



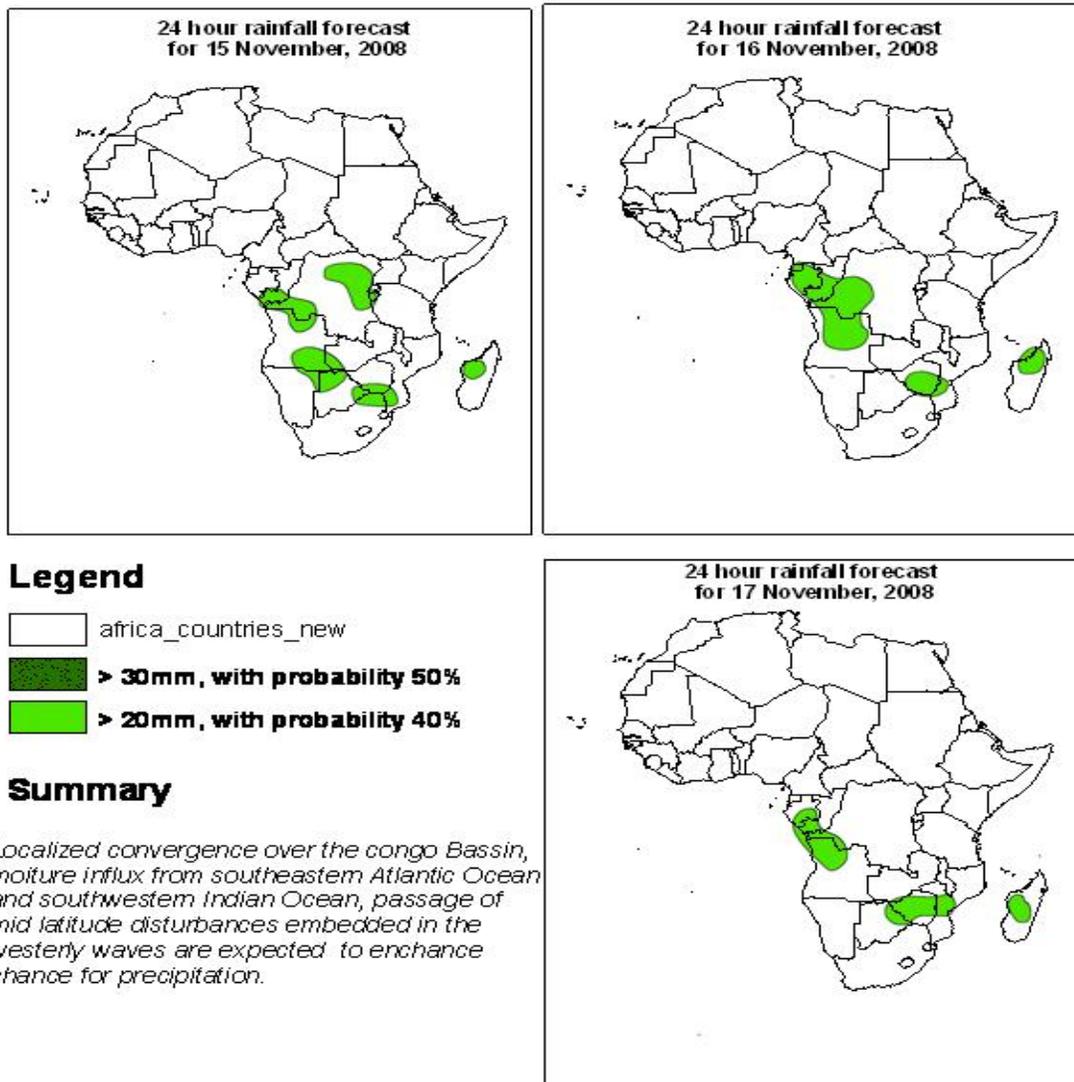
## Forecast Guidance for Africa

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

**FORECAST DISCUSSION 14H00 EST, 14<sup>th</sup> NOVEMBER, 2008**  
**Valid: 00Z 15<sup>th</sup> NOVEMBER – 17<sup>th</sup> 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; 15<sup>th</sup> 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 system. A ridge from the Azores anticyclone will affect western Maghreb with a trough featured over parts of Algeria and Tunisia. A cyclonic vortex is likely to develop over the northern coast of Angola. Localized convergence is likely to occur over western Tanzania, southeastern DRC, southern Zambia, northern and eastern Namibia and over southern Botswana. Confluent flows are expected to occur over western Ethiopia, southern Sudan, southeastern Uganda and over central DRC. On the other hand, localized divergence is expected to occur over southern DRC and over eastern Angola. Much of Southern Africa will be under the influence of the St. Helena and Mascarene anticyclonic circulation systems with a trough in the westerly wave over the southern Mozambique Channel.

