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 5, 2018)

1.1. Daily Rainfall and Maximum Heat Index Forecasts (valid: Nov 6 - 10, 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 keep oscillating over the Central and north of Southern Africa. Southwesterly to westerly monsoon flow from the Atlantic Ocean is expected to continue weakening resulting into reduced rainfall over Gulf of Guinea coast. There is a chance for moderate to heavy rainfall over Congo DR and Angola for the first 4 days of the forecast period.
- There is an increased chance for temperature heat index values to exceed 40[°]C over local areas of Togo, Benin, Nigeria, Chad, Central Africa Republic and Mozambique.

1.2. Atmospheric Dust Concentration Forecasts (valid: November 6 – 10, 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 6 – 10, 2018

The Azores High Pressure system over the North Atlantic Ocean with Its central pressure value expected to decrease from 1035hPa to 1026hPa.

The St. Helena High Pressure system over down Southwest Atlantic Ocean is expected to maintain its strength through the 48hrs as it progress southeast, its central pressure value is expected to be 1031hPa.Developing St. Helena High Pressure system with its central pressure value expected to decrease from 1027hPa to 1025hPa.

The Mascarene High Pressure system over the Southwest Indian Ocean is expected to strengthen as it progresses southeast of the Ocean through the 48hrs. Its central pressure value is expected to increase from 1028hPa to 1030hPa. The new formed Mascarene High Pressure system is expected to weaken as it moves to the southeast. Its central pressure value is expected to decrease from 1028hPa to 1024hPa.

At 925hPa, strong northeasterly to easterly flow is expected to prevail over most parts of northern Africa and the Sahel region. Southwesterly to westerly monsoon flow from the Atlantic Ocean is expected to continue weakening over the Gulf of Guinea coast. Moist and unstable northeasterly to easterly winds are expected to prevail over East and southeast African countries.

At 850hPa, Lower-level wind convergence associated with the Congo air boundary (CAB) over parts of the Lake Victoria region and North of Southern Africa in the next 48hrs.

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There is an increased chance for temperature heat index values to exceed 40^oC over local areas of Togo, Benin, Nigeria, Chad, Central Africa Republic and Mozambique.

2.0. Previous and Current Day Weather over Africa

2.1. Weather assessment for the previous day (November 4, 2018)

Above 25mm daily rainfall was observed through localized areas of Central African countries and Madagascar.

2.2. Weather assessment for the current day (November 5, 2018)

Intense convective clouds are observed over local areas Gulf of Guinea, Central and southern African countries.

