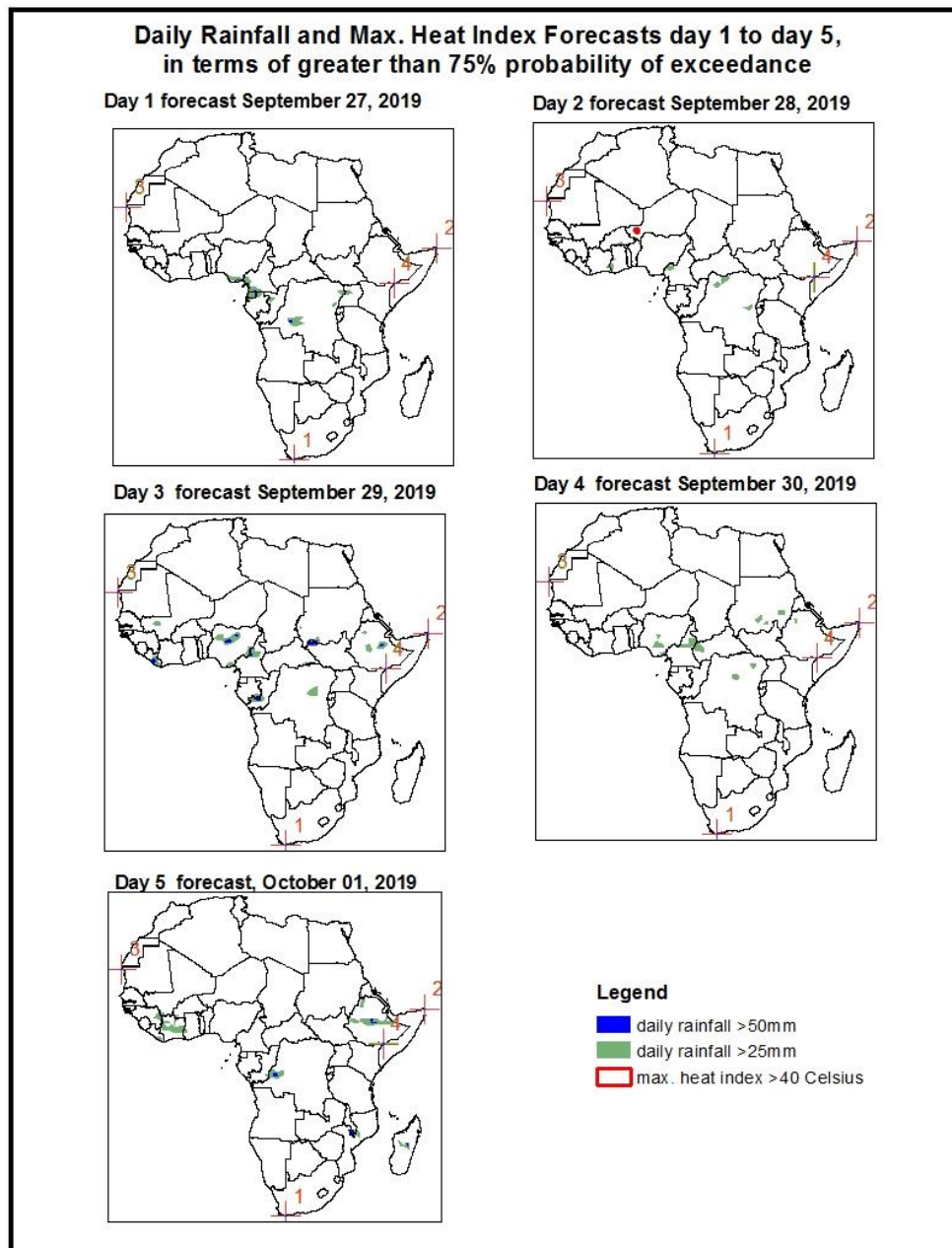


NCEP Contributions to the WMO Severe Weather Forecasting Demonstration Project (SWFDP) and to the African Monsoon Multidisciplinary Analysis (AMMA) Initiative

