



## Forecast Guidance for Africa

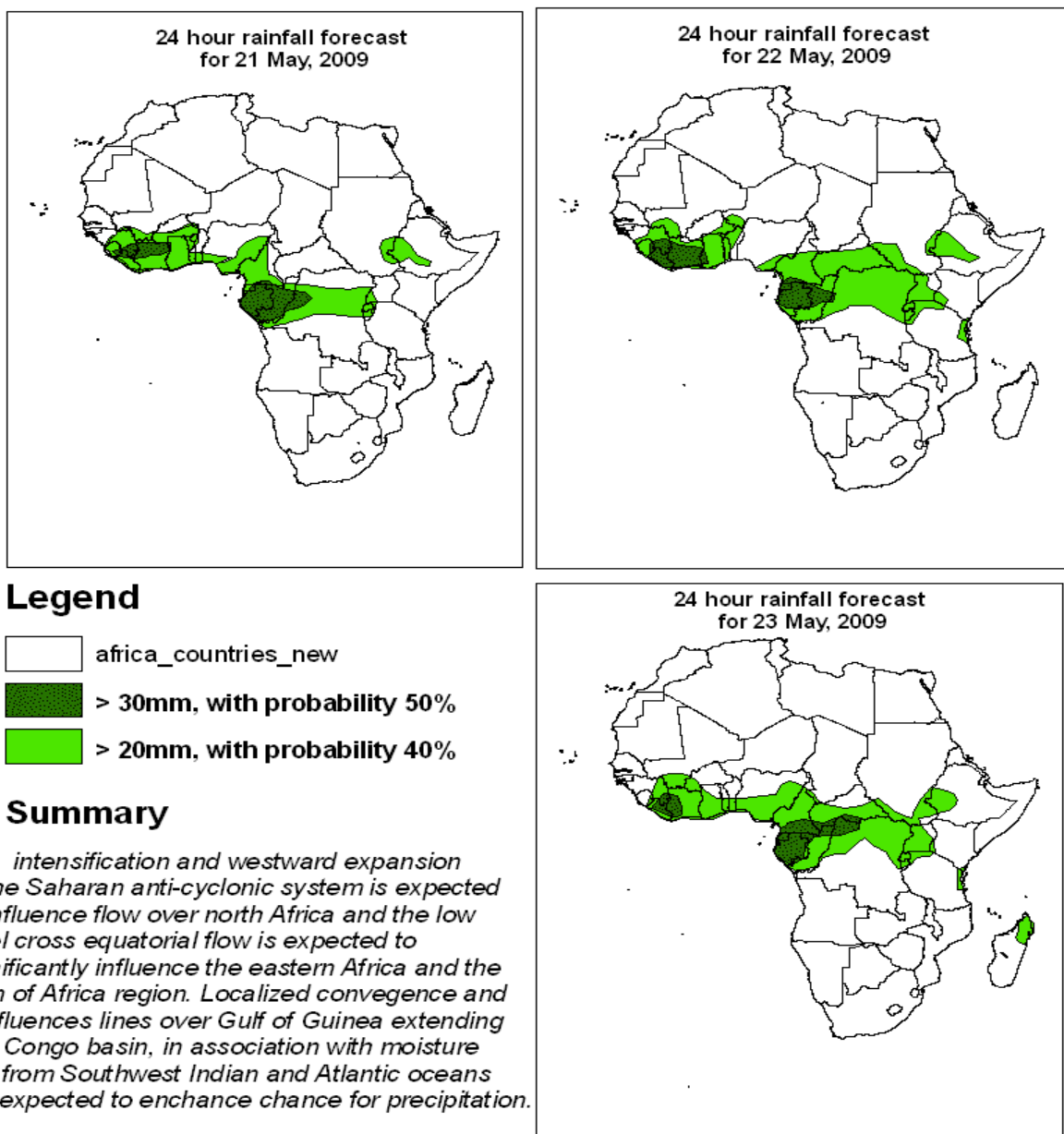
NCEP Contributions to the WMO Severe Weather Forecasting Demonstration Project (SWFDP) and to the African Monsoon Multidisciplinary Analysis (AMMA) Initiative.

