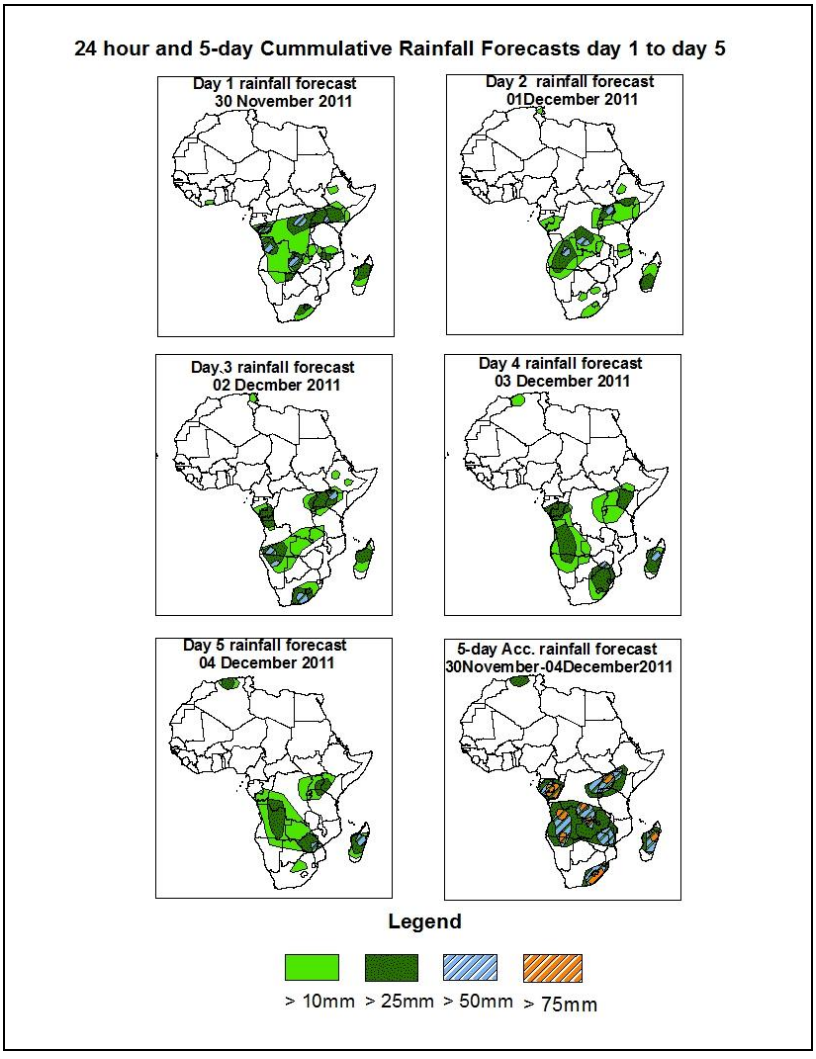
NCEP Contributions to the WMO Severe Weather Forecasting Demonstration Project (SWFDP) and to the African Monsoon Multidisciplinary Analysis (AMMA) Initiative

1.0. Rainfall Forecast: Valid 06Z of 30November – 06Z of 04December 2011, (Issued at 16:15Z of 29November 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 are expected to enhance rainfall in their respective regions. Hence, there is an increased chance for heavy rainfall over Angola, Gabon, Congo Brazzaville, parts of DRC, north western Tanzania, northern Namibia, Zambia, parts of Madagascar, Burundi, Rwanda, western Kenya, Zimbabwe, parts of Mozambique, parts of Ethiopia, Uganda and parts of southern Africa.

1.2. Models Comparison and Discussion-Valid from 00Z of 30 November 2011

The GFS, ECMWF and UKMET models indicate series of lows and their associated troughs across central and the South African countries. The low over DRC is expected to deepen, with its mean sea level pressure value decreasing from 1010mb to 1007mb towards the end of the forecast period according to the ECMWF model. While according to GFS model it is expected to fill up to 1010mb through 24 to 48hours and then deepen to 1006mb towards the end of the forecast period. Another low is expected to form in the vicinity of Namibia and tends to deepen, with its MSLP value decreasing from 1010mb to 1006mb towards the end of the forecast period according to GFS model. Another low is expected to form in the vicinity of Tanzania and it tends to deepen, with its central pressure value decreasing from 1010mb to 1009mb through 24 to 96 hours according to GFS model. A high pressure is expected to form over Arabian Peninsula and tends to weaken from 1024mb to 1020mb towards the end of 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 1028mb to 1024mb towards the end of the forecast period according to both GFS and ECMWF models. According to UKMET model it is expected to intensify, with its MSLP value increasing from 1024mb to 1031mb through 24 to 72hours and then tends to weaken to 1027mb towards the end of the forecast period. The Mascarene high pressure system over southwest Indian Ocean is expected to weaken, with its central pressure value of decreasing from 1024mb to 1016mb towards the end of the forecast period according to ECMWF model. While according to both UKMET and GFS models it is expected to weaken from 1024mb to 1020mb towards the end of the forecast period.

