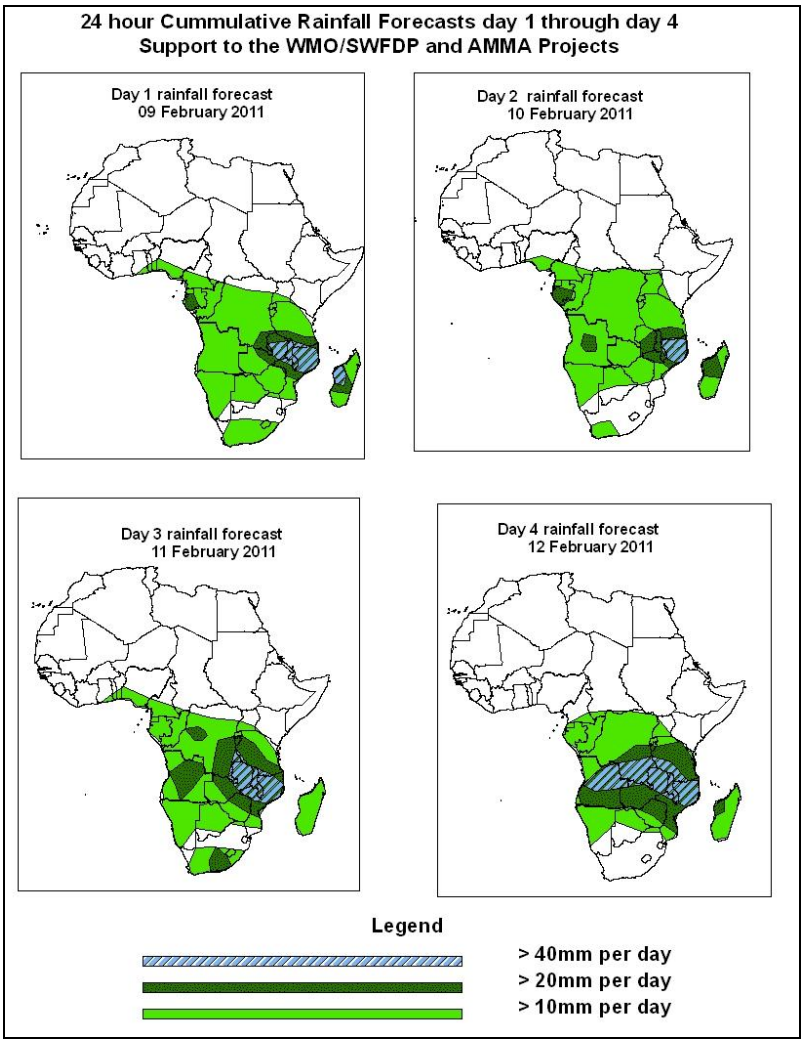
NCEP Contributions to the WMO Severe Weather Forecasting Demonstration Project (SWFDP) and to the African Monsoon Multidisciplinary Analysis (AMMA) Initiative

1.0. Rainfall Forecast: Valid, 06Z of 09 February – 06Z of 12 February 2011, (Issued at 10:30Z of 08 February 2011)

1.1. Twenty Four Hour Cumulative Rainfall Forecasts

The forecasts are expressed in terms of 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 coming four days, moderate to heavy rainfall is expected to continue over Tanzania, Eastern Zambia, southern DRC, Malawi and Mozambique due to the persistent lower level convergence in the region and cyclonic circulation in the vicinity of Mozambique Channel. Hence, there is an increased chance for rainfall to exceed 20mm per day over Madagascar, Zambia, Angola, Malawi, southeastern DRC, Western and southern Tanzania.

1.2. Models Comparison and Discussion-Valid from 00Z of 09 February 2011

From the GFS, ECMWF and UKMET models, a series of cut off lows over the southern parts of the Gulf of Guinea, parts of central African region and southern Sudan should form an east-west oriented trough. In the coming four days, this trough is expected to persist, maintaining a central value of between 1001hpa and 1002hpa in its eastern end (mainly over Central African Republic / Sudan region) and a central value of between 1007 and 1008hpa along its western end. The lows associated with the meridional arm of the ITCZ appear over Uganda and western Tanzania region by 24hours maintaining same position by 72 hour period but appearing as a closed low over Lake Victoria vicinity by 72 through 96 hour period. A low pressure system in the vicinity of Mozambique Channel and Madagascar is expected to maintain its position and persist throughout the period in consideration. In general, there appears to be some level of similarity in pressure patterns as depicted by the GFS, ECMWF and UKMO models.

According to the GFS, ECMWF and UKMET models, St. Helena High pressure system is expected to remain quasi stationary within 24 to 48 hours with a central value of about 1020hpa. It weakens to 1018hpa by 72 hours and intensifies to 1020hpa by 96 hour period. The Mascarene high pressure system over southwest Indian Ocean appears very weak. Its central value is not visible in the vicinity of its climatological position from 24 to 72 hour period, but appears as 1020hpa by 96 hour period.

