Forecast Guidance for Africa

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

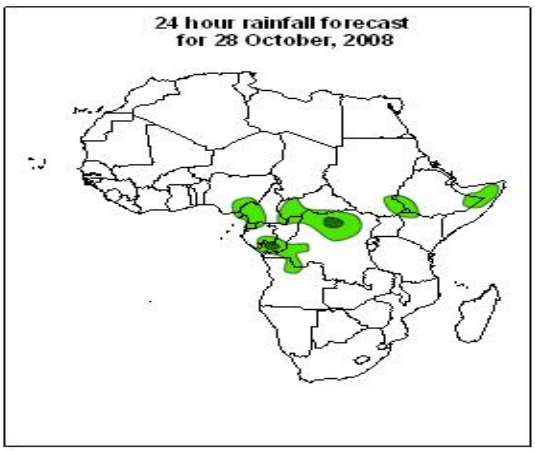
FORECAST DISCUSSION 14H00 EST, 27th OCTOBER, 2008
Valid: 00Z 28th OCTOBER – 30th OCTOBER, 2008

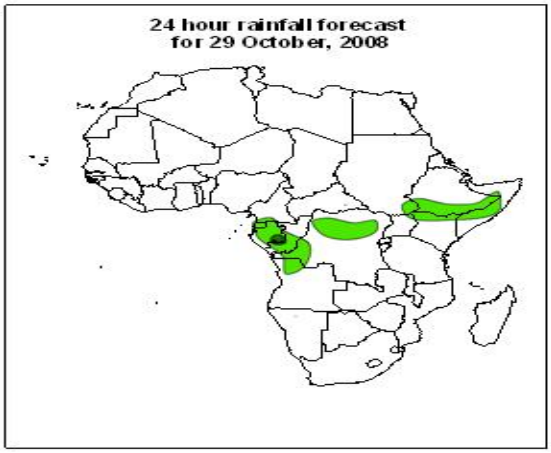
1. Twenty Four Hour Cumulative Rainfall Forecasts

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; 28th 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.





Legend

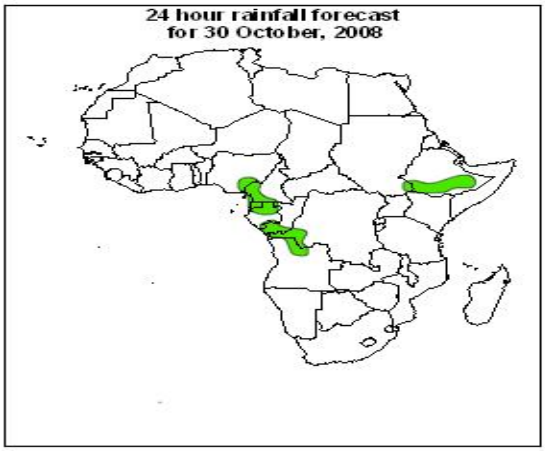
africa_countries_new

> 30mm, with probability 50%

> 20mm, with probability 40%

Summary

Localized convergence expected over parts of central Africa, moisture influx from the Gulf of Guinea and Congo Basin, low pressure over the equatorial western Indian Ocean are expected to enchance chance for precipitation.



2.1. Flow at 850hPa:

T+24h, the Saharan anticyclonic circulation system will dominate the flow over much of North and West Africa, while a deep trough will affect the flow over western Maghreb. A cyclonic vortex will be centered over western DRC. Localized convergence is expected to occur over Uganda and over northern Namibia. Confluent flows are expected to occur over western Ethiopia, parts of southeastern Sudan, southwestern Congo, eastern and southeastern DRC, eastern Angola, western Botswana and over southeastern South Africa. Conversely, localized divergence will occur over western Nigeria, southwestern Cameroon and over southern Somalia. The western and southern sectors of Southern Africa will be dominated by anticyclonic systems; whereas, a deep mid latitude trough will affect the flow over the eastern sector of the Mozambique Channel.

T+48, the flow over North and West Africa will be similar to that of the previous day. The trough over western Maghreb is likely to strengthen and move westwards. The cyclonic vortex centered over western DRC will decay. Convergence is likely to occur over southwestern Uganda, southwestern and eastern Angola, southern DRC, northwestern Somali and over eastern Ethiopia. Confluent flows are expected to occur over southeastern Nigeria, western Ethiopia onto southeastern Sudan and over eastern DRC. Localized divergence will be featured over the coast of Cameroon and over southeastern Gabon. The flow over much of Southern Africa is expected to be under the influence of the St. Helena and Mascarene anticyclonic systems. The southwestern sector of South Africa, the Mozambique Channel and southern Madagascar are likely to be affected by mid-latitude troughs.

