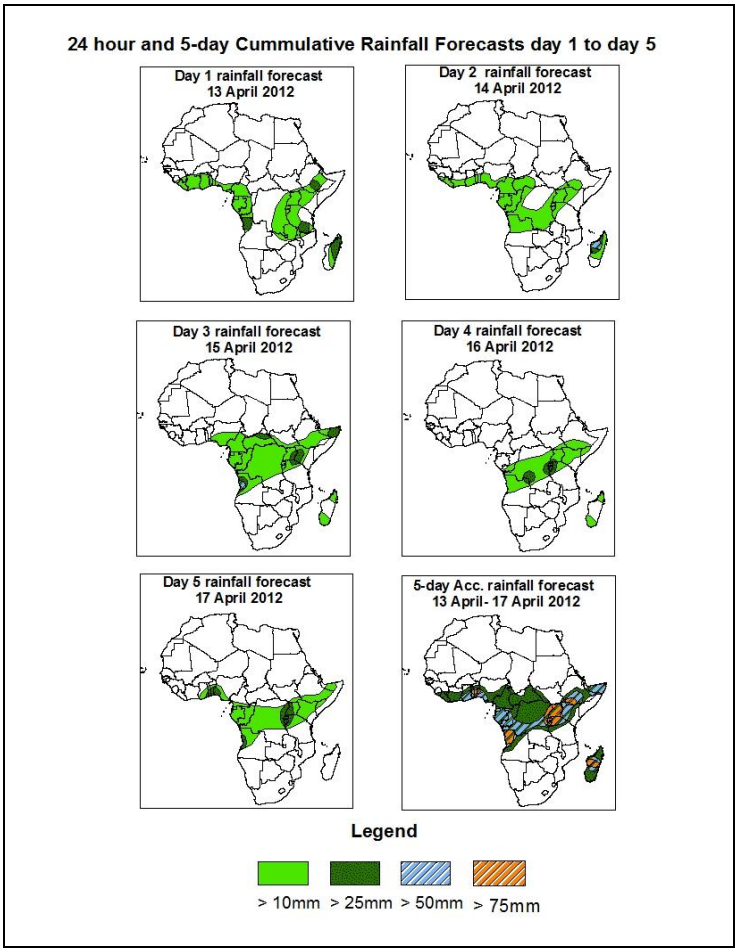
NCEP Contributions to the WMO Severe Weather Forecasting Demonstration Project (SWFDP) and to the African Monsoon Multidisciplinary Analysis (AMMA) Initiative

1.0. Rainfall Forecast: Valid 06Z of 13 April – 06Z of 17 April 2012, (Issued at 11:00Z of 12 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.



