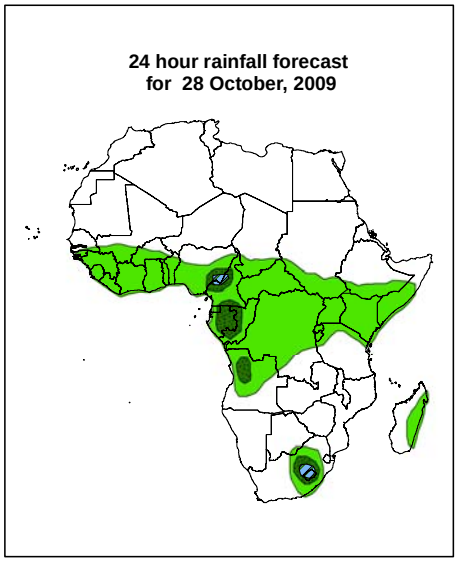
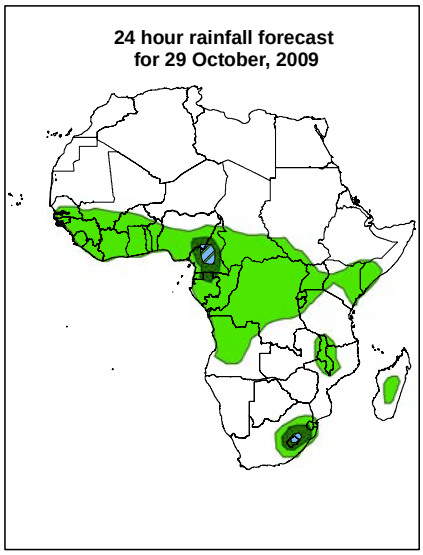
NCEP Contributions to the WMO Severe Weather Forecasting Demonstration Project (SWFDP) and to the African Monsoon Multidisciplinary Analysis (AMMA) Initiative

1. Forecast Discussion: Valid, 06Z of 28 October – 06Z of 30 October 2009, (Issued at 14:00EST 0f 27 October 2009)

1.1. Twenty Four Hour Cumulative Rainfall Forecasts

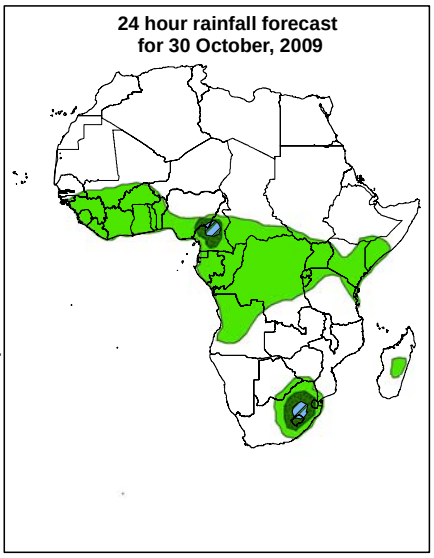
The forecasts are expressed in terms of probability of precipitation (POP) exceedence based on the NCEP, UK Met Office and the ECMWF NWP outputs, the NCEP global ensemble forecasts system (GEFS), and expert assessment.





Legend

- >40mm, with probability 70%
- > 20mm, with probability 70%
- > 10mm, with probability 70%



Summary

The localized convergence lines over central and western parts of Tropical Africa, the southeasterly flow from western Indian Ocean converging over the coastal areas of East Africa and the passage frontal system across South Africa are expected to enhance precipitation in the coming three days.

1.2. Model discussion

Model comparison (Valid from 00Z; 27, OCTOBER, 2009): all the three models are in general agreement especially with respect to the positioning of large scale features, however, the UK model tends to give lower values than both the GFS and ECMWF models especially in the Equatorial region (10^oS and 10^oN).

1.3. Flow at 850hPa

T+24h: The localized wind convergence and confluence lines are expected to continue influencing the rainfall activity over Gabon and Congo. Moreover, the convergence associated with the CAB is expected to get enhanced in the area extending between Uganda and northeastern Angola. On the other hand, the southeasterly winds from western Indian Ocean are expected to converge over the coastal areas of East African countries.

T+48h: The localized wind convergence and confluence lines are expected to expand towards DRC, while, the convergence associated with the CAB is expected to persist in the area extending between Uganda and northeastern Angola. On the other hand, the convergence associated with the southeasterly winds from western Indian Ocean is expected to shift towards southern parts of Ethiopia.

