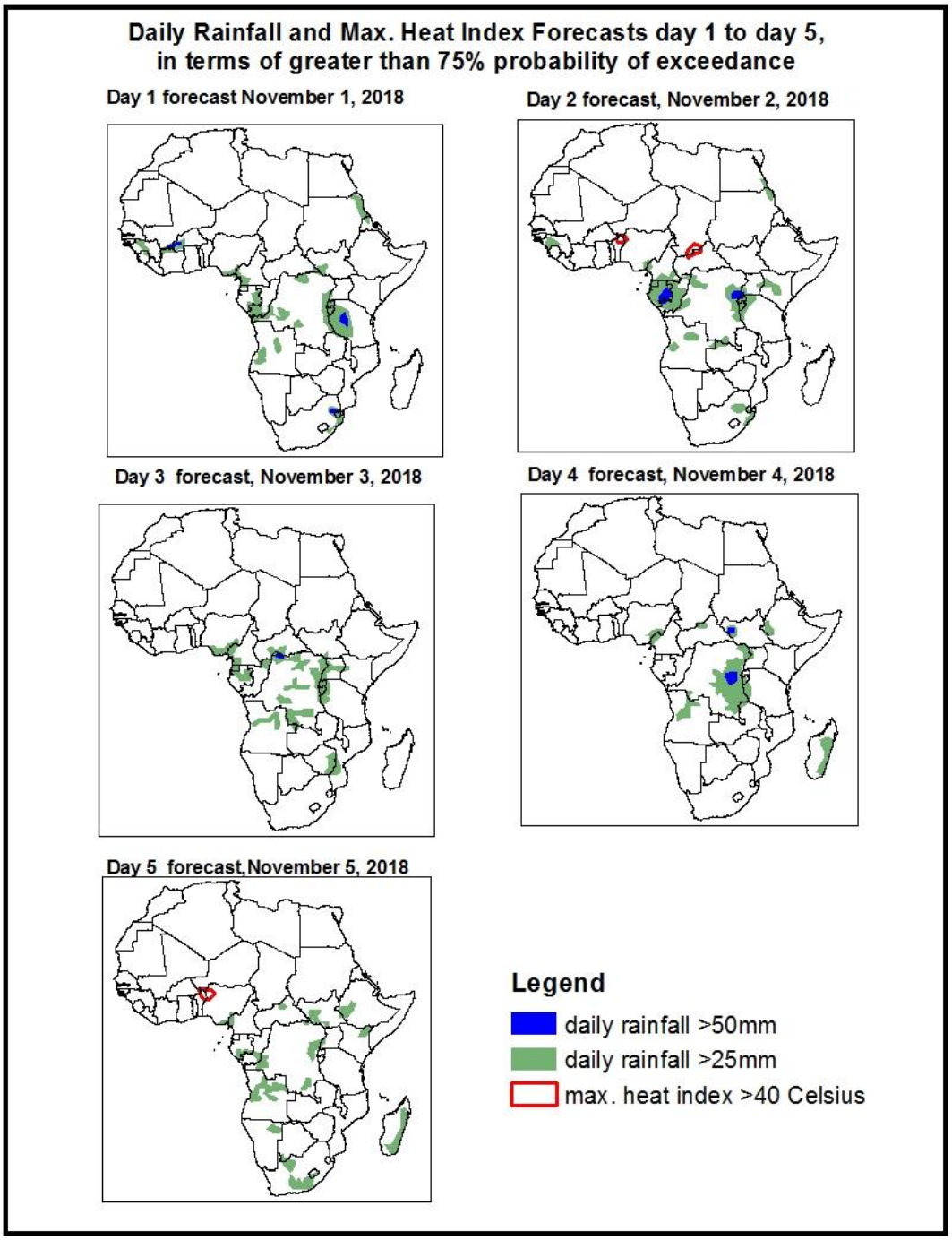
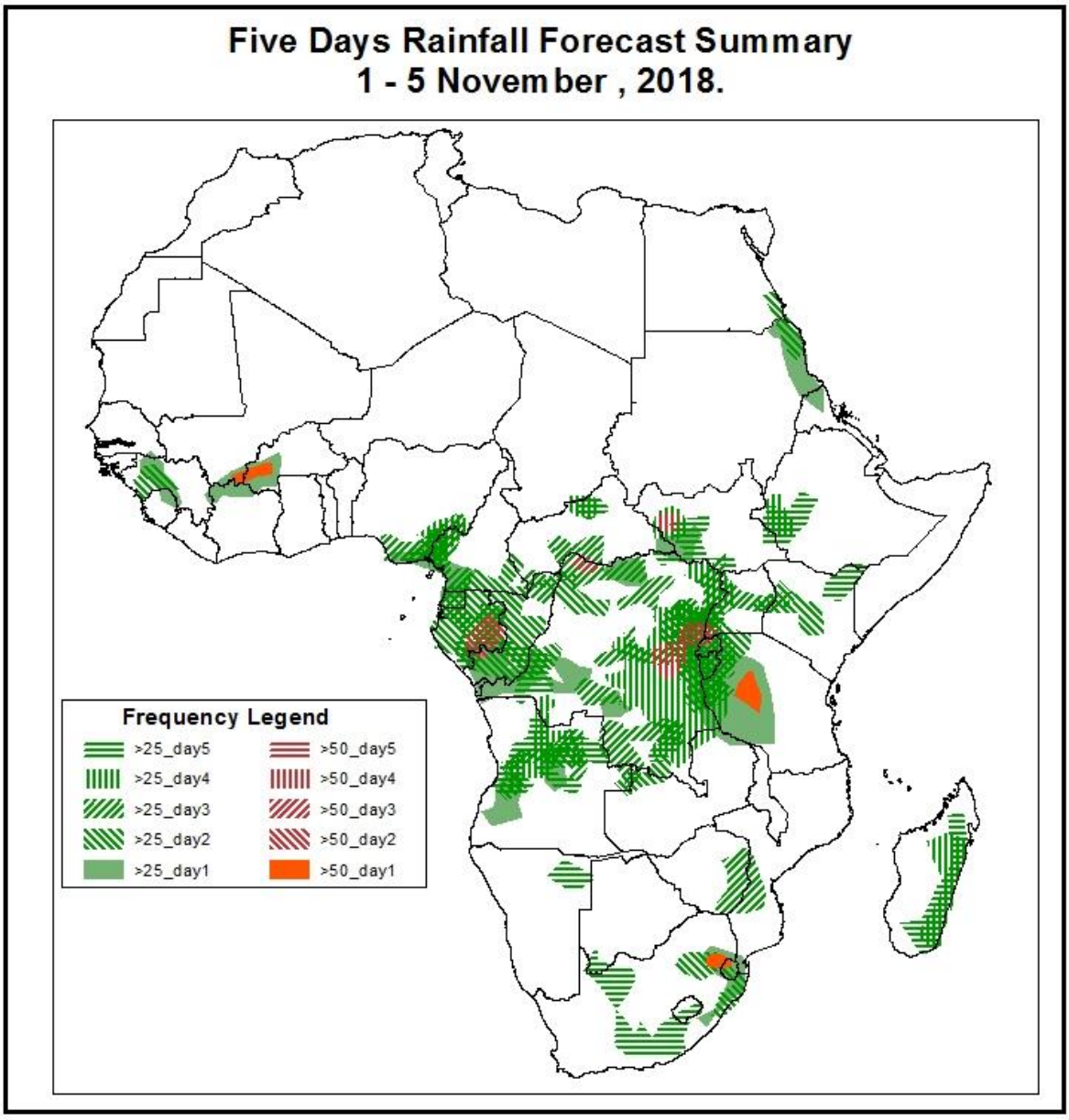
NCEP Contributions to the WMO Severe Weather Forecasting Demonstration Project (SWFDP) and to the African Monsoon Multidisciplinary Analysis (AMMA) Initiative

