

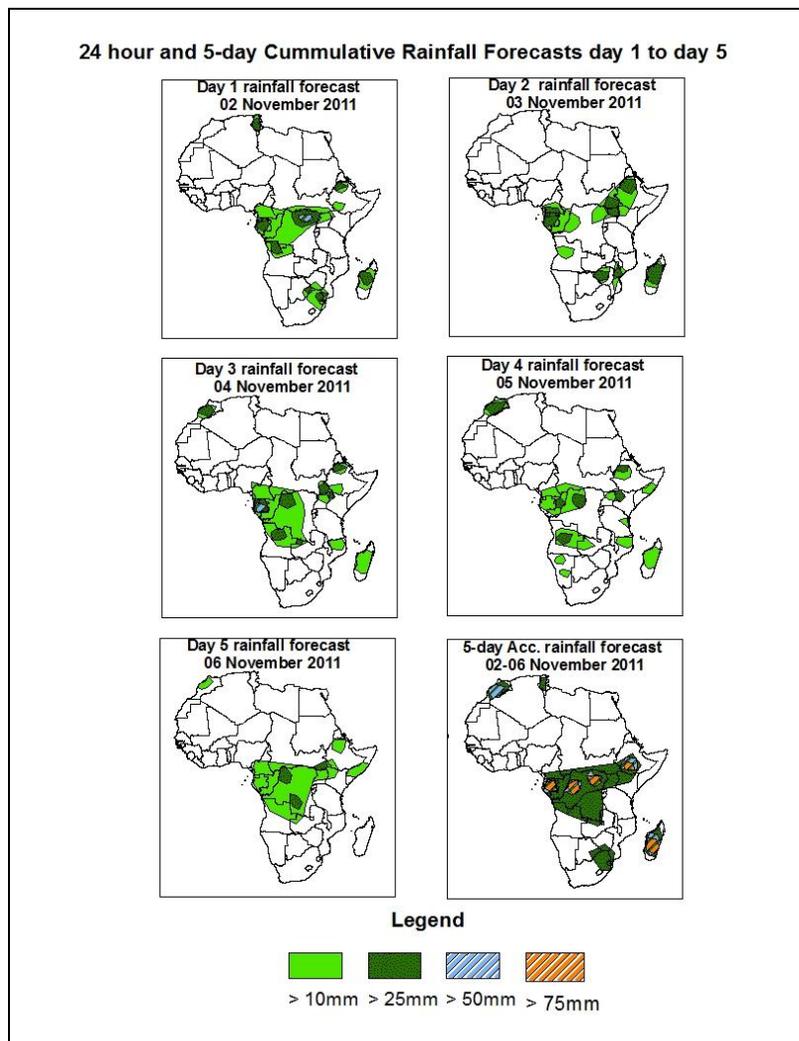


NCEP Contributions to the WMO Severe Weather Forecasting Demonstration Project (SWFDP) and to the African Monsoon Multidisciplinary Analysis (AMMA) Initiative

1.0. Rainfall Forecast: Valid 06Z of 02 November – 06Z of 06 November 2011, (Issued at 15:30Z of 01 November 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, southern Ethiopia, Northern Zambia, Northern Angola, Gabon, Congo Brazzaville DRC, parts of Kenya, Madagascar, Tunisia, Uganda and portions of eastern South Africa and portions of Morocco.

1.2. Models Comparison and Discussion-Valid from 00Z of 02 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 1009mb during the forecast period, according to the GFS model. This same low tends to fill up, with its central pressure value increasing from 1010mb to 1012mb through 72 to 120hours according to ECMWF model. A low over Tanzania is expected to deepen from MSLP value of 1009mb to 1007mb during the forecast period according to the GFS model. Another low is expected to form extending across Zambia, Namibia and Botswana and tends to fill up, with its MSLP value increasing from 1005mb to 1008mb through 24 to 72hours and then tends to deepen to MSLP value of 1006mb by 96hours according to the GFS model. According to UKMET model, this low tends to fill up, with its MSLP value increasing from 1004mb to 1008mb through 24 to 72hours. According to ECMWF this low is expected to fill up, with its MSLP value increasing from 1006mb to 1009mb through 24 to 48hours. A low is expected to form in the vicinity of Madagascar through 24 to 48hours with a central pressure value of 1010mb 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 1028mb to 1020mb towards the end of forecast period. While tends to weaken to MSLP value of 1021 towards the end of forecast period 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 and ECMWF model through 48 to 120hours. According to UKMET model, the same high pressure system tends to weaken, with its MSLP value decreasing from 1020mb to 1016mb through 48 to 120hours. According to the GFS model this same high pressure tends to weaken, with its MSLP value decreasing from 1020mb to 1016mb through 48 to 120 hours.