T+72h: The localized convergence and confluence lines over Gabon and Congo are expected to weaken slightly while the convergence associated with the CAB is expected to get enhanced over DRC and adjacent areas. The easterly winds from western Indian Ocean are expected to continue converging into the eastern portions of the Horn of Africa.

1.4. Flow at 500hPa

T+24h: Zonal easterlies are expected to dominate the flow over much of tropical Africa, while a weak mid-tropospheric perturbation in the easterlies is expected to prevail over Nigeria and the adjacent areas. On the other hand, a trough associated with mid-latitude frontal system is expected to extend towards Madagascar.

T+48h: The easterly perturbation over Nigeria is expected to move slightly to the west. On the other hand, a trough associated with mid-latitude frontal system is expected to expand towards Mozambique.

T+72h: The trough associated with mid-latitude frontal system is expected to expand over southern Africa countries dominating the flow in the region.

1.5. Flow at 200hPa

T+24h: A feeble trough associated with upper tropospheric westerlies is expected to dominate the flow over the coastal areas of East Africa, while upper tropospheric ridge dominates the flow over much the tropical African region .

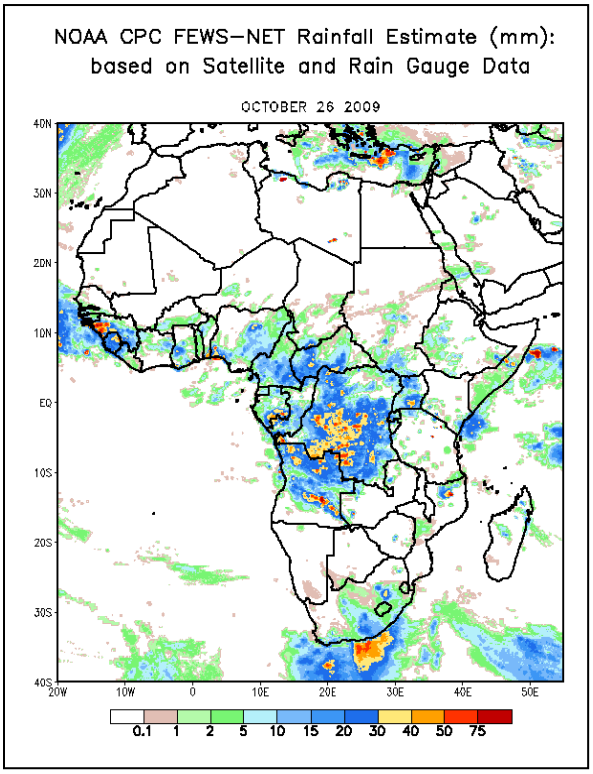
T+48h: The upper trpospheric trough over east Africa is expected to fill up while the upper tropospheric ridge intensifies over the adjacent areas.

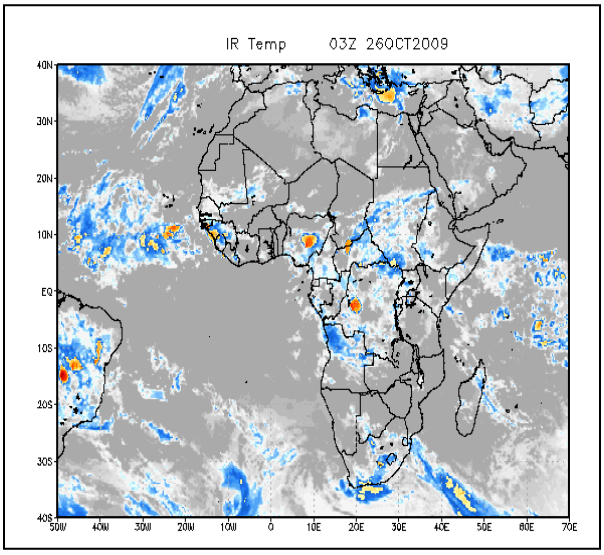
T+72h: No significant change is expected.

2. Previous and Current Day Weather Discussion over Africa (26-27 October 2009)

2.1. Weather assessment for the previous day (26 October 2009): During the previous day, moderate to heavy rainfall events were observed over parts of Guinea, Cameroon, Central Africa Rep., DR Congo, northern Angola, Lake Victoria region, eastern Kenya, South Africa and eastern Mozambique.

2.2. Weather assessment for the current day (27 October 2009): Intense clouds are observed over parts of Sierra Leone, eastern Nigeria, southwestern DR Congo, northern Angola and South Africa.





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

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