

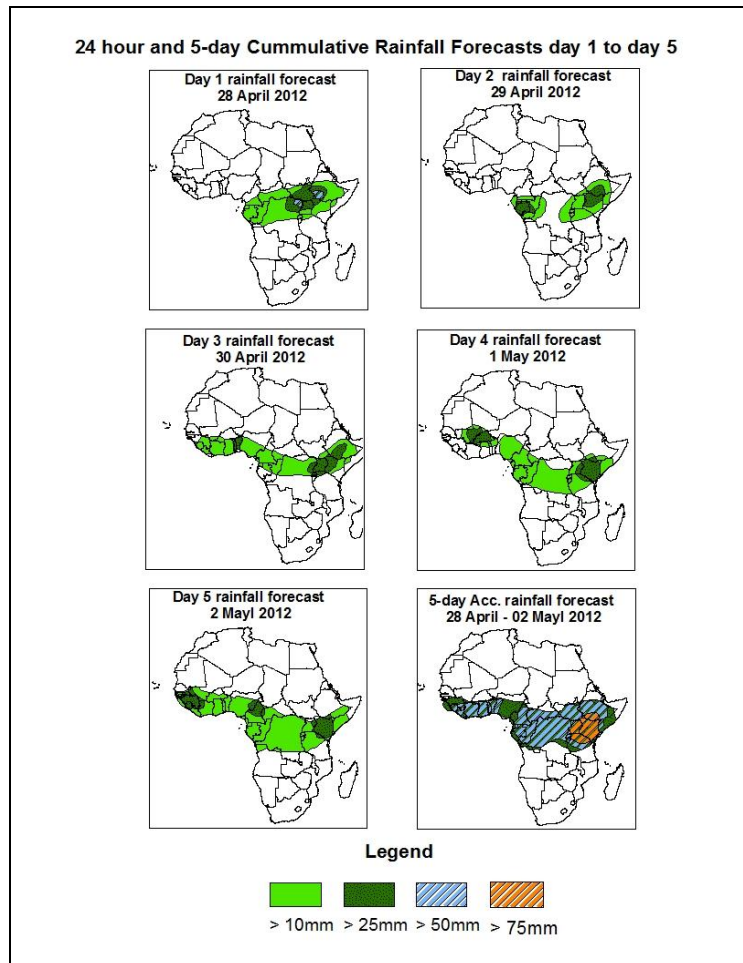


NCEP Contributions to the WMO Severe Weather Forecasting Demonstration Project (SWFDP) and to the African Monsoon Multidisciplinary Analysis (AMMA) Initiative

1.0. Rainfall Forecast: Valid 06Z of 28 April – 06Z of 02 May 2012, (Issued at 16:30Z of 27 April 2012)

1.1. Twenty Four Hour Cumulative Rainfall Forecasts

The forecasts are expressed in terms of 75% probability of precipitation (POP) exceeded, based on the NCEP, UK Met Office and the ECMWF NWP outputs, the NCEP global ensemble forecasts system (GEFS) and expert assessment.