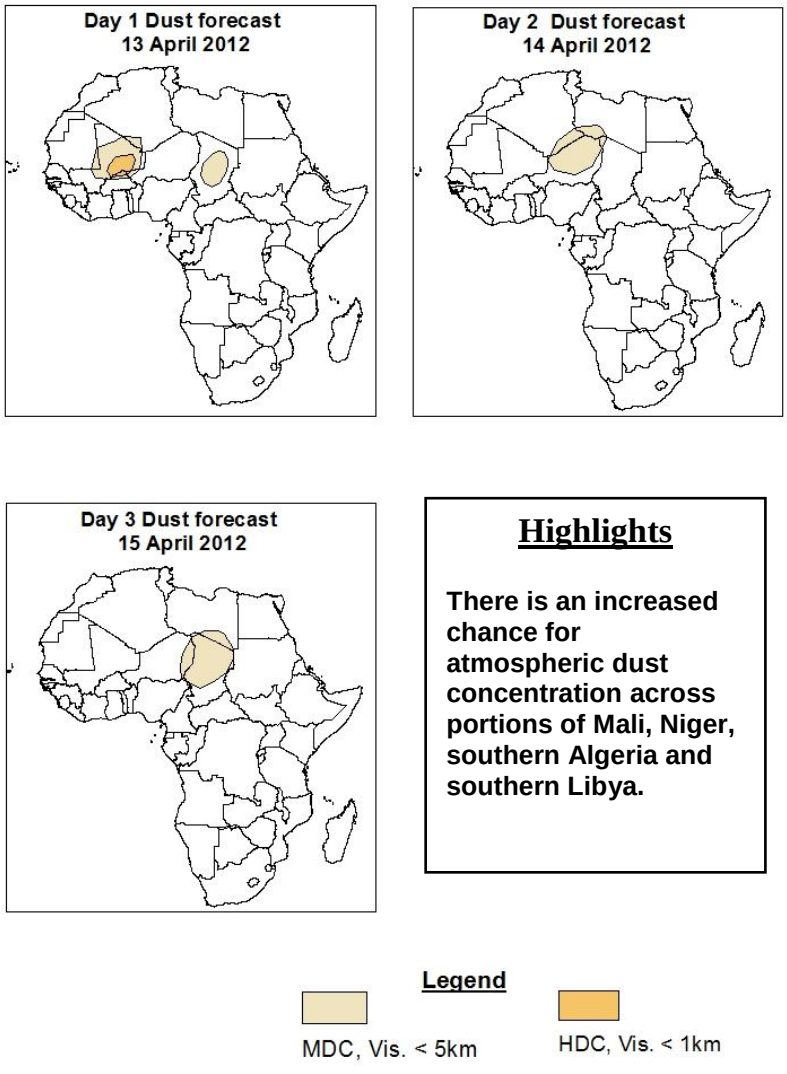
Summary

In the next five days, the West Africa monsoon flow with its convergence across the Gulf of Guinea, localized convergences across central Africa and the Lake Victoria region, wind convergences in Ethiopia and Somali, and the interactions between mid-latitude and tropical systems across Madagascar are expected to enhance rainfall across their respective regions. In general, there is an increased chance for moderate to heavy rainfall over portions of the Gulf of Guinea and central African regions, northern Angola, the Lake Victoria region, Ethiopia, parts of Somalia and Madagascar.

1.2. Atmospheric Dust Forecasts: Valid 13 – 15 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.

Atmospheric Dust Forecasts, day 1 to day 3,
Moderate Dust Concentration (MDC) and High Dust Concentration (HDC)



1.3. Model Discussion: Valid from 00Z of 12 April 2012

According to the GFS model an east-west oriented trough and its associated heat lows are expected to prevail in the region between eastern Niger and Sudan.

A low with its associated trough across Niger northern Nigeria, northern Cameroon, southern Chad and CAR is expected to maintain its central MSLP value of 1005mb during the forecast period. Another trough across Sudan and South Sudan Republic is also expected to maintain its mean pressure value of 1005mb during the forecast period.

The St. Helena High pressure system over southeast Atlantic Ocean is expected to intensify through 24 to 48 hours (from mslp 1030 to 1035) and then it tends to weaken (from mslp 1035 to 1025) towards end of the forecast period.

The Mascarene high pressure system over southwestern Indian Ocean is expected to shift eastwards gradually, ahead of a mid-latitude frontal system propagating across South Africa during the rest of the forecast period. The high pressure system is expected to have maximum central pressure value as high as 1040mb during the forecast period.

At 925hpa level, zone of strong and dry wind (>35kts) across portions Mali is expected to weaken gradually through 24 to 48 hours. Dry northerly winds are expected to prevail over northwestern and north-central African countries as a continental high pressure system builds over Algeria through 24 to 72 hours.

At the 850hpa level, a lower tropospheric wind convergence associated with the West African Monsoon is expected to remain active in the region between Cote d'Ivoire and southern Chad traversing, Burkina Faso, Ghana, Togo, Benin, Nigeria and Cameroon during the forecast period. Another zone of lower level convergence is expected to prevail over CAR, southern Sudan and portions of Ethiopia throughout the forecast period. The convergence associated with the meridonial arm of the ITCZ is expected to remain west of its normal position, while localized convergences are expected in the vicinity of Lake Victoria through the forecast period.

At 500hpa level, a stationary mid-latitude trough with geo-potential value of 5840gpm along its southern extent is expected to dominate the flow over northeastern Africa throughout the forecast period. Eastwards propagating mid-latitude trough with a geo-potential value of 5840gpm along its northern extent is expected to dominate the flow over southern African countries as it propagates eastwards reaching the longitude of Madagascar towards by 48 hours. Another mid-latitude frontal system is expected to approach southern Africa by 72 hours.

At 200mb, winds with strong wind speed, associated with a stationary Sub-Tropical Westerly Jet are expected to dominate the flow from northeastern Atlantic Ocean across North Africa to eastern Egypt during the forecast period. The intensity of the jet is expected to exceed 120kts while moving to the east with its core values increasing to more than 140kts towards end of the forecast period.

