

**QUATERLY REPORT OF THE REGIONAL SUBPROJECT**  
**PERIOD: (March 2007 to May 2007)**  
**NMS: Madagascar**

**1- HIGHLIGHTS OVER THE PERIOD**

- a. March 2007:
  - 1st week : ITCZ in the North eastern
  - 14-17 :Tropical .Cyclone “INDLALA” in the Northern part of the island
- b. April 2007:
  - 1st week : Tropical .Cyclone “JAYA” in the Northern part of the island
  - Convection in the Southern part
- c. May 2007:
  - Wet in the North-eastern coast of the island

**2) OVERVIEW OF PRODUCTS**

**a- Usefulness of RSMC-Pretoria guidance**

RSMC-Pretoria guidance helps the forecasters to find areas of severe activities and in issue warnings in time. However their failure is that they can't detect local event : strong local winds.

**b- Usefulness of SWFDP NWP/EPS Products received from each global centre and RSMC UM-SA12**

They are very useful because the products lead the forecasters to able to identify areas of heavy precipitations and strong winds well up to five days.  
 With these products, the confidence of the forecasters increases because the products are more accurate then reliable.

**3) PROJECT EVALUATION AGAINST SWFDP GOALS**

<b>SWFDP GOAL</b>	<b>PROGRESS AGAINST GOALS</b>
To improve the ability of NMCs to forecast severe weather events	The NMCs have got more tools to forecast severe weather events . These products are different from the others because they give informations to the region ,consequently, their ability to forecast severe weather event is improved
To improve the lead time of alerting these Events	The forecast is now available beyond five days with confidence. SWFDP Products are reliable so the forecasters do not hesitate to issue a warning or advisory.
To identify gaps and areas for improvements.	At the beginning, it was not easy to work with so many products at once, but with time, the forecasters succeed to find the best way how to work with them.
To improve the skill of products from Global Centre through feedback from NMCs	Feedback from NMCs will be provided regularly through evaluation form from which the performance of each model will be shown

<p>To improve the interaction of NMCs with Disaster Management and Civil Protection authorities before, during and after severe weather events.</p>	<p>This project reinforces the interaction of the NMC with the DMCPA.  <u>Before</u>, because the forecast is issued 5 days before  <u>during</u>, because warnings are sent directly to the DMCPA  <u>after</u> them the DMCPA has to give their feedback to the NMC</p>
---	---

#### 4) EVALUATION OF WEATHER WARNINGS

##### A- Feedback from the public

The public appreciates our warnings (lead-time of alerting severe event improved). However they are complaining of the content of the advisory because it is too technical.

##### B- Feedback from the DMCPA

No comments, the warnings reach the concerned districts because the DMCPA is very well structured.

##### C- Feedback from the Media

Like the public, the Media appreciates warnings. The TV and radio give information on time but newspapers, the next day. Any way they report the events positively as the accuracy of the forecast has improved and as a result, the perception of the media about the meteorological services has improved (they got training from NMC and DMCPA)

##### D- Warning verification by the NMCs

After the event, as a warning verification, the NMC and DMCPA and some partners in disaster issues go to the places (by plane) where the severe events occurred to evaluate the disaster.

#### 5) SUMMARY (general comments, challenges, etc, details in Annex 1)

- The NMC ability to forecast severe event (heavy precipitation) was improved.
- It remains a challenge to forecast local strong wind from convection.
- More training is needed to forecasters to improve their skills : CD system is not sufficient, more practises are useful (to interpret the products)

**6) CASE STUDY (PowerPoint Presentation to include guidance products (RSMC and NWP), satellite imagery, warnings issued, impact evidence etc)**

