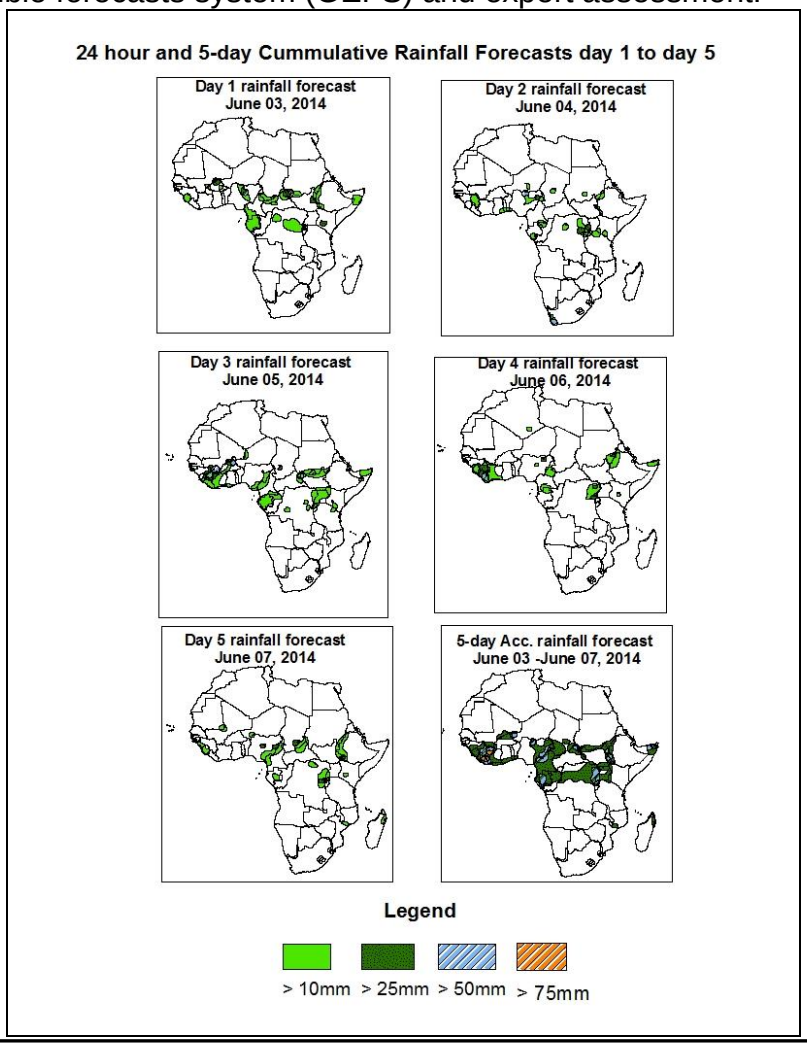
NCEP Contributions to the WMO Severe Weather Forecasting Demonstration Project (SWFDP) and to the African Monsoon Multidisciplinary Analysis (AMMA) Initiative

1.0. Rainfall Forecast: Valid 06Z of June 03 – 06Z of June 07, 2014. (Issued at 1600Z of June 02, 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.



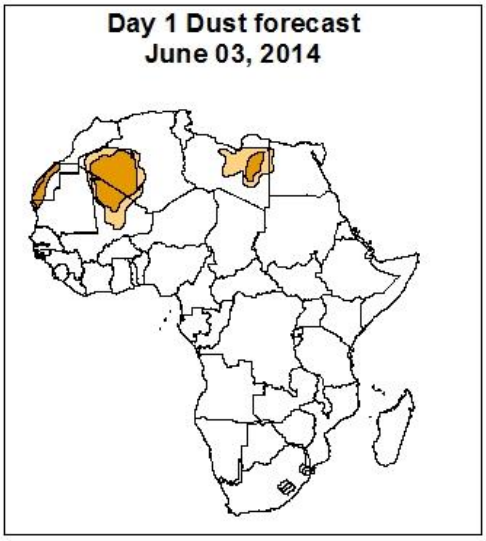
Summary

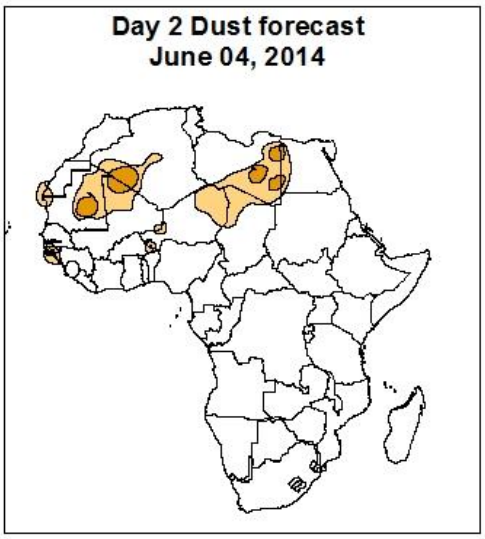
In the next five days, westward propagating easterly waves across the Gulf of Guinea, seasonal wind convergences in East Africa region are expected to enhance rainfall in their respective regions.

