



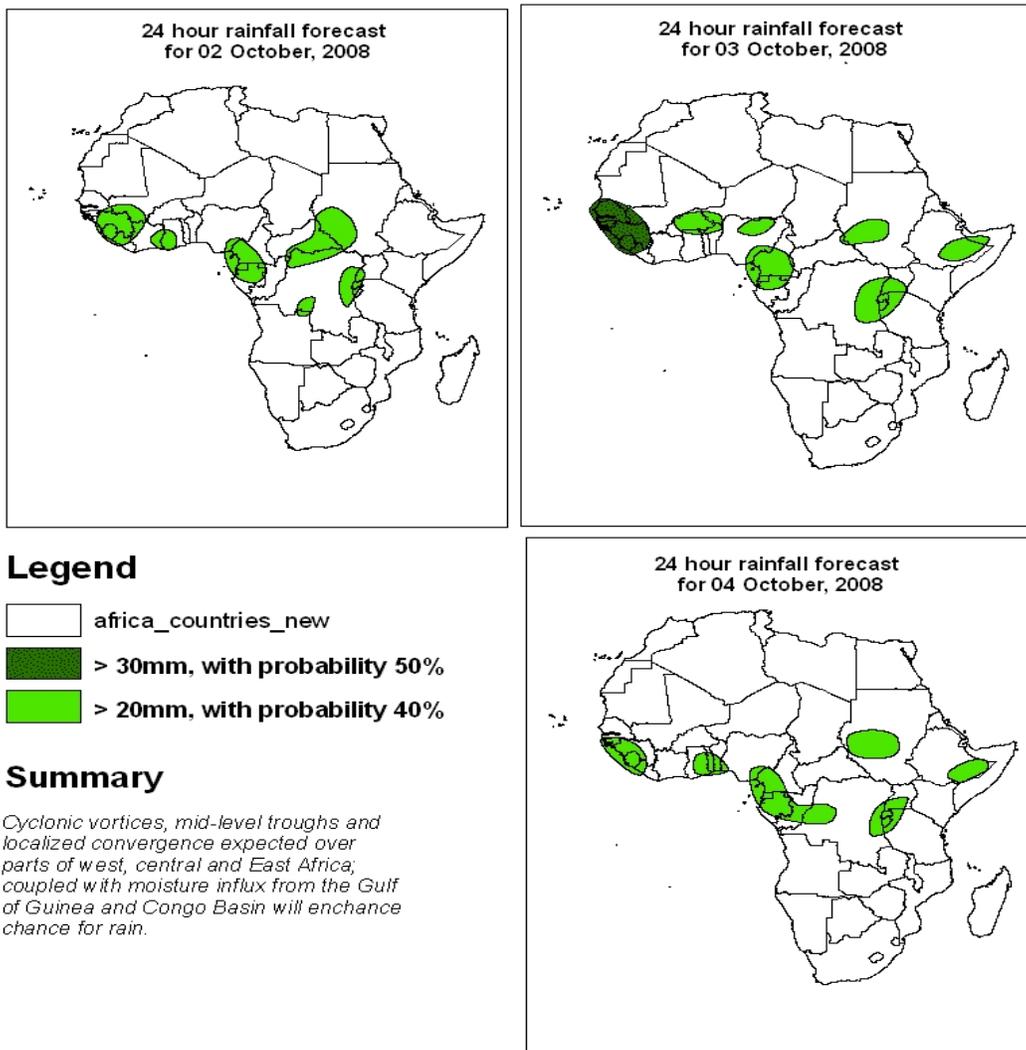
Forecast Guidance for Africa

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

FORECAST DISCUSSION 14H00 EST, 01st OCTOBER, 2008
Valid: 00Z 02nd October – 04th October, 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; 02nd 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 influence the flow over most parts of North Africa except over the western bulge of North/West Africa which will be dominated by a series of cyclonic circulation systems with centers between the border of Morocco and western Sahara, over the coast between Western Sahara and Mauritania, coast of Guinea Conakry including eastern Cote d'Ivoire, southern Cameroon and southern CAR. Cyclonic vortices will likely be featured between the border of southern Niger and northern Niger, and over central Ethiopia. Localized convergence will occur over central Mali, northern Togo/Benin, southeastern Nigeria, western and southern Sudan, the northern border of Cameroon and CAR, northern Gabon, western DRC, and western Lake Victoria stretching onwards to southern DRC and onto Angola. Conversely, localized divergence will occur over western Nigeria, northeastern and central DRC, and much of East Africa. The Southern African region is expected to be dominated by the St. Helena and Mascarene Ridges; with a mid-latitude trough likely to affect South Africa.