1. Rainfall, Heat Index and Dust Concentration Forecasts, (Issued on *October 31*, 2018)

1.1. Daily Rainfall and Maximum Heat Index Forecasts (valid: Nov 1 - 5, 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.



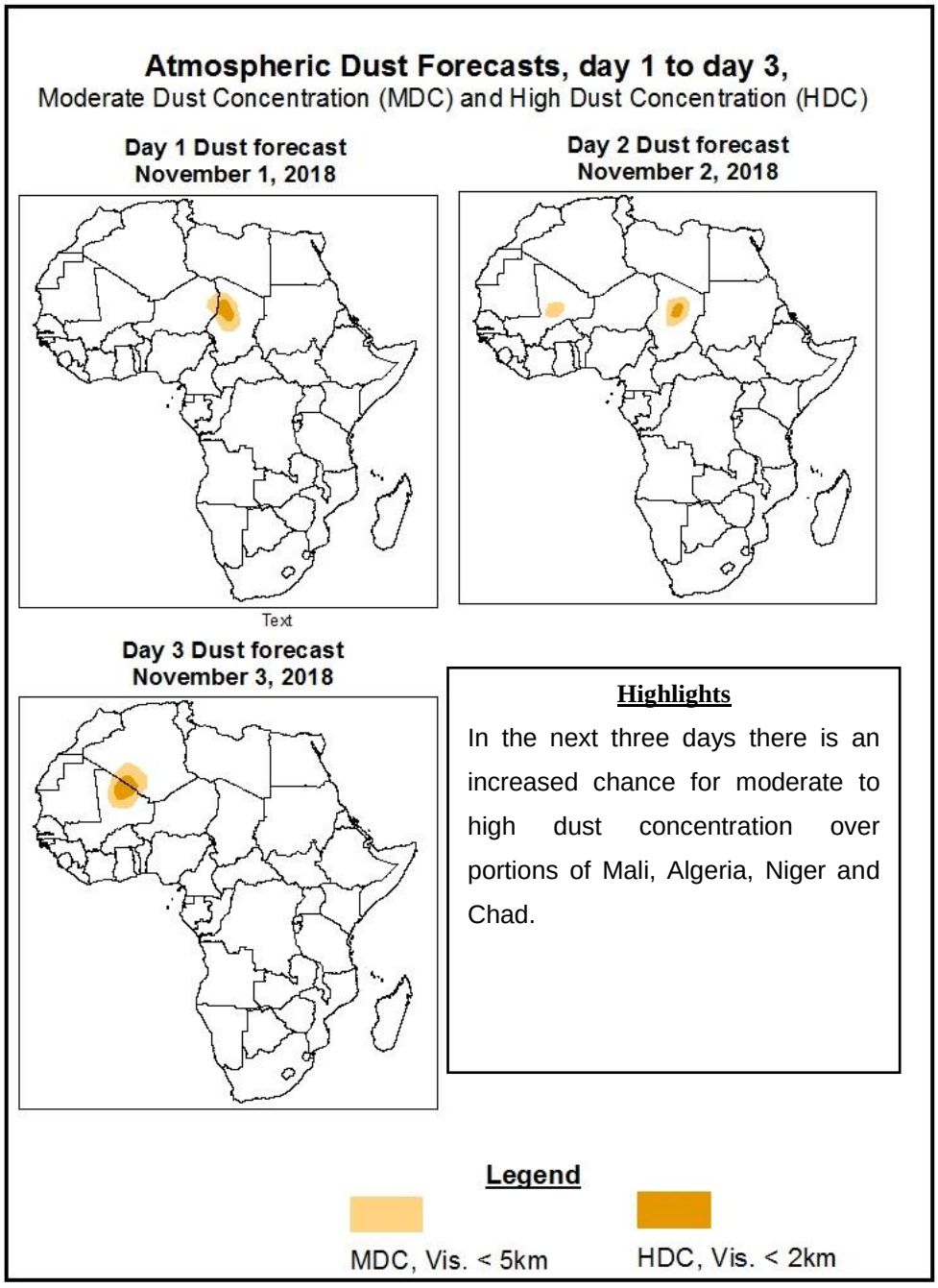


Highlights

- In the next five days the Congo Air Boundary (CAB) is expected to gradually extend further southwards the continent. Southwesterly to westerly monsoon flow from the Atlantic Ocean is expected to weaken and reduce rainfall activities over Gulf of Guinea coast. There is an increased chance for moderate to heavy rainfall over localized areas of Burkina Faso, Gabon, Congo DR Tanzania and South Africa.
- There is an increased chance for temperature heat index values to exceed 40^0C over local areas of Benin, Nigeria, Chad, and Republic of Central Africa.

1.2. Atmospheric Dust Concentration Forecasts *(valid: November 1 – 5, 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 1 – 5, 2018*

The Azores High Pressure system over the North Atlantic Ocean is expected to strengthen through the forecast period, its central pressure value expected to increase from 1025hPa to 1031hPa.

