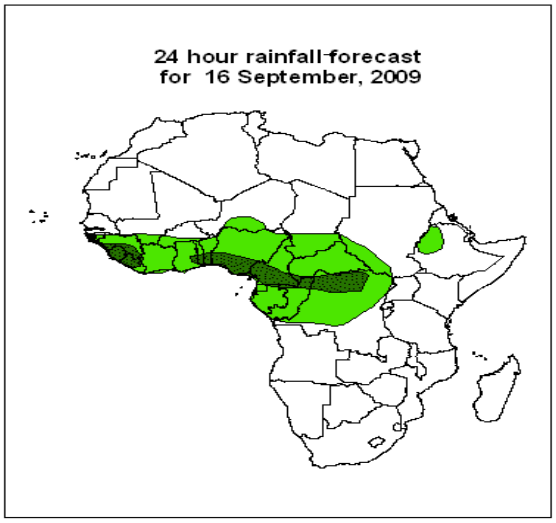
Forecast Guidance for Africa

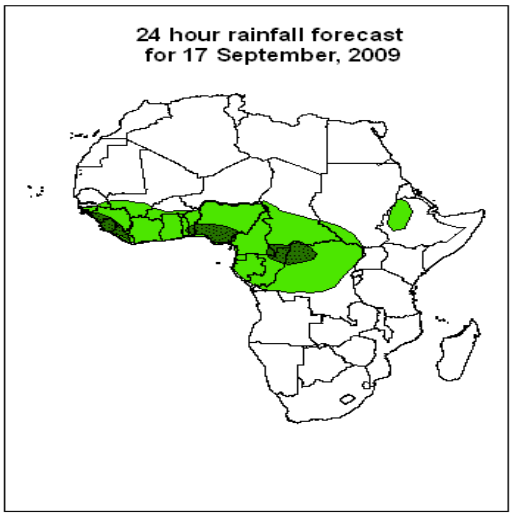
NCEP Contributions to the WMO Severe Weather Forecasting Demonstration Project (SWFDP) and to the African Monsoon Multidisciplinary Analysis (AMMA) Initiative.

FORECAST DISCUSSION 14H00 EST, 15 SEPTEMBER, 2009
Valid: 00Z 16 SEPTEMBER – 18 SEPTEMBER, 2009

1. Twenty Four Hour Cumulative Rainfall Forecasts

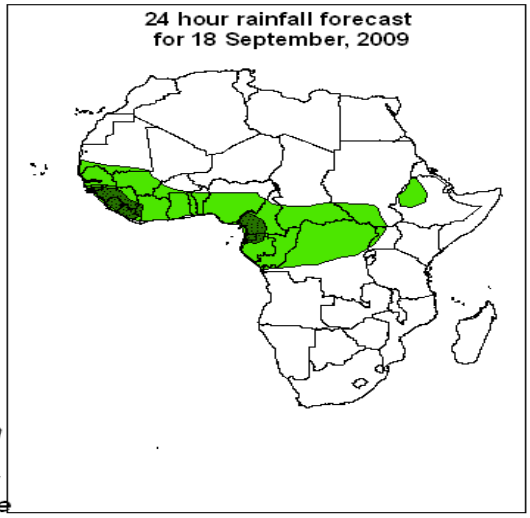
The forecasts are expressed in terms of probability of precipitation (POP) on the NCEP, UK Met Office and the ECMWF NWP outputs, the NCEP global ensemble forecasts system (GEFS), and expert assessment.





Legend

africa_countries_new
> 20mm, with probability 70%
> 10mm, with probability 70%



Summary

In the southern hemisphere, the St. Helena anticyclone is expected to dominate the flow over much of southeastern Atlantic Ocean, with peripheral winds carrying moisture towards the Gulf of Guinea and portions of central African countries. On the other hand theMascarene anticyclone and its associated ridge is expected to have a zonal orientation oversouthwest Indian Ocean and the adjoining areasof southeastern Africa. In the northern hemisphere, localized convergence and conflu ence lines are expected to persist over southern Mali, Niger, Nigeria, Chad, Sudan and DR Congo.In green the area with 5-30% probability of 24 hr precipitation exceeding 5mm .In blue the area with probabilitymore than 30%.

2. Model discussion

Model comparison (Valid from 00Z; 15 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 (14 September 2009): During the previous day, enhanced rainfall activity was observed over southern Mauritania, Senegal, western Nigeria, Benin and Togo.

2.1.1. Conditions of the current cay (15 September 2009): Intense Clouds are observed over western Ethiopia, Southern Sudan, Mali, Niger, DR Congo and Central African Republic.

2.2.1 Flow at 850hPa

T+24h: In the southern hemisphere, the St. Helena anticyclone is expected to dominate the flow over much of southeastern Atlantic Ocean, with peripheral winds carrying moisture towards the Gulf of Guinea and portions of central African countries. On the other hand the Mascarene anticyclone and its associated ridge is expected to have a zonal orientation over southwest Indian Ocean and the adjoining areas of southeastern Africa. In the northern hemisphere, localized convergence and confluence lines are expected to persist over southern Mali, Niger, Nigeria, Chad, Sudan and DR Congo.

T+48h: In the southern hemisphere, a feeble trough is expected over the western portions of southern African countries between the St Helena Anticyclone and the Mascarene Anticyclone. In the northern hemisphere, the localized confluence and convergent lines are expected to keep their previous day position.

T+72h: In the southern hemisphere, the two subtropical anticyclones are expected to expand over southeastern Atlantic and southwestern Indian Oceans, with their peripheral winds enhancing the cross equatorial flow towards western and eastern African countries. As a result, the equatorial trough in the northern hemisphere is expected to maintain its northern position.

2.2.2 Flow at 700hPa

T+24h: Two axes of troughs in easterly are expected over southern Nigeria and northern Sudan.

T+48h: The easterly troughs and the associated waves are expected to move slightly to the west, while weakening.

T+72h: The easterly wave over southern Sudan is expected to move towards southern Chad..

2.2.3 Flow at 500hPa

T+24h: A mid-tropospheric easterly flow is expected to dominate the flow over tropical Africa with a feeble trough over western portions of Cameroon.

T+48h: The mid-tropospheric easterly trough is expected to move towards Ghana.

T+72h: The trough is expected to be more or less stationary over its previous day position.

2.2.4 Flow at 200hPa

T+24h: The flow associated with the upper level subtropical anticyclonic system is expected to be dominant over much of the tropical Africa, with the upper level easterly flow expected to persist over the Horn of Africa.

T+48h: The upper anticyclonic system is expected to weaken slightly, while the easterly flow over the Horn of Africa persists.

T+72h: The upper level anticyclonc system is expected to intensify and dominate the flow over tropical Africa..

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Disclaimer: This bulletin is for training purposes only and should be used as guidance. NOAA does not make forecasts for areas outside of the United States.