**Forecast guidance for Severe Weather Forecasting Demonstration Project (SWFDP)**

**SHORT RANGE FORECAST DISCUSSION 14H00 EST 28th December, 2006**

**AFRICA DESK**
**CLIMATE PREDICTION CENTER**
**National Centers for Environmental predictions**
**National Weather Service**
**NOAA**
**Camp Springs MD 20746**

**Valid 12:00Z 29th December 2006 - 00z 31st December 2006**

**TROPICAL CYCLONE FORMATION AT POSITION, NEAR 9.3S 56.2E MOVING WEST-SOUTHWESTWARDS AT 04KNOTS AND WINDS IN THE AREA ARE IN THE REGION OF 25-30KNOTS. THIS ALERT ON THIS SYSTEM BY THE JOINT TYPHOON WARNING CENTER (NAVPACMETOCCEN) WILL BE REISSUED, UPGRADED TO A WARNING OR CANCELLED AT 282230Z.**

The general pattern at 200hpa over the Southern Africa (South of the Equator) indicates an upper level near-equatorial ridge dominating the flow overland with areas north of 20S experiencing SE to E winds of up to 50 knots and south of 22S the flow being NW 25 to 90 knots. A trough is moving through over the central part of South Africa where strong divergence is indicated by the model. Strong divergence also indicated NE of Madagascar where there is an indication of a Tropical Cyclone formation. At T+48 the upper level ridge moves northwards slightly as the trough over the central parts of South Africa intensifies. A trough moving over the NE part of Madagascar is causing an increase in divergence over the area where cyclone formation is likely in the next 24hrs. At T+72 the trough over South Africa shifts to the eastern part as the upper level ridge is displaced further northwards. A closed circulation low can be observed over the NE Madagascar where strong divergence is also observed but maximum divergence occurring over the NE part of South Africa. The UK- Met and ECMWF models are similar to GFS in terms of positioning the systems at this level.

At 500hpa a trough is moving through over the central part of South Africa extending up to the southern part of Angola causing northwesterly 25 to 55kts winds in the south but northeasterly 15 to 25 knots winds can be observed over east Africa due to a high pressure system centered at about 23S 43E and extends a ridge to the eastern areas. At T+48 the trough moves to the eastern part of South Africa as the high in the east recedes to high latitudes. A closed circulation can be seen NE of Madagascar. At T+72 the trough will intensify as it moves to the NE part of South Africa and the closed circulation over NE Madagascar also deepening with winds of up to 50knots indicated by the model.

Strong vertical lift indicated over southern Mozambique, east of the trough as well as over the NE part Madagascar where strong circulation is indicated. The UK-MET and ECMWF models handle the situation similar and no major discrepancies between these models and GFS.

At 850hpa a cold front is approaching from the southwest with an Atlantic high pressure in the west following closely behind. A steep surface trough ahead of the front over the western interior of S.A and extends up to southern Angola. An Indian Ocean high in the east extends a ridge over the eastern part where the flow is mainly northeasterly. A closed low circulation can be observed at about 10S 52E where cyclone formation is expected in the next 24 hrs. Strong vorticity advection as well indicated around the vicinity of the low. At T+48 the cold front moves to the central part of S.A. as the high behind it extends a ridge overland thus precipitation associated with the front will be limited to the SE part. The low over NE Madagascar will intensify giving strong indication that it will become a Tropical Cyclone by then. The strong vorticity advection NE of Madagascar also points strongly to the formation of a cyclone in the next 24hrs. At T+72 a definite cyclone will be sitting over NE Madagascar with cyclonic winds of up to 50 knots around the center which should be clearly visible at this time. The cold front moves to the NE part of S.A. with strong vorticity advection over southern Mozambique as well as the extreme NE part of S.A. The high in the west continues to ridge overland whilst the one in the east recedes further to the east. There is a resemblance between ECMWF and GFS models in indicating the low developing NE of Madagascar and deepening to a cyclone in the next 24hrs. UK-Met model is the only model indicating the low weakening in the next 24hrs and by T+72 hrs nothing will be left of this system as it fizzles out according to the UK-MET which is totally in contrast with the other two models.

**Note: All maps or pictures are attached below including forecast maps for the next three days.**

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## SUMMARY TABLES FOR RISK AREAS

**DAY 1: Friday 29th December 2006**

| | HEAVY PRECIPITATION | | | | STRONG WINDS | | | |
|---|---|---|---|---|---|---|---|---|
| **RISK** | **No risk** | **Low risk** | **Medium risk** | **High risk** | **No risk** | **Low risk** | **Medium risk** | **High risk** |
| **Botswana** | | | **In the NW** | | **X** | | | |
| **Madagascar** | | | **Extr NE** | | | | **Extr NE** | |
| **Mozambique** | **X** | | | | **X** | | | |
| **Tanzania** | **X** | | | | **X** | | | |

| | | | | | | | | |
|---|---|---|---|---|---|---|---|---|
| Zimbabwe | | | In the SW | | X | | | |