At the 850hpa level, a lower tropospheric wind convergence is expected to dominate the flow over parts of 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, Zambia, South Africa, Tanzania, Congo, Gabon, Algeria, Namibia, Kenya, Zimbabwe and Uganda 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 Tunisia and Libya by 24 and expected to extend over Egypt through 48 to 96hours .This trough is expected to extend over north Africa through 72 to 96 hours. While at the end of the forecast period it is expected to extend over Libya, Morocco, Algeria and Tunisia Egypt. A mid latitude frontal system is expected to propagate eastwards across the Southern African countries through 48 to 120 hours.

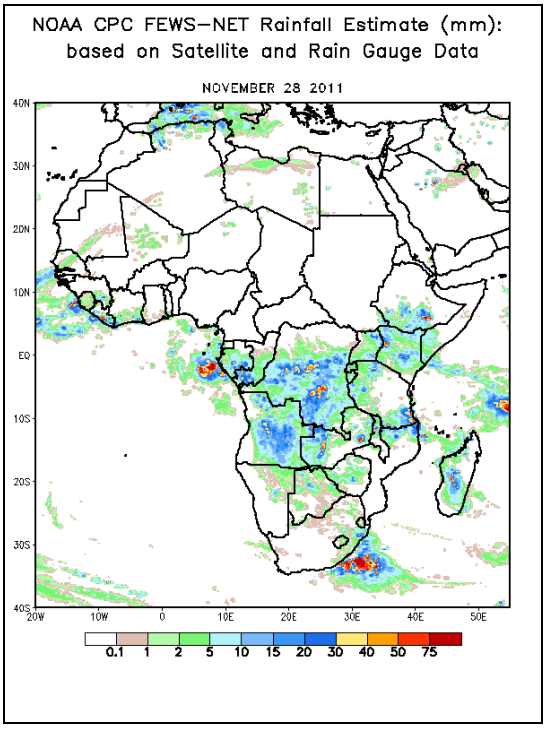
At 200mb, strong winds associated with Sub-Tropical Westerly Jet are expected to dominate the flow over northern Africa, during the forecast period. The intensity of the jet is expected to exceed 130kts over Algeria, Libya and Egypt by 24hours. While by 48 it is expected to extend over Libya and Egypt. By the end of the forecast period it is expected to propagate over Libya and Egypt with wind speed exceeded 110kts. Wind speed values associated with the southern Hemisphere sub-tropical westerly jet are expected to exceed 90kts and it is expected to weaken towards the end of the forecast period.

In the next five days, seasonal and localized wind convergences are expected to enhance rainfall in their respective regions. Hence, there is an increased chance for heavy rainfall over Angola, Gabon, Congo Brazzaville, parts of DRC, north western Tanzania, northern Namibia, Zambia, parts of Madagascar, Burundi, Rwanda, western Kenya, Zimbabwe, parts of Mozambique, parts of Ethiopia, Uganda and parts of southern Africa.

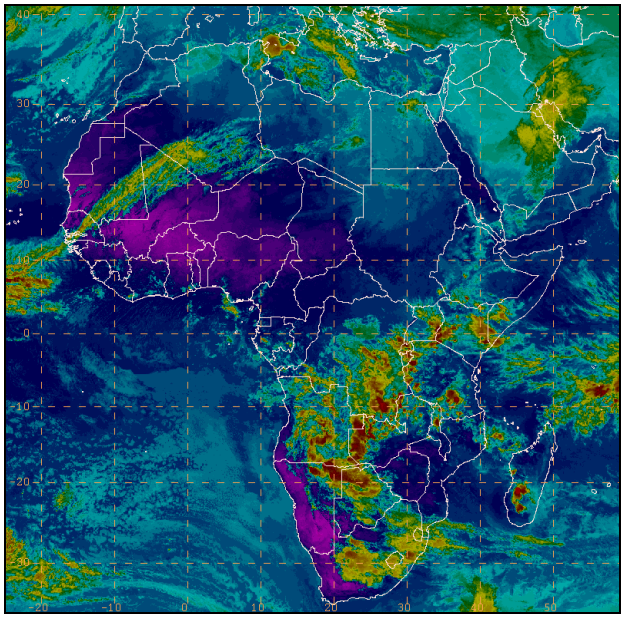
2.0. Previous and Current Day Weather Discussion over Africa (28November - 29November 2011)

2.1. Weather assessment for the previous day (28November 2011): During the previous day, moderate to locally heavy rainfall was observed over much of DRC, northern Algeria, southern Ethiopia, parts of Madagascar, Angola, parts of Zambia, parts of Congo, northern Mozambique,parts of Tanzania, parts of Kenya and parts of Uganda.

2.2. Weather assessment for the current day (29November 2011): Intense clouds are observed over Angola, parts of Zambia, parts of Tanzania, much of DRC, portion of Madagascar, parts of Kenya, parts of Uganda, north eastern Namibia, northern Botswana, Rwanda, Burundi, southern Somalia and parts of Southern Africa.



IR Satellite Image (valid 1545Z of 29November 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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