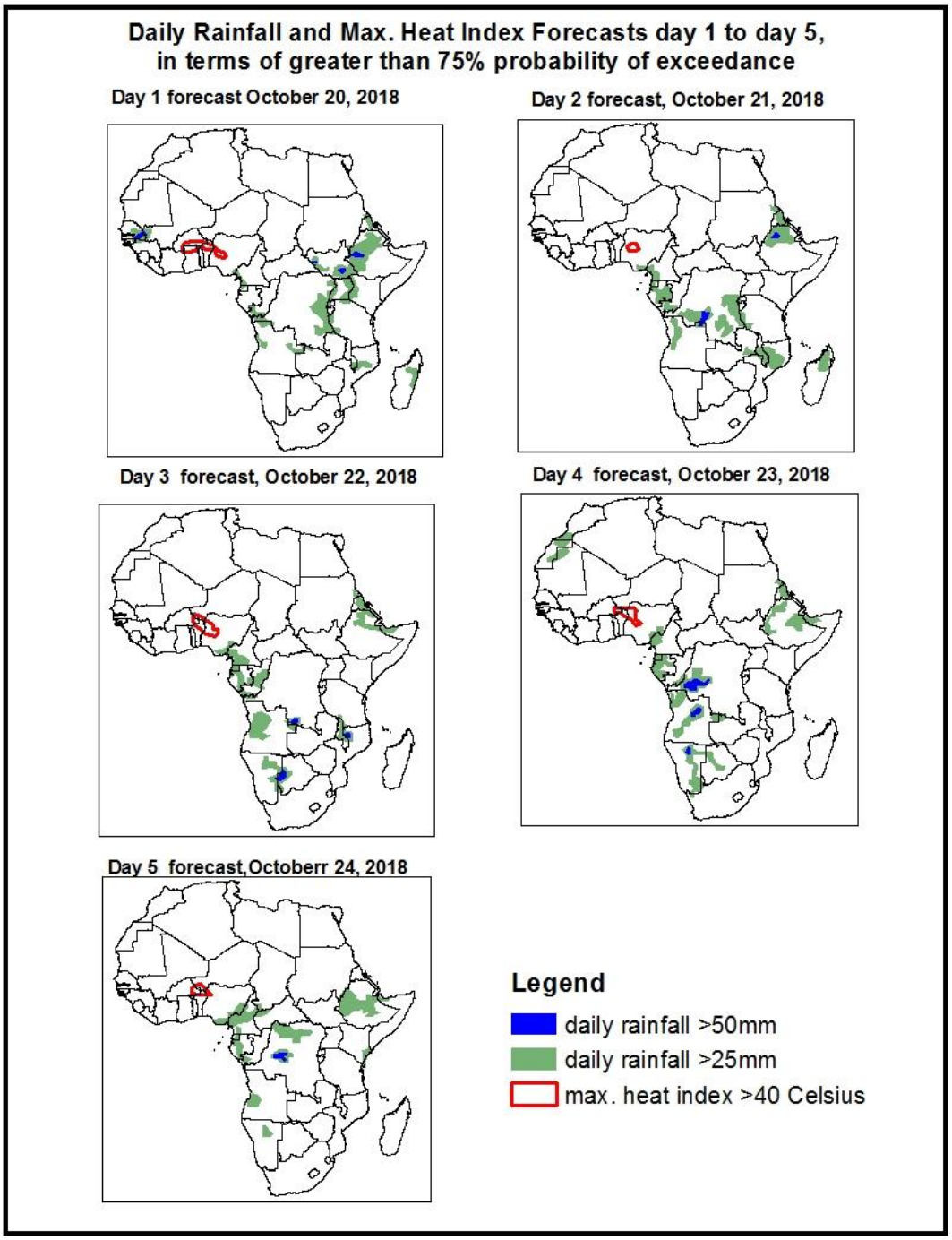
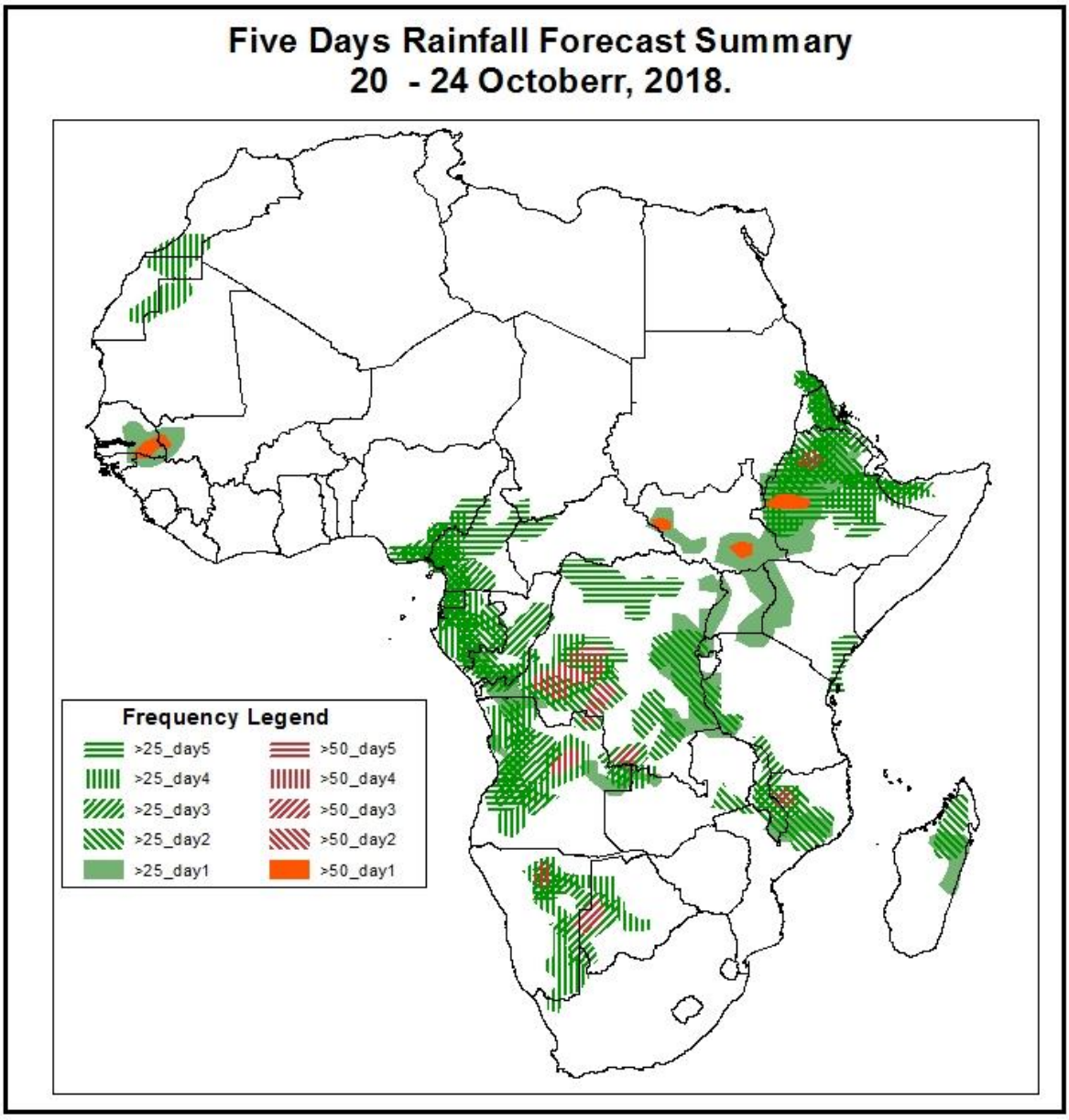
NCEP Contributions to the WMO Severe Weather Forecasting Demonstration Project (SWFDP) and to the African Monsoon Multidisciplinary Analysis (AMMA) Initiative