At 850hPa level, the GFS model indicates east-west oriented convergence line in the region between the coastal areas of the Gulf of Guinea and northeast DRC. The convergence line is expected to be more pronounced over the eastern parts of the Gulf of Guinea within 24 hours, it deepens and extends westward by 48 hours, it persist and covers the entire stretch of the Gulf of Guinea by 72, but more to the East of the Gulf by 96 hour period. The north-south oriented convergence line is over the border of Uganda and Western Tanzania by 24 and 48 hour period. Thereafter, it is replaced by a cyclonic circulation which persists throughout the 72 to 96 hour period. Another convergence line is expected in the region extending from western Angola to western Namibia, while localized cyclonic is expected to extend into South Africa. The cyclonic circulation near Madagascar is also expected to persist throughout the period in consideration.

At 700hPa level, mostly northeasterly to easterly winds dominate across western and central African countries. A strong lower tropospheric convergence is expected to

dominate the flow over Angola, DRC, Malawi, Tanzania, Mozambique and Zambia, through 24 to 96 hours. The cyclonic circulation in the Mozambique Channel is expected to persist through 24 to 96 hour period.

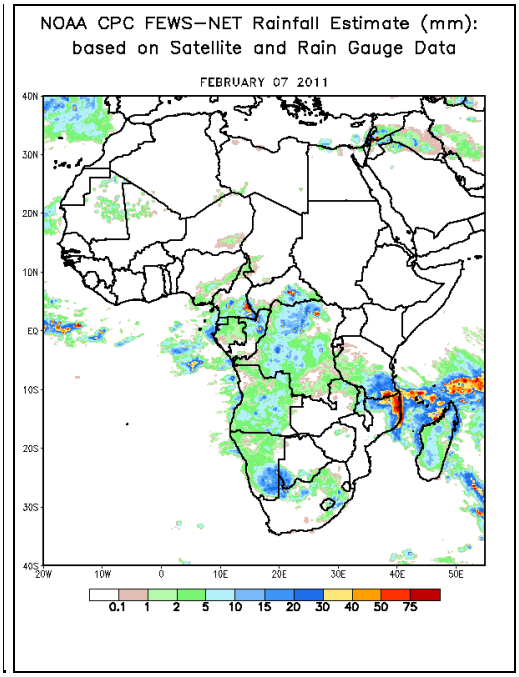
At 200hPa, a zone of strong wind (>150Kts) associated with the Sub Tropical westerly Jet in the sub-tropical region of northern Africa is expected to attain a slightly wavy pattern through 24 to 96 hours. Similarly, strong winds (>90Kts) associated with the Sub-Tropical Westerly Jet in the Sub Tropical region of southern Africa is expected to be wavy through the 24 to 72 hour period.

In the coming four days, moderate to heavy rainfall is expected to continue over Tanzania, Eastern Zambia, southern DRC, Malawi and Mozambique due to the persistent lower level convergence in the region and cyclonic circulation in the vicinity of Mozambique Channel. Hence, there is an increased chance for rainfall to exceed 20mm per day over Madagascar, Zambia, Angola, Malawi, southeastern DRC, Western and southern Tanzania.

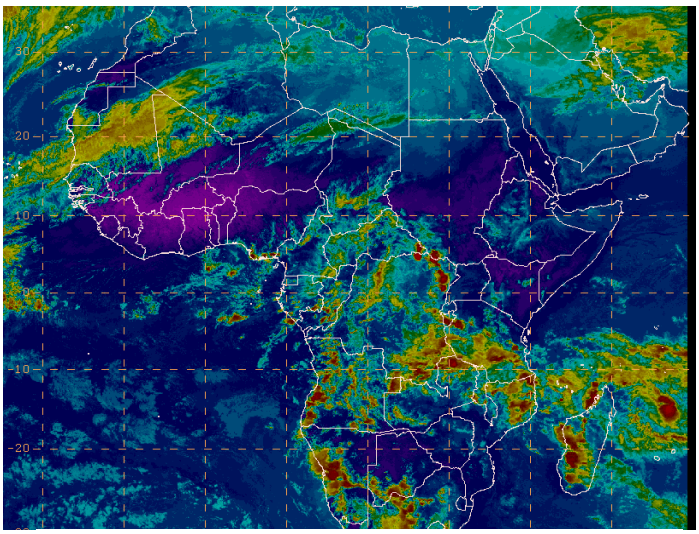
2.0. Previous and Current Day Weather Discussion over Africa (07 – 08 February 2011)

2.1. Weather assessment for the previous day (07 February 2011):
During the previous day, a combination of light, moderate and heavy rainfall was observed over Cameroun, CAR, Eq. Guinea, Congo, DRC, Gabon, Angola, Namibia, Tanzania, Mozambique, Madagascar and parts of South Africa.

2.2. Weather assessment for the current day (08 February 2011): Intense clouds are observed over Madagascar, Tanzania, Namibia, Angola, DRC, northern Mozambique, southern Sudan, eastern CAR, southern Gabon, Botswana, Congo, southeastern Nigeria and South Africa.



IR Satellite Image, Valid 1630Z, February 8, 2011



Previous day rainfall condition over Africa (Left) based on the NCEP CPCE/RFE and current day cloud cover (top) based on IR Satellite image

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