

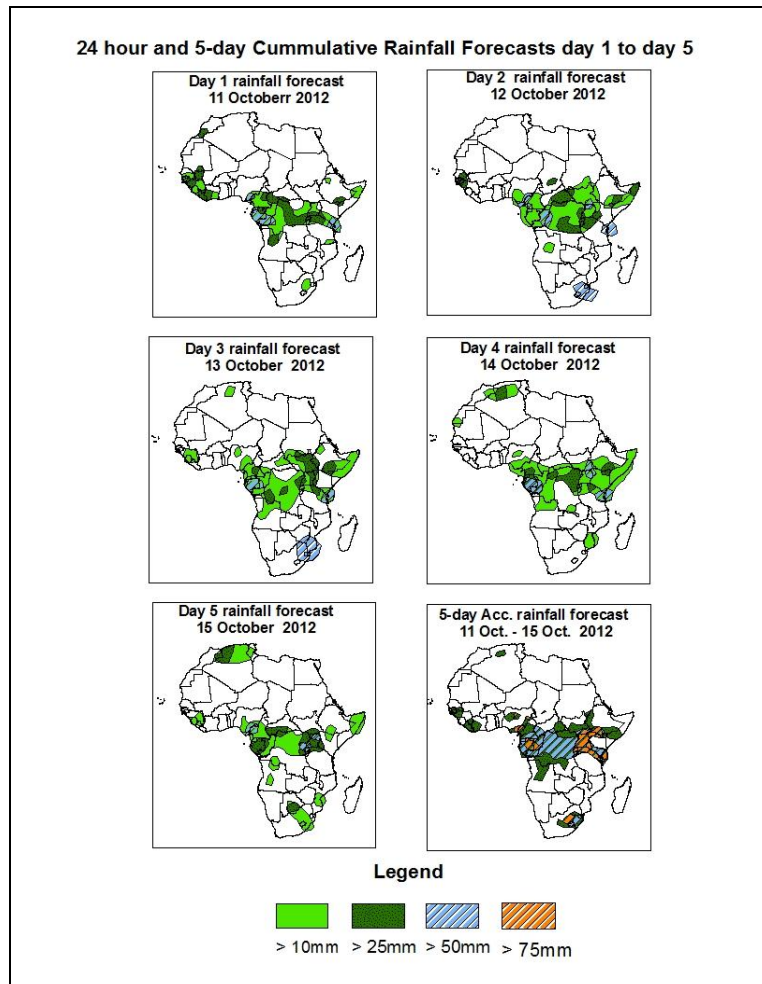


NCEP Contributions to the WMO Severe Weather Forecasting Demonstration Project (SWFDP) and to the African Monsoon Multidisciplinary Analysis (AMMA) Initiative

1.0. Rainfall Forecast: Valid 06Z of October 11th – 06Z of October, 15th 2012. (Issued at 13:00Z of October, 10th 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 seasonal convergence lines over the CAB region and the surrounding areas of East Africa are expected to enhance and maintain rainfall activities within the regions. Hence, there is an increased chance for moderate to heavy rainfall over parts of East and Central Africa into Cameroon, Nigeria along with Morocco, Senegal, Algeria, Mozambique and the eastern parts of South Africa.

1.2. Model Discussion: Valid from 00Z of October, 10th 2012.

Model comparison (Valid from 00Z; October, 10th 2012) shows all the three models are in general agreement especially with respect to the positioning of large scale features, however, the UK model tends to give somewhat slightly higher values than both the GFS and ECMWF models especially in the Equatorial region (10°S and 10°N) with regards to the heat lows.