T+72, the Saharan antcyclonic circulation system will continue to prevail over much of North and West Africa. The trough over the western Maghreb is expected to remain quasi stationary. Cyclonic vortices are likely to develop off the coast of Mauritania, over northern Somalia and over eastern Congo. Localized convergence will affect the Lake Victoria region and the southeastern sector of DRC. Confluent flows will be featured over southeastern Nigeria, western Ethiopia onto southeastern Sudan, southern Ethiopia and over southern Angola onto northeastern Namibia. Localized divergence is expected to occur over central Sudan and over western DRC. Much of Southern Africa will be dominated by the St. Helena and Mascarene anticyclonic system except for the southeastern sector of South Africa which will be under the influence of a weak mid-latitude trough.

2.2. Flow at 500hPa:

T+24, a westerly wave, in which a trough is embedded over western Maghreb is expected to dominate the flow over the Maghreb region. To the South, the Sahara anticyclonic circulation system is expected to prevail over much of North and West Africa. Localized convergence is expected to occur over northeastern Gabon. Confluent flows are expected to occur over northeastern Mali, northern Benin onto southwestern Niger, southeastern Ghana, western DRC and over southwestern Somalia onto eastern Kenya. On the other hand, divergence will be featured over northeastern Ghana and over eastern DRC. The flow over Southern Africa will be dominated by the St. Helena and Mascarene anticyclonic circulation system. A westerly wave will affect the flow over the southern sector of South Africa and part of Madagascar.

T+48, the flow over much of North and West Africa will be similar to that of the previous day. The trough over Morocco will weaken and retreat northeastwards but still affecting northern Morocco and northwestern Algeria. A strong convergence is likely to occur over

the eastern Gulf of Guinea. Confluent flows will be featured over northeastern Nigeria onto southern Niger, northeastern Ghana, southeastern Nigeria, southeastern Kenya onto northeastern Tanzania and over southeastern DRC onto eastern Angola.. Conversely, divergence is expected to occur over northwestern CAR and over eastern DRC. The flow over much of Southern Africa will be under the influence of the St. Helena anticyclonic circulation system. A westerly wave will affect the southern sector of South Africa and southern Madagascar.

T+72, much of North and West Africa is likely to be under the influence of the Saharan anticyclonic circulation system. To the North a westerly wave in which a trough is embedded over Morocco and northwestern Algeria, will prevail. Convergence is likely to occur over central Somalia. Confluent flows will be featured over southeastern Ghana, western CAR, central Gabon and over western Kenya. Localized divergence is expected to occur over western Cameroon and over eastern DRC. The St. Helena and Mascarene anticyclonic circulation systems will dominate the flow over much of Southern Africa. A westerly wave will affect the flow over the southern sector of South Africa and southern Madagascar.

2.3. Flow at 200hPa:

T+24h, the Maghreb region including Egypt will be under the influence of a westerly wave with an embedded upper level trough centered over northern Morocco and northwestern Algeria. To the South, an extensive upper-level anticyclonic circulation will dominate the flow. Confluent flows will be featured over southern CAR, northern Angola and over southeastern Tanzania. Diffluent flow is expected to occur over northern Congo and over eastern DRC. The flow over the northern sector of Southern Africa will be dominated by an anticyclonic circulation, while the southern sector will be under the influence of a westerly wave.

T+48h, a similar flow to that of the previous day will prevail over most of Northern and Southern Africa. The trough over the western Maghreb will weaken and retreat northwards. A cyclonic flow will be featured over eastern Sudan, northeastern Ethiopia and over western Tanzania. Diffluent flow is expected over the coast of Cameroon, eastern Congo and over eastern DRC.

T+72h, a westerly wave will prevail over the Maghreb region including Egypt. An extensive anticyclonic circulation system will dominate the flow over Sahel and environs. Confluent flows will be featured over southeastern Mali, southern Chad, eastern Sudan, southeastern CAR and over northern Uganda. On the other hand, diffluent flow is likely to occur over northwestern Congo and over the Lake Victoria region. The northern sector of Southern Africa will be dominated by an anticyclonic circulation, while the southern sector will be under the influence of a westerly wave.

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