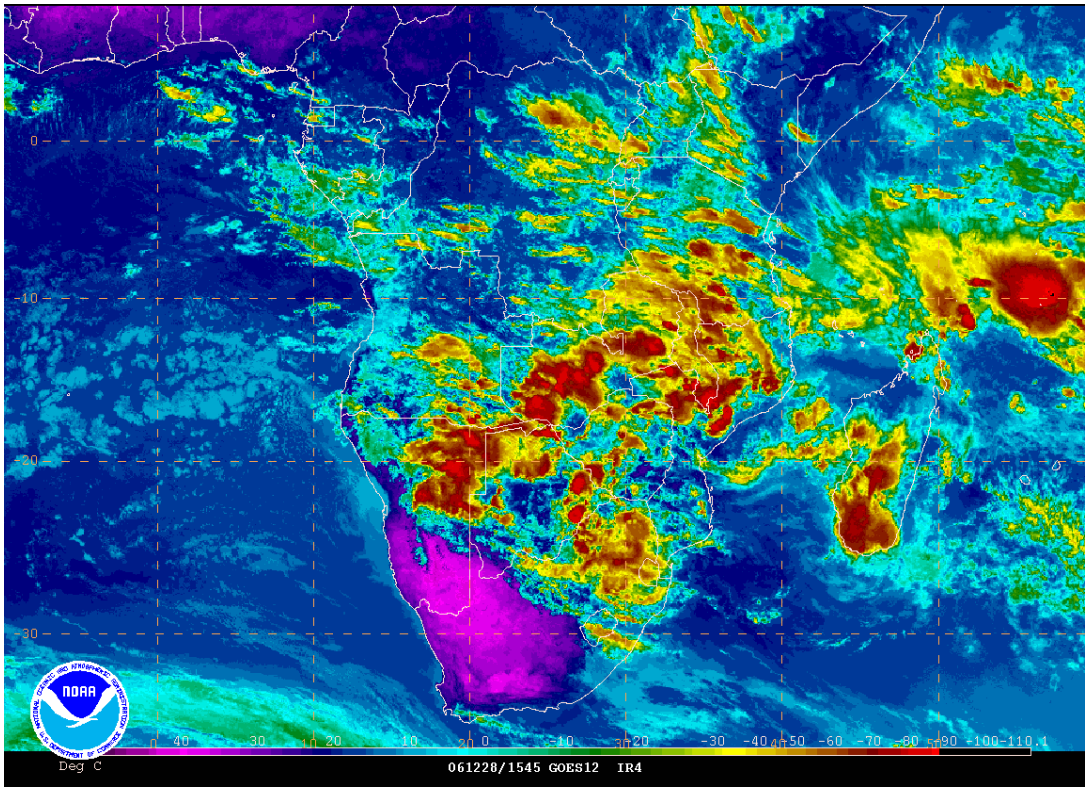
**DAY 2: Saturday 30th December 2006**

| | HEAVY PRECIPITATION | | | | STRONG WINDS | | | |
|---|---|---|---|---|---|---|---|---|
| RISK | No risk | Low risk | Medium risk | High risk | No risk | Low risk | Medium risk | High risk |
| Botswana | X | | | | X | | | |
| Madagascar | | | | Extr NE | | | | Extr NE |
| Mozambique | X | | | | X | | | |
| Tanzania | X | | | | X | | | |
| Zimbabwe | X | | | | X | | | |

