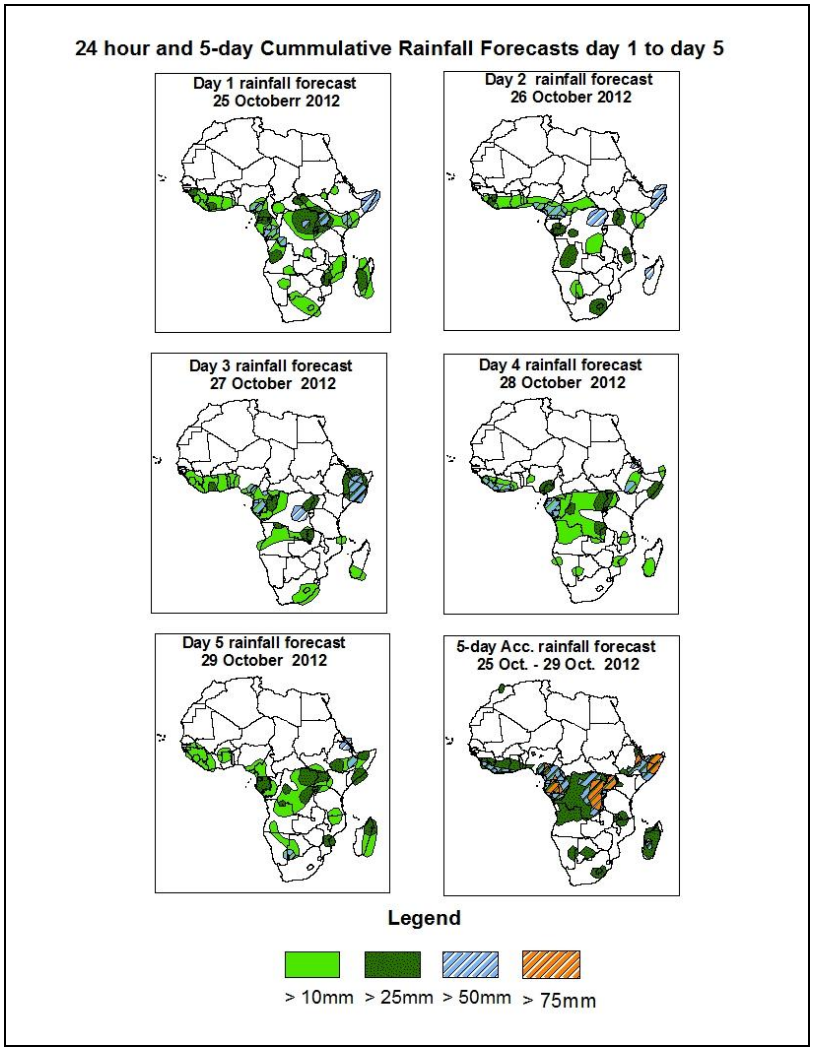
NCEP Contributions to the WMO Severe Weather Forecasting Demonstration Project (SWFDP) and to the African Monsoon Multidisciplinary Analysis (AMMA) Initiative

1.0. Rainfall Forecast: Valid 06Z of 25 October – 06Z of 29 October 2012. (Issued at 13:00Z of 24 October 2012)

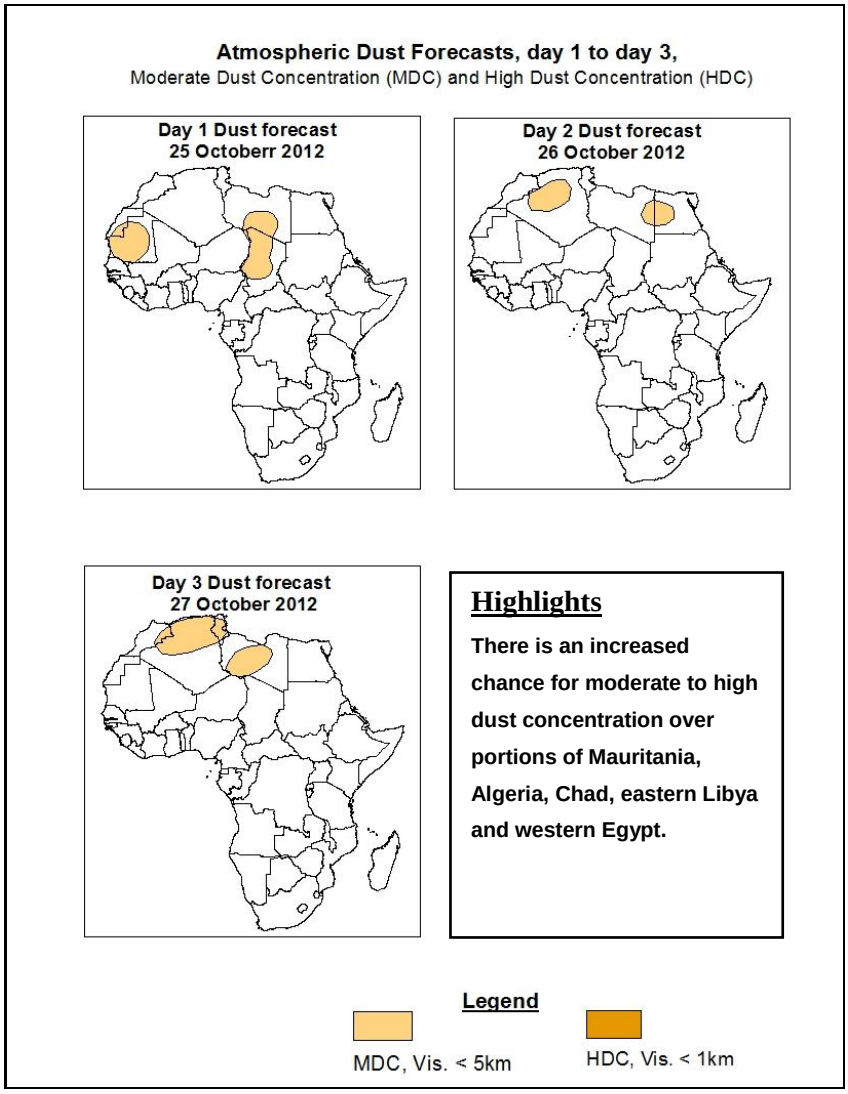
1.1. Twenty Four Hour Cumulative Rainfall Forecasts

