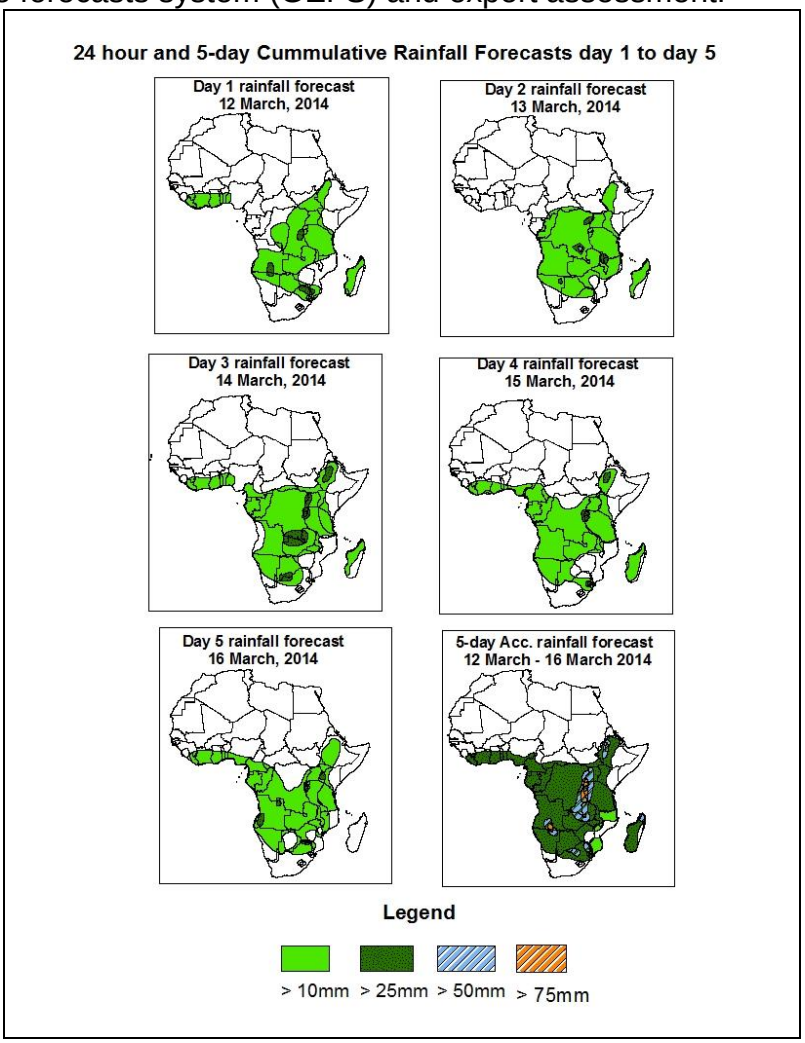
NCEP Contributions to the WMO Severe Weather Forecasting Demonstration Project (SWFDP) and to the African Monsoon Multidisciplinary Analysis (AMMA) Initiative

1.0. Rainfall Forecast: Valid 06Z of 12 March – 06Z of 16 March, 2014. (Issued at 1600Z of 11 March 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.

