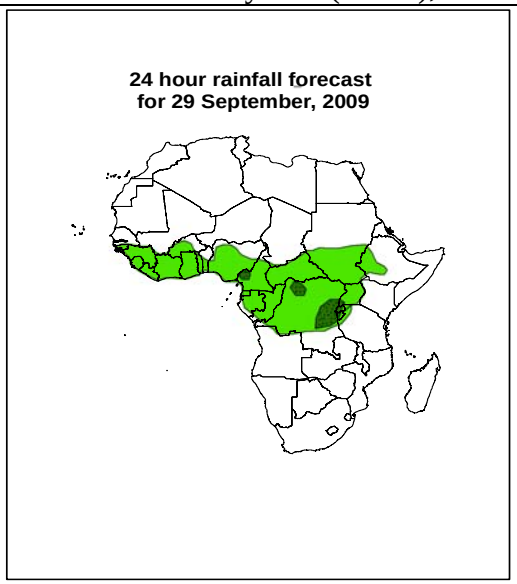
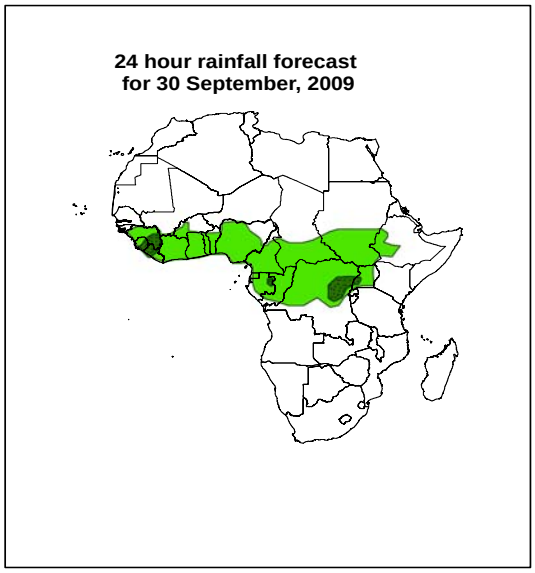
NCEP Contributions to the WMO Severe Weather Forecasting Demonstration Project (SWFDP) and to the African Monsoon Multidisciplinary Analysis (AMMA) Initiative.

FORECAST DISCUSSION 14H00 EST, 28 SEPTEMBER, 2009
Valid: 00Z 29 SEPTEMBER – 01 Oct, 2009

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

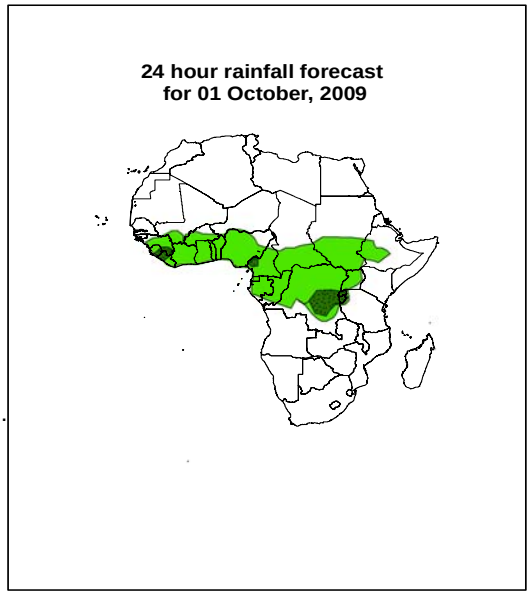
> 40mm, with probability 70%

> 20mm, with probability 70%

> 10mm, with probability 70%

Summary

In the northern hemisphere, the flow associated with the equatorial trough is expected to persist across Senegal, central portions of Mali, Chad and Sudan as well as Eritrea. On the other hand, the convergence and confluence lines are expected to continue dominating the flow over Tanzania, DR Congo, Ethiopia, Eritrea and Sudan. In the southern hemisphere, the subtropical anticyclonic systems are expected to dominate the flow over southeast Atlantic and southwest Indian Oceans, while the peripheral winds of the anticyclones are expected to converge into southern and eastern African countries.



2. Model discussion

Model comparison (Valid from 00Z; 28 SEPTEMBER, 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).

2.1. Weather assessment for the previous day (27 September 2009):

During the previous day, moderate to heavy rainfall events were observed over Sudan, Niger, Ghana, Benin, Nigeria, Cameroon, Congo and Central Africa Rep.

2.1.1. Current day condition (28 September 2009):

Deep clouds are observed over Uganda, Tanzania, Central Africa Rep. and DR Congo.

2.2.2. Flow at 850hPa

T+24h: In the northern hemisphere, the flow associated with the equatorial trough is expected to persist across Senegal, central portions of Mali, Chad and Sudan as well as Eritrea. On the other hand, the convergence and confluence lines are expected to continue dominating the flow over Tanzania, DR Congo, Ethiopia, Eritrea and Sudan. In the southern hemisphere, the subtropical anticyclonic systems are expected to dominate the flow over southeast Atlantic and southwest Indian Oceans, while the peripheral winds of the anticyclones are expected to converge into southern and eastern African countries.

T+48h: The localized convergence and confluence lines are expected to persist over Tanzania, Uganda and DR Congo, Sudan, Ethiopia and Eritrea. In the southern hemisphere, the peripheral winds of the Mascarene anticyclone is expected to converge across southern and eastern African countries.

T+72h: The localized convergence and confluence lines are expected to persist over DRC, Tanzania, Sudan, Ethiopia and Uganda while extending to Chad and Congo. On the other hand, the southern hemisphere subtropical anticyclonic systems are expected to weaken, while the peripheral winds are expected to continue converging into southern African countries.

2.2.2 Flow at 700hPa

T+24h: Zonal easterly flow is expected to dominate the flow over the tropical African region with a weak trough over the Gulf of Guinea countries.

T+48h: The easterly trough expected to move towards the west, while further weakening.

T+72h: The trough is expected to weaken further leading to a zonal flow over much of the tropical African countries.

2.2.3 Flow at 500hPa

T+24h: Mid tropospheric easterlies are expected to persist dominating the flow over tropical African countries, with an axis of weak easterly trough extending between the Gulf of Guinea and Nigeria.

T+48h: The axis of the trough is expected to move towards Ghana and Burkina Faso.

T+72h: The easterly trough is expected to move further westward crossing the coast of West Africa.

2.2.4 Flow at 200hPa

T+24h: A ridge associated with upper tropospheric anticyclone is expected to dominate the flow between 10^{o} and 20^{o} N latitudes, while the upper level easterly flow is expected to be dominant south of the ridge.

T+48h: No significant change in the main flow pattern

T+72h: No significant change in the main flow pattern.

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