T+48, the Saharan anticyclonic system is expected to extend westwards and as a result will weaken the cyclonic systems over the western bulge. However, the cyclonic systems will be replaced by a well pronounced off-shore trough running parallel to the coastline from south of Western Sahara onwards to Guinea. The cyclonic vortices featured over Niger/Nigeria and Ethiopia will remain quasi-stationary while those over Cameroon and Chad will merge between their borders. Other cyclonic vortices will develop between the borders of Mali, Niger and Burkina and over central Sudan respectively. Localized convergence will prevail over Lake Victoria region and stretching southwestwards onwards to southern Angola. On the other hand, a divergent flow pattern will prevail over the western and northern Congo Basin region, eastern Chad, southern Sudan and most parts of East Africa. The Southern African region is expected to be dominated by the St. Helena and Mascarene Ridges; with a mid-latitude trough likely to affect the southeastern coast of South Africa.

T+72, the Saharan anticyclonic system is expected to further extend westwards; thus dominating the flow over the entire North African region. The cyclonic vortex featured over the border between Mali, Niger and Burkina will propagate onto central Mali while the one over eastern Cameroon will drift slightly to the southwest. The ones between the border of Niger/Nigeria, central Sudan and over Ethiopia will degenerate with another expected to develop over central Sudan. Localized convergence is likely to occur over western Niger, western Chad, southern Ethiopia, western DRC, Lake Victoria region and southern Angola. On the other hand, a divergent flow pattern will prevail over eastern Gulf of Guinea states, the stretch between CAR onwards to eastern Ethiopia and most parts of East Africa. Southern Africa is expected to be dominated by the St. Helena and Mascarene Ridges; with a mid-latitude trough likely to affect the southern coast of South Africa.

2.2. Flow at 500hPa:

T+24, an extensive Sub-Tropical anticyclonic circulation system is expected to prevail over western Sahel extending northeastwards over North Africa and onto Arabia. A westerly wave will dominate the flow pole-wards featuring a deep cut-off cyclonic circulation over Morocco. Easterlies will prevail equator-wards with a weak shortwave trough expected over northern Cote d'Ivoire and east of Lake Chad. A confluent flow is likely to occur over the western Gulf of Guinea states, northern Kenya and over eastern Somalia. The flow over much of Southern Africa will be dominated by a Sub-Tropical anticyclonic system; except over the western sectors of South Africa which will be under the influence of a westerly wave.

T+48, the cut-off cyclonic circulation over Northwestern Maghreb will weaken while another is expected to develop over southwest of the Canary Islands. Cyclonic vortices are likely to evolve over eastern Gulf of Guinea and over the northern Tip of Ethiopia; whereas a deep shortwave trough will be featured extending from Liberia onto northern Senegal. The one featured over northern Cote d'Ivoire will likely decay while its counterpart over east of Lake Chad will move slightly westwards onto Niger/Nigeria. A similar flow to that of the previous day will prevail over Southern Africa

T+72, similar flow patterns to that of the previous day are expected over Northern and Southern Africa. The cyclonic circulations featured over the Gulf of Guinea and Somalia will drift slightly westwards. Shortwave troughs are likely to occur over Ghana/ Burkina and over southern Nigeria stretching onto western Chad, while confluent flows are expected over central Nigeria and northwestern DRC.

2.3. Flow at 200hPa:

T+24h, an extensive upper-level anticyclonic flow pattern will prevail over the equatorial Atlantic, spreading right across west and much of central Africa with another centered over Arabia extending onto northern Kenya. A Westerly wave will dominate the flow pole-ward of the anticyclonic systems with a strong upper-level trough featured over Sudan. Easterlies will dominate the flow equator-ward, with a confluent flow likely to occur over DRC and eastern Tanzania. Much of Southern Africa will be under the influence of an upper-level anticyclonic system while a westerly wave will dominated over the southern sectors of South Africa with a weak trough likely over Madagascar.

T+48h, similar flows are expected over Northern and Southern Africa as compared to that of the previous day. However, the trough over Sudan is likely to retreat northward. Shortwave troughs are expected to emerge on the easterlies with their axis centered over Ghana and over southern Sudan. Confluent flows are likely to occur over Kenya, southern Somalia and Angola. The trough featured over Madagascar is likely to intensify and extend to the Kenyan/Tanzanian coast.

T+72h, the main difference on the general flow on the continent as compared to that of the previous day will be the westward propagation of the shortwave troughs to be centered over Cote d'Ivoire/southern Mali and over CAR stretching onto southern Chad and western Sudan. A cyclonic circulation is likely to develop over eastern Ethiopia, while a convergent flow is expected over eastern Sudan. The trough featured over Madagascar will continue to intensify and it's expected to affect the entire East African Coast.

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