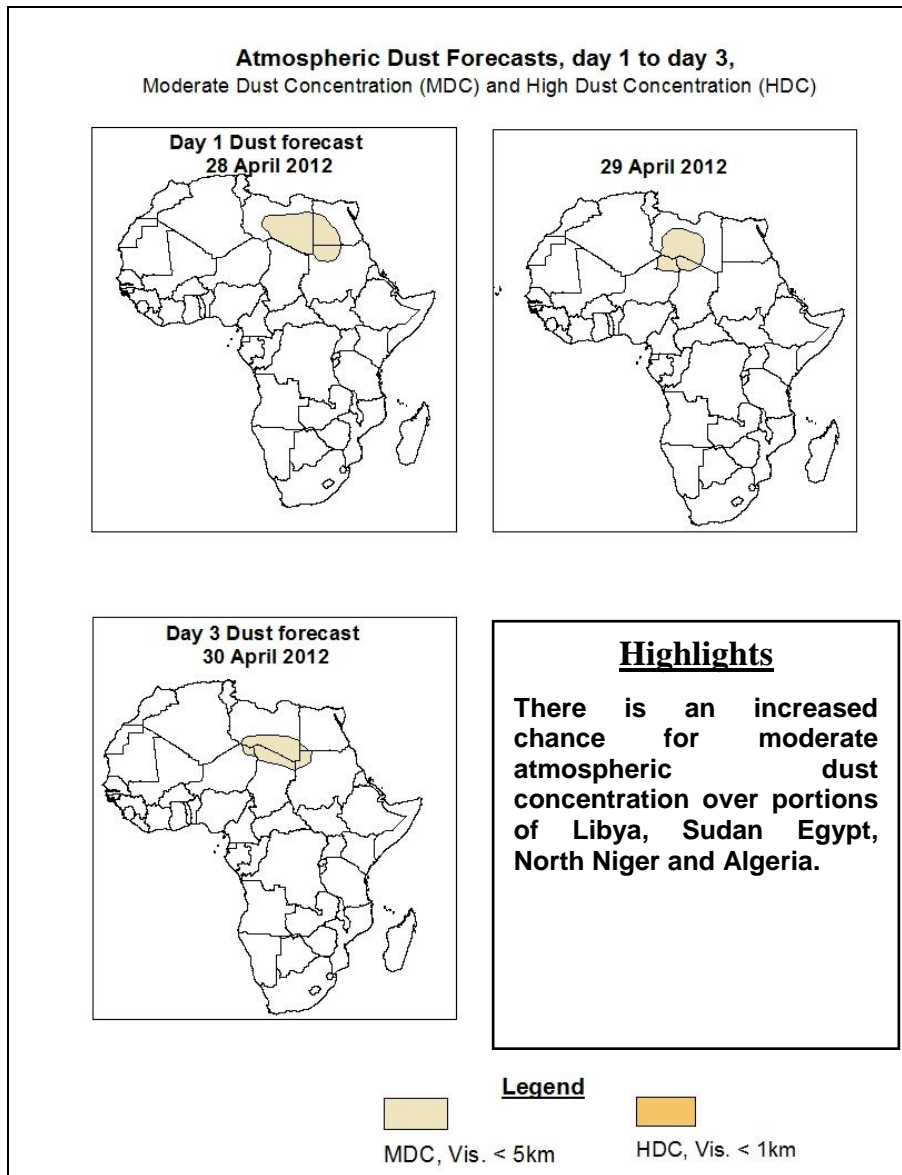


Summary

In the next five days, seasonal wind convergences in the Gulf of Guinea, with cyclonic circulation over Mali, convergence over central Africa and western equatorial Africa regions, convergences associated with Congo Air Mass, seasonal wind convergences in southern Ethiopia, Southern Sudan and Somalia, and cyclonic circulation off the coast of East Africa are expected to enhance rainfall across their respective regions. In general, there is an increased chance for heavy rainfall over portions of southern Ethiopia, eastern DRC, Uganda, Kenya portions of Tanzania, Rwanda and Burundi.

1.2. Atmospheric Dust Forecasts: Valid 28 – 30 April 2012

The NCEP/GFS, the UK Met Office, the ECMWF and the NCEP/WRF outputs are used to identify areas with high probability of dust concentration.



1.3. Model Discussion: Valid from 00Z of 27 April 2012

According to the GFS, ECMWF and UKMET models an east-west oriented trough and its associated heat lows are expected to prevail in the region between southern Mali and Sudan.

A low near Benin and Nigeria is expected to shift toward the border between Mali and Burkina Faso across Niger, with its central pressure value decreasing from 1005hpa in 24 hours to 1002hpa in 120 hours. The central pressure value of a low over Southern Chad tends to decrease from 1005hpa to 1002hpa through 24 hours to 120 hours. The low across Sudan and South Sudan Republic is also expected to deepen, with its central pressure value decreasing from 1005hpa to 1001hpa through 24 to 120 hours.