**Issue Date: 13<sup>th</sup> March 2007**

Valid for	GUIDANCE		OBSERVED			
	Heavy precipitation	Strong winds	Station	Date	Rainfall (mm)	Strong winds
01 Day 14-03-07	>100mm- 150mm/24h High risk in the N.E	>20KT High risk in the N.E	Antsiranana	14.06.07	56,0	Yes
			Nosy Be	14.06.07	76,0	Yes
			Sambava	14.06.07	83,0	Yes
			Antalaha	14.06.07	355,3	Yes
02 Days 15-03-07	100mm-150mm/24h High risk in the N.E	>20KT High risk in the N.E	Antalaha	15.03.07	85,8	Yes
			Nosy Be	15.03.07	95,7	Yes
			Antsohihy	15.03.07	344,7	Yes
			Sainte-Marie	15.03.07	107,9	Yes
			Farafangana	15.03.07	73,6	yes
03 Days 16-03-07	>100mm/24h High risk up to 80% in the E+N.E	>20KT High risk up to 80% in the E	Antsohihy	16.03.07	240,7	Yes
			Mahajanga	16.03.07	221,2	Yes
			Toamasina	16.03.07	97,2	Yes
			Ambatondrazaka	16.03.07	84,0	Yes
			Mahanoro	16.03.07	69,0,	Yes
			Sainte-Marie	16.03.07	61,0	yes
04 Days 17-03-07	>100mm/24h Medium risk up to 60% in the E	>20KT High risk up to 80% in the E	Mananjary	17.06.07	140,6	Yes
			Farafangana	17.06.07	60,9	yes
05 Days 18-03-07	50-150mm/24h Medium risk up to 60% in the C.E	>20KT Medium risk up to 60% in the S.E	No	18.03.07 No	No	No

**CONCLUSION:**

7) ANNEX 1 – Quarterly Evaluation Table ( to be fulfilled according to the Severe Weather Evaluation Form )

**ANNEX.1**

**Evaluation Table**

DATE	SWFDP Evaluation Form Event Nr (If Applicable)	Weather Type	Location	Observed amount (rainfall or wind speed)	RSMC Guidance		Which NWP/EPS forecast product(s) used by NMC	Local Warnings issued	Impact	
					Amount predicted	Usefulness (1-4) 4 is best				
Dd/mm/yy March 2007 to May 2007		Mesoscale rainfall or synoptic scale rainfall or strong winds (convective or synoptic)		(mm/24h)	Amount predicted	Usefulness (1-4) 4 is best	(RSMC UM-SA 12, ECMWF, Met-Office, NCEP)	Usefulness from 1 to 4 1- Misleading 2- Not useful 3- Useful 4- Very useful		
08/03/07		Mesoscale rainfall	Mahajanga	61.4		3	RSMC UM-SA 12, ECMWF, Met-Office, NCEP	1 4 3 3	Not issued	
14/03/07		Synoptic scale rainfall	Antsiranana	56.0		4	RSMC UM-SA 12, ECMWF, Met-Office, NCEP	3 4 3 3	Not issued	
14/03/07		Synoptic scale rainfall	Nosy Be	76.0		4	RSMC UM-SA 12, ECMWF, Met-Office, NCEP	1 4 3 3	Not issued	
14/03/07		Synoptic scale rainfall and strong winds	Sambava	83.4		4	RSMC UM-SA 12, ECMWF, Met-Office, NCEP	4 4 3 3	Issued	Flooding
14/03/07		Synoptic scale rainfall and strong winds	Antalaha	355.3		4	RSMC UM-SA 12, ECMWF, Met-Office, NCEP	4 4 3 3	Issued	Flooding
15/03/07		Synoptic scale rainfall and strong winds	Antalaha	85.8		4	RSMC UM-SA 12, ECMWF, Met-Office, NCEP	4 4 3 3	Issued	Flooding
15/03/07		Synoptic scale rainfall and strong winds	Nosy Be	95.7		4	RSMC UM-SA 12, ECMWF, Met-Office, NCEP	4 4 3 3	Issued	