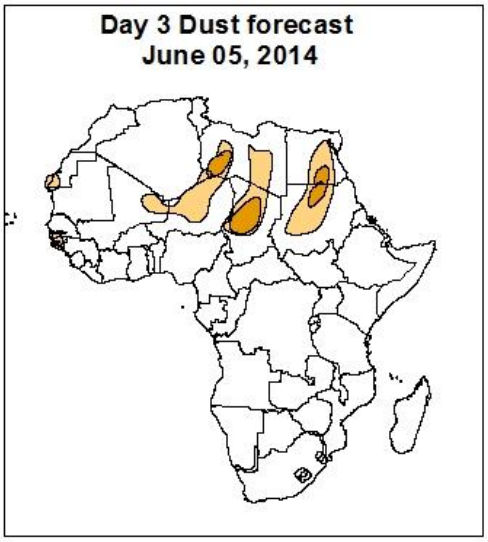
Generally there is an increased chance for moderate to heavy rainfall over portions of Guinea Bissau, Sierra Leone, Liberia, Nigeria, Chad, Sudan, Democratic Republic of Congo, Cameroun, Equatorial Guinea, Gabon, Congo Brazzaville, Uganda, Ethiopia, Somalia and Tanzania.

1.2. Atmospheric Dust Forecasts: Valid June 03 – June 05, 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 Western Sahara, Algeria Libya, Egypt, Mauritania, Gambia, Guinea Bissau, Mali, Niger, Sudan and Chad

Legend

MDC, Vis. < 5km

HDC, Vis. < 1km

1.3. Model Discussion: Valid from 00Z of June 03, 2014

Model comparison (GFS and UKMET Valid from 00Z: June 03, 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 heat lows across Eastern Algeria, Mali through Great Horn of Africa, DRC to South Africa are expected to fluctuate in their positions while deepening and filling up through their 24 to 120 hours according to the GFS model.

According to the GFS model, a low over Northern Libya at 999hpa in 24hours is expected to fill up to 1004 hpa in 48hours.A low over Mali and Burkina Faso with pressure of 1005hpa is expected to maintain its pressure value at 48hours. Another low over Mali and Niger at 72hours is expected to deepen at 96hours to 1005hpa and fills up again through 120 hours to 1006hpa.A low over East Sudan is expected to maintain its pressure value of 1004hpa through 24 hours to 96hours and then expected to deepen to 1001hpa to the end of the forecast period. Eritrea and the Great Horn of Africa with lows of 1004hpa and 1005 hpa respectively are expected to maintain their positions through the 24 to 96 hours and then deepen to 1002hoa and 1003 hpa by the end of the forecast period.
A low over DRC at 1008hpa is expected to maintain that pressure value through 48 hours and then fill up to 1009hpa by 96hours and then expected to deepen to 1008 by 120 hours.

The Azores high pressure system over the North Atlantic Ocean is expected to weaken from a central pressure value of 1034hpa to 1028hpa through 24 to 120 hours according to the GFS model and for the UKMET model the high pressure system is expected to weaken through 24 to 120 hours at a central pressure value of 1033hpa to 1027hpa.

The St. Helena high pressure system over the South Atlantic Ocean is expected to weaken from 24 to 72 hours at a central pressure value of 1029hpa to 1027hpa and the intensify to 1030hpa and then expected to weaken to 1020hpa at 120hours hours for

the GFS model. For the UKMET model it is expected to maintain it central pressure value through 24 to 48hours at 1029hpa and then deepen to 1028hpa at 72hours and expected to intensify to 1032hpa at 120hours hpa.

During the forecast period, the Mascarene high pressure system over the southwestern Indian Ocean is expected to remain weak through 24 to 48hours due to the presence mid latitude frontal system in that area. A central pressure value of 1023hpa at 72hours is expected to intensify to 1027hpa at 96 hours and then weaken to 1026 hpa by 120 hours.

At 925Hpa level, a zone of moderate and dry northerly and easterly winds is expected to prevail over Sahel region, Northern Gulf of Guinea countries, Western Gulf of Guinea coast, Great Horn of Africa Region and Central Africa region through 24 to 120hours.

