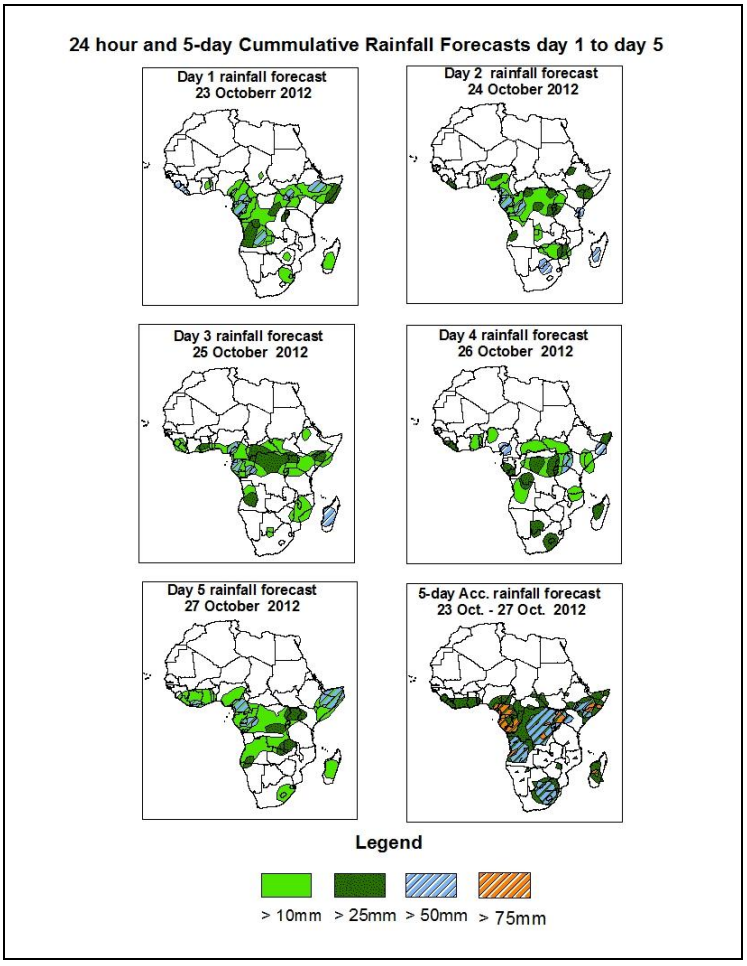
NCEP Contributions to the WMO Severe Weather Forecasting Demonstration Project (SWFDP) and to the African Monsoon Multidisciplinary Analysis (AMMA) Initiative