**FORECAST DISCUSSION 14H00 EST, 20 MAY, 2009**

**Valid: 00Z 21 MAY – 23 MAY, 2009**

### 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; 20 May, 2009): all the three models are in general agreement especially with respect to the positioning of large scale features, however, the UK model tends to give lower values than both the GFS and ECMWF models especially in the Equatorial region (10°S and 10°N).*

### 2.1. Flow at 850hPa

**T+24h:** In the northern hemisphere, the intensification and westward expansion of the Saharan anti-cyclonic system is expected to influence flow over North Africa and the low level cross equatorial flow is expected to significantly influence the flow in eastern Africa and the horn of Africa region. A closed cyclonic circulation system is expected to persist over northeastern Atlantic Ocean as part of the mid latitude cyclonic circulation system. Localized convergence and confluent lines are expected over the Gulf of Guinea region, Cameroun, Central African Republic, northern DR Congo, southern Sudan and southern Ethiopia. In the southern hemisphere, subtropical anti-cyclonic systems are expected to intensify and expand over much of southern Africa. A trough associated with the westerly wave over southeast Atlantic Ocean is expected to extend northwards up to 20°S latitude; with another trough over southeastern Indian Ocean expected to separate the anti-cyclonic systems.

**T+48h:** In the northern hemisphere, the significant features are expected to maintain their previous day position; however a subtropical ridge is expected to extend from the Arabian Peninsula across North Africa. Localized convergence and confluent lines are expected to maintain their previous day positions. In the southern hemisphere, the significant features are expected to maintain their previous day positions; however the Mascarene anti-cyclonic system is expected to expand eastwards over southwestern Indian Ocean.

**T+72h:** In the northern hemisphere, the subtropical ridge is expected to breakup into isolated anti-cyclonic systems, with the Saharan anti-cyclone expected to influence flow over North Africa. The localized convergence and confluent lines are expected to maintain their previous day positions. In southern Africa, the flow is expected to be similar as the previous day.

### 2.2. Flow at 500hPa

**T+24h:** In the northern hemisphere, a trough associated with the westerly wave is expected over North Africa across the eastern Mediterranean Sea, creating a disturbed flow pattern of the westerlies over northern Africa. A weak cyclonic system is expected to persist over the Gulf of Aden region. In the southern hemisphere, the development of a feeble trough over southeast Atlantic Ocean and a ridge off the tip of South Africa is expected to create a disturbed flow pattern of the westerlies.

**T+48h:** In the northern hemisphere the flow is expected to be more similar to the previous day; however the cyclonic system over the Gulf of Aden is expected to slightly expand. In the southern hemisphere, the mid latitude cyclonic systems are expected to be suppressed, giving way to a more zonal flow pattern of the westerlies.

**T+72h:** In the northern hemisphere the flow is expected to be more similar to the previous day; however the troughs associated with the westerly wave are expected to move slightly eastwards. In the southern hemisphere, the flow is expected to be more similar to the previous day.

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

**T+24h:** In the northern hemisphere, troughs associated with the westerly wave are expected over the Mediterranean Sea and northeast Atlantic Ocean, creating a disturbed flow pattern of the westerlies over North Africa. In the southern hemisphere, the flow is expected to take a generally zonal pattern.

**T+48h:** The flow is similar to that of the previous day over both the northern and the southern hemispheres.

**T+72h:** The troughs associated with the westerly wave in the northern hemisphere are expected to cause some disturbances of the westerlies; however the flow is expected to take a more zonal pattern. In the southern hemisphere, a generally zonal flow pattern of the westerlies is expected to persist.

*Authors:*

- 1. Ado Kalaki Kasongo (METTELSAT / DR Congo and African Desk)*
- 2. Khalid Muwembe (UGANDA MET / Uganda and African Desk).*