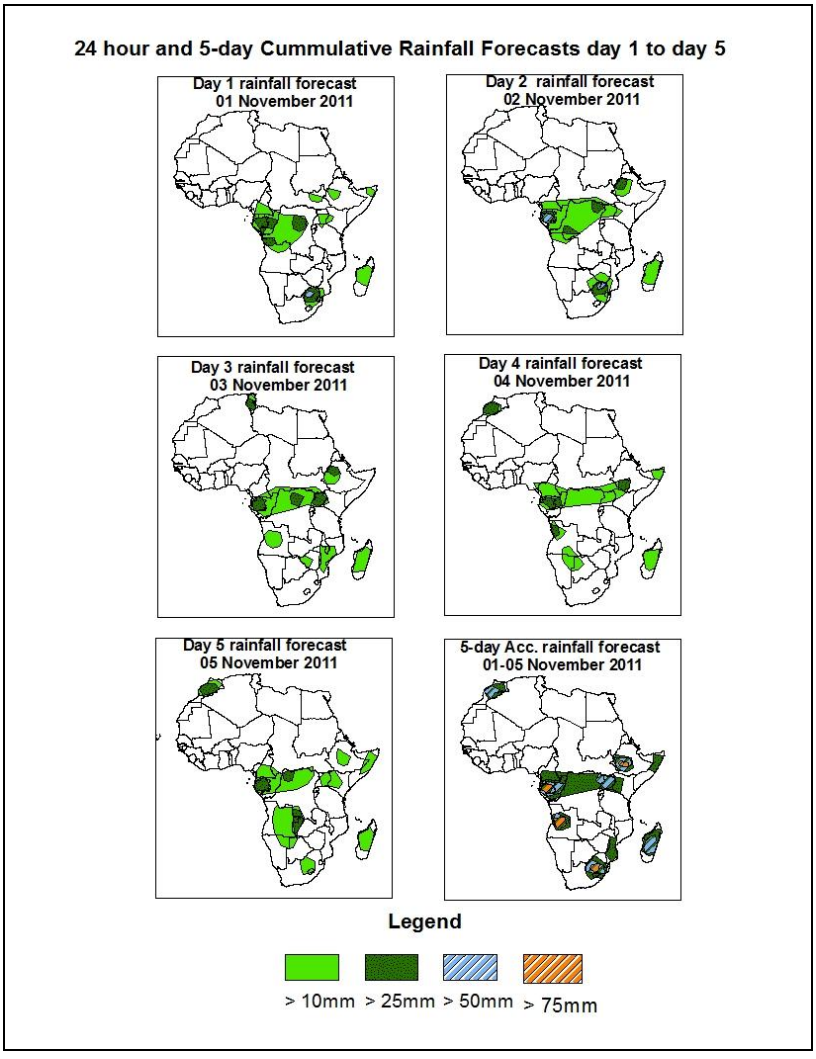
NCEP Contributions to the WMO Severe Weather Forecasting Demonstration Project (SWFDP) and to the African Monsoon Multidisciplinary Analysis (AMMA) Initiative

1.0. Rainfall Forecast: Valid 06Z of 01 November – 06Z of 05 November 2011, (Issued at 15:30Z of 31October 2011)

1.1. Twenty Four Hour Cumulative Rainfall Forecasts

The forecasts are expressed in terms of high 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, seasonal and localized wind convergences and eastward propagating mid-latitude frontal systems are expected to enhance rainfall in their respective regions. Hence, there is an increased chance for heavy rainfall over Cameroon, Northern Angola, Gabon, Congo Brazzaville, parts of DRC, parts of Somalia, parts of Kenya, Madagascar, Uganda and portions of eastern South Africa and portions of Morocco.

1.2. Models Comparison and Discussion-Valid from 00Z of 01 November 2011

The GFS, ECMWF and UKMET models indicate series of heat lows and their associated troughs across central and the South African countries. The heat low near DRC is expected to fill up, with its mean sea level pressure value increasing from 1008mb to 1009mb through 24 to 48 hours, according to the GFS model and tends to maintain its central pressure value of value of 1008mb towards end of the forecast period. The heat low over Tanzania is expected to deepen from MSLP value of 1009mb to 1008mb during the forecast period according to the GFS model. Another heat low is expected to form extending across Zambia, Zimbabwe, Botswana and Mozambique and tends to fill up, with its MSLP value increasing from 1005mb to 1009mb during the forecast period according to the GFS model. According to UKMET model, this heat low tends to fill up, with its MSLP value increasing from 1004mb to 1007mb through 24 to 72hours. According to ECMWF this heat low is expected to fill up, with its MSLP value increasing from 1005mb to 1009mb during the forecast period. A heat low is expected to form extending to Madagascar through 48 to 72hours with its central pressure value decreasing from 1010mb to 1009mb according to UKMET model. A localized high pressure over Ethiopia tends to maintain its central pressure value of 1012mb during the forecast period according to GFS model.

The St. Helena High pressure system over southeast Atlantic Ocean is expected to weaken, with its MSLP value decreasing from 1032mb to 1022mb during the forecast period according to GFS model. According to the ECMWF model, this same high pressure is expected to weaken, with its central pressure value decreasing from of 1032mb to1024mb towards the end of forecast period. While tends to weaken to MSLP value of 1024 by 96 hours and then intensify to 1028mb by 120hours according to UKMET model. The Mascarene high pressure system over southwest Indian Ocean is expected to weaken, with its MSLP value decreasing from 1019mb to 1016mb according to both the GFS and ECMWF models through 72 to 120hours. According to UKMET model, the same high pressure system tends to weaken, with its MSLP value decreasing from 1020mb to 1016mb through 72 to 120hours.