1.0. Rainfall Forecast: Valid 06Z of October 23rd – 06Z of October, 27th 2012. (Issued at 13:00Z of October, 22nd 2012)

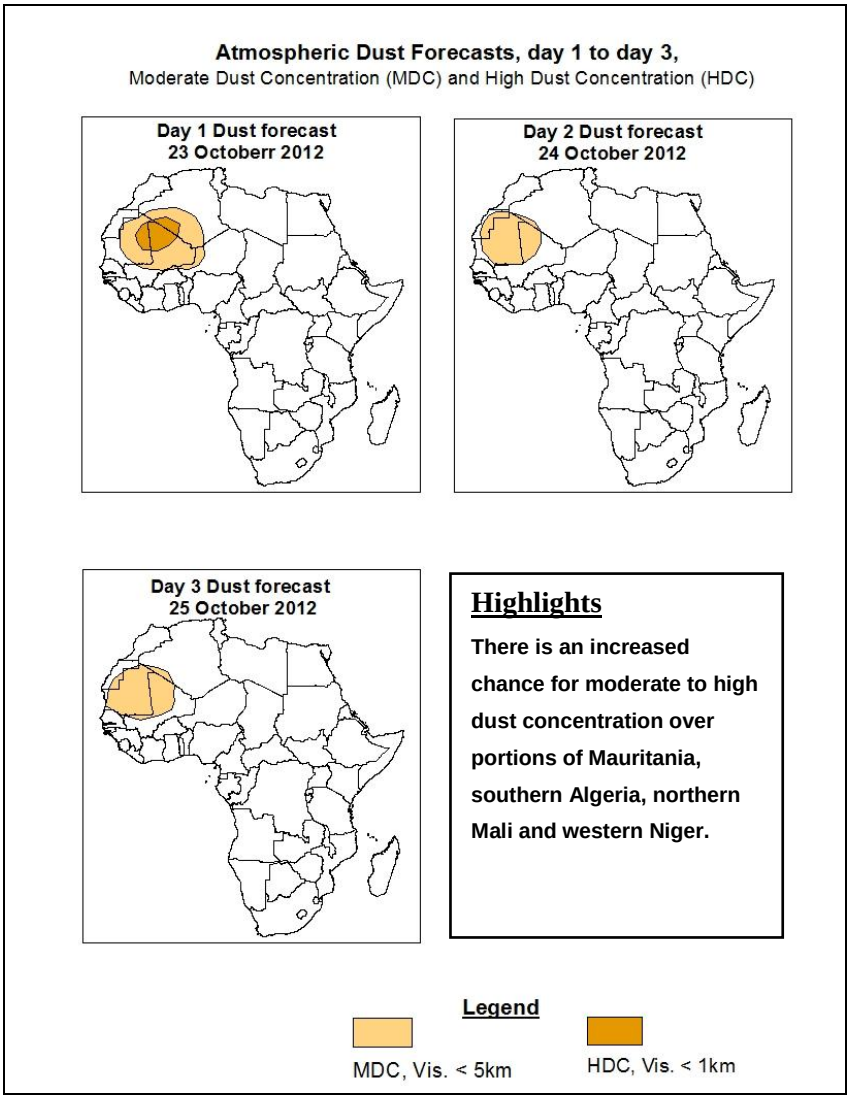
1.1. Twenty Four Hour Cumulative Rainfall Forecasts

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, a cyclonic circulation over northern Indian Ocean and its propagation towards the Horn of Africa and lower lever easterly winds over Madagascar are expected to enhance rainfall in their respective regions. Thus, there is an increased chance for heavy rainfall over southeastern Nigeria, Cameroon, Gabon, Angola, portions of the Lake Victoria region, southern Ethiopia, Somalia, portions of Kenya and Madagascar.



1.2. Model Discussion: Valid from 00Z of October, 22nd 2012.

Model comparison (Valid from 00Z; October, 22nd 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 from the Atlantic Ocean to the Indian Ocean through 24 to 48 hours, maintaining its central pressure value of 1032hpa according to the ECMWF and GFS models, and slightly decreasing from central value of 1033hpa to 1032hpa according to the UKMET model. A new St. Helena high pressure system over southeastern atlantic Ocean is

expected to maintain central pressure value of 1024hpa through 48 to 96 hours, and it tends to intensify to central pressure value of 1028hpa towards end of the forecast period according to the ECMWF model. This same high pressure tends to intensify slightly through 48 to 96 hours, and it tends to relax towards end of the forecast period according to the UKMET and GFS models.

The Mascarene high pressure system over southwestern Indian Ocean is expected to intensify gradually, from central pressure value of 1032hpa in 48 hours to 1036hpa in 120 hours, according to the ECMWF model, and from 1032hpa to 1034hpa according to the UKMET and GFS models.

The central pressure value of the seasonal lows across the southern African countries is expected to remain about 1008hpa through the forecast period according to the three models. A low pressure system over northern Indian Ocean is expected to propagate towards the Horn of Africa during the forecast period, approaching the GHA coast in 72 hours.

At the 850hpa level, the seasonal low level wind convergence in the CAB region is expected to remain active, with slight eastward shift over Uganda and western Tanzania during the forecast period. Low level wind convergences across eastern Gulf of Guinea and western parts of Equatorial Africa are also expected to remain active during the forecast period. Moist easterly winds from northern Indian Ocean with their convergence over the Horn of Africa are expected to remain active through 24 to 48hours. On the other hand, a cyclonic circulation over northern Indian Ocean is expected to propagate towards the Horn of Africa through 24 to 120 hours. Lower level easterlies are expected to dominate the flow over M<Madagascar through 24 to 72 hours.