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 low level wind convergences near the Congo Air Boundary (CAB) region, persistent lower level wind convergences associated with the monsoon flow over eastern Gulf of Guinea and western Equatorial Africa, and a cyclonic circulation off the coast of Somalia and its landfall over the Horn of Africa are expected to enhance rainfall in their respective regions. Thus, there is an increased chance for heavy rainfall over southern Cameroon, Gabon, local areas in Angola and DRC, portions of the Lake Victoria region, southern Ethiopia, Somalia, and portions of Kenya.



1.2. Model Discussion: Valid from 00Z of 24 October 2012

Model comparison (Valid from 00Z; 24 October 2012) shows all the three models are in general agreement with respect to positioning of synoptic scale features, such as, seasonal lows across Central and Southern Africa countries, the eastward shift of the southern hemisphere sub-tropical high pressure systems (St. Helena and Mascarene), westward propagation of a low pressure system towards the Horn of Africa. However, the models show differences in terms of central pressure values.

The St. Helena High pressure system over southeast Atlantic Ocean is expected to shift towards Indian Ocean to become the Mascarene high pressure system through 24 to 48 hours according to the ECMWF, UKMET and GFS models. It tends to maintain central pressure value of 1024hpa according to the ECMWF model and central pressure value of 1025hpa according to the UKMET model, and its central pressure tends to increase

from about 1024hpa to 1027hpa according to the GFS model before it becomes the Mascarene high pressure system. A new St Helena high pressure system is expected to develop in the Atlantic Ocean, with its central pressure value increasing from 1022hpa to 1028hpa according to the ECMWF model, from 1023hpa to 1027hpa according to the UKMET model, and from 1023hpa 1025hpa according to the GFS model, through 96 to 120 hours.

The Mascarene high pressure system over southwestern Indian Ocean is expected to maintain central pressure value of 1035hpa according to the ECMWF model, 1036hpa according to the UKMET and GFS models through 24 to 72 hours, and it is expected to shift eastwards and its position will be taken by a high pressure system that will shift from the Atlantic Ocean. The new Mascarene high pressure system is expected to maintain central pressure value of 1025hpa according to the ECMWF model, 1024hpa according to the UKMET model and 1023hpa according to the GFS model through 96 to 120 hours. The East African ridge across Southeast and East Africa is expected to remain more or less strong during the forecast period.

The central pressure value of the seasonal lows across the southern African countries is expected to remain about 1009hpa during the forecast period according to the three models. A low pressure system off the coast of Somalia is expected to move towards the Horn of Africa through 24 to 48hours, according to the GFS model. This low pressure appears relatively weak on the ECMWF and UKMET models.

At the 850hpa level, the seasonal low level wind convergence in the CAB region is expected to remain active through 24 hours, and it tends to weaken through 48 hours. It will then become active through 72 to 96 hours and it will again weaken towards end of the forecast period. Low level wind convergences across eastern Gulf of Guinea and western parts of Equatorial Africa are expected to remain active through 24 to 96 hours. A cyclonic circulation over northern Indian Ocean is expected to make a landfall over northern Somalia in 24 hours and it tends to shift further to Southeast Ethiopia in 72 hours.

At 500hpa, a trough associated with the Northern Hemisphere mid-latitude system is expected to shift eastward across Northeast Africa and the neighboring areas, while weakening during the forecast. A feeble mid latitude trough is also expected to leave the East coast of South Africa through 24 to 48 hours.