The St. Helena High pressure system over southeast Atlantic Ocean is expected to intensify, with its MSLP value increasing from 1029hpa to 1032hpa during the forecast period according to the GFS model. According to the UKMET model, this same high pressure system is expected to increase its central pressure value of 1029hpa to 1033hpa through 24 to 96 hours and then tends to weaken to MSLP value of 1030hpa in 120 hours. Finally on the ECMWF model, it is expected to increase from 1029hpa to 1030hpa through 24 to 96 hours and tends to weaken to a central value of 1029hpa in 120hours. The Mascarene high pressure system over southwest Indian Ocean is expected to increase in value from 1025hpa to 1028hpa in 24 hours and tends to weaken, with its MSLP value decreasing to 1025hpa through 72 to 120 hours according to both the GFS and ECMWF models during the forecast period. According to UKMET model, the same high pressure system is expected to increase in value from 1026hpa to 1028hpa in 24 hours and tends to weaken, with its MSLP value decreasing to 1025hpa through 72 to 120 hours during the forecast period.

At the 850hpa level, a cyclonic circulation is expected to dominate the flow over northern Nigeria, central Mali, north-east Sudan and the Niger/Burkina Faso border within 24 to 120 hours with an extended trough line across East and Central Africa. A weak trough line is expected to dominate the flow across parts of Cote d'Ivoire, Guinea-Conakry and Senegal through 48 to 120 hours. The convergence associated with the Congo Air mass is expected to persist over the Congo Air Boundary (CAB) region. Strong wind convergences are expected to prevail over southern Ethiopia, Democratic Republic of Congo, Uganda, Tanzania, Zambia and Angola and will continue to influence moderate to heavy rainfall in the region. Also the westerly trough associated

with the mid-latitude frontal system is expected to dominate the flow over parts of South Africa.

At 500hpa, a deep well established trough in the Northern Hemisphere westerly jet extending down into north Chad and Niger is expected to dominate the flow over the Mediterranean Sea and coastal North Africa during the forecast period. It remains quasi-stationary between longitudes 20°E and 30°E and weakens in 48 hours due to a cut-off low pressure system that develops over north Chad. A mid latitude frontal system is expected to propagate eastwards across South Africa within 24 to 120 hours.

At 200hpa, the northern Hemisphere sub-tropical westerly jet is also expected to intensify across Algeria, Egypt and Libya with strong winds of about 75 knots dominating the flow across North Africa within 24 to 120 hours. A weak quasi-stationary trough is also expected to affect the area. Strong winds of about 65 knots associated with the Sub-Tropical Westerly Jets are expected to dominate the flow over southern Africa, while intensifying gradually during the forecast period.

In the next five days, the seasonal convergence lines over the CAB region and the surrounding areas of East Africa are expected to enhance and maintain rainfall activities within the regions. Hence, there is an increased chance for moderate to heavy rainfall over parts of East and Central Africa into Cameroon, Nigeria along with Morocco, Senegal, Algeria, Mozambique and the eastern parts of South Africa.

