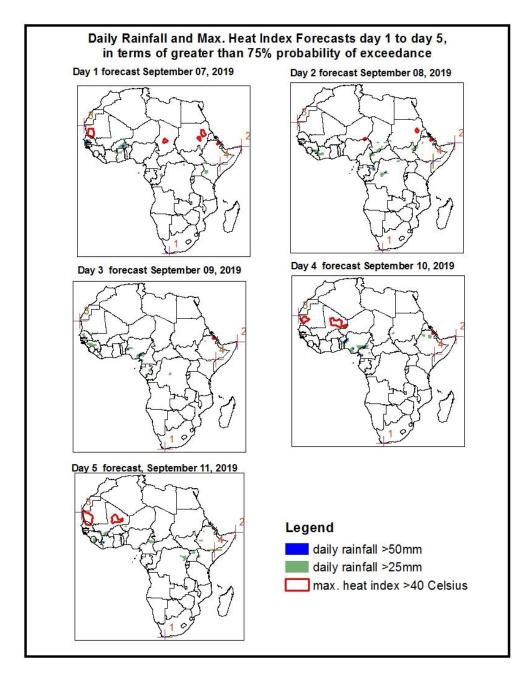
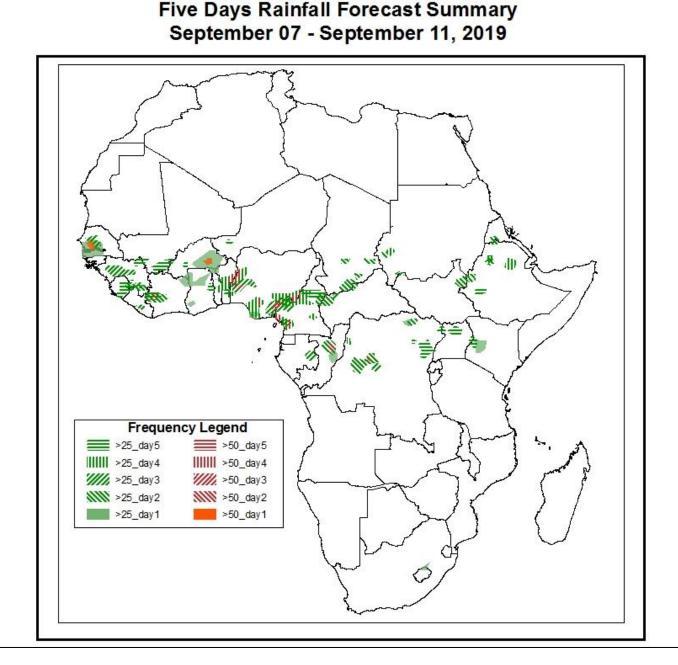
NCEP Contributions to the WMO Severe Weather Forecasting Demonstration Project (SWFDP) and to the African Monsoon Multidisciplinary Analysis (AMMA) Initiative

- **1. Rainfall, Heat Index and Dust Concentration Forecasts,** (Issued on September 06, 2019)
- **1.1. Daily Rainfall and Maximum Heat Index Forecasts** (valid: 07 11 September, 2019)

The forecasts are expressed in terms of high probability of precipitation (POP), valid 06Z to 06Z, and exceedance probability of maximum heat index (>40°C), based on the NCEP/GFS and the NCEP Global Ensemble Forecasts System (GEFS) and expert assessment.