At 500hpa, a trough associated with the Northern Hemisphere mid-latitude system is expected to shift eastward while weakening during the forecast. A feeble mid latitude trough is also expected to leave the East coast of South Africa through 24 to 72 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 intensifying. In the southern hemisphere, the subtropical westerly jet,

with its core of strong winds (>90kts), is expected to propagate between South Africa and Indian Ocean 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, a cyclonic circulation over northern Indian Ocean and its propagation towards the Horn of Africa and lower lever easterly winds over Madagascar are expected to enhance rainfall in their respective regions. Thus, there is an increased chance for heavy rainfall over southeastern Nigeria, Cameroon, Gabon, Angola, portions of the Lake Victoria region, southern Ethiopia, Somalia, portions of Kenya and Madagascar.

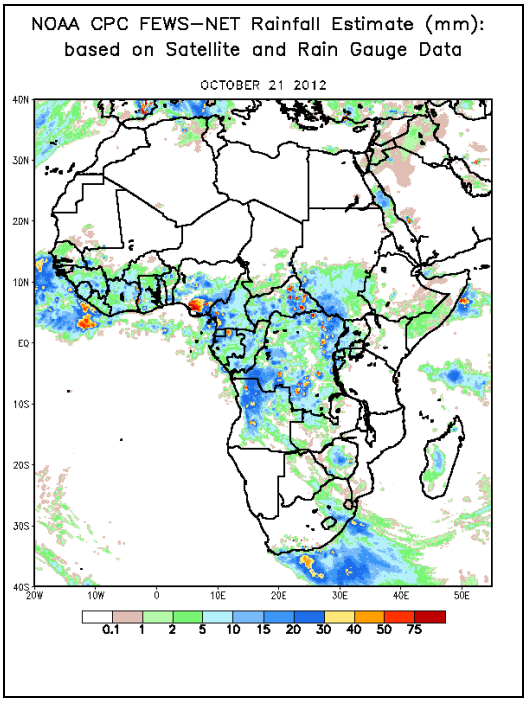
2.0. Previous and Current Day Weather Discussion over Africa (October, 21st 2012 – October, 22nd 2012)

2.1. Weather assessment for the previous day (October, 21st 2012)

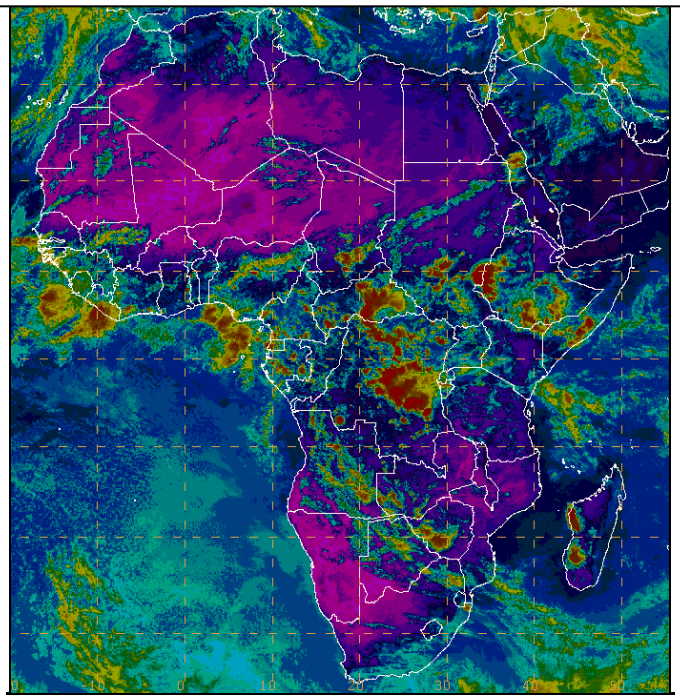
During the previous day, light rains were observed over parts of Mauritania; Mali; Morocco; Algeria; Chad; Egypt and South Africa with moderate to heavy rainfall over parts of Togo; Sierra Leone; Nigeria; Gabon; Cameroon; Congo Brazzaville; Democratic Republic of Congo; Central African Republic; South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

2.2. Weather assessment for the current day (October, 22nd 2012)

Convective clouds are observed across parts of Algeria; Libya; Mali; 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 October, 22nd 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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