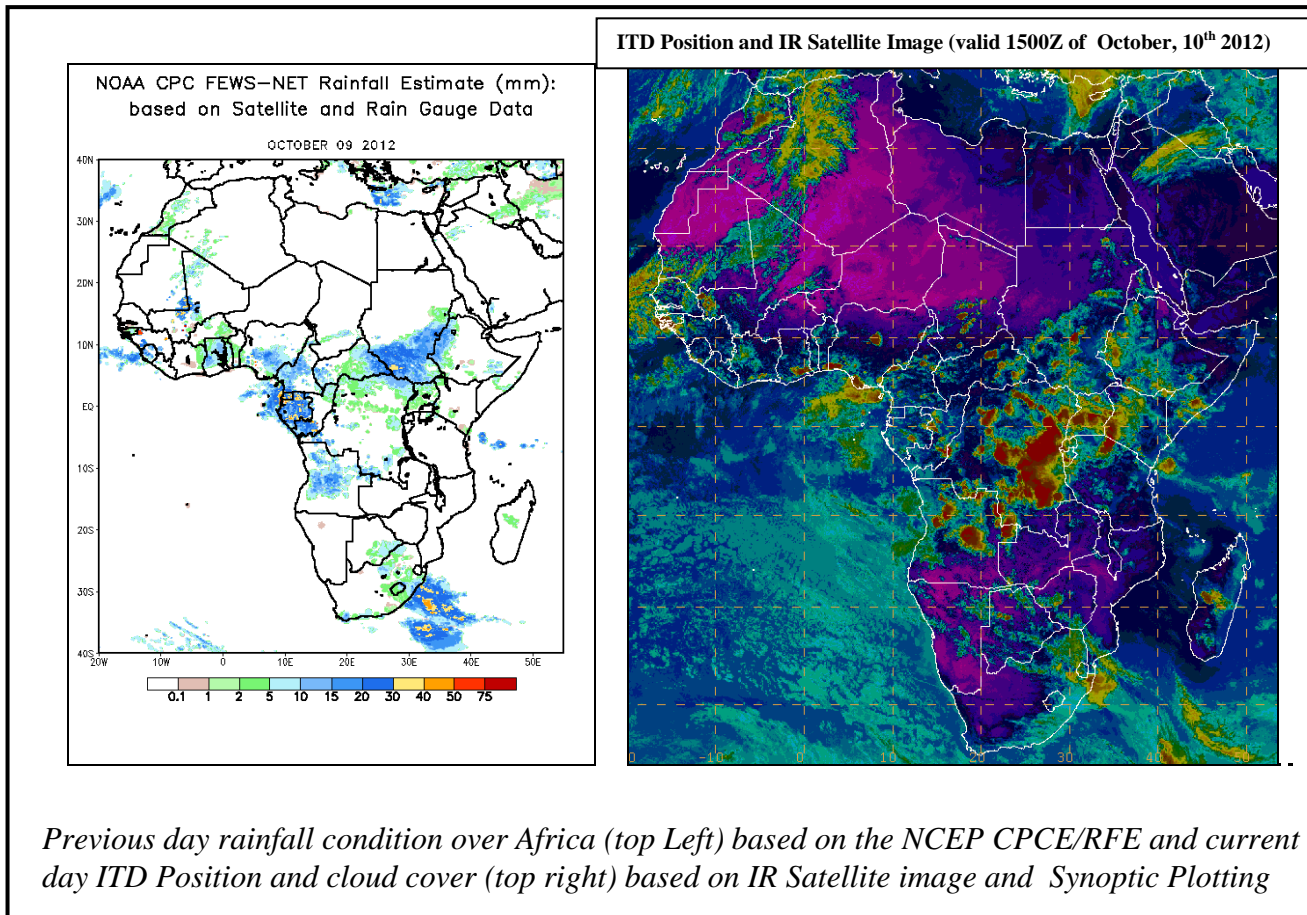
2.0. Previous and Current Day Weather Discussion over Africa (October, 09th 2012 – October, 10th 2012)

2.1. Weather assessment for the previous day (October, 09th 2012)

During the previous day, light rains were observed over parts of Mauritania; Mali; Morocco; Chad; Congo Brazzaville and South Africa with moderate to heavy rainfall over parts of Togo; Sierra Leone; Nigeria; Gabon; Cameroon; Democratic Republic of Congo; Central African Republic; South Sudan Republic; Ethiopia; Angola; Ghana and Angola.

2.2. Weather assessment for the current day (October, 10th 2012)

Convective clouds are observed across parts of Mali; Mauritania; Nigeria; Chad; Democratic Republic of Congo; Cameroon; Sudan; Congo Brazzaville; South Sudan Republic; Ethiopia; Uganda; Somalia; South Africa; Senegal; Guinea-Conakry; Sierra Leone; Ghana; Togo; Kenya; Gabon; Angola and Central African Republic.



Author: Izuchukwu Ebenebe, (Nigeria Meteorological Agency / CPC-African Desk); izu.ebenebe@noaa.gov