The St. Helena High Pressure system over the Southwest Atlantic Ocean is expected to progress eastwards towards the southern sub-continent. Its central pressure value is expected to decrease from 1030hPa to 1029hPa through 48hrs. Developing St. Helena High Pressure system down southwest Atlantic Ocean is expected to strengthen as it moves eastwards with its Central pressure value expected to increase from 1024hPa to 1035hPa.

The Mascarene High Pressure system over the Southwest Indian Ocean is expected to weaken as it progresses southeast of the Ocean through the72hrs. Its central pressure value is expected to decrease from 1031hPa to 1026hPa. Expected to develop is another Mascarene High Pressure system over Southwest Indian Ocean with its Central average pressure of 1029hPa towards the end of the forecast period.

At 925hPa, strong northeasterly to easterly flow is expected to prevail over most parts of northern Africa, and some areas of the Sahel region. Southwesterly to westerly monsoon flow from the Atlantic Ocean is expected to gradually weaken 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 Southern Africa and the Lake Victoria region.

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There is an increased chance for temperature heat index values to exceed 40^0C over local areas of Benin, Nigeria, Chad, and Republic of Central Africa.

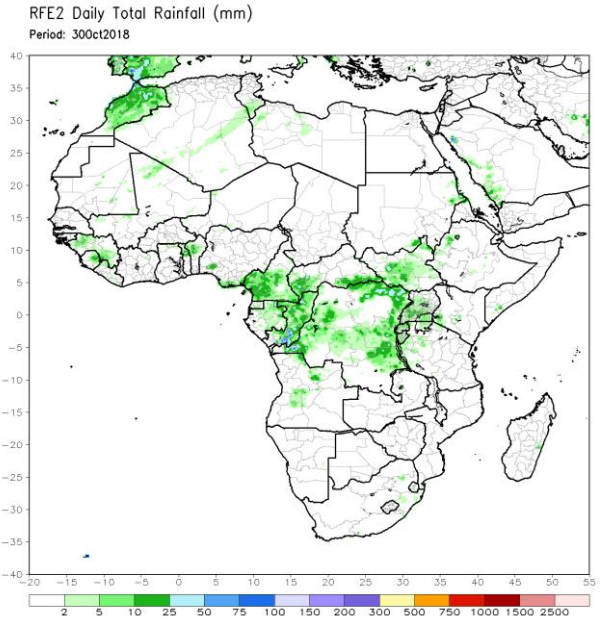
2.0. Previous and Current Day Weather over Africa

2.1. Weather assessment for the previous day (October 30, 2018)

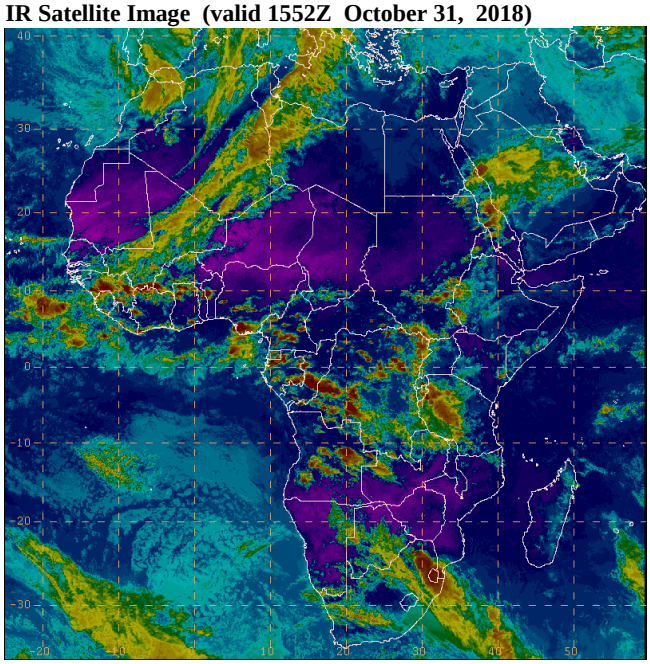
Above 25mm daily rainfall was observed over localized areas of western countries of Central African.

2.2. Weather assessment for the current day (*October 31*, 2018)

Intense convective clouds are observed over parts of Gulf of Guinea coast, Central African countries and Northern parts of Southern African countries.



IR Satellite Image (valid 1552Z October 31, 2018)



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