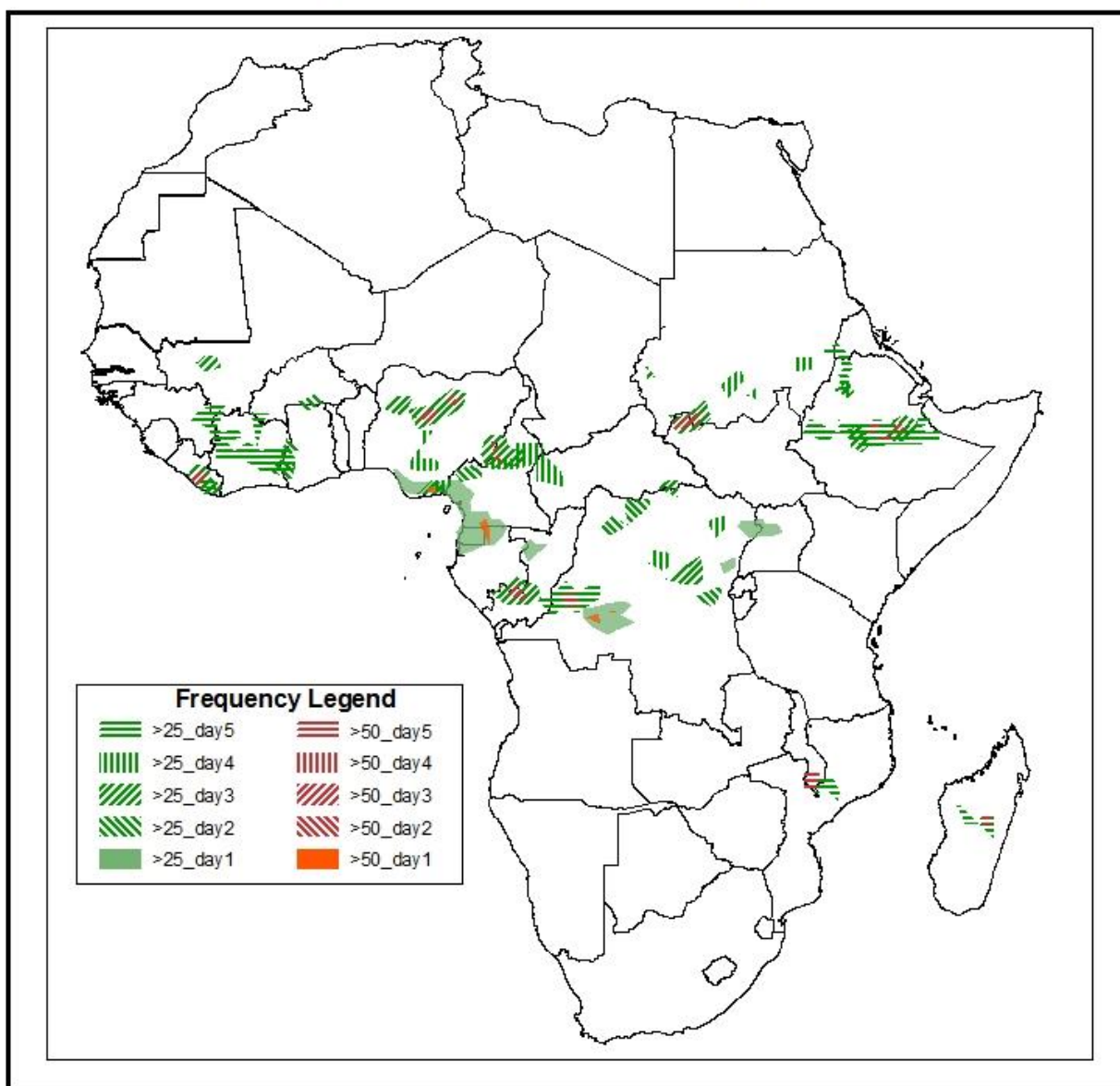
1. Rainfall, Heat Index and Dust Concentration Forecasts, (Issued on September 26, 2019)