1. Rainfall, Heat Index and Dust Concentration Forecasts, (Issued on *October 19,* 2018)

1.1. Daily Rainfall and Maximum Heat Index Forecasts (valid: Oct 20, –Oct 24, 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^{o}C), based on the NCEP/GFS and the NCEP Global Ensemble Forecasts System (GEFS) and expert assessment.



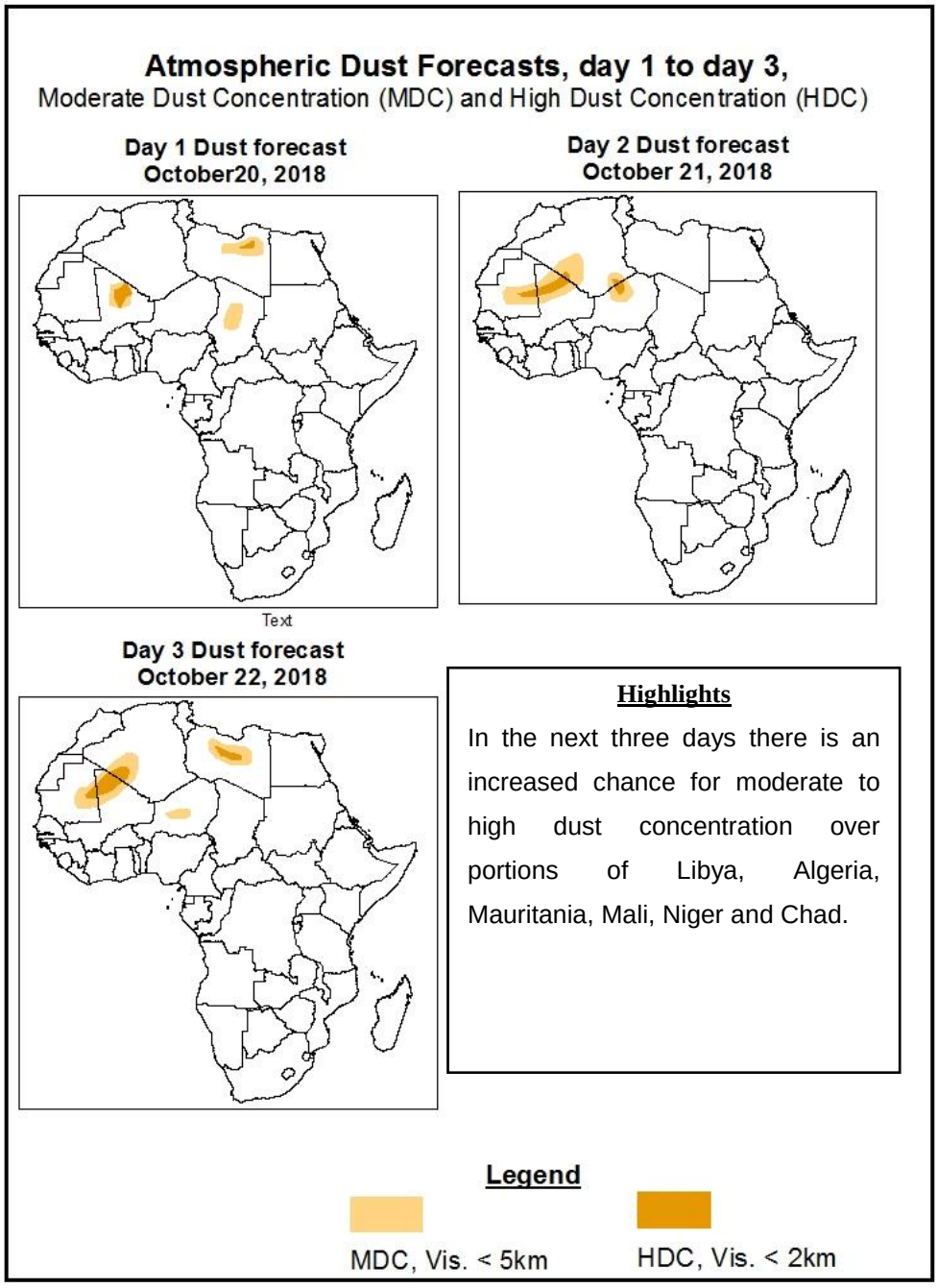


Highlights

- Stronger easterlies from the Indian Ocean are likely to keep the Congo Air Boundary (CAB) west of its normal position. Lower level convergence in the Greater Horn of Africa is expected to maintain moderate to heavy rainfall in the region during the first half of the forecast period. There is an increased chance for 2 or more days of moderate to heavy rainfall over parts of Central African, the Greater Horn of Africa countries and southern Africa countries.
- There is an increased chance for temperature heat index values to exceed 40^0C over local areas of Niger, Burkina Faso, Ghana, Togo, Benin, and Nigeria.

1.2. Atmospheric Dust Concentration Forecasts *(valid: Oct 20 – October 24, 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: October 20 –24 October, 2018*

The Azores High Pressure system over the North Atlantic Ocean is expected to strengthen its central pressure value is expected to increase from 1027hPa to 1046hPa in 96hrs.

The St. Helena High Pressure system over the Southeast Atlantic Ocean is moving towards the southern sub-continent. Its central pressure value is expected to increase from 1023hPa to 1037hPa within 24hrs. Developing St Helena over the southwest of the Atlantic Ocean progressing eastwards with the central pressure value expected to increase from 1023hPa to 1030hPa through the120hrs.

