Forecasting guidance for Sever Weather Forecasting Demonstration Project (SWFDP)

**SHORT RANGE FORECAST DISCUSSION 14H00 EST 31ST DECEMBER 2007**

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

**FORECAST DISCUSSION 14H00 EST, 31ST DECEMBER 2007**
**Valid: 00Z 01st JANUARY 2008-OOZ 03rd JANUARY 2008**

## 1: 24HR RAINFALL FORECAST

### DAY 1: 01ST JAN 2008

During the period, 30-50mm is expected over eastern Madagascar; 20-40mm over central Zambia, northern Zimbabwe and central to northern Madagascar; 5-30mm over central Mozambique, Malawi, central Zimbabwe, western to northern Zambia and southwestern Tanzania.

### DAY 2: 02ND JAN 2008

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

### DAY 3: 03RD JAN 2008

During this period, 30-60mm is expected over southern Madagascar; 10-30mm over central to northern Madagascar; 5-20mm over southeastern South Africa, central Mozambique, Malawi, Zambia and northern Zimbabwe

## 2: MODELS DISCUSSION:

*Models comparison (Valid from 00Z; 31$^{ST}$ 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 system has centered at 39S 50E ridging towards northern South Africa. A St Helena high pressure system has situated to west at 24S 10W ridging eastwards while causing a weak onshore flow on Angola coast. There is a trough system south of the sub continent, pointing towards South Africa. A deep Low pressure system centered over Mozambique Channel at 20S 40E and causing strong convergence over there. Low pressure system causing convergence dominates central Mozambique, northern Zimbabwe, northern Botswana, Malawi, Zambia, central South Africa, Namibia and Angola. Weak convergence associated with northeasterlies and westerlies is evident over western and southwestern Tanzania.

At T+48, a Mascarine high pressure has shifted eastwards, now centered at 38S 58E, ridging towards northern South Africa while causing onshore flow over southern Mozambique coast. A St Helena high pressure is still situated far to the west with little influence towards the sub continent. A trough system which was situated south of the sub continent has shifted to the east, now pointing towards southeastern South Africa. A deep Low pressure system over the Channel continues to deepened, with a slight southwards shift, now centered at 23S 40E. There is a strong convergence associated with this Low pressure system south of Madagascar. Convergence continues to dominate Zambia, central Mozambique, Malawi, northern Zimbabwe, Northern Botswana, Angola, Namibia and central to southern South Africa.

At T+72, a Mascarine high pressure system has shifted further to the east, with a trough system behind it pointing towards southeastern South Africa. A deep Low pressure system over the Mozambique Channel continues to deepen, now centered at 25S 40E and causing significant convergence over there. Convergence dominates central Mozambique, southern Madagascar, Malawi, Zambia, Northern South Africa, southern Botswana, northern Namibia but divergence over Angola, DRC and Tanzania.

**FLOW AT 500MB**

At T+24, there is a high pressure system centered at 25S 40E ridging towards South Africa. A deep Low Pressure system is evident over Mozambique Channel, causing

convergence over there. Wind convergence dominates southern Madagascar, central Mozambique, Zambia, northern Zimbabwe, Malawi and eastern Angola.

At T+48, a high pressure has shifted eastwards, now centered at 35S 48E ridging towards northern part of South Africa. A deep Low pressure system over the Channel continues to persist and causing strong convergence over there. Convergence dominates central Mozambique, Zambia, northern Botswana and eastern Tanzania, otherwise divergence over central to western Tanzania and DRC.

At T+72, a high pressure has further shifted eastwards, now centered at 37S 64E, having a weak ridge towards northern South Africa. A Low pressure system over the Mozambique Channel has slightly filled up but extending a trough towards northern Zimbabwe. Convergence persists over eastern Tanzania, otherwise great part of it and DRC are dominated by divergence pattern.

**FLOW AT 200MB**

At T+24, a high pressure cell is dominating northwestern Namibia at 18S 13E, extending a ridge towards South Africa. It is associated with very strong westerlies over the western South Africa. Strong divergence associated with a Low level convergence is evident over the Mozambique Channel. Also, divergence pattern dominates Zambia, central Mozambique and Malawi. Strong southeasterlies dominates northern part of the sub continent.

At T+48, the high pressure cell associated with very strong westerlies over South Africa has almost maintained the position northwest of Madagascar. Strong divergence continues to prevail over the Mozambique Channel, otherwise strong southeasterlies over the northern part of the sub continent.

At T+72, the high pressure cell has continues to maintain the position, but now weakened. There is a trough system situated south of South Africa, together with a high pressure cell, they both contributes towards a westerly Jet Stream over South Africa. Strong divergence continues to persist over the Channel extending towards Zambia, otherwise northern part of the sub continent continues to be dominated by strong southeasterlies.

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