1.1. Daily Rainfall and Maximum Heat Index Forecasts (valid: 27 – 01 October, 2019)

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



Five Days Rainfall Forecast Summary September 27 - October 01, 2019

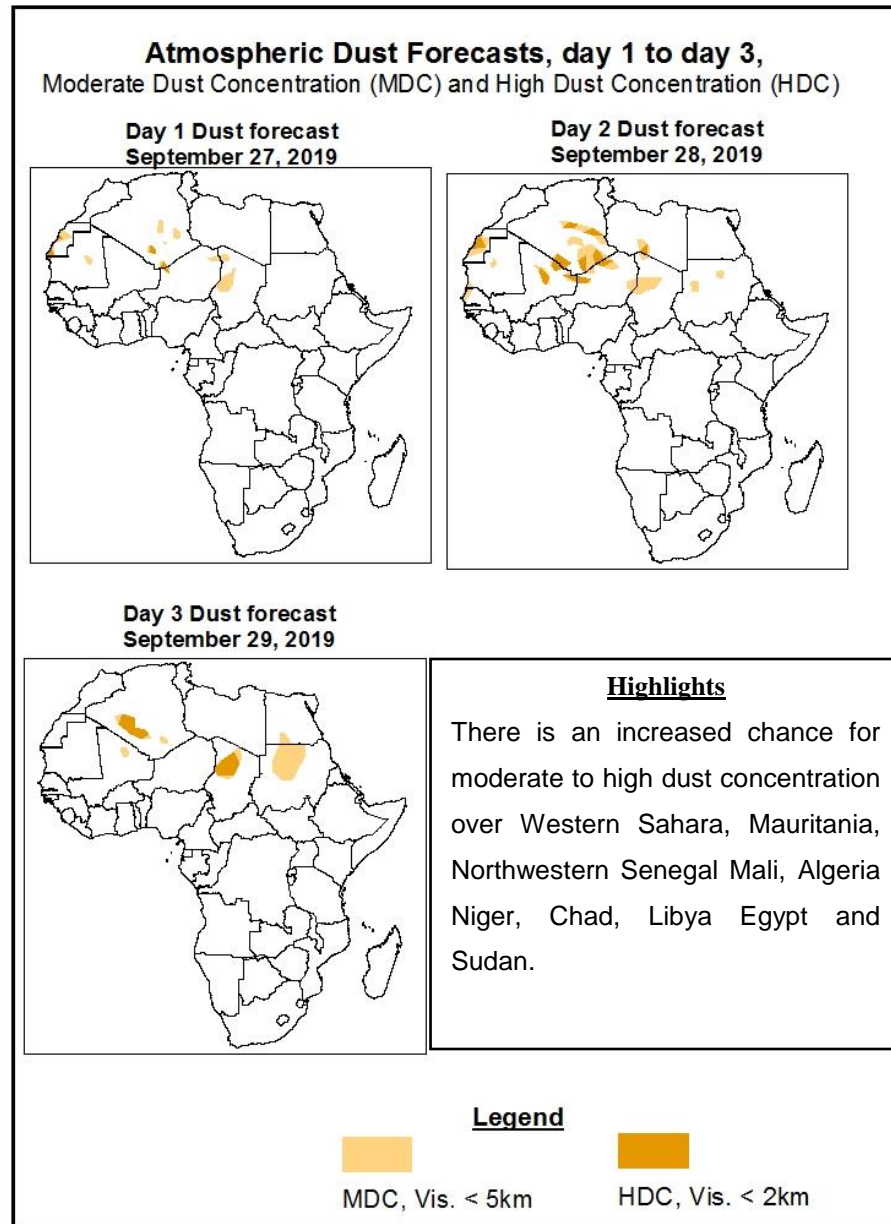


Highlights

- 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 portions of West and Central Africa. Seasonal wind convergences are expected to enhance rainfall in the Lake Victoria region, and parts of Ethiopia
- At least 25mm for two or more days is likely over portions of Eastern Guinea, Liberia, Southern Mali, Cote D'Ivoire, Southern Ghana, Nigeria, Cameroon, CAR, DRC, RC, Gabon, South Sudan, Uganda, Ethiopia.
- There is an increased chance for daily rainfall to exceed 50mm over Liberia, Nigeria, southern Sudan and North South Sudan, Ethiopia, Malawi and Madagascar
- There is an increased chance for daily maximum heat index to exceed 40°C over Niger.

1.2. Atmospheric Dust Concentration Forecasts (valid: 27 Sept – 29 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: 27 September –01 October 2019

The Azores High Pressure system over the Northeast Atlantic is expected to weaken, with its central pressure value decreasing from 1026hPa to 1021hPa during the forecast period.

The St. Helena High Pressure system over Southeast Atlantic Ocean is expected to weaken while shifting eastward with its central pressure value decreasing from 1032hPa to 1030hPa during the forecast period.

The Mascarene High Pressure system over Southwest Indian Ocean is expected to weaken while shifting eastward, with its central pressure value decreases from 1034hPa to 1029hPa during the forecast period.

Thermal low across the Sahel region is expected to deepen with its central pressure value decreasing while shifting westward from 1010hPa to 1006hPa during the forecast period.

At 925-hPa level, strong dry northerly flow is expected to prevail across Northwest Africa. In other hand, moist southwesterly flow from the Atlantic Ocean is expected to prevail across the Gulf of Guinea and the Sahel regions, and the neighboring areas of Central Africa.

At 850-hPa, meridional wind convergence is expected to remain active in the Lake Victoria region and neighboring areas during the forecast period. Otherwise, dry northeasterly flow from North Africa is expected to prevail across Sahel region that will be reducing precipitations in this area.

At 700-hPa, a broad area of anticyclonic circulation is expect to remain while shifting westward over North Africa. Quite significant convergence over central and Great Horn of Africa underscores the depth of the convergent wind system over.

At 500-hpa, wind speed associated with easterly flow is expected to exceed 30kts across the Northern Africa and southern South Africa region 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 portions of West and Central Africa. Seasonal wind convergences are expected to enhance rainfall in the Lake Victoria region, and parts of Ethiopia. At least 25mm for two or more days is likely over portions of Eastern Guinea, Liberia, Southern Mali, Cote D'Ivoire, Southern Ghana, Nigeria, Cameroon, CAR, DRC, RC, Gabon, South Sudan, Uganda, Ethiopia. There is an increased chance for daily rainfall to exceed 50mm over Liberia, Nigeria, southern Sudan and North South Sudan, Ethiopia, Malawi and Madagascar. There is an increased chance for daily maximum heat index to exceed 40°C over Niger.

2.0. Previous and Current Day Weather over Africa

2.1. *Weather assessment for the previous day* (Sept 25, 2019)

Daily rainfall amount exceeded 25mm over Nigeria, DRC, Uganda and Ethiopia and exceeded 50mm over Nigeria, DRC and Ethiopia.

2.2. *Weather assessment for the current day* (Sept 26, 2019)

Deep convective clouds are observed over far West Africa region, Central Africa countries and local areas in the Greater Horn of Africa.