According to GFS model, the St. Helena High pressure system over southeast Atlantic Ocean is expected to weaken through 24 to 72 hours due to mid-latitude frontal systems influence in the region. Then, a new high with central pressure value of 1020hpa is expected to appear over southeast Atlantic Ocean during 96 hours, and tends to weaken to pressure value of 1018 through 120 hours. According to ECMWF model, the central pressure value of St. Helena High pressure system over southeast Atlantic Ocean is expected to decrease from 1019hpa to 1017hpa through 24 hours to 72 hours. Lastly, according to the UKMET model, the central pressure value tends to decrease from 1020hpa to 1019hpa through 24 hours to 120 hours.

According to ECMWF and GFS models, the Mascarene high pressure system over southwestern Indian Ocean is expected to shift eastwards (from about 57°E to 75°E), while giving way to the interactions between mid-latitude and tropical systems during 24 hours to 48 hours. Its central pressure value is expected to increase from about 1024hpa to about 1028hpa through 24 to 48 hours. Lastly, according to the UKMET model, the central value of this high tends to increase from 1025hpa to 1028hpa, by shifting from about 55° E to about 75° E through 24 hours to 48 hours.

At 925hpa level, zone of moderate and dry northerly and easterly winds (25 to 35kts) are expected to prevail over parts of Libya, Sudan and Egypt through 24 to 72 hours.

At the 850hpa level, a lower tropospheric wind convergence associated with the West African Monsoon is expected to prevail over parts of Mali and Guinea and tend to shift toward Burkina Faso and Nigeria from 24 hours to 48 hours. During 72 hours, the convergence tends to become a cyclonic circulation over Mali and close to the Horn of Africa. And during 96 hours to 120 hours, it converges over parts of Nigeria, Niger, Benin and Southern Mali. Then, the convergence is expected to extend towards Chad, Northeastern Nigeria, and Sudan by the end of forecasting period, it tends to merge with the convergence over Southern Sudan. Seasonal lower level convergences are expected to remain active over Southern Sudan and Ethiopia throughout the forecast period. The convergence associated with the meridional arm of the ITCZ is expected remain active across North Tanzania, Kenya and over Uganda during 24 hours to 48 hours. During 72 hours, it becomes weaken. And 96 hours to 120 hours, it is expected to prevail over Uganda and Kenya.

At 500hpa level, a mid-latitude trough across northern Africa and the neighboring areas is expected to deepen gradually, with its axis over Egypt through 24 to 96 hours. A mid-latitude frontal trough is also expected propagate across South Africa Republic during 24 to 48 hours.

At 200mb, the Sub-Tropical Westerly Jet across northeastern Atlantic Ocean, North Africa and eastern Egypt is expected to have a wavy pattern, with cores over Northwest and Northeast Africa. The core speed over Western Sahara and Morocco is expected to exceed 130kts during 48 hours, and it tends to shift northwards through 72 to 120 hours. The winds speed across the core over Egypt is expected to exceed 110kts 48 to 72 hours, and then it tends to weaken to wind speed values of below 70kts towards end of the forecast period.

In the next five days, seasonal wind convergences in the Gulf of Guinea, with cyclonic circulation over Mali, convergence over central Africa and western equatorial Africa regions, convergences associated with Congo Air Mass, seasonal wind convergences in southern Ethiopia, Southern Sudan and Somalia, and cyclonic circulation off the coast of East Africa are expected to enhance rainfall across their respective regions. In general, there is an increased chance for heavy rainfall over portions of southern Ethiopia, eastern DRC, Uganda, Kenya portions of Tanzania, Rwanda and Burundi.

There is an increased chance for moderate atmospheric dust concentration over portions of Libya, Sudan Egypt, North Niger and Algeria.