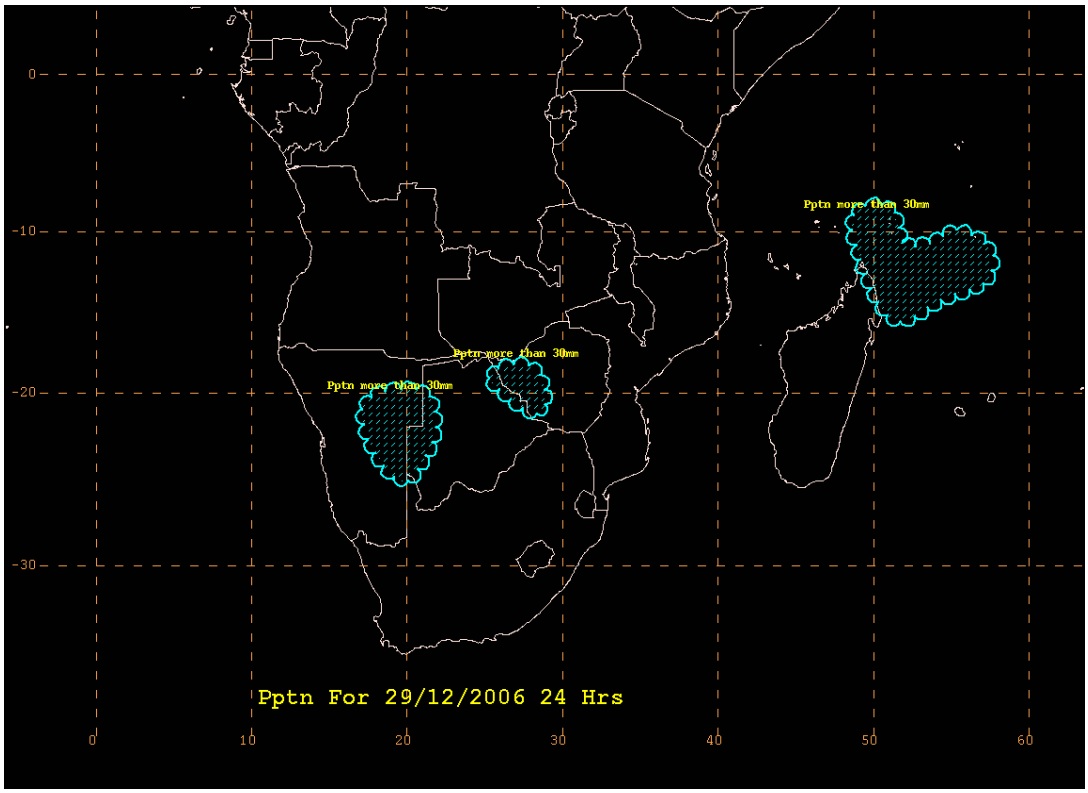
**DAY 3: Sunday 31st December 2006**

| | HEAVY PRECIPITATION | | | | STRONG WINDS | | | |
|---|---|---|---|---|---|---|---|---|
| RISK | No risk | Low risk | Medium risk | High risk | No risk | Low risk | Medium risk | High risk |
| Botswana | X | | | | X | | | |
| Madagascar | | | | In the NE | | | | Extr NE |
| Mozambique | | | | In the south | X | | | In the south |
| Tanzania | X | | | | X | | | |
| Zimbabwe | X | | | | X | | | |

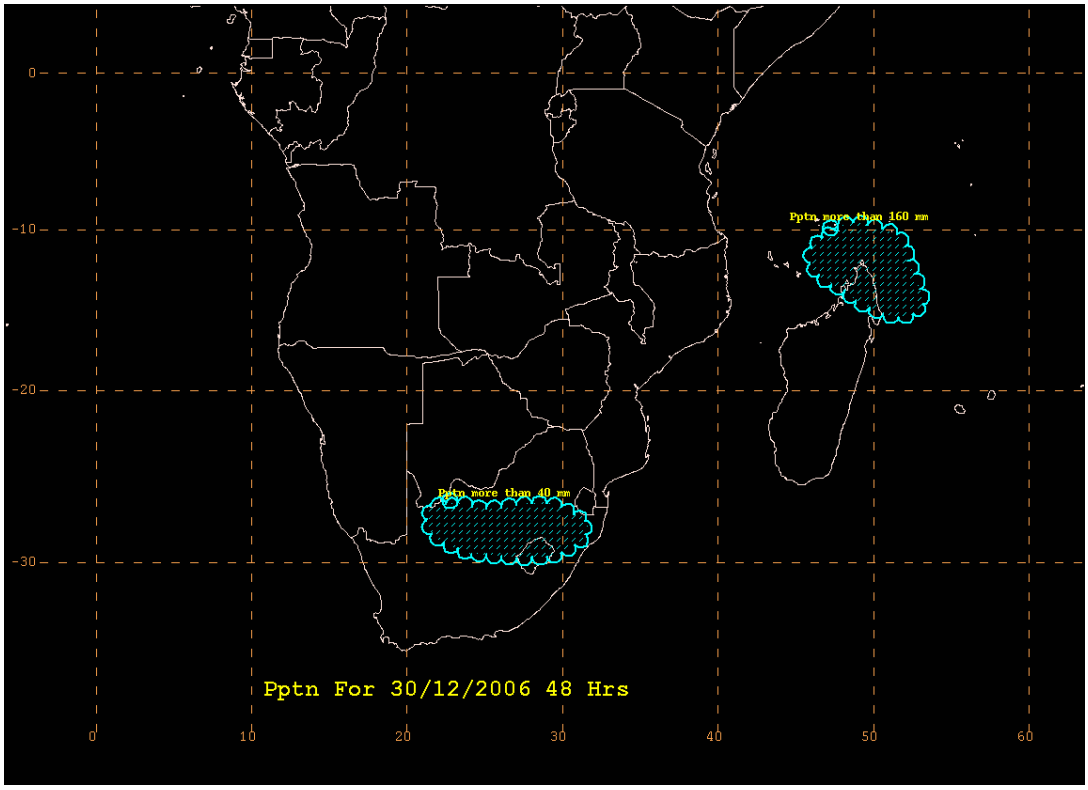
**SATELLITE PICTURE INDICATING DEEP CONVECTION WHERE TC FORMATION IS EXPECTED NE OF MADAGASCAR IN THE NEXT 24HRS**



**FORECAST FOR DAY1**




**FORECAST FOR DAY 2**



## FORECAST FOR DAY 3