



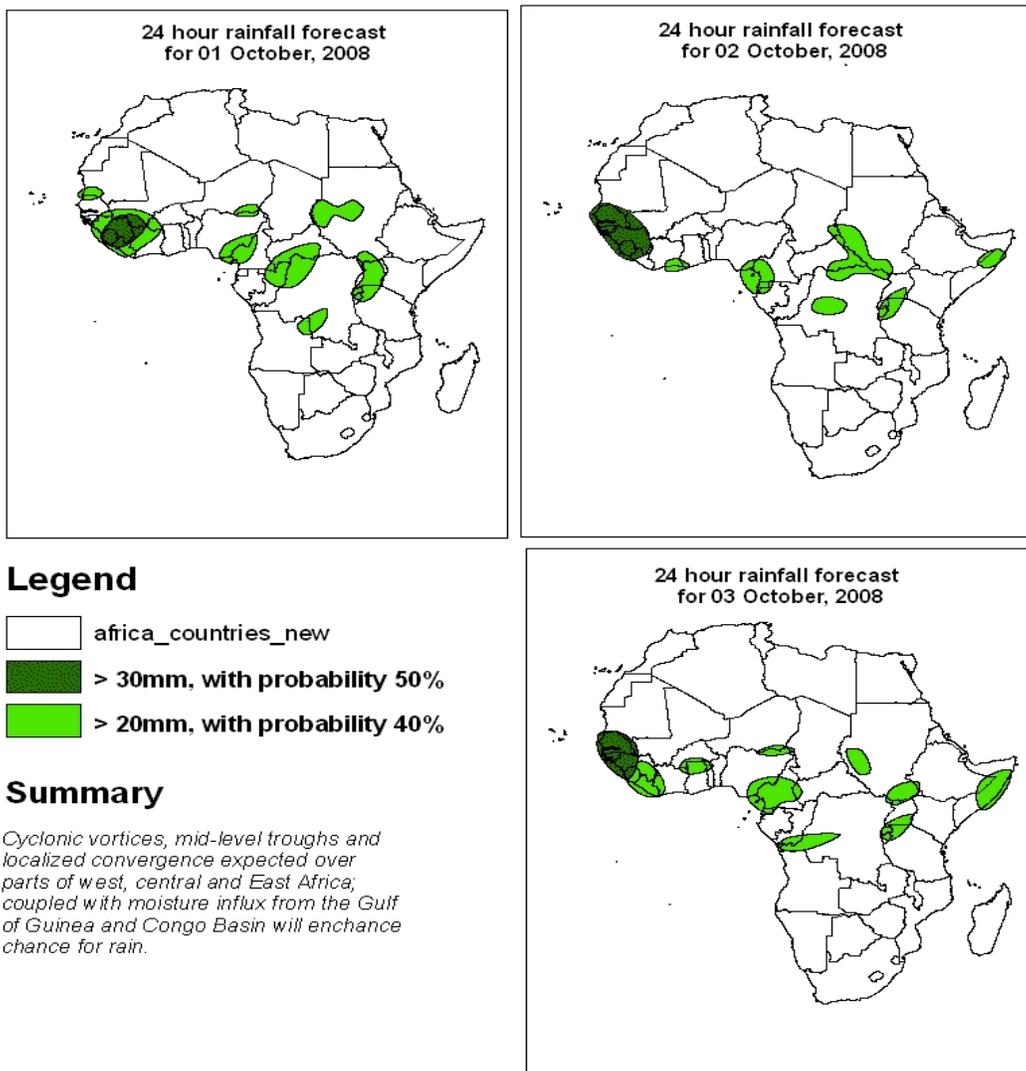
Forecast Guidance for Africa

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

FORECAST DISCUSSION 14H00 EST, 30th SEPTEMBER, 2008
Valid: 00Z 01st September – 03rd SEPTEMBER, 2008

1. Twenty Four Hour Cumulative Rainfall Forecasts

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



2. Model discussion

Model comparison (Valid from 00Z; 01st October, 2008): all the three models are in general agreement especially with respect to the positioning of large scale features, however, the UK model has a tendency to give lower values than the GFS and ECMWF models in the Equatorial (10°S and 10°N) Continental Africa.

2.1. Flow at 850hPa:

T+24h, the Saharan anticyclonic circulation is expected to be confined over Northeastern Africa with an extension to Central Sahel, while the Azores anticyclonic circulation will mainly be over the Northern Atlantic. Cyclonic circulation systems will dominate the flow over northwestern sectors of North Africa and over western Gulf of Guinea states. Cyclonic vortices will be featured over southern Algeria, western Libya, northern Mali, the northern border between Senegal and southwestern Mauritania, and over western and central Sudan. Localized convergence will occur over northeastern Ghana onwards to southern Mali, southeastern Niger, northern Somalia, southern Sudan, eastern Uganda and stretching across Lake Victoria onwards to southern DRC and onto eastern/ southern Angola. Conversely, localized divergence will occur over the eastern Gulf of Guinea states, the Congo Basin and much of East Africa. The Southern African region is expected to be dominated mainly by Mascarene anticyclonic system while a weak trough is likely to affect the southwestern coastline.

