

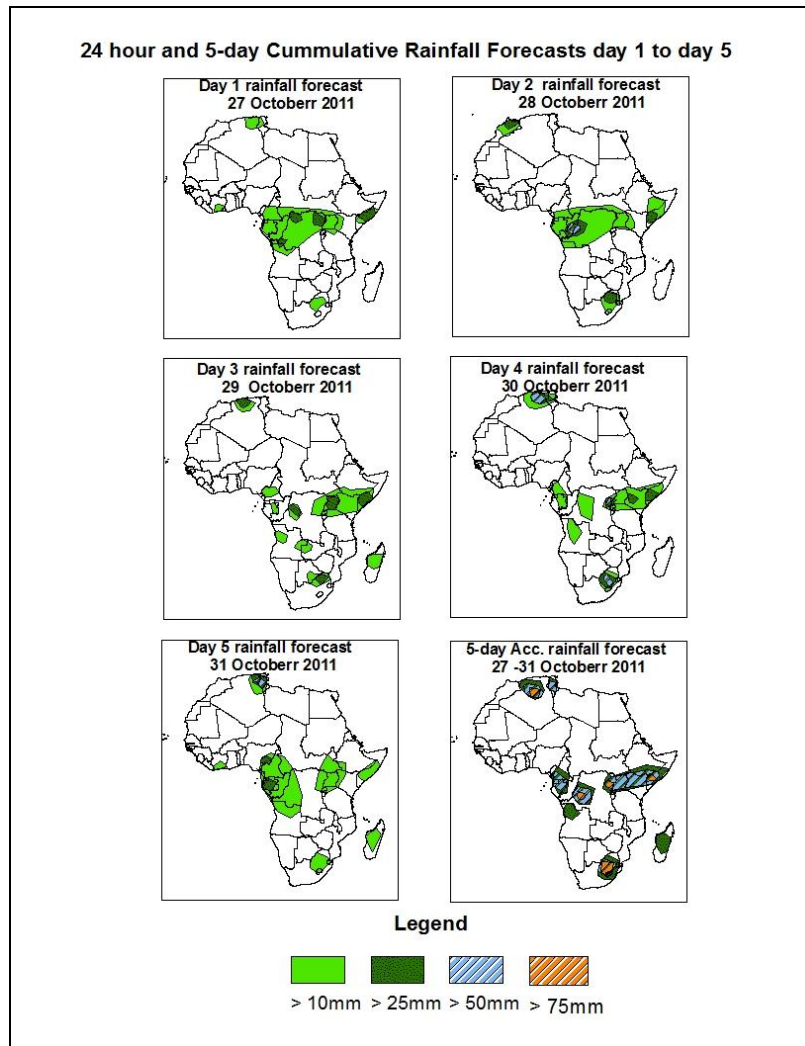


NCEP Contributions to the WMO Severe Weather Forecasting Demonstration Project (SWFDP) and to the African Monsoon Multidisciplinary Analysis (AMMA) Initiative

1.0. Rainfall Forecast: Valid 06Z of 27 October – 06Z of 31 October 2011, (Issued at 15:30Z of 26 October 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, the seasonal wind convergences over central African region, the Horn of Africa and Southeast Africa are expected to enhance rainfall in their respective areas. Hence, there is an increased chance for heavy rainfall over Cameroon, Northern Angola, Gabon, parts of Congo Brazzaville, parts of DRC, Southern Somalia, parts of Kenya, parts of Madagascar Uganda and portions of eastern South Africa. Parts of Algeria and Tunisia are also expected to have enhanced rainfall due to mid-latitude frontal system.

1.2. Models Comparison and Discussion-Valid from 00Z of 27 October 2011

According to the GFS, ECMWF and UKMET models, the monsoon trough with its associated heat lows across the Sahel region is expected to maintain its east-west orientation during the forecast period. The models also indicate series of heat lows and their associated trough across central African countries, extending partly to the South African countries. The heat low near Senegal is expected to deepen, with its mean sea level pressure value decreasing from 1011mb to 1008mb through 24 to 96 hours, according to the GFS model and tends to fill up to MSLP value of 1009mb towards end of the forecast period. This same heat low tends to dominate the flow over Senegal and Mali with central value pressure changing from 1010mb to 1008mb through 24 to 72hours according to UKMET model and then tends to fill up, to MSLP value of 1009mb by 120hours. The heat low over central Africa region is expected to fill up, with its central value pressure increasing from 1007mb to 1008mb, according to the GFS model through 24 to 72hours and tends to deepen, to MSLP value of 1005mb towards end of forecast period. In contrast this same low tends to fill up from 1008mb to 1009mb, according to the ECMWF model through 24 to 48hours and then tends to maintain its central to MSLP value of 1008mb towards end of the forecast period. According to the UKMET model, this low tends to maintain its central value of 1006mb during the forecast period. The heat low over Botswana is expected to extend towards Zambia and Zimbabwe while filling up with its central value pressure increasing from 1003mb to 1004mb through 24 to 96hours and tends to deepen to MSLP value of 1002mb towards the end of the forecast period, according to GFS model. This same low is expected to fill up with its central value pressure increasing from 1004mb to 1007mb according to ECMWF model through 24 to 72hours and tends to deepen, to MSLP value of 1004mb towards end of the forecast period. According to UKMET model this low is expected to fill up, from 1001mb to 1004mb through 24 to 96hours and tends to deepen to 1002mb by 120hours. A localized high pressure over Ethiopia tends to weaken from MSLP value of 1016mb to 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 1031mb to 1028mb through 24 to 48 hours and tends to intensify to MSLP value of 1032mb during the forecast period according to the GFS model. While according to ECMWF model, this same high pressure is expected to weaken to MSLP value changing from 1032mb to 1028mb and