In the next five days, the West Africa monsoon flow with its convergence across the Gulf of Guinea, localized convergences across central Africa and the Lake Victoria region, wind convergences in Ethiopia and Somali, and the interactions between mid-latitude and tropical systems across Madagascar are expected to enhance rainfall across their respective regions. In general, there is an increased chance for moderate to heavy rainfall over portions of the Gulf of Guinea and central African regions, northern Angola, the Lake Victoria region, Ethiopia, parts of Somalia and Madagascar.

There is an increased chance for atmospheric dust concentration across portions of Mali, Niger, southern Algeria and southern Libya.

2.0. Previous and Current Day Weather Discussion over Africa

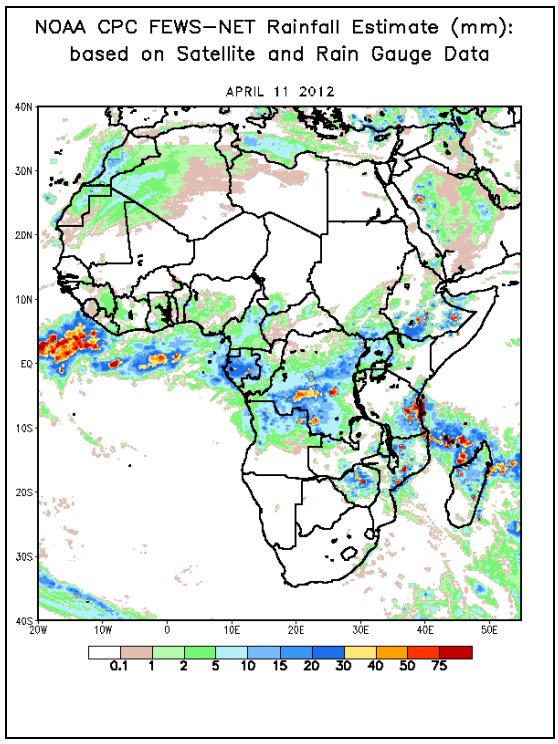
(11 April – 12 April 2012)

2.1. Weather assessment for the previous day (11 April 2012)

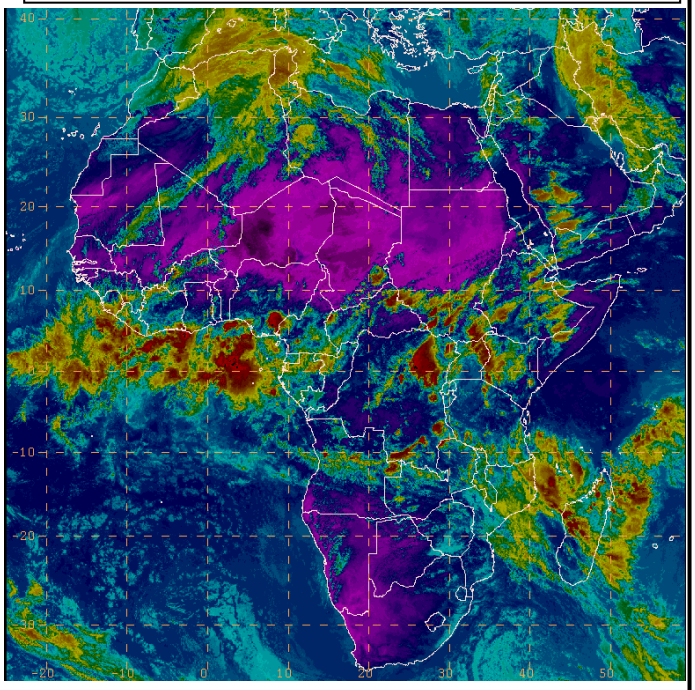
During the previous day, moderate to locally heavy rainfall was observed across portions of Gabon, DRC, southern and southeastern Ethiopia, eastern Tanzania, Zimbabwe, northern Mozambique and northern Madagascar.

2.2. Weather assessment for the current day (12 April 2012)

Intense clouds are observed across eastern Gulf of Guinea and central African regions, South Sudan Republic, Ethiopia, Kenya, Uganda and portions of southeastern Africa.



IR Satellite Image (valid 1422Z of 12 April 2012)



Previous day rainfall condition over Africa (top Left) based on the NCEP CPCE/RFE and current day cloud cover (top right) based on IR Satellite image

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