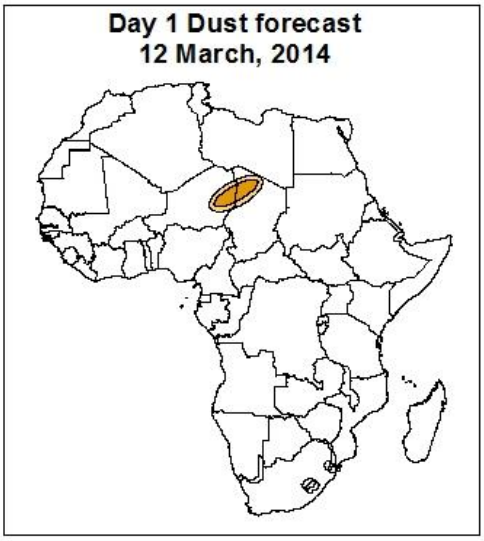


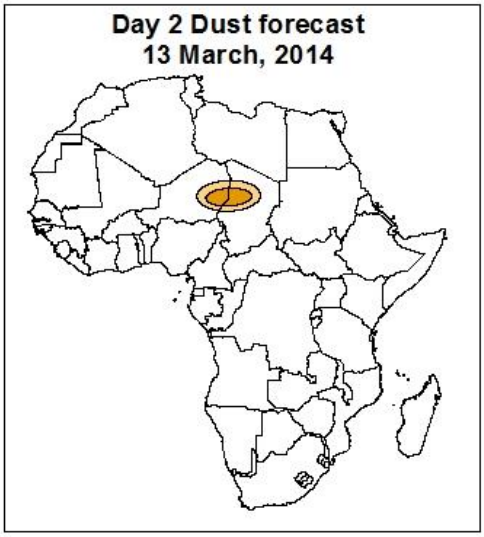
Summary

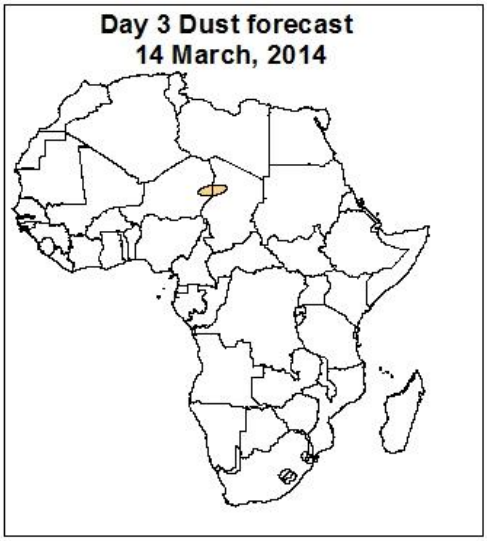
In the coming five days, lower-tropospheric wind convergences across the gulf of guinea, East, Central and southern Africa countries are expected to persist and hence continued moderate rains over Angola, Cameroon, Ghana, Togo, Benin, Gabon, Equatorial Guinea, Uganda, parts of Central Africa Republic, Botswana, Congo Brazzaville, Namibia, Tanzania, Zambia, DRC, Madagascar, Nigeria, Ivory Coast, Bissau Guinea, South Mali, Parts of South Africa, South Sudan, Mozambique, Ethiopia and Kenya. However significant spatial reduction is expected over South Africa.

1.2. Atmospheric Dust Forecasts: Valid 12 March – 14 March 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 to high dust concentration over Niger and Chad.

Legend

MDC, Vis. < 5km

HDC, Vis. < 1km

1.3. Model Discussion: Valid from 00Z of 11 March 2014

Model comparison (GFS and UKMET Valid from 00Z: 11 March 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 is expected to slightly relax with its central pressure value changing from 1030Hpa to 1021Hpa. This will result in an increase of rains over Namibia in the forecast period.

According to both the GFS and UKMET model, the Mascarene high pressure is expected to slightly relax with it central pressure values between 1029Hpa and 1019Hpa, but remain active over the Mozambique Channel. This will result in reduced rainfall over South Africa, Mozambique and Zimbabwe but an increase of the rains over Tanzania and parts of Kenya.

At 850hpa level, Moderate to strong convergence is expected to persist throughout the forecast period over Democratic Republic of Congo (DRC), Central Africa Republic (CAR), Namibia, Uganda, Gabon, Angola and parts of Bissau guinea, Nigeria, south Sudan, Ethiopia, Botswana, Burkina Faso, Ivory Coast, South Mali, Tanzania, Mozambique, Kenya, Madagascar and South Africa.

At 500hpa level, troughs associated with mid-latitude frontal system over Algeria and propagating eastward are expected to result in some tropical, extra-tropical interactions with light rains expected over Bissau guinea, Liberia, ivory Coast, South Mali, Ghana, Togo, Benin, Nigeria.

At 200hpa level, the sub-tropical Westerly Jet mainly (with wind speed >70 knots and <150 knots), extending between Mauritania, Algeria, Libya and Egypt, and across, Mali, Niger, Chad, Western Sahara, persist during the forecast period. In the south, the sub-tropical westerly Jet (with speed >70 knots and <110 knots) is expected over South Africa, Indian and Atlantic Ocean.