The Mascarene High Pressure system over the Southwest Indian Ocean is expected to withdraw and gradually weaken as it progresses southeast. It's expected to maintain its central pressure value of 1027hPa through 24hrs. Developed Mascarene High Pressure over the south Indian Ocean is expected to strengthen and move southeast. Its central pressure value is expected to decrease from 1038hPa to 1030hPa towards the end of the forecast period.

At 925hPa, dry 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 remain weak. A broad area of cross equatorial flow from the Indian Ocean is expected to weaken from across the Greater Horn of Africa. Moist and unstable northeasterly is expected to prevail over some parts of southeast and southern Africa through 24hrs.

At 850hPa, lower-level wind convergence associated with the Congo air boundary (CAB) and lower level wind convergence associated with the southern costal low is expected to remain active during the next 24hrs of the forecast period.

Stronger easterlies from the Indian Ocean are likely to keep the Congo Air Boundary (CAB) west of its normal position. Lower level convergence in the Greater Horn of Africa is expected to maintain moderate to heavy rainfall in the region during the first half of the forecast period. There is an increased chance for 2 or more days of moderate to heavy rainfall over parts of Central African, the Greater Horn of Africa countries and southern Africa countries. There is an increased chance for temperature heat index values to exceed 40^0C over local areas of Niger, Burkina Faso, Ghana, Togo, Benin, and Nigeria.

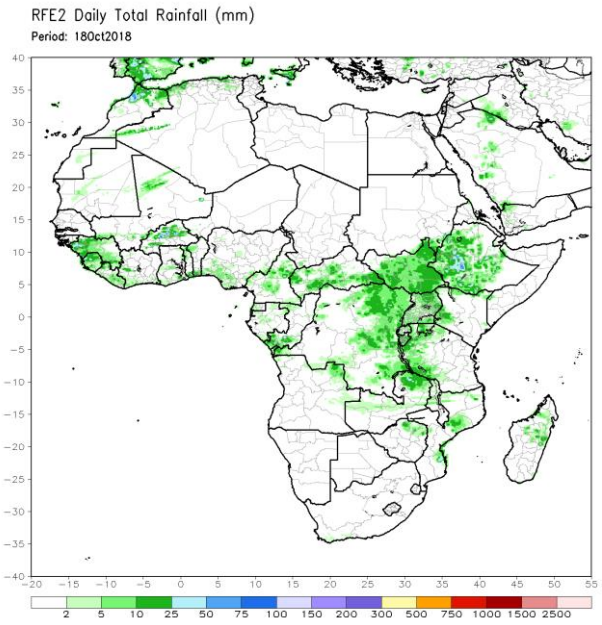
2.0. Previous and Current Day Weather over Africa

2.1. Weather assessment for the previous day (October 18, 2018)

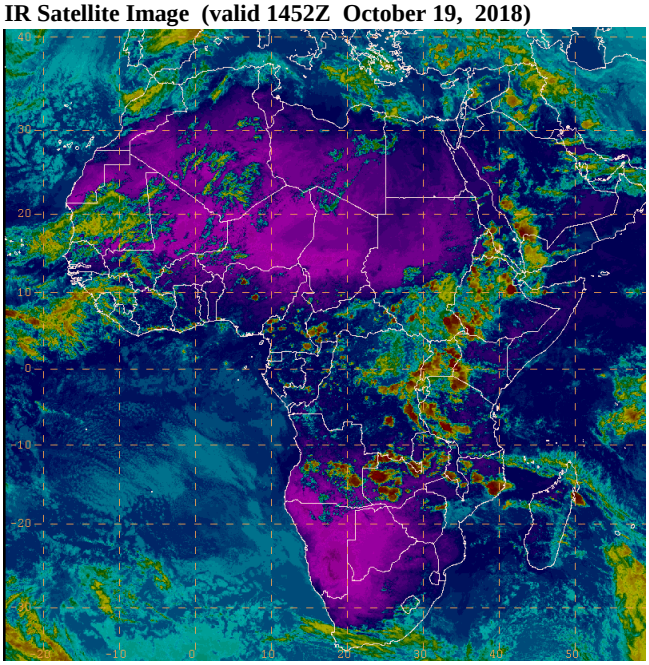
Daily rainfall of above 25mm was observed over parts of Ethiopia and Burkina Faso.

2.2. Weather assessment for the current day (*October 19*, 2018)

Intense convective clouds are observed over localized areas of lake Victoria and Eastern and Southern Africa countries.



IR Satellite Image (valid 1452Z October 19, 2018)



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