



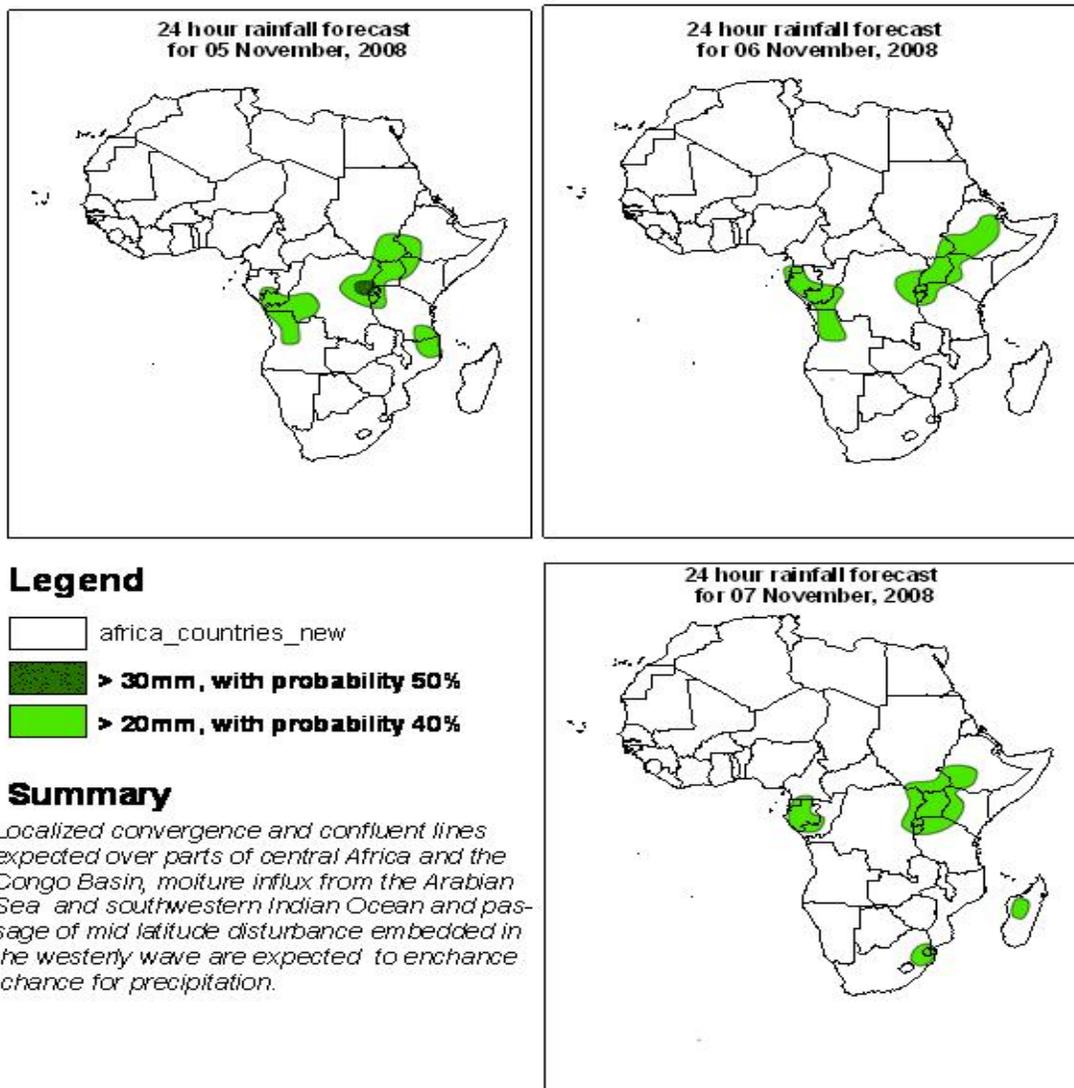
Forecast Guidance for Africa

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

FORECAST DISCUSSION 14H00 EST, 04th NOVEMBER, 2008
Valid: 00Z 05th NOVEMBER – 07th NOVEMBER, 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; 05th November, 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 flow over much of North and West Africa is expected to be dominated by the Saharan anticyclonic circulation with a trough over much of Morocco, Algeria and Tunisia. A ridge from the Azores anticyclone is likely to affect much of Western Sahara, Mauritania and northeastern Mali. Easterlies will feature a cyclonic vortex over northeastern Sudan, northern Ethiopia and part of Eritrea. Localized convergence is likely to occur over southwestern Ethiopia, the Lake Victoria region, western DRC and over southern Angola. Confluent flows are expected to occur over eastern Ethiopia, the northeastern sector of DRC, the southern coast of Tanzania, southwestern Zambia, northern Zimbabwe and over southeastern Namibia. On the other hand, localized divergence is expected to occur over northwestern DRC. Much of Southern Africa will be under the influence of St. Helena and Mascarene anticyclonic circulation systems. To the south, a westerly wave will prevail with a cut off anticyclonic circulation.

