

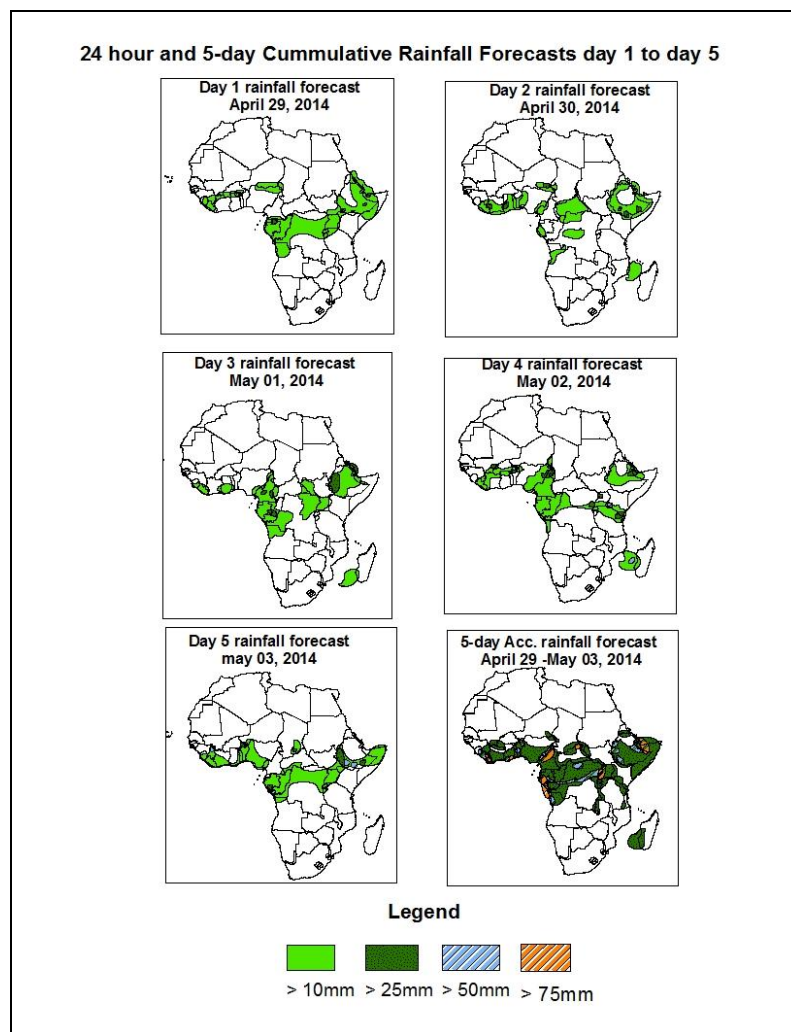


NCEP Contributions to the WMO Severe Weather Forecasting Demonstration Project (SWFDP) and to the African Monsoon Multidisciplinary Analysis (AMMA) Initiative

1.0. Rainfall Forecast: Valid 06Z of April 29 – 06Z of May 03, 2014. (Issued at 1600Z of April 28, 2014)

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/GFS and UK Met Office NWP outputs, and the NCEP global ensemble forecasts system (GEFS) and expert assessment.



Summary

In the coming five days, lower troposphere convergence associated with the West African Monsoon flow is expected to enhance rainfall across the Gulf of Guinea region. Seasonal wind convergence in the Central and East Africa is expected to enhance rainfall in respective regions. Interactions between the mid latitude and tropical systems across north eastern Africa is expected to enhance rainfall over Ethiopia but reduced rainfall will be over most of East African countries. Moderate to Heavy rainfall are expected over Liberia, Sierra Leone, parts of Cote D'Ivoire and Ghana, Togo, Burkina Faso Nigeria, Cameroun, Central African Republic, Democratic Republic of Congo, Uganda, Northern Angola, Ethiopia and south eastern coast of South Africa.

1.2. Atmospheric Dust Forecasts: Valid April 29– May 01 2014

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

Day 1 Dust forecast
April 29, 2014



Day 2 Dust forecast
April 30, 2014



Day 3 Dust forecast
May 01, 2014



Highlights

There is an increased
chance for moderate
dust concentration over
Algeria, Mali, Niger and
Chad

Legend



MDC, Vis. < 5km



HDC, Vis. < 1km

1.3. Model Discussion: Valid from 00Z of April 28, 2014

Model comparison (GFS and UKMET Valid from 00Z: April 28, 2014) shows general agreement in terms of depicting positions of the northern and southern hemisphere subtropical highs, while they showed slight differences in depicting their intensity.

The Azores high pressure system in Northeastern Atlantic Ocean is expected to weaken while shifting eastwards through 24 to 48 hours, begins to increase through 72 to 96 hours and then starts decreasing for both GFS whilst it decreases through 24 to 48 hours, maintains the central pressure value at 96 hours and then begin to increase through 96 hours and then decrease again according to UKMET models. Its central pressure value is expected to decrease from about 1026hpa to 1023hpa according to both GFS and UKMET models.

The heat lows over the central Sahel and the neighboring region are expected to deepen during the forecast period particularly over Mali, Niger Chad, but expected to fill up in the southern Sudan region. Heat lows around Central African region, Angola and Congo coast are not supposed to observe any significant change through 24 to 48 hours but are supposed to deepen and fill-up for the rest of the forecast period. The lowest central values are expected to vary between 1002 to 1010hpa for GFS model and 1004 to 1009 for UKMET models

The St. Helena High Pressure System in southern Atlantic Ocean is expected to weaken through 24 to 72 hours and intensify through 72 to 120 hours while shifting eastwards. Its central pressure value is expected to decrease slightly from about 1029hpa to 1019hpa and then increase to 1026 according to the GFS model, and from about 1030hpa to 1024hpa and then increase to 1026 according to the UKMET model.

The Mascarene high pressure system in southwestern Indian Ocean is expected to slightly decrease maintaining its central value for the 24 to 48 hours and, increase through the 72 hours and then decrease while maintaining the central value through 96 to 120 hours. for the GFS model while it decreases through 24 to 48 hours and then increase through 72 hours and starts decreasing again for the UKMET model. Its central

pressure value is around 1031hpa to 1036hpa according to the GFS and from about 1033 through 1037 according to the UKMET models.

At 925Hpa level, Moderate to strong convergence is expected to persist throughout the forecast period over the Sahel region, Congo Coast, Central African region and south eastern coast of South Africa

At 850Hpa level, mid tropospheric wind convergence associated with West African Monsoon is expected to prevail over the Sahel region and Central African region. A low over the Mozambique Channel develops into a cyclonic activity over Mozambique from 48 to 96 hours of the forecast period.

At 500Hpa level, easterly winds are gradually coming up; troughs associated with mid-latitude frontal system persist and these interactions between the mid latitude and tropical systems across north eastern Africa is expected to enhance rainfall over the Sudan, Ethiopia, Madagascar, southeastern coast of South Africa and Greater Horn of Africa for most part of the forecast period.

At 200hpa level, the sub-tropical Westerly Jet mainly (with wind speed >70 knots and <90 knots), are slightly weaker over North Africa during the forecast period. In the south, the sub-tropical westerly Jet (with speed >70 knots and <110 knots) is expected over South Africa, , Mozambique, Indian and Southern Atlantic Ocean.

In the coming five days, lower troposphere convergence associated with the West African Monsoon flow is expected to enhance rainfall across the Gulf of Guinea region. Seasonal wind convergence in the Central and East Africa is expected to enhance rainfall in respective regions. Interactions between the mid latitude and tropical systems across north eastern Africa is expected to enhance rainfall over Ethiopia but reduced rainfall will be over most of East African countries. Moderate to Heavy rainfall are expected over Liberia, Sierra Leone, parts of Cote D'Ivoire and Ghana, Togo, Burkina Faso Nigeria, Cameroun, Central African Republic, Democratic Republic of Congo Uganda, Northern Angola , Ethiopia and south eastern coast of South Africa.

2.0. Previous and Current Day Weather Discussion over Africa

(April 27, 2014 – April 28, 2014)

2.1. Weather assessment for the previous day (April 27, 2014)

During the previous day, moderate to heavy rainfall was observed east Gulf of Guinea Coast, east Nigeria, west Cameroun, south Chad, Gabon, DRC, South Sudan, Central African Republic and south eastern coast of South Africa

2.2. Weather assessment for the current day (April 28, 2014)

Intense clouds are observed over local areas in the Gulf of Guinea coast, Cote D'Ivoire, Ghana, Burkina Faso, Benin, Nigeria, Cameroun, Southern Chad, Congo Brazzaville, Equatorial Guinea, Angola, Democratic Republic of Congo, South Sudan, Ethiopia, Uganda, Mozambique, Madagascar and Southeast coast of South Africa

