



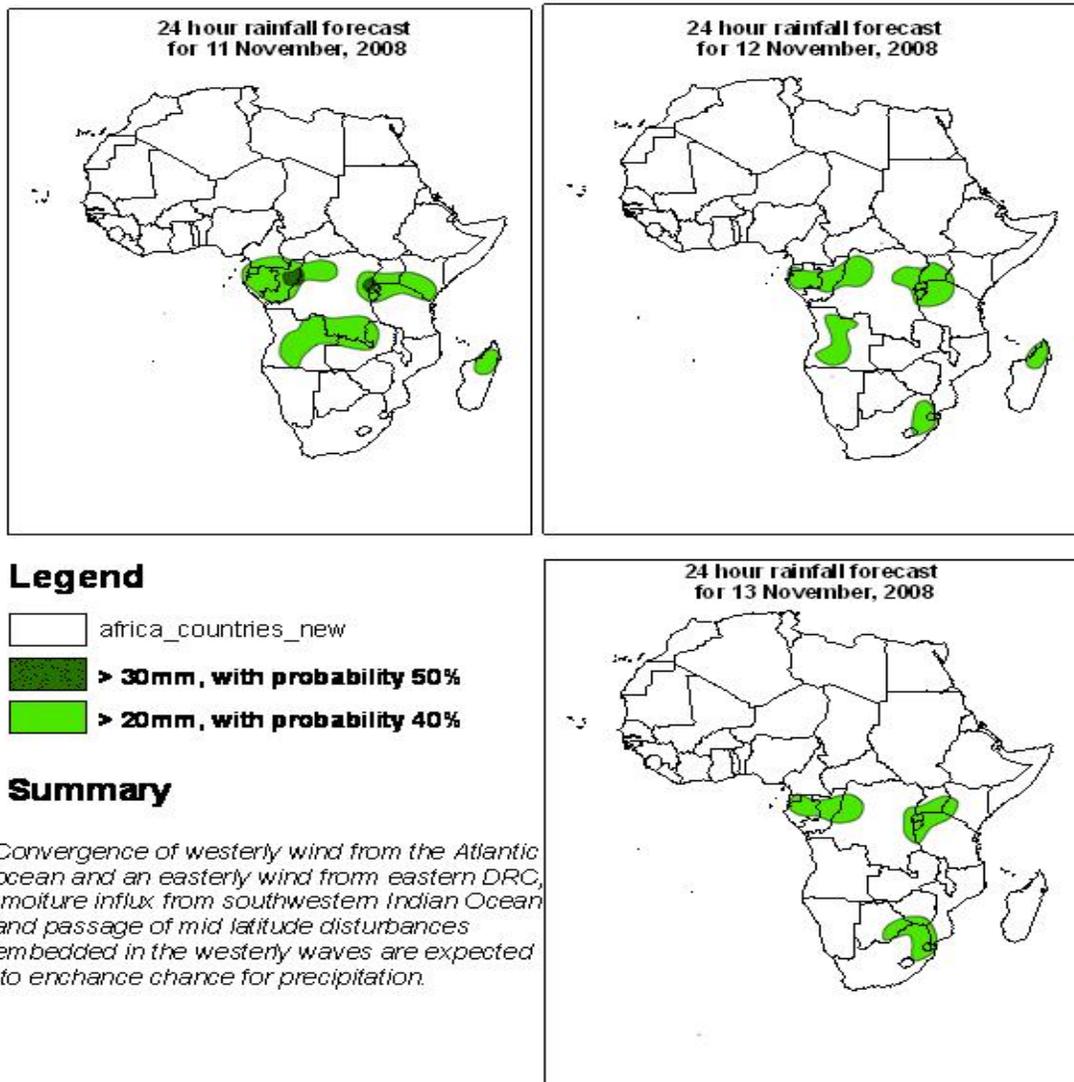
## Forecast Guidance for Africa

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

**FORECAST DISCUSSION 14H00 EST, 10<sup>th</sup> NOVEMBER, 2008**  
**Valid: 00Z 11<sup>th</sup> NOVEMBER – 13<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; 11<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 Africa is expected to be dominated by the Saharan anticyclonic circulation system. Localized convergence is likely to occur over southern Cameroon, eastern DRC, southwestern Tanzania, northern and southwestern Botswana. Confluent flows are expected to occur over western Ethiopia onto southeastern Sudan, eastern Ethiopia, western DRC and over western Zambia. On the other hand, localized divergence is expected to occur over southern DRC. Diffluent flows are expected over southern Nigeria and over northeastern DRC. Much of Southern Africa will be under the influence of the St. Helena and Mascarene anticyclonic circulation system. A closed cyclonic circulation will affect southwestern Angola and northwestern Namibia. To the south, a westerly wave will prevail with a trough over southern South Africa.