T+48, the Saharan and Azores anticyclonic circulations will continue to prevail over much of North and West Africa. The trough over Algeria and Tunisia is expected to weaken and retreat northeastwards but still affect northeastern Algeria and northern Tunisia. Convergence is expected to occur over southeastern DRC, northeastern Angola, eastern Namibia and over northwestern South Africa. Confluent flows are expected to occur over western Ethiopia onto southeastern Sudan, southeastern Ethiopia, northeastern DRC, southwestern Congo, western Tanzania, southeastern Zambia and over northwestern Madagascar. Diffluent flows will be featured over southeastern Uganda and over the central sector of Angola. The flow over much of Southern Africa will be dominated by the St. Helena and Mascarene Anticyclonic circulation systems with a trough in the westerly wave over southern Madagascar.

T+72, the flow over much of North and West Africa will be similar to that of the previous day. However, the trough over northeastern Algeria will weaken and retreat northeastwards to Tunisia. Convergence is expected to occur over southeastern DRC, eastern Angola, southwestern Botswana and over central Madagascar. Confluent flows are likely to occur over eastern and southern Ethiopia, central DRC, northwestern Tanzania, northwestern Angola and over central Malawi. On the other hand, divergence will be featured over southeastern Angola, southern Mozambique and over the central Mozambique Channel. Much of Southern Africa will be under the influence of the St. Helena and Mascarene anticyclonic circulations. A trough in the westerly wave will affect the southern sector of Madagascar.

### **2.2. Flow at 500hPa:**

T+24, a westerly wave in which a trough is embedded over northern Morocco and northern Algeria will dominate the flow over much of North Africa. To the South, a sub-tropical anticyclonic circulation system will prevail. Confluent flows will be featured over southern Chad, southeastern Ethiopia, southwestern Cameroon and over southern Somalia. Diffluent flows will be featured over southwestern CAR and over central DRC. Much of Southern Africa will be dominated by the Mascarene anticyclonic circulation system, while a westerly wave is expected to dominate the southern sectors with a back hanging trough over the southeastern Atlantic Ocean.

T+48, a westerly wave will dominate the flow over much of North Africa. The trough over Morocco and northern Algeria will expand westwards and eastwards to Tunisia. To the South, a sub-tropical anticyclonic circulation will prevail. Convergence will be featured over southeastern Kenya. Confluent flows are likely to occur over southwestern CAR, northeastern DRC and over northwestern Kenya. Diffluent flows are expected to occur over eastern Ethiopia and over central DRC. Much of Southern Africa and the region surrounding Madagascar will be under the influence of the Mascarene anticyclonic circulation, while the southern sectors of South Africa and Madagascar will be affected by a westerly wave.

T+72, the trough in the westerly wave over western Maghreb is expected to expand westwards and eastwards to northwestern Libya. A Sub-tropical anticyclonic circulation system will dominate the flow over the rest of North Africa. Convergence will be featured over the Lake Victoria region. Confluent flows are expected to occur over northern and southeastern DRC, western Kenya and over northern Mozambique. Divergence is likely to occur over southern Ethiopia, southern Somalia and over western Congo. The flow over much of Southern Africa will be dominated by an anticyclonic circulation, to the South of which a westerly wave will prevail

### **2.3. Flow at 200hPa:**

T+24h, a westerly wave with an embedded trough over northern Morocco and Algeria will dominate the flow over much of North Africa. To the south, an anticyclonic circulation system will prevail. Convergence is expected to occur over central DRC. Confluent flows will be featured over southwestern Sudan, northern Congo, northeastern DRC and over northeastern Zambia. Divergence is likely to occur over the northwestern sector of DRC. The flow over much of Southern Africa will be dominated by an anticyclonic circulation, while a westerly wave will affect the southern sector.

T+48h, the trough in the westerly wave over the western Maghreb will expand westwards, while another one will be featured the Gulf of Guinea. To the South, an anticyclonic circulation system will prevail. A closed cyclonic circulation is expected to affect southern DRC and the eastern sector of Angola. Confluent flows are expected to occur over southeastern Nigeria, southwestern Sudan, northeastern DRC and over the coast of Kenya. Divergence is likely to occur over northeastern CAR. Much of Southern Africa will be under the influence of an anticyclonic circulation, while the southern sector is likely to be dominated by a westerly wave.

T+72h, a westerly wave will prevail over North Africa and the trough over western Maghreb will expand westwards, while the one over western Gulf of Guinea is likely to remain in the same position. An anticyclonic circulation is expected to dominate the flow to the South. A cyclonic circulation will be featured over parts of Tanzania and Kenya. Confluent flows are expected to occur over southern Congo and over northeastern DRC. Divergence is likely to occur over northeastern Angola. The flow over much of Southern Africa is expected to be dominated by an anticyclonic circulation except for the southern sector which will be under the influence of a westerly wave.

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