At 850Hpa level, a lower tropospheric wind convergence is expected to be active across the western side of the Gulf of Guinea coast, the central and western Sahel regions through 24 hours Gulf of Guinea countries, Great Horn of Africa through 48hours, of the Gulf of Guinea through the 96 hours and then by 120 hours convergence are expected over Northern Sudan, Tanzania, Kenya and Ethiopia.

At 500Hpa level, winds associated with African Easterly Jets are beginning to surface with wind speed of 30knots between Mali and Ethiopia throughout the forecast period. Eastward propagating mid-latitude trough across Northern Africa and neighboring areas is expected to deepen gradually with its axis over Libya, Egypt and North Sudan through 24 to 120 hours while trough from westward propagation is expected over Cote D'Ivoire is expected by 96hours.

At 200hpa level, winds with strong speed (>70kts and >90kts) associated with the Northern hemisphere sub-tropical Westerly Jet is expected to propagate across the North Africa during the forecast period across the subtropical latitudes during the forecast period while winds (>70kts and <150kts) is expected in the southern Hemisphere across South Africa, South Atlantic Ocean, Indian Ocean, Botswana, Namibia and Zimbabwe.

In the next five days, westward propagating easterly waves across the Gulf of Guinea, seasonal wind convergences in East Africa region are expected to enhance rainfall in their respective regions.

Generally there is an increased chance for moderate to heavy rainfall over portions of Guinea Bissau, Sierra Leone, Liberia, Nigeria, Chad, Sudan, Democratic Republic of Congo, Cameroun, Equatorial Guinea, Gabon, Congo Brazzaville, Uganda, Ethiopia, Somalia and Tanzania.

2.0. Previous and Current Day Weather Discussion over Africa

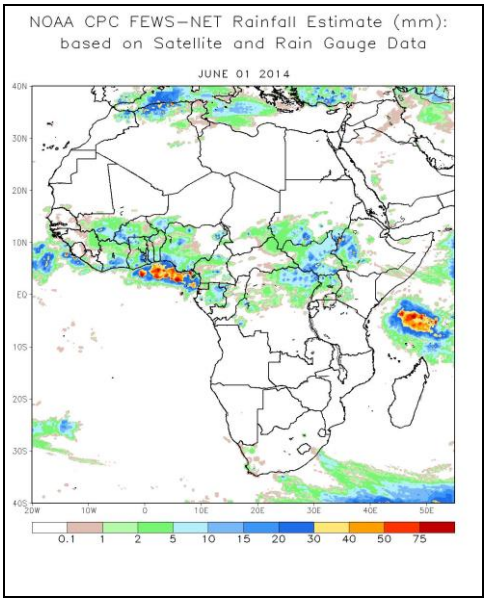
(May 29, 2014 – May 30, 2014)

2.1. Weather assessment for the previous day (June 01, 2014)

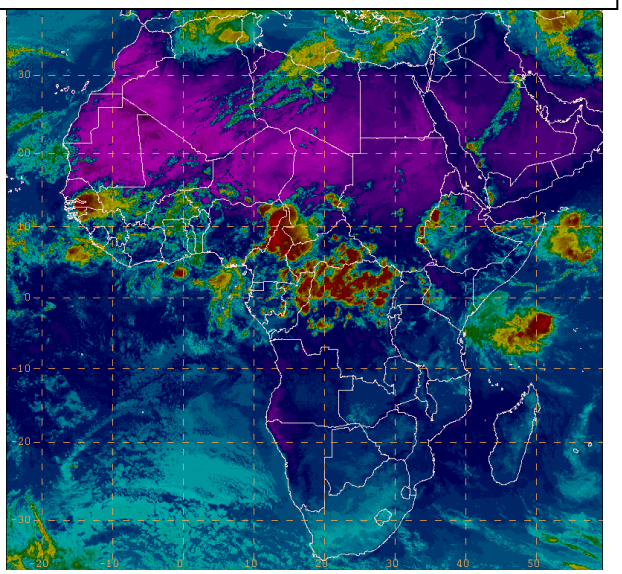
During the previous day, moderate to heavy rainfall was observed over Coastal Nigeria, Western Nigeria, Western Africa, Western part of Gulf of Guinea.

2.2. Weather assessment for the current day (June 02, 2014)

Intense clouds are observed over local areas in Gambia, Senegal, Guinea Bissau, Cameroun, Chad, DRC ,Mali and Congo



IR Satellite Image (valid 1200 Z of June 02, 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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