T+48, the Saharan anticyclonic circulation is expected to intensify. A trough will be featured over northern Morocco and over northwestern Algeria. A cyclonic vortex is likely to develop over the western sector of DRC. Convergence is expected to occur over northeastern CAR, southern Angola, western Zimbabwe and over southern Mozambique. Confluent flows are expected to occur over western and southeastern Ethiopia, western Tanzania, northern and southern Zambia and over the southern Mozambique Channel. Divergence will be featured over southeastern Cameroon and over northwestern Namibia. The flow over much of Southern Africa will be dominated by the St. Helena and Mascarene Anticyclonic circulation systems. A closed cyclonic circulation will be featured over southern Namibia and over southwestern Botswana.

T+72, the flow over much of North Africa will be similar to that of the previous day. However, the trough over northern Morocco will weaken and retreat northeastwards. A closed anticyclonic circulation will be featured over southern Congo, western DRC and over northwestern Angola. Cyclonic vortices are likely to develop over northern DRC, central coast of Angola and over northwestern South Africa. Convergence is expected to occur over northeastern CAR, northern and western Tanzania, northwestern Zambia and over southwestern Zimbabwe. Confluent flows are likely to occur over southwestern Sudan, southwestern CAR, southeastern Ethiopia, northeastern Angola, southern Mozambique and over the southwestern Mozambique Channel. On the other hand, divergence will be featured over southeastern CAR and over southern DRC. Much of Southern Africa is expected to be under the influence of the St. Helena anticyclonic circulation except for Madagascar which will be affected by a trough.

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

T+24, a westerly wave in which a trough is embedded over Tunisia and northwestern Libya, will dominate the flow over much of North Africa. To the South, a sub-tropical anticyclonic circulation system will prevail. A trough from the equatorial Atlantic Ocean will affect the states of western Gulf of Guinea. A cyclonic vortex is likely to develop over northwestern DRC and over eastern Congo. Localized convergence is expected to occur over southern Congo and over northeastern DRC. Confluent flows will be featured over southeastern Nigeria, southern Ethiopia, central Angola and over northern Mozambique. Diffluent flows will be featured over northwestern CAR. Much of Southern Africa will be

dominated by the Mascarene anticyclonic circulation system, while a westerly wave is expected to dominate the southern sectors.

T+48, a westerly wave with two embedded troughs over Morocco and over north eastern Libya will dominate the flow over much of North Africa. The sub-tropical anticyclonic circulation will prevail to the South. A cyclonic vortex is likely to develop over the western Gulf of Guinea, while the one over northwestern DRC will remain in the same position. Convergence is expected to occur over central Congo. Confluent flows are likely to occur over northwestern Benin, southern Sudan and over western Gabon. Divergence is expected to occur over the western sector of DRC. Much of Southern Africa will be under the influence of an anticyclonic circulation, and the southern sectors of South Africa and Madagascar will be affected by a trough in the westerly wave.

T+72, the trough over Morocco will expand westward to northern Algeria and Tunisia, while the one over Libya will weaken and retreat northeastwards. A Sub-tropical anticyclonic circulation system will dominate the flow over the rest of North Africa. Convergence is expected to occur over central Gabon. Confluent flows are expected to occur over southeastern Cameroon, northeastern and southeastern DRC. Divergence is likely to occur over northern Madagascar. The flow over much of Southern Africa will be dominated by an anticyclonic circulation. A deep trough in the westerly wave will affect southern Namibia, much of South Africa and parts of Madagascar.

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

T+24h, a westerly wave will dominate the flow over the Maghreb region including Egypt with a deep trough over western Africa, to the south of which an anticyclonic circulation system will prevail. Confluent flows will be featured over western Cameroon, northeastern CAR, western Tanzania and over southern Angola. Divergence is likely to occur over southwestern Congo and over northwestern 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 and eastern sectors.

T+48h, a westerly wave, with a weak embedded trough over northern Morocco, will dominate the flow over Northern Africa. The trough in the westerly wave over western Africa will expand eastwards. To the South, an anticyclonic circulation system will prevail. Confluent flows are expected to occur over southeastern Chad, northeastern DRC and over eastern Kenya. Divergence is likely to occur over central Congo and over eastern DRC. The northern sector 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 with a back hanging trough extending from northern Madagascar to northeastern Tanzania and southeastern Kenya.

T+72h, a westerly wave will prevail over North Africa and the trough over western Africa will move eastwards. An anticyclonic circulation is expected to dominate the flow to the South. The closed cyclonic circulation over southeastern Ethiopia is expected to strengthen and move northeastwards to southeastern Sudan. Confluent flows will be featured over western Cameroon and over southeastern CAR. Divergence is likely to occur over central Congo and over northern DRC. 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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