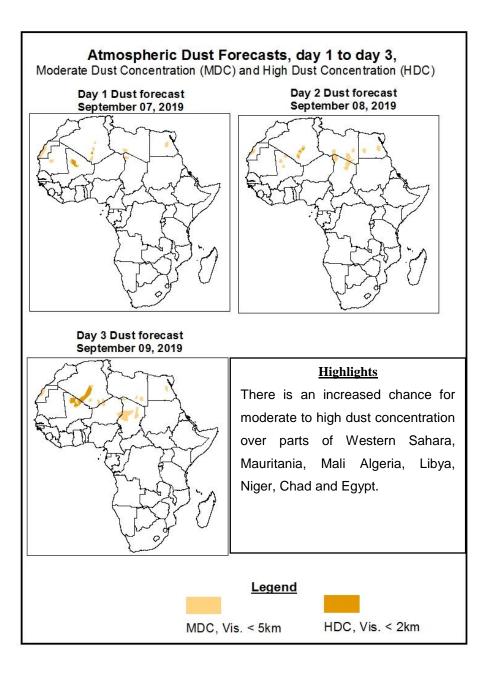




Highlights

- The monsoon flow from the Atlantic Ocean with its associated lower-level convergence, and westward propagating meso-scale convective systems are expected to enhance rainfall over Western Africa, portions of the Sahel, Central Africa countries.
- Lower-level wind convergences are expected to enhance rainfall across portions of the Greater Horn of Africa.
- At least 25mm for two or more days is likely over portions of West, Central Africa and portions of the Greater Horn of Africa. There is an increased chance for daily rainfall to exceed 50mm over western Senegal, Gambia, Mali, Benin, Nigeria, Cameroon, RC and DRC.
- There is an increased chance for daily maximum heat index to exceed 40°C over Western Sahara, Mali, Mauritania, Southeastern Niger, Sudan and Ethiopia.

1.2. Atmospheric Dust Concentration Forecasts (valid: 07 Sept – 09 Sept 2019) 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: 07 September – 11 September 2019

The Azores High Pressure system over the Northeast Atlantic is expected to Weaken with its central pressure value decreasing from 1033hPa to 1029hPa during the forecast period.

The St. Helena High Pressure system over Southeast Atlantic Ocean is expected to strengthen with its central pressure value increasing from 1029hPa to 1032hPa during the forecast period.

The Mascarene High Pressure system over Southwest Indian Ocean is expected to weaken with its central pressure value decreasing from 1042hPa to 1025hPa during the forecast period.

Thermal low across the Sahel region is expected to deepen with its central pressure value decreasing from 1009 to 1006hPa during of forecast period.

At 925-hPa level, Northeasterly winds is expected to prevail across Northwest Africa, and moist southwesterly flow from the Atlantic Ocean is expected to prevail across the Gulf of Guinea and covering much of West Africa and the Sahel regions, the neighboring areas of Central Africa.

At 850-hPa, lower-level winds convergences are expected to remain active over portions of the Sahel, RDC, Sudan and Lake Victoria regions.

At 700-hPa, a broad area of anticyclonic flow is expected to prevail and intensify across much of Northwest and West Africa during the forecast period.

At 500-hpa, wind speed associated with easterly flow is expected to exceed 30kts across the Sahel, northern Africa, over many parts southern Sahel, and Greater Horn of Africa during the forecast period.

At 150-hPa, a strong wind (>70kts) associated with tropical easterly jet (TEJ) is expected to prevail across Northern Africa and at the far eastern East Africa during the forecast period.

The monsoon flow from the Atlantic Ocean with its associated lower-level convergence, and westward propagating meso-scale convective systems are expected to enhance rainfall over Western Africa, portions of the Sahel, Central Africa countries. Lower-level wind convergences are expected to enhance rainfall across portions of the Greater Horn of Africa. At least 25mm for two or more days is likely over portions of West, Central Africa and portions of the Greater Horn of Africa. There is an increased chance for daily rainfall to exceed 50mm over western Senegal, Gambia, Mali, Benin, Nigeria, Cameroon, RC and DRC. There is an increased chance for daily maximum heat index to exceed 40°C over Western Sahara, Mali, Mauritania, Southeastern Niger, Sudan and Ethiopia.

2.0. Previous and Current Day Weather over Africa

2.1. Weather assessment for the previous day (Sept 05, 2019)

Daily rainfall amount exceeded 25mm over Southeastern Senegal, Guinea, Sierra Leone, Liberia, Southeastern Mali, Southeastern Nigeria and Northwestern Cameroon and exceeded 50mm over portions Southeastern Senegal, Guinea, Sierra Leone and Liberia.

2.2. Weather assessment for the current day (Sept 06, 2019)

Deep convective clouds are observed over Western and Central Africa countries and local areas in the Greater Horn of Africa.