T+48, the Azores and Saharan anticyclonic circulations are expected to merge and dominate the flow over much of North and West Africa. The trough over western Maghreb will weaken and retreat northeastwards but still affect northeastern Algeria and Tunisia. Convergence is likely to occur over western Sudan, southern Cameroon, southern Sudan, northern Tanzania, southwestern Congo and over southeastern Namibia. Confluent flows are expected to occur over central Ethiopia, western Tanzania, western Zambia and over northeastern Namibia. Divergence is expected over northern Congo and over southwestern Angola. The flow over much of Southern Africa will be dominated by the St. Helena and Mascarene Anticyclonic circulation systems. To the South, a trough in the westerlies will affect the southeastern sector of South Africa.

T+72, the Azores and the Saharan anticyclonic circulations are expected to intensify. The trough over northeastern Algeria and Tunisia will weaken and retreat northwards. A cyclonic vortex is likely to develop over northern Ethiopia. Convergence is expected to occur over eastern northwestern CAR, northeastern Congo, northwestern Tanzania, and over southwestern Zambia. Confluent flows are likely to occur over southern Ethiopia, southeastern CAR, northwestern Gabon, eastern and southeastern DRC, southern Tanzania, central Angola, northern Botswana and over southeastern Namibia. On the other hand, divergence will be featured over southeastern Sudan and over northwestern Angola. Much of Southern Africa is expected to be under the influence of the St. Helena and Mascarene anticyclonic circulations. A closed cyclonic circulation is likely to develop off the coast of northern Angola, while a cyclonic vortex will be featured over The Mozambique Channel. A trough, in the westerlies, will affect the southern sector of South Africa.

2.2. Flow at 500hPa:

T+24, a westerly wave in which two troughs are embedded over northern Morocco and northern Algeria and over part of Egypt and part of Sudan and a sub-tropical anticyclonic circulation system will affect the flow over much of North Africa. Confluent flows are expected to occur over southwestern Cameroon, western and southern DRC, northern Tanzania and over northeastern Angola. Divergence will be featured over northwestern

DRC and diffluent flows are expected to occur over southern Somalia. Much of Southern Africa will be dominated by an anticyclonic circulation system, with a westerly wave to the South.

T+48, the trough embedded in the westerlies over northern Morocco and northern Algeria will remain in the same position, while the one over Egypt and Sudan will retreat northwards. To the South, a sub tropical anticyclonic circulation will prevail. A cyclonic vortex is likely to develop off the coast of northern Somalia. Convergence is expected to occur over northern Congo, southeastern Gabon and over northeastern DRC. Confluent flows are likely to occur over southwestern Sudan, southern Cameroon, the western sector of DRC and over northwestern Tanzania. Divergence is expected to occur over southwestern Ethiopia and over southeastern CAR. Much of Southern Africa will be under the influence of the St. Helena ridge. A westerly wave will affect the southern sector of South Africa.

T+72, the trough over Morocco and Algeria will deepen and expand eastwards to northwestern Libya, while the one over Egypt is likely to weaken and retreat northeastwards. A Sub-tropical anticyclonic circulation system will dominate the flow over the rest of North Africa. Convergence will be featured over southwestern Congo and over western DRC. Confluent flows are expected to occur over southern Chad, southern Ethiopia, eastern Nigeria, southeastern Cameroon, northeastern and southeastern DRC, southern Somalia and over northern Zambia. Divergence is likely to occur over southern Nigeria and over southeastern CAR. The flow over much of Southern Africa will be dominated by St. Helena ridge with a westerly wave to the south.

2.3. Flow at 200hPa:

T+24h, a westerly wave with two embedded troughs over western Maghreb and northeastern Egypt will dominate the flow over the Maghreb region including Egypt. To the south, an anticyclonic circulation system will prevail. Confluent flows will be featured over eastern CAR, eastern DRC and over central Tanzania. Divergence is likely to occur over southeastern Cameroon and over northern DRC. The flow over the northern sector of Southern Africa will be dominated by an anticyclonic circulation, while a westerly wave will affect the southern sector.

T+48h, a westerly wave will dominate the flow over Northern Africa. The trough over western Maghreb will weaken and retreat northwards, while the one over Egypt will also weaken and retreat northeastwards. To the South, an anticyclonic circulation system will prevail. Confluent flows are expected to occur over northern CAR and the eastern sector of DRC. Divergence is likely to occur over northern Congo and over northeastern DRC. The flow over Southern Africa will be similar to that of the previous day.

T+72h, a westerly wave will prevail over North Africa and the upper-level trough over western Maghreb will move southeastwards to Tunisia. An anticyclonic circulation is expected to dominate the flow to the South. Confluent flows will be featured over southeastern Nigeria, northern CAR and over central DRC. Divergence is likely to occur over central Congo and over northeastern DRC. The flow over much of Southern Africa is expected to be dominated by a mid latitude westerly wave except for the northwestern sector which will be under the influence of an anticyclonic circulation.

Author: Lutumba Tima (Instituto Nacional de Meteorologia, Angola, and African Desk).