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 *November 15*, 2018)

1.1. Daily Rainfall and Maximum Heat Index Forecasts (valid: Nov 16 - 20, 2018)

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.





<u>Highlights</u>

- In the next five days the Congo Air Boundary (CAB) is expected to remain active over Central African Countries, some parts of Lake Victoria and it is later expected to extend its influence over the North of Southern African. In the next five days, there is a chance for moderate to heavy rainfall over localized areas of Somalia, Kenya, Congo DR, Congo Brazzaville, Zambia, Mozambique, South Africa and Madagascar.
- There is an increased chance for temperature heat index values to exceed 40^oC over local areas of Nigeria and Republican of Central Africa.

1.2. Atmospheric Dust Concentration Forecasts (valid: November 16 – 18, 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: November 16 – 20, 2018

The Azores High Pressure system over the North Atlantic Ocean is expected to relax its strength. Its central pressure value is expected to decrease from 1029hPa and 1020hPa through the forecast period.

The St. Helena High Pressure system over Southwest Atlantic Ocean is expected to maintain its strength as it progresses eastwards towards the sub-continent. Its central pressure value is expected to fluctuate between from 1029hPa to 1030hPa through the forecast period.

The Mascarene High Pressure system over Southwest Indian Ocean is expected to intensify as it progresses eastward with its central pressure value from 1032hPa to 1036hPa through the forecast period.

At 925hPa, strong northeasterly to easterly flow is expected to prevail over most parts of Northern Africa and the Sahel region. Moist and unstable Southwesterly to westerly winds are expected to weaken over parts of Gulf of Guinea but remain active over Central African countries.

At 850hPa, Lower-level wind convergence associated with the Congo air boundary (CAB) over parts of Central Africa. Also, Northeasterly flow over Southern and the Southeast of Africa.

In the next five days the Congo Air Boundary (CAB) is expected to remain active over Central African Countries, some parts of Lake Victoria and it is later expected to extend its influence over the North of Southern African. In the next five days, there is a chance for moderate to heavy rainfall over localized areas of Somalia, Kenya, Congo DR, Congo Brazzaville, Zambia, Mozambique, South Africa and Madagascar.

There is an increased chance for temperature heat index values to exceed 40^oC over local areas of Nigeria and Republican of Central Africa.

2.0. Previous and Current Day Weather over Africa

2.1. Weather assessment for the previous day (November 14, 2018)

Above 25mm daily rainfall was observed over localized areas of western Central Africa, Somalia and Madagascar.

2.2. Weather assessment for the current day (November 15, 2018)

Intense convective clouds are observed over some areas of the Central African countries and Zambia.