maintains its central pressure value of 1032mb during the forecast period. This same high pressure is expected to intensify according to the UKMET model, to MSLP value of 1028 by 48 hours and maintains its central pressure value of 1032mb during the forecast period. The Mascarene high pressure system over southwest Indian Ocean is expected to intensify, with its MSLP value increasing from 1012mb to 1016mb according to the GFS through 48 to 72hours and then weaken to 1012mb by 120 hours. According to ECMWF model, the same high pressure system tends to intensify to MSLP value of 1017mb by 72 hours and weaken to 1012mb towards end of forecast period. This same high pressure tends to weaken from MSLP value of 1016mb to MSLP of 1012mb through 72 to 120hours according to UKMET model.

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, CAR and Cameroun. Localized wind convergences are also expected to dominate the flow over portions of Ethiopia, Tanzania, Somalia, Botswana, Kenya, Zambia, Uganda, Mauritania, Namibia, Mali, Algeria, Nigeria, Congo, Gabon, Togo, Libya, Morocco, Zimbabwe 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 by 24hours. This trough tends to shift towards Libya through 48 hours and back to Egypt during the rest of the forecast period. Another trough prevails over Morocco and Algeria through 48 to 72hours, this trough tends to extend towards Tunisia between 96 hours and end of the forecast period. A mid latitude frontal system is 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 70kts near Egypt and Libya through 24 to 72hours and then intensify to exceed 90kts towards end of the forecast period. Another trough is expected to prevail over Morocco by 48hours with maximum wind speed exceeding 90kts, and

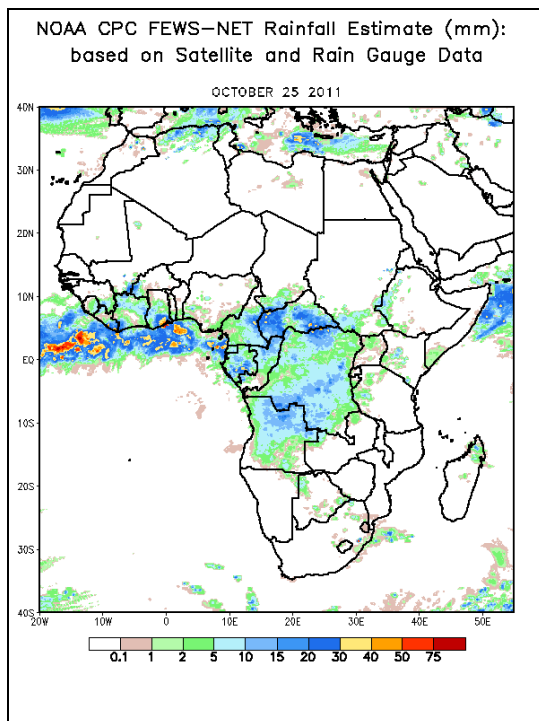
extends to Algeria and Tunisia towards the end of forecast period. The southern Hemisphere sub-tropical westerly jet is expected to intensify gradually to wind speed values of over 150kts by 48hours and then weaken to exceed 130kts towards end of forecast period across South Africa.

In the next five days, the seasonal wind convergences over central African region, the Horn of Africa and Southeast Africa are expected to enhance rainfall in their respective areas. Hence, there is an increased chance for heavy rainfall over Cameroon, Northern Angola, Gabon, parts of Congo Brazzaville, parts of DRC, Southern Somalia, parts of Kenya, parts of Madagascar Uganda and portions of eastern South Africa. Parts of Algeria and Tunisia are also expected to have enhanced rainfall due to mid-latitude frontal system.

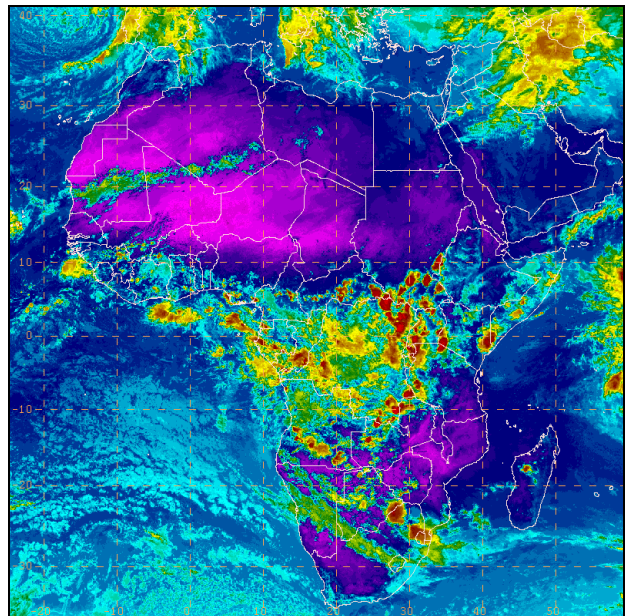
2.0. Previous and Current Day Weather Discussion over Africa (25 October - 26 October 2011)

2.1. Weather assessment for the previous day (25 October 2011): During the previous day, moderate to locally heavy rainfall was observed over parts of DRC, portions of Angola, parts of Cameroon, Gabon, northern Congo, South Somalia, coastal Gulf of Guinea and parts of Algeria.

2.2. Weather assessment for the current day (26 October 2011): Intense clouds are observed over much of central Africa, coastal Gulf of Guinea, parts of GHA countries, parts Madagascar and parts of south east Africa.



IR Satellite Image (valid 1500Z of 26 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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