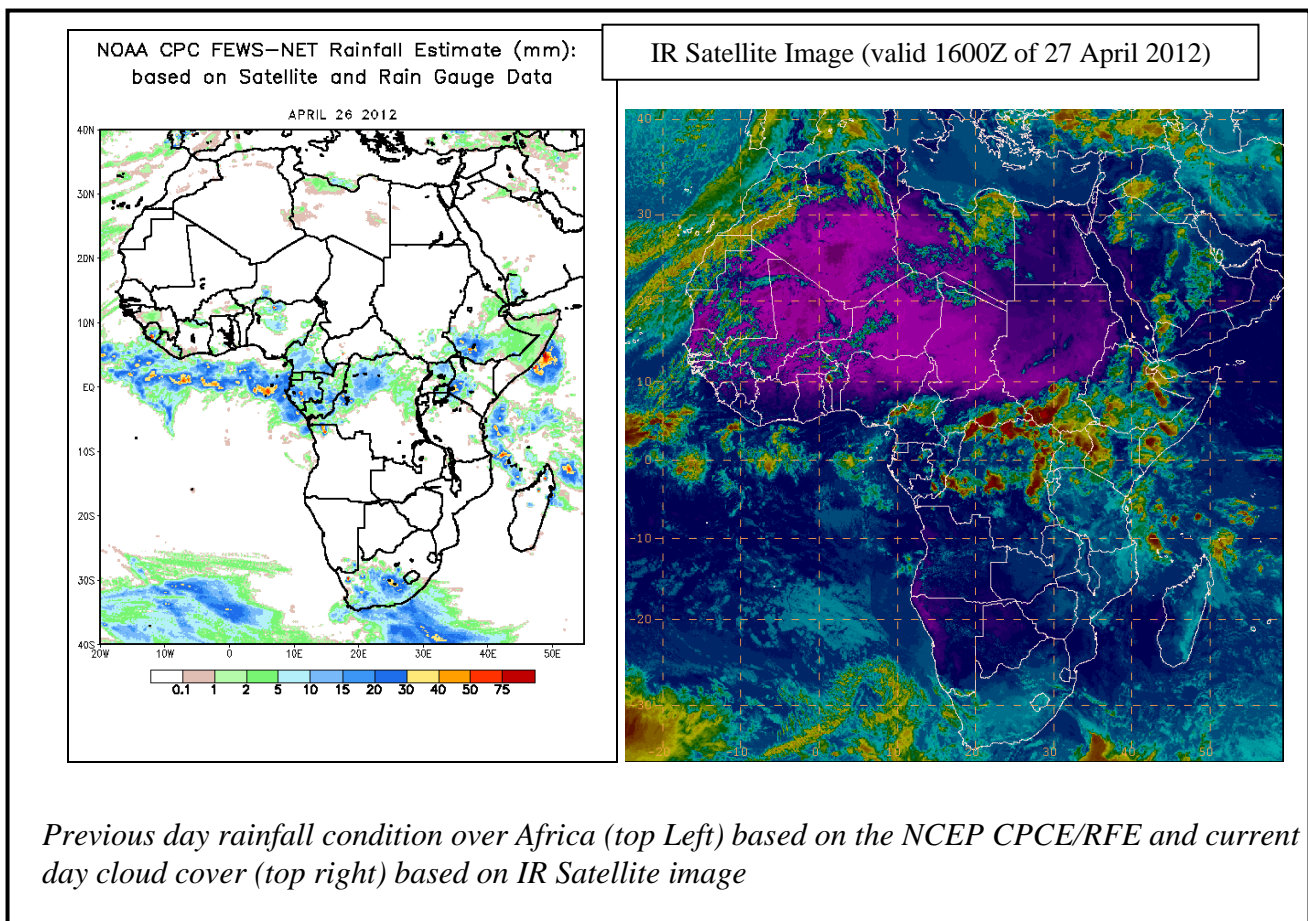
2.0. Previous and Current Day Weather Discussion over Africa (26 April – 27 April 2012)

2.1. Weather assessment for the previous day (26 April 2012)

During the previous day, moderate to locally heavy rainfall was observed across portions of Cameroon, Gabon, DRC, Southern Ethiopia, Western Kenya, and South Africa.

2.2. Weather assessment for the current day (27 April 2012)

Intense clouds are observed across central African and the Greater Horn of Africa countries.



Authors: Eugene V. S. Gar-Glahn, (Liberia Meteorological Service / CPC-African Desk); eugene.gar-qlahn@noaa.gov
Ezekiel Njoroge, (Kenyan Meteorological Department / CPC-African Desk); ezekiel.njoroge@noaa.gov