



Forecasting guidance for Sever Weather Forecasting Demonstration Project (SWFDP)

**SHORT RANGE FORECAST DISCUSSION 14H00 EST 20<sup>TH</sup> DECEMBER 2007**

**AFRICAN DESK  
CLIMATE PREDICTION CENTRE  
National Centers for Environmental Predictions  
National Weather Service  
NOAA  
Camp Spring MD 20746**

**FORECAST DISCUSSION 14H00 EST, 20<sup>th</sup> DECEMBER 2007**

**Valid: 00Z 21<sup>st</sup> DECEMBER 2007-00Z 23<sup>rd</sup> DECEMBER 2007**

**1: 24HR RAINFALL FORECAST**

**DAY 1: 20<sup>TH</sup> DEC 2007**

During the period, 40-70mm is expected over northern Mozambique, Malawi eastern and southern Tanzania; 15-40mm over southern Mozambique and eastern Madagascar; 5-20mm over central Mozambique, northern Zimbabwe, central to northern Zambia and southwestern Tanzania.

**DAY 2: 21<sup>ST</sup> DEC 2007**

During this period, 30-60 mm is expected over central Mozambique, Malawi, and northern Zambia; 5-40mm over northern Mozambique, southwestern, eastern and southern Tanzania, southern Mozambique, northern Zimbabwe, central Zambia and southeastern DRC.

**DAY 3: 22<sup>ND</sup> DEC 2007**

During this period, 30-60mm is expected over central Mozambique, Malawi and northern Zambia,; 20-50mm over central to northern Madagascar; 5-40mm over northern Mozambique, northern Zimbabwe, southwestern Tanzania, southern and western DRC, western Zambia, extreme northern Angola and extreme northern Zimbabwe.

## **2: MODELS DISCUSSION:**

*Models comparison (Valid from 00Z; 20<sup>th</sup> Dec 2007): There is an agreement of UK MET, ECMWF and GFS models. There are no major discrepancies between them.*

### **FLOW AT 850MB**

At T+24, a Mascarine high pressure is centered at 38S 45E causing onshore flow southern Mozambique associated with convergence. A St Helena high pressure has two cells, one centered at 24S 17E and another at 35S 3E ridging south of the South Africa. A significant convergence associated by southeasterlies and northwesterlies is evident over Zambia, northern Mozambique, eastern Madagascar, Malawi and Angola otherwise westerlies and northwesterlies converge over central towards eastern Tanzania. There is a Low pressure system Indian Ocean at 10S 61E, it is causing convergence over there.

At T+48, a Mascarine high pressure has retrograded slightly to the west, now centered at 38S 37E continues to cause onshore flow on Mozambique coast. A St Helena high pressure has also retrograded to the west and centered at 25S 24W. Convergence continues to dominate northern and central Zambia, northern Mozambique, eastern Madagascar, Malawi, Zimbabwe and Angola, but in Tanzania convergence has shifted southwards otherwise a weak convergence over central to southern DRC. A Low pressure causing convergence sits over southeast of Madagascar while that over the Indian Ocean has almost maintained the position.

At T+72, a St Helena high pressure system has now two cells, one centered at 25S 22W while another at 37S 10W and both of them are situated to the west. A Mascarine high pressure has shifted to the east, centered at 40S 45E and continuing to cause onshore flow on southern Mozambique coast. Convergence prevails over central to northern Mozambique, northern Madagascar, northern Malawi, west, central, southern DRC and eastern Angola otherwise great part of Tanzania is dominated by divergence. A Low pressure system over the Indian Ocean has filled up but convergence associated with a Low pressure system prevails over southeastern Madagascar.

### **FLOW AT 500MB**

At T+24, there is a weak sub tropical high pressure over Mozambique Channel. Wind convergence dominates eastern Angola and central to southern DRC but weak over central Tanzania and Zambia. No significant flow pattern over the rest of the sub continent.

At T+48, a weak high pressure system associated with divergence has retrograded slightly to the west, now centered over southern Mozambique. Weak convergence dominates southern Tanzania, central Zambia, Malawi, northern Angola and eastern Angola.

At T+72, a weak sub tropical high pressure has continues to retrograde to the west, now centered over Botswana. A trough system is situated southwest of South Africa, together with a high pressure system over Botswana, they contribute to strong northwesterly wind reaching 35Kts west of South Africa. Wind convergence continues to prevail over southern Tanzania, Malawi and northern Zambia.

### **FLOW AT 200MB**

At T+24, a trough system is situated to the west of South Africa. A high pressure causing divergence is centered at 22S 38E. These two systems contribute towards a northwesterly Jet Stream with a maximum speed of 85Kts over South Africa. Strong southeasterly to easterlies dominates the eastern part of the sub continent otherwise northeasterlies over the western part.

At T+48, a trough system has slightly shifted to the east where the axis is just to the west of South Africa. A high pressure has almost maintained the position, together with a trough system, they continues to contribute towards strong northwesterly wind over South Africa. There is no significant change in the flow patterns over the eastern and western parts of the sub continent.

At T+72, a trough system has filled up. A high pressure has now centered over Zimbabwe at 20S 30E contributing towards strong northwesterlies-westerlies reaching 45Kts over South Africa. Strong southeasterlies dominates great northern part of the sub continent.

*Author: Augustino Nduganda (Tanzania Meteorological Service and African Desk)*