At 200hpa, zone of strong winds (>70kts), associated with the northern Hemisphere sub-tropical westerly jet is expected to propagate between Northeast Africa and the Persian Gulf while weakening. In the southern hemisphere, the subtropical westerly jet, with its core of strong winds (>90kts), is expected to propagate between the Atlantic Ocean and Indian Ocean while weakening during the forecast period.

In the next five days, the seasonal low level wind convergences near the Congo Air Boundary (CAB) region, persistent lower level wind convergences associated with the monsoon flow over eastern Gulf of Guinea and western Equatorial Africa, and a cyclonic circulation off the coast of Somalia and its landfall over the Horn of Africa are expected to enhance rainfall in their respective regions. Thus, there is an increased chance for heavy rainfall over southern Cameroon, Gabon, local areas in Angola and DRC, portions of the Lake Victoria region, southern Ethiopia, Somalia, and portions of Kenya .

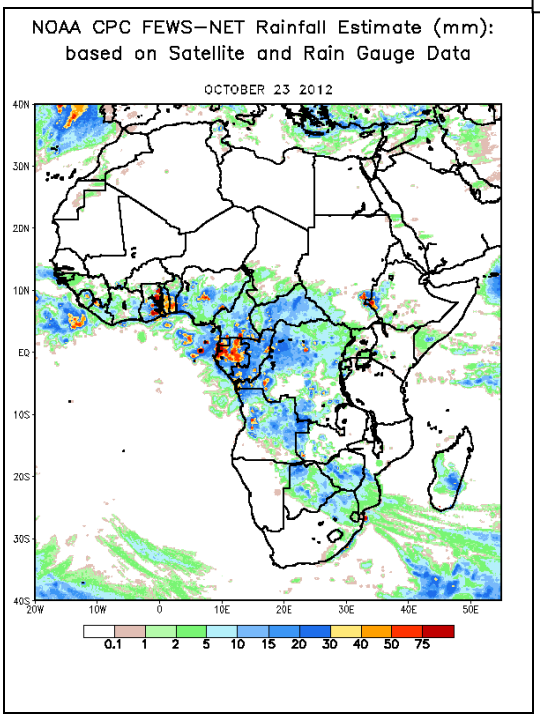
2.0. Previous and Current Day Weather Discussion over Africa (23 October 2012 – 24 October 2012)

2.1. Weather assessment for the previous day (23 October 2012)

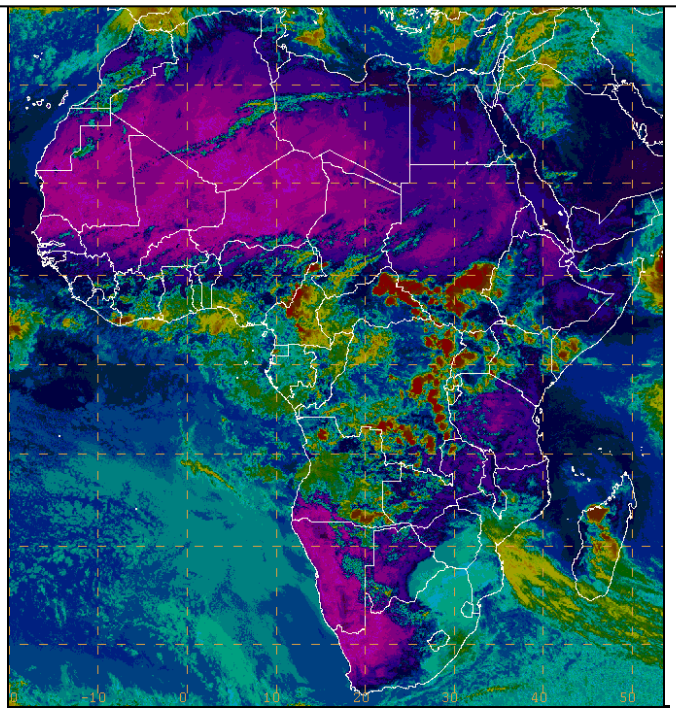
During the previous day, light rains were observed over parts of Mauritania; Mali; Morocco; Algeria; Chad; Egypt and South Africa with moderate to heavy rainfall over parts of Togo; Sierra Leone; Nigeria; Gabon; Cameroon; Congo Brazzaville; Democratic Republic of Congo; Central African Republic; South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

2.2. Weather assessment for the current day (24 October 2012)

Convective clouds are observed across parts of Algeria; Libya; Mauritania; Nigeria; Chad; Democratic Republic of Congo; Cameroon; Sudan; Congo Brazzaville; South Sudan Republic; Ethiopia; Uganda; Somalia; Malawi; Zimbabwe; Algeria; Libya; Egypt; Sudan; Guinea-Conakry; Sierra Leone; Gambia; Togo; Kenya; Gabon; Angola; South Africa and Central African Republic.



ITD Position and IR Satellite Image (valid 1500Z of 24 October 2012)



Previous day rainfall condition over Africa (top Left) based on the NCEP CPCE/RFE and current day ITD Position and cloud cover (top right) based on IR Satellite image and Synoptic Plotting

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