T+48, the Saharan anticyclonic system is expected to intensify and extend westwards thus influencing the flow over much of Northern Africa except over the entire western bulge that stretches from Morocco onwards to Liberia which will likely be under the influence of cut-off cyclonic circulations with centers over Morocco, the coastal border between Western Sahara/ Mauritania and over Guinea Conakry/ Sierra Leone. The cyclonic vortex featured over southern Algeria, western Libya and northern Mali will all decay. The one over western Sudan will drift slightly onto southeastern Chad while its counterpart over the central part of the country will remain quasi-stationary. Other cyclonic vortices will develop over eastern and southwestern Sudan respectively. Localized convergence will prevail over Lake Victoria region, DRC and eastern and southern DRC, and over southwestern Botswana. On the other hand, a divergent flow pattern will prevail over the western and northern Congo Basin region, and most parts of East Africa. The Southern African region is expected to be dominated by the merger between the St. Helena and Mascarene Ridges; with a mid-latitude trough likely to affect the South Africa.

T+72, the Azores ridge is expected to retreat further onto the Atlantic Ocean giving way to a strong shortwave trough off the coast of Western Sahara and Mauritania, as a replacement of the cyclonic circulation which was featured over their coast. The cyclonic system over Guinea Conakry/ Sierra Leone is expected to intensify and propagate northwestwards along the coast to Guinea Bissau. The cyclonic vortices featured over central and eastern Sudan are expected to remain quasi-stationary with the latter degenerating. The ones over eastern Chad and southwestern Sudan will decay, while others will develop over western Niger and northern Nigeria. The merger between the St. Helena and Mascarene ridges will continue to persist over much of Southern Africa with the passage of a mid-latitude trough expected over southeastern South Africa.

2.2. Flow at 500hPa:

T+24, an extensive Sub-Tropical anticyclonic circulation system is expected to prevail over much of Northern Africa. However, a westerly wave will dominate the flow pole-wards featuring a deep cut-off cyclonic circulation over northwestern Maghreb. Easterlies will

prevail equator-wards with a shortwave trough expected over the western Gulf of Guinea states. A confluent flow is likely to occur over northern Congo onwards to the coast of Gabon. The flow over much of the northern sectors of Southern Africa will be dominated by a Sub-Tropical anticyclonic system; whereas a westerly wave will prevail over the southern sectors with a mid-level slanting trough likely to affect eastern Madagascar.

T+48, the cut-off cyclonic circulation over Northwestern Maghreb will weaken but it's expected to be replaced by another over the Moroccan coast. A deep cyclonic vortex will evolve over Guinea with its associated shortwave trough extending onto northwestern Senegal, with another one likely over southeastern Ethiopia. Other shortwave troughs are expected to emerge over central Chad and central Sudan. A similar flow to that of the previous day will prevail over Southern Africa although the Sub-Tropical anticyclonic circulation system is expected to intensify and extend further north and southwards, and is expected to be centered over Zimbabwe, Mozambique and South Africa.

T+72, the cut-off cyclonic circulation over the Moroccan coast is expected to weaken while another will develop to the southwest of the Canary Islands. The cyclonic vortex featured over Guinea will persist while drifting slightly onto Senegal and The Gambia. The one over Ethiopia will weaken; but another is likely to form over the tip of Somalia extending a trough southwestward onto northeastern Kenya. The flow over much of Southern Africa will be dominated by a Sub-Tropical anticyclonic system centered over southern Mozambique Channel; whereas, a westerly wave will prevail over the southwestern sectors.

2.3. Flow at 200hPa:

T+24h, an extensive upper-level anticyclonic flow pattern will prevail over the entire Sahel extending from the equatorial Atlantic and spreading right across to Arabia. A Westerly wave will dominate the flow pole-ward of the anticyclonic flow i.e. over much of Northern Africa with a cut-off upper-level cyclonic circulation likely to be featured over northern Algeria. Easterlies will dominate the flow equator-ward, with a confluent flow likely to occur between the border of Chad/ CAR and stretching onto eastern Nigeria. Northern sectors of Southern Africa will be under the influence of an upper-level anticyclonic system while a westerly wave will be dominated to the south with a deep upper-level trough likely to be featured over Madagascar.

T+48h, cut-off upper-level cyclonic circulation featured over northern Algeria will weaken and will be replaced by a trough which is expected to stretch from the Mediterranean onto the Atlantic west of the Moroccan coast. A series of cyclonic cells are likely to develop over southern DRC, northern Zambia and between the borders of southern Tanzania, Malawi and Mozambique. Similar flow patterns to that of the previous day are expected over Southern Africa.

T+72h, the main difference on the general flow on the continent as compared with that of the previous day will be a well pronounced trough likely to be featured over the equatorial West Indian Ocean stretching onto eastern Somalia and further onto northern Ethiopia. The cyclonic circulations over southern Tanzania and northern Zambia will merge and propagate onto northwestern Zambia. The one over DRC will decay.

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