15/03/07		Synoptic scale rainfall and strong winds	Antsohihy	344.7		4	RSMC UM-SA 12, ECMWF, Met-Office NCEP	4 4 3 3	Not issued	Flooding
15/03/07		Synoptic scale rainfall and strong winds	Sainte Marie	107.9		4	RSMC UM-SA 12, ECMWF, Met-Office NCEP	4 4 3 3	Not issued	
15/03/07		Synoptic scale rainfall and strong winds	Farafangana	73.6		3	RSMC UM-SA 12, ECMWF, Met-Office NCEP	3 3 3 3	Not issued	
16/03/07		Synoptic scale rainfall and strong winds	Antsohihy	240.7		4	RSMC UM-SA 12, ECMWF, Met-Office NCEP	4 4 3 3	Issued	Flooding
16/03/07		Synoptic scale rainfall and strong winds	Mahajanga	221.2		4	RSMC UM-SA 12, ECMWF, Met-Office NCEP	4 4 3 3	Issued	Flooding
16/03/07		Synoptic scale rainfall and strong winds	Ambatondrazaka	84.0		4	RSMC UM-SA 12, ECMWF, Met-Office NCEP	4 4 3 3	Not issued	
16/03/07		Synoptic scale rainfall and strong winds	Sainte Marie	61.0		4	RSMC UM-SA 12, ECMWF, Met-Office NCEP	4 4 3 3	Issued	
16/03/07		Synoptic scale rainfall and strong winds	Toamasina	97.2		4	RSMC UM-SA 12, ECMWF, Met-Office NCEP	4 4 3 3	Issued	
16/03/07		Synoptic scale rainfall and strong winds	Mahanoro	69.0						
17/03/07		Synoptic scale rainfall and strong winds	Farafangana	60.9		3	RSMC UM-SA 12, ECMWF, Met-Office NCEP	3 3 3 3	Not issued	
17/03/07		Synoptic scale rainfall and strong winds	Mananjary	140.6		3	RSMC UM-SA 12, ECMWF, Met-Office NCEP	3 3 3 3	Not issued	
20/03/07		Mesoscale rainfall	Toamasina	65.0		3	RSMC UM-SA 12, ECMWF, Met-Office NCEP	3 3 3 3	Not issued	
02/04/07		Synoptic scale rainfall	Antalaha	53.2		3	RSMC UM-SA 12, ECMWF, Met-Office NCEP	3 3 3 3	Issued	

02/04/07		Synoptic scale rainfall	Sainte Marie	52.8		3	RSMC UM-SA 12, ECMWF, Met-Office NCEP	3 3 3 3	Issued	
03/04/07		Synoptic scale rainfall and strong winds	Sambava	141.3		4	RSMC UM-SA 12, ECMWF, Met-Office NCEP	4 4 3 3	Issued	Flooding
03/04/07		Synoptic scale rainfall and strong winds	Antalaha	144.0		4	RSMC UM-SA 12, ECMWF, Met-Office NCEP	4 4 3 3	Issued	Flooding
03/04/07		Synoptic scale rainfall and strong winds	Toamasina	216.1		4	RSMC UM-SA 12, ECMWF, Met-Office NCEP	4 4 3 3	Issued	Flooding
04/04/07		Synoptic scale rainfall and strong winds	Toamasina	51.0		4	RSMC UM-SA 12, ECMWF, Met-Office NCEP	2 3 3 3	Not issued	Flooding
07/04/07		Synoptic scale rainfall	Maintirano	56.4		3	RSMC UM-SA 12, ECMWF, Met-Office NCEP	3 3 3 3	Not issued	
13/04/07		Mesoscale rainfall	Antalaha	75.6		3	RSMC UM-SA 12, ECMWF, Met-Office NCEP	3 3 3 3	Not issued	

8) Warning bulletin at 07UTC at 14<sup>th</sup> March 2007

imprimer : 01

14 MAR 2007

FILAZANA MANOKANA MOMBAN'NY TOETRY NY ANDRO  
VOARAY NY 14 MARS 2007 TAMIN'NY 10 ORA ATOANDRO

=====  
MIZOTRA MIANATSIMO ANDREFANA ILAY RIVODOZA ' INDLALA ' AO AMIN'NY  
RANOMASIMBE INDIANA. TAMIN'NY 09 ORA MARAINA TEO DIA TANY AMIN'NY  
220 KM AVARATRA ATSIINANAN' I SAMBAVA NY FOIRENY. NY ANDIAN-DRAHONA  
MIARANA AMIN'NY DIA MILONDRA DRANA ARAPINY TOTOD-UNIVOTRA ANY AMIN'NY  
MORONTSIRAKA AVARATRA ATSIINANAN'NY NOSY INY.  
NOHO IZANY DIA MBOLA MANAN-KERY NY FILAZANA LOZA VOARAIN' IRETO  
DISTRIKA MANARAKA IRETO :

LOZA MANARAKA :

-----ANTSIRANANA I-II, VOHEMAR, SAMBAVA, ANTALAHA, ANDAPA,