At the 850hpa level, a lower tropospheric wind convergence is expected to dominate the flow over Sudan, parts of Chad and Angola during the forecast period. The seasonal

wind convergence across central African countries is expected to remain active during the forecast period extending across DRC.Localized wind convergences are also expected to dominate the flow over portions of Ethiopia, Tanzania, Botswana, Kenya, Zambia, Namibia, Mali, Algeria, Tunisia, Congo, Gabon, Somalia, Cameron, Uganda, Mozambique, Madagascar, Nigeria, Libya, and South Africa during the forecast period.

At 500hpa, eastward propagating trough in the westerly is expected to dominate the flow over Mediterranean Sea during the forecast period; with the low geopotential value of 5820gpm extending to the latitudes of Egypt and expected to dominate the flow over Libya by 120hours. There is another trough is expected to propagate over Algeria, Morocco and Tunisia during the forecast period. A mid latitude frontal system is also expected to propagate eastwards across the Southern African countries during the forecast period.

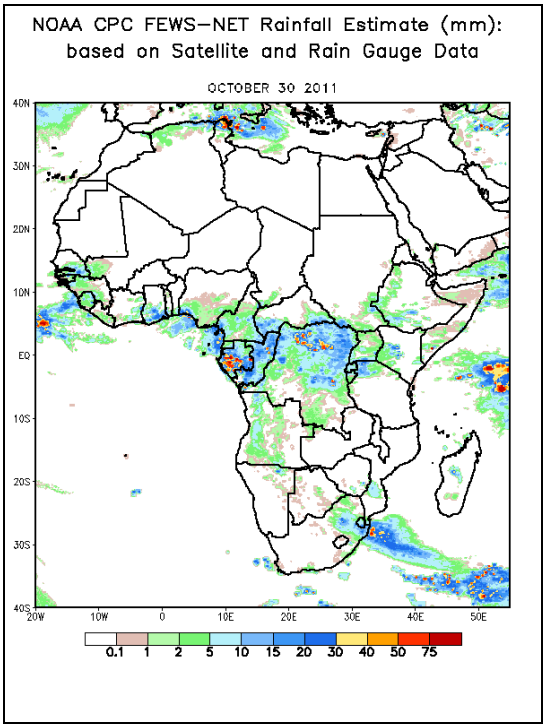
At 200mb, strong winds associated with Sub-Tropical Westerly Jet are expected to dominate the flow over northern Africa, during the forecast period. The intensity of the jet is expected to exceed 90kts near Egypt by 24 and then tend to prevail over Libya by 48hours and intensify with maximum winds exceeding 110kts towards end of the forecast period. Another zone of maximum wind speed is expected to prevail over Morocco by 120 hours with maximum wind speed exceeding 90kts.Wind speed values associated with the southern Hemisphere sub-tropical westerly jet are expected to 130kts and is expected to weaken gradually by 72hours to 90kts and then tends to intensify towards end of forecast period across South Africa.

In the next five days, seasonal and localized wind convergences and eastward propagating mid-latitude frontal systems are expected to enhance rainfall in their respective regions. Hence, there is an increased chance for heavy rainfall over Cameroon, Northern Angola, Gabon, Congo Brazzaville, parts of DRC, parts of Somalia, parts of Kenya, Madagascar, Uganda and portions of eastern South Africa and portions of Morocco.

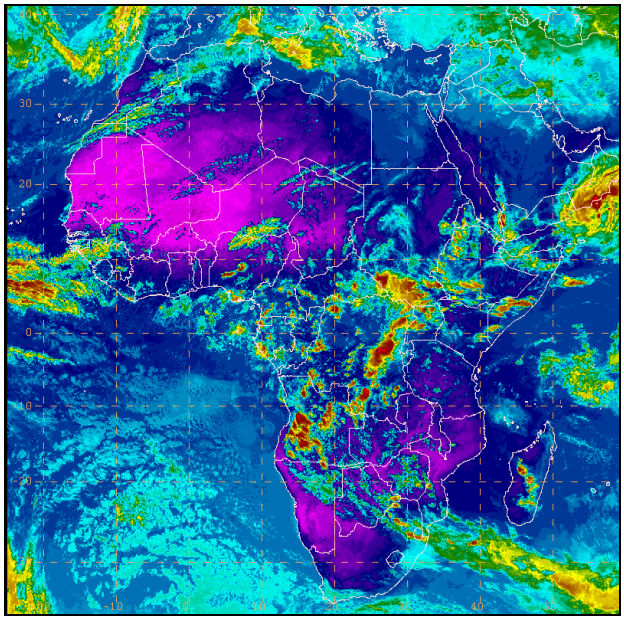
2.0. Previous and Current Day Weather Discussion over Africa (30 October - 31 October 2011)

2.1. Weather assessment for the previous day (30 October 2011): During the previous day, moderate to locally heavy rainfall was observed over northern DRC, western Tanzania, Gabon, Tunisia and southeastern South Africa.

2.2. Weather assessment for the current day (31 October 2011): Intense clouds are observed over much of central African region, parts of the GHA countries, Nigeria, portions of southern Africa countries and Madagascar.



IR Satellite Image (valid 1500Z of 31 October 2011)



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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