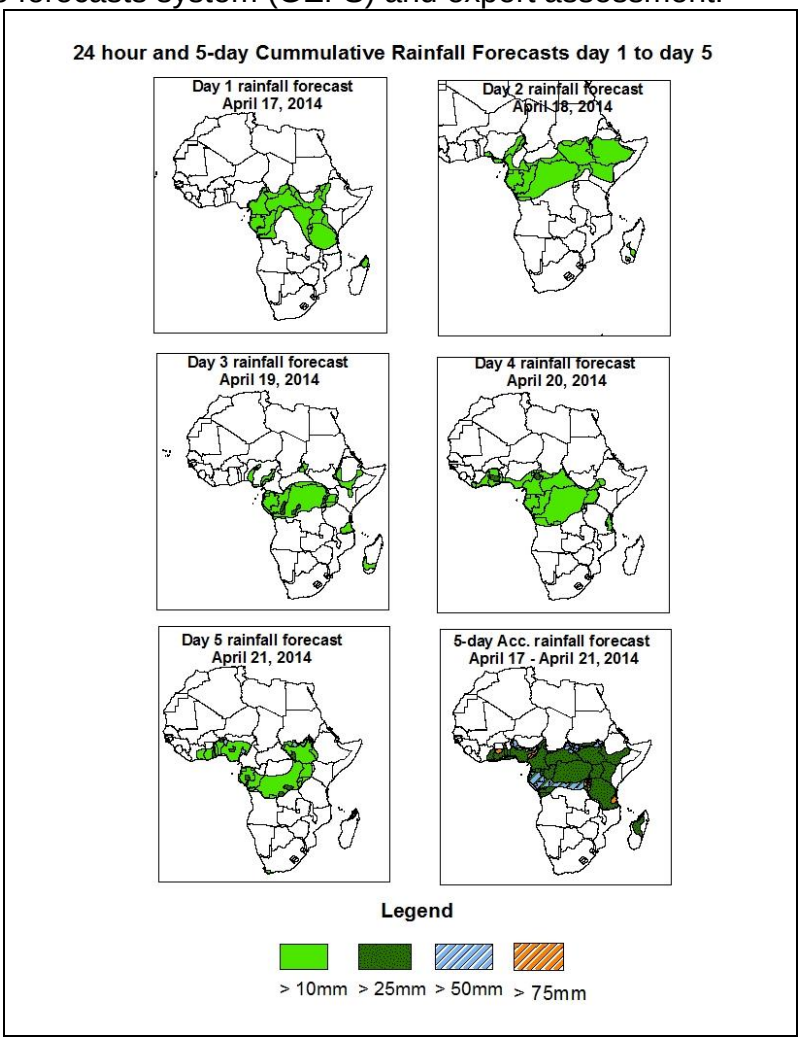
NCEP Contributions to the WMO Severe Weather Forecasting Demonstration Project (SWFDP) and to the African Monsoon Multidisciplinary Analysis (AMMA) Initiative

1.0. Rainfall Forecast: Valid 06Z of April 17 – 06Z of April 21, 2014. (Issued at 1600Z of April 16, 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.

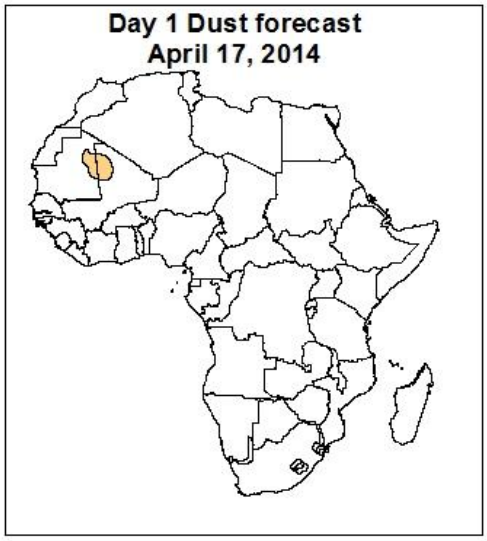


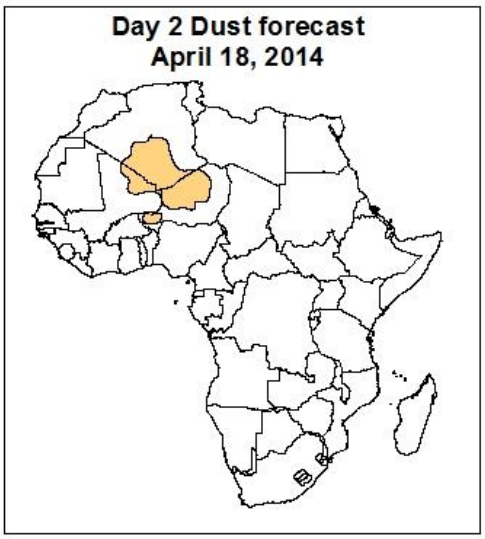
Summary

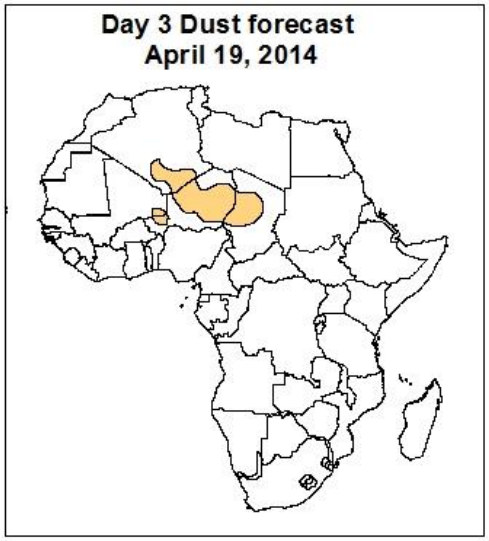
The east west wind convergence across West Africa is expected to enhance rainfall in the southern part of the Gulf of Guinean Region. Seasonal wind convergence in the Central and East Africa is expected to enhance rainfall in respective regions. Hence, there is an increased chance for heavy rainfall for Democratic Republic of Congo, Congo Brazzaville, North eastern Nigeria and Southern Cameroun.

1.2. Atmospheric Dust Forecasts: Valid April 17– April 19 2014

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







Highlights

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

Legend

MDC, Vis. < 5km

HDC, Vis. < 1km

1.3. Model Discussion: Valid from 00Z of April 16, 2014

Model comparison (GFS and UKMET Valid from 00Z: April 16, 2014*) shows general agreement in terms of depicting positions of the northern and southern hemisphere sub-tropical highs, while they showed slight differences in depicting their intensity.*

The St. Helena High Pressure System, in southern Atlantic Ocean is expected to weaken through 24 to 48 hours and Intensify until the end of the forecast shifting eastwards. Its central pressure value is expected to increase from about 1021hpa to 1037hpa according to the GFS model, and from about 1022hpa to 1035hpa according to the UKMET model.

The Mascarene high pressure system in southwestern Indian Ocean is expected to Intensify from 24 to 48 hours whilst it weakens from 48 to 72 hours and intensify again until the end of the forecast while taking its normal position. The East African ridge is expected to intensify gradually as a result of normal orientation of the Mascarene high pressure system and weaken again as the Mascarene High takes it zonal position. Its central pressure value is expected to increase from about 1021hpa to 1026hpa according to the GFS while 1019 to 1028hpa according to the UKMET models.

The Azores high pressure system in Northeastern Atlantic Ocean is expected to intensify while shifting eastwards through 24 to 120 hours. Its central pressure value is expected to increase from about 1030hpa to 1034hpa according to the GFS and 1028 to 1035 according to the UKMET models.

At 925Hpa level, Moderate to strong convergence is expected to persist throughout the forecast period over Senegal, Southern Mali, Northern Guinea Conakry, Burkina Faso, Northern Nigeria, Chad, Sudan, Ethiopia, Uganda, Democratic Republic of Congo, Congo, and Angola

At 850Hpa level, Moderate to strong convergence is expected to persist throughout the forecast period over Burkina Faso, Nigeria, Chad, Ethiopia, Democratic Republic of Congo, Guinea Conakry, Sudan, Uganda and North Western South African

At 500Hpa level, troughs associated with mid-latitude frontal system persist and are expected to result in some tropical, extra-tropical interactions bringing rains over Mali, Niger, Ethiopia, Sudan, Angola, Namibia, Niger, Nigeria, Sudan Chad and Mauritania for most part of the forecast period.

At 200hpa level, the sub-tropical Westerly Jet mainly (with wind speed >90 knots and <110 knots), extending between Western Sahara, Algeria, Morocco, Egypt and Libya, persist during the forecast period. In the south, the sub-tropical westerly Jet (with speed >70 knots and <90 knots) is expected over Madagascar, Mozambique, Botswana, Namibia, Zimbabwe extending to Indian and Southern Atlantic Ocean.

The east west wind convergence across West Africa is expected to enhance rainfall in the southern part of the Gulf of Guinean Region. Seasonal wind convergence in the Central and East Africa is expected to enhance rainfall in respective regions. Hence, there is an increased chance for heavy rainfall for Democratic Republic of Congo, Congo Brazzaville, North eastern Nigeria and Southern Cameroun.

2.0. Previous and Current Day Weather Discussion over Africa

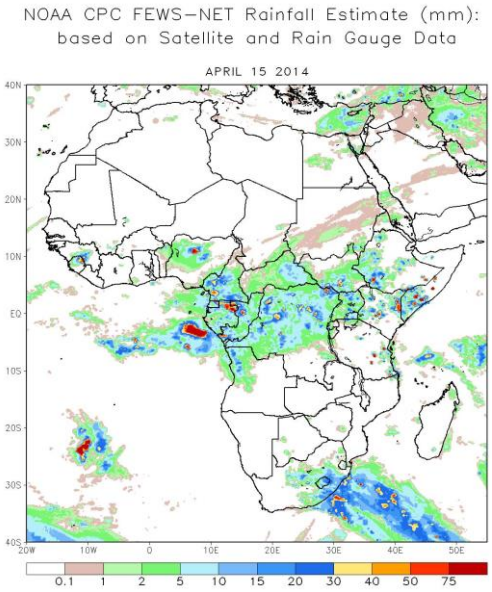
(April 15, 2014 – April 16, 2014)

2.1. Weather assessment for the previous day (April 15, 2014)

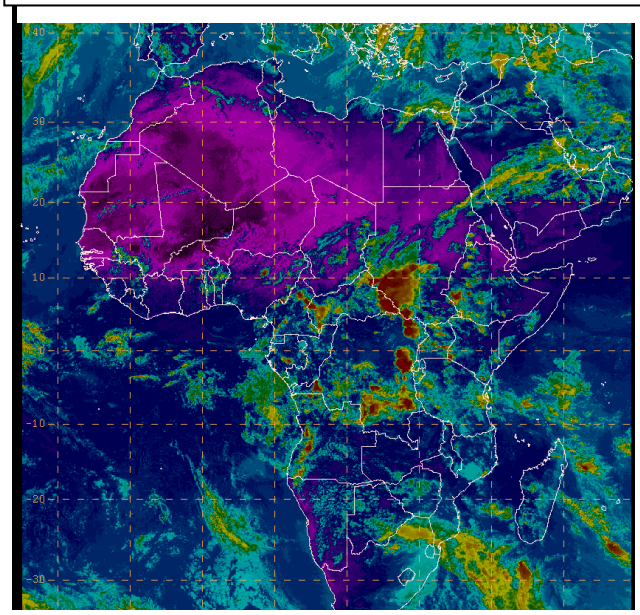
During the previous day, moderate to heavy rainfall was observed over parts of Ethiopia, Somalia, Congo, Nigeria , Guinea Conakry, Sierra Leone, Cameroun, Gabon, Equatorial Guinea, Kenya, and Democratic Republic of Congo

2.2. Weather assessment for the current day (April 16, 2014)

Intense clouds are observed over local areas in the DRC, Somalia, Democratic Republic of Congo Central African Republic and Sudan



IR Satellite Image (valid 1200 Z of April 15, 2014)



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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