At the 850hpa level, a lower tropospheric wind convergence is expected to dominate the flow over 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, Algeria, Congo, Gabon, Cameroon, Uganda, Nigeria, 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 through 27 to 120hours. Another trough is expected to propagate over Algeria, Morocco, Libya 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.

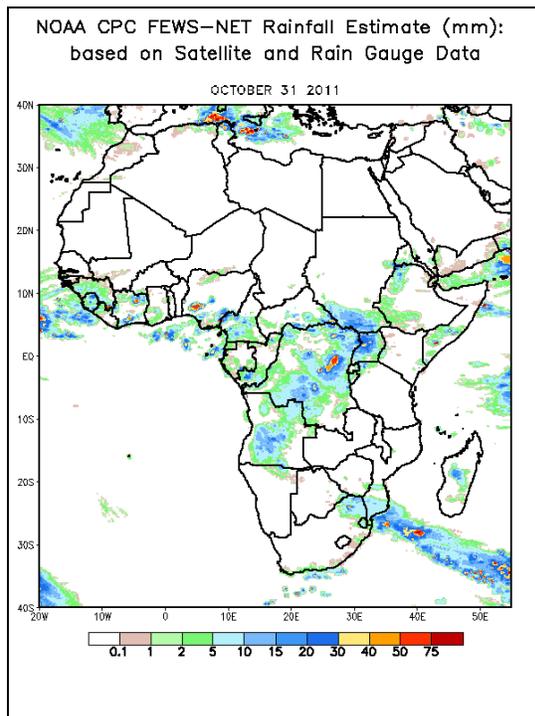
At 200mb, strong winds associated with Sub-Tropical Westerly Jet are expected to dominate the flow over northern Africa, during the forecast period. The intensity of the jet is expected to exceed 90kts near Egypt, Libya, Tunisia and Algeria by 24 hours and tends to intensify over Egypt and Libya by 48hours to wind speed value of 110kts; then tends to weaken to 90kts during the forecast period. Another zone of maximum wind speed is expected to prevail over Morocco by 72 hours with maximum wind speed exceeding 110kts. Wind speed values associated with the southern Hemisphere subtropical westerly jet are expected to exceed 110kts and tends to weaken by 48hours to 70kts 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, southern Ethiopia, Northern Zambia, Northern Angola, Gabon, Congo Brazzaville DRC, parts of Kenya, Madagascar, Tunisia, Uganda and portions of eastern South Africa and portions of Morocco.

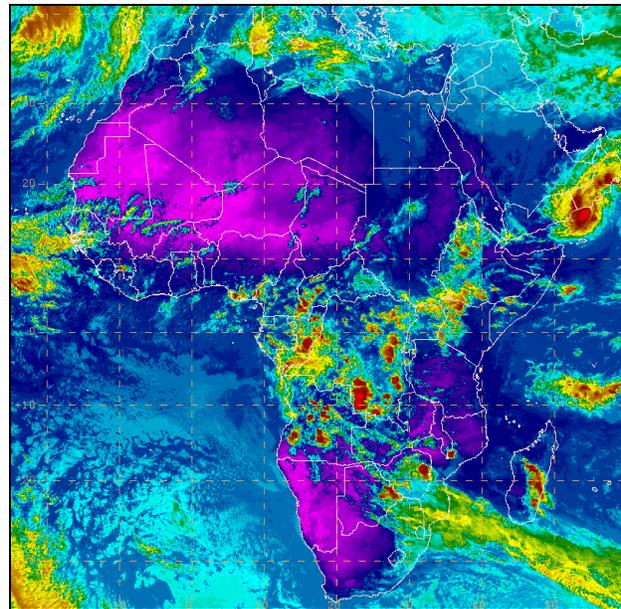
2.0. Previous and Current Day Weather Discussion over Africa (31 October - 01 November 2011)

2.1. Weather assessment for the previous day (31 October 2011): During the previous day, moderate to locally heavy rainfall was observed over DRC, western Uganda, Southern Sudan, parts of Angola, parts of Madagascar, parts of Congo coastal Gulf of Guinea and northeastern South Africa.

2.2. Weather assessment for the current day (01 November 2011): Intense clouds are observed over much of central African region, parts of the GHA countries, southern Nigeria, portions of southeastern Africa countries and Madagascar.



IR Satellite Image (valid 1500Z of 01 November 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

Author(s): Amira Ibrahim (Egyptian Meteorological Authority) / CPC-African Desk),
Amira.ibrahim@noaa.gov,
Sadibou Ba (Agence Nationale de la Meteorologie du Senegal) / CPC-African Desk),
sadibou.ba@noaa.gov and
Aminata Makalou (Direction Nationale de la Meteorologie du Mali-ASECNA) / CPC-African
Desk), aminata.makalou@noaa.gov