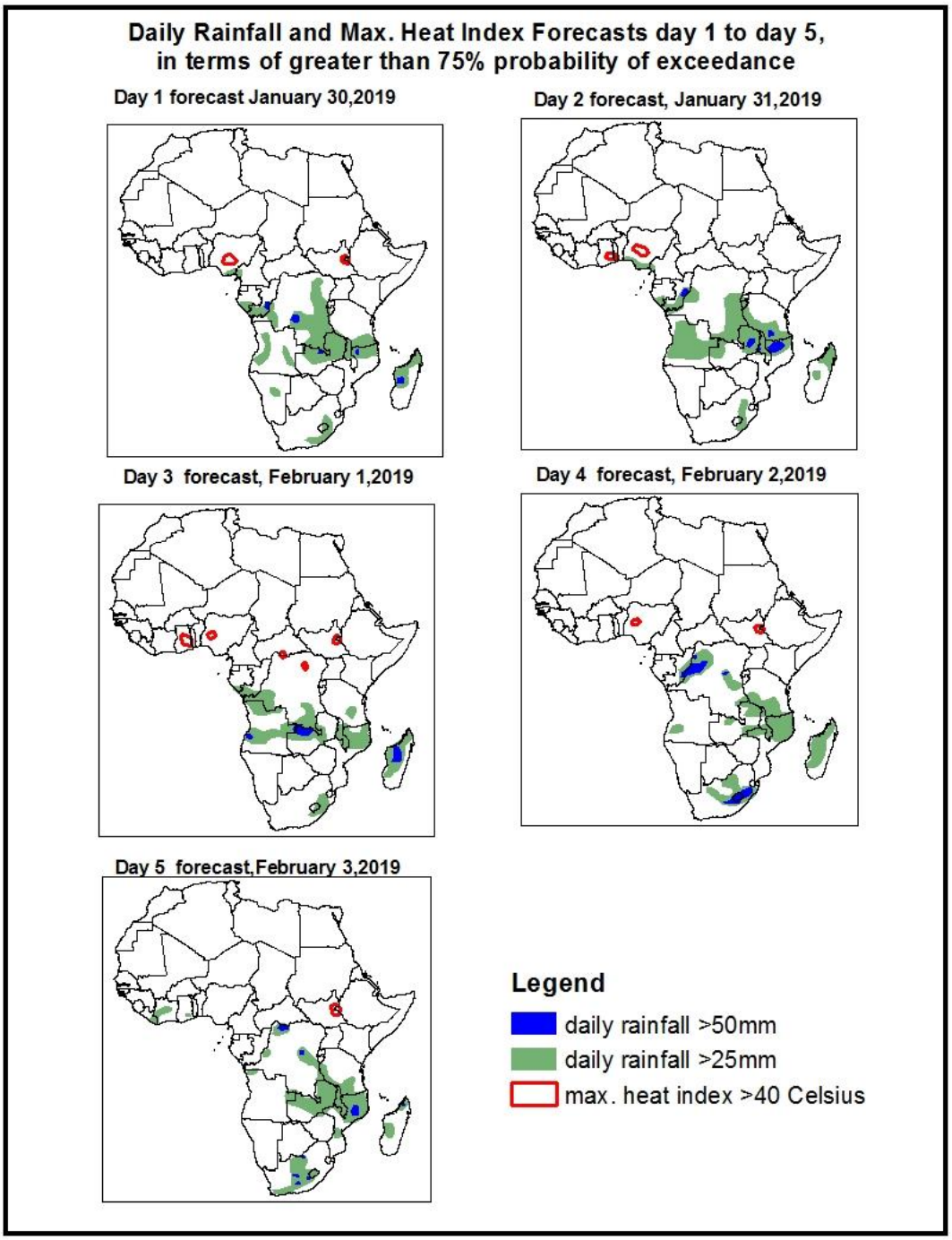
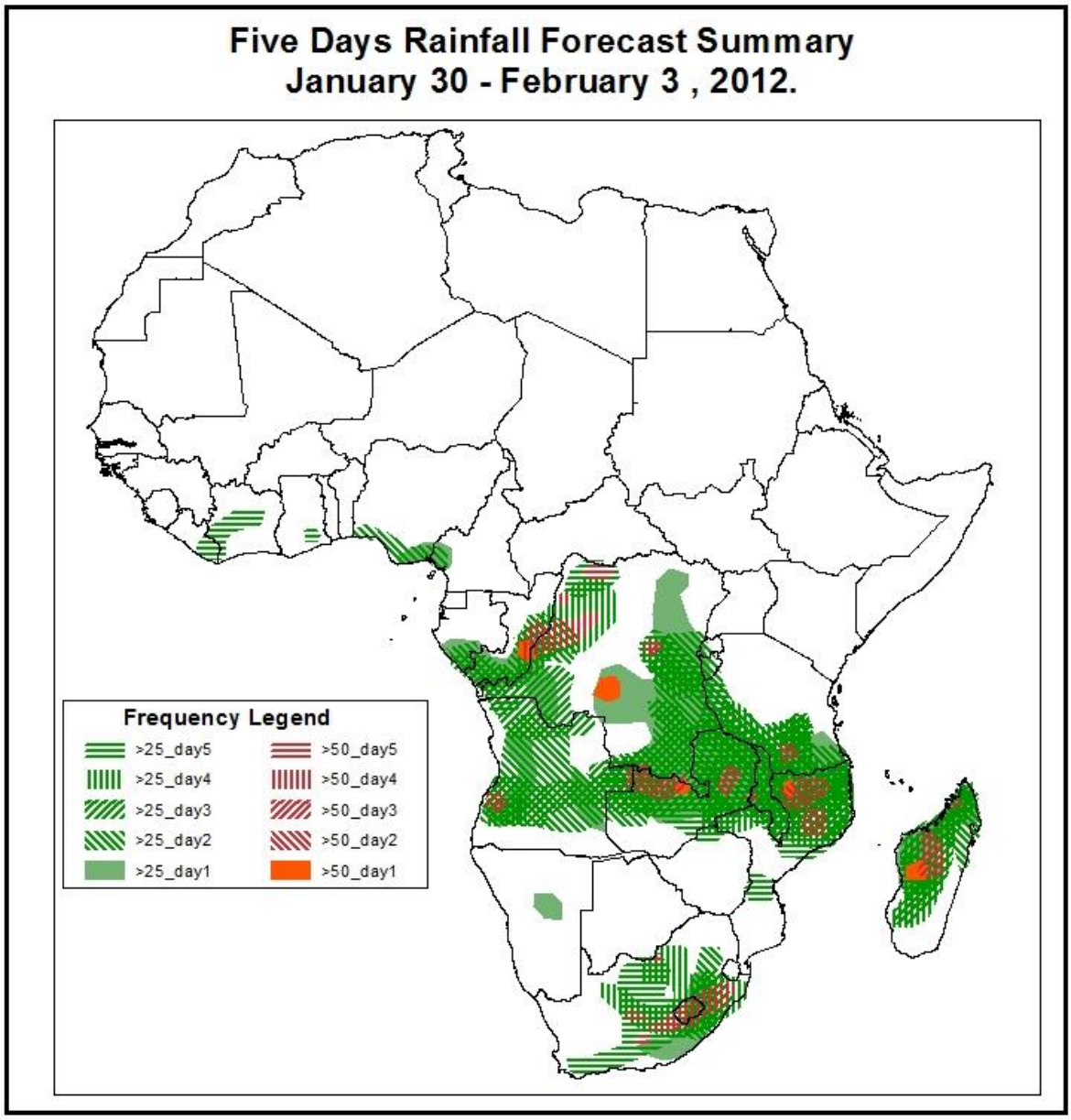
NCEP Contributions to the WMO Severe Weather Forecasting Demonstration Project (SWFDP) and to the African Monsoon Multidisciplinary Analysis (AMMA) Initiative

1. Rainfall, Heat Index and Dust Concentration Forecasts, (Issued on *January 29,* 2019)

1.1. Daily Rainfall and Maximum Heat Index Forecasts (valid: Jan 30 –Feb 3, 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^{o}C), based on the NCEP/GFS and the NCEP Global Ensemble Forecasts System (GEFS) and expert assessment.



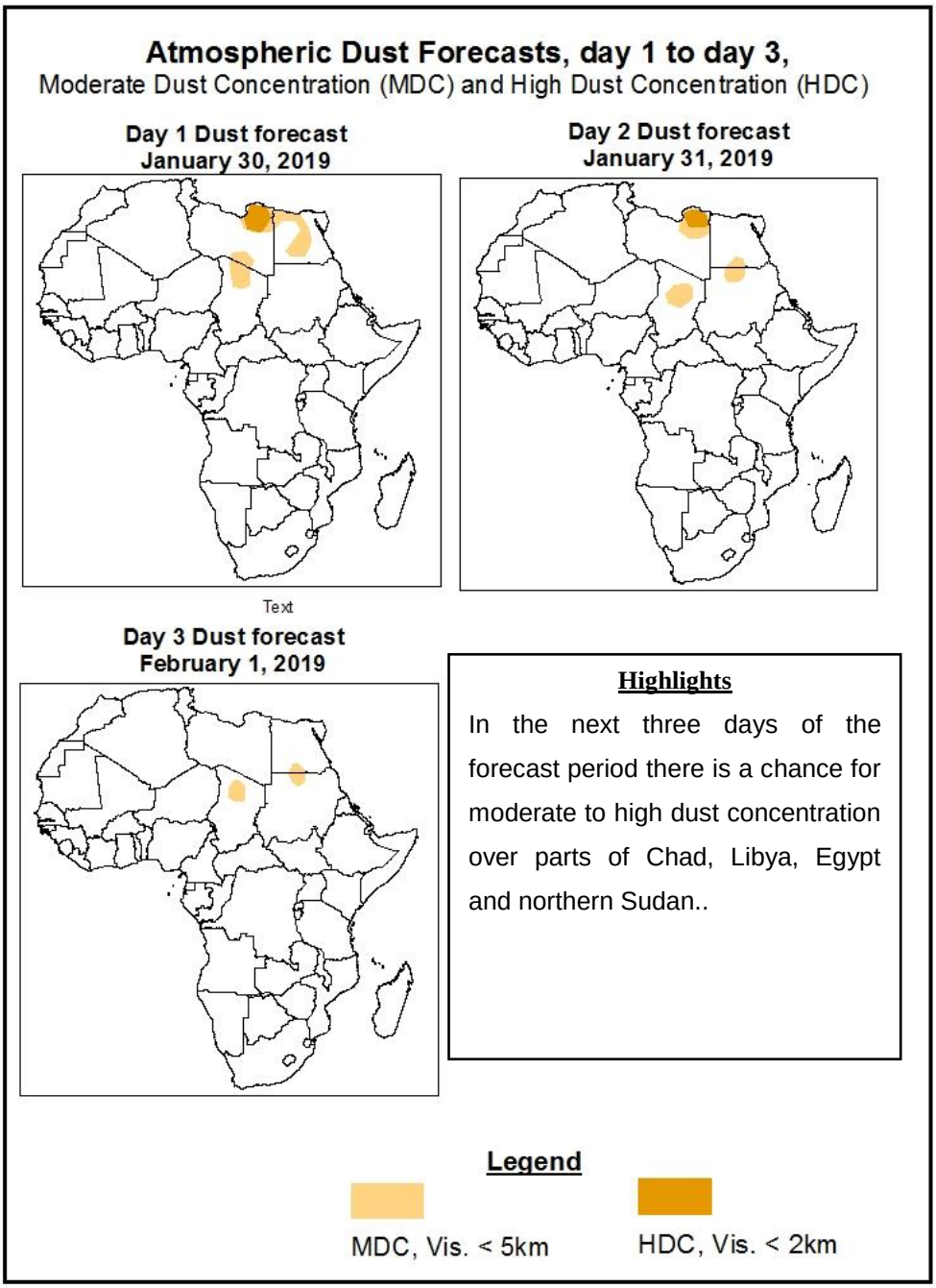


Highlights

- In the next five days, lower-level wind convergence across parts of central Africa and the northern portions of Southern Africa, cyclonic trough in South Africa, and cyclonic circulation in the Mozambique Channel and Madagascar are expected to enhance rainfall in the areas. Hence, there is an increased chance for 2 or more days of moderate to heavy rainfall across parts of Central the neighboring northern portions of Southern Africa, portions of South Africa and Madagascar.
- There is a high likelihood for temperature heat index values to exceed 40^0C over local areas of in Nigeria, CAR, DRC, eastern South Sudan, and southwestern Ethiopia.

1.2. Atmospheric Dust Concentration Forecasts *(valid: Jan 30 – Feb 1, 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: January 30 – February 3, 2019*

The Azores High Pressure system over the North of Atlantic Ocean is expected to progress eastwards while maintaining average central pressure value of 1028hpa during the forecast period.

The St. Helena High Pressure system over Southwest Atlantic Ocean is expected to intensify as it progresses eastwards with its central pressure value expected to increase from 1023hPa to 1028hPa through 96hours.

The Mascarene High Pressure system over Southwest Indian Ocean is expected to intensify as it progresses eastwards with its central pressure value is expected to increase from 1030hPa to 1032hPa.

At 925hPa, the dry northerly to northeasterly flow continues to prevail across portions of the Sahel region, including Sudan. Strong dry wind is also expected to prevail over portions of Northeast Africa.

At 850hPa, a broad area of wind convergence is expected to prevail across DRC, Angola, Zambia, and northern Mozambique. A cyclonic circulation in the Mozambique Channel and neighboring areas is expected to weaken gradually during the forecast period. Localized wind convergence is also expected to enhance rainfall across parts of South Africa.

In the next five days, lower-level wind convergence across parts of central Africa and the northern portions of Southern Africa, cyclonic trough in South Africa, and cyclonic circulation in the Mozambique Channel and Madagascar are expected to enhance rainfall in the areas. Hence, there is an increased chance for 2 or more days of moderate to heavy rainfall across parts of Central the neighboring northern portions of Southern Africa, portions of South Africa and Madagascar. There is a high likelihood for temperature heat index values to exceed 40^0C over local areas of in Nigeria, CAR, DRC, eastern South Sudan, and southwestern Ethiopia.

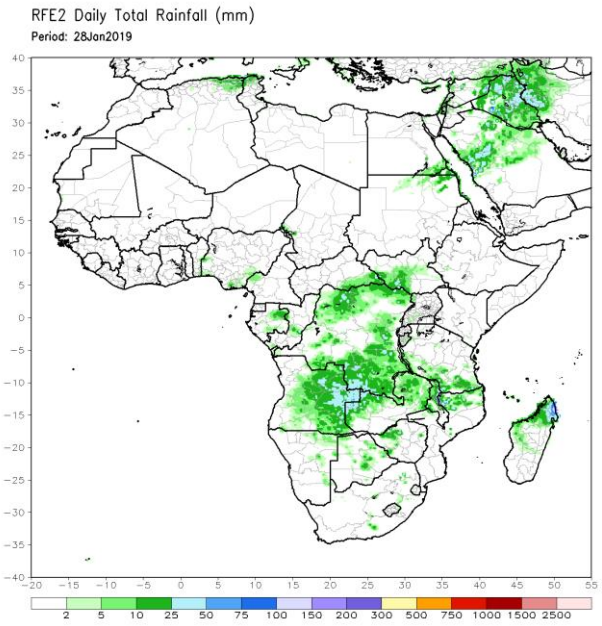
2.0. Previous and Current Day Weather over Africa

2.1. Weather assessment for the previous day (January 28, 2019)

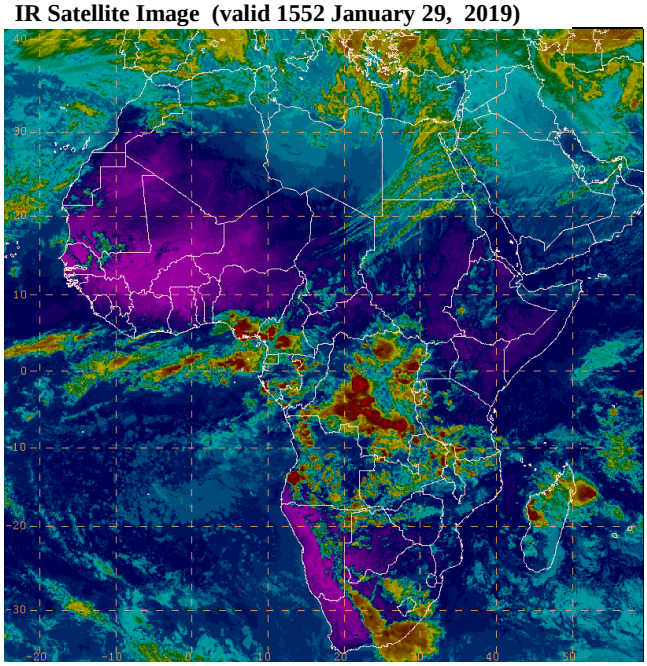
Daily rainfall above 25mm was observed over eastern Angola, portions of DRC, local areas in Malawi and northern Mozambique, and northern Madagascar.

2.2. Weather assessment for the current day (*January 29,* 2019)

Intense convective clouds are observed over southern Nigeria, and many places in central and the northern portions of Southern Africa countries.



IR Satellite Image (valid 1552 January 29, 2019)



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