In the coming five days, lower-tropospheric wind convergences across the gulf of guinea, East, Central and southern Africa countries are expected to persist and hence continued moderate rains over Angola, Cameroon, Ghana, Togo, Benin, Gabon, Equatorial Guinea, Uganda, parts of Central Africa Republic, Botswana, Congo Brazzaville, Namibia, Tanzania, Zambia, DRC, Madagascar, Nigeria, Ivory Coast, Bissau Guinea, South Mali, Parts of South Africa, South Sudan, Mozambique, Ethiopia and Kenya. However significant spatial reduction is expected over South Africa.

2.0. Previous and Current Day Weather Discussion over Africa

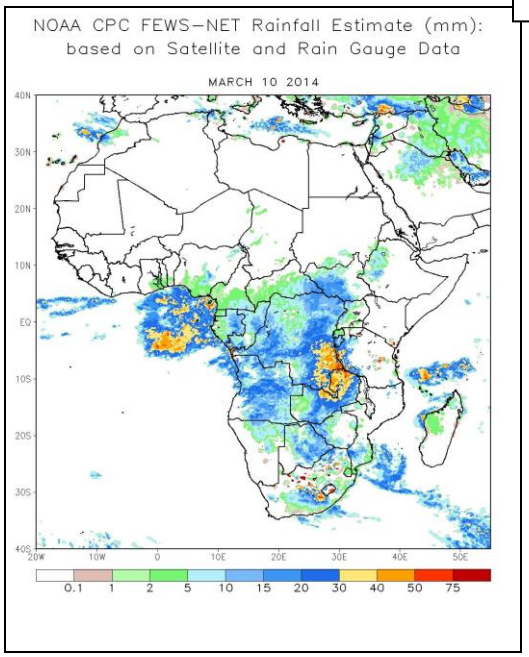
(10 March 2014 – 11 March 2014)

2.1. Weather assessment for the previous day (10 March 2014)

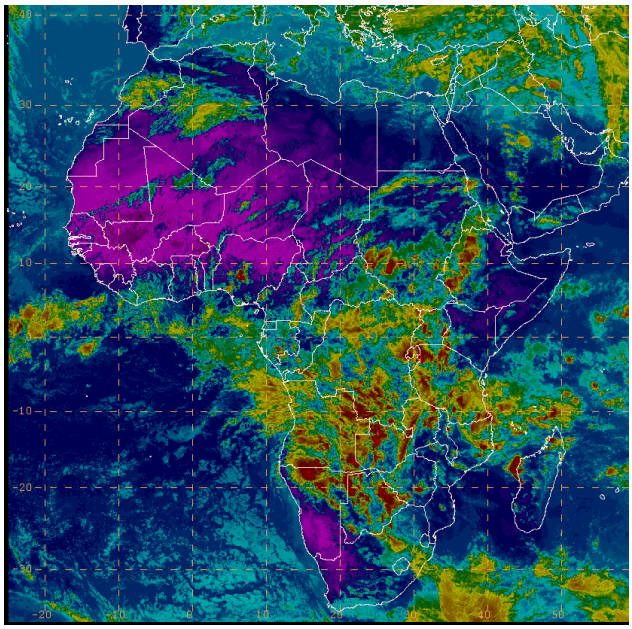
During the previous day, moderate rainfall was observed over local areas in Gabon, Angola, DRC, Botswana, South Africa, Cameroon, South Sudan, Ethiopian, Uganda, Nigeria, Congo Brazzaville, Zambia, Tanzania and Madagascar.

2.2. Weather assessment for the current day (10 March 2014)

Intense clouds are observed over parts of Gulf of Guinea, Central and Southern African countries as well as Madagascar.



IR Satellite Image (valid 1730 Z of 11 March 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

Author: ***Juliana Paixao,*** (Centro de Previsao de Tempo-Angola / CPC-African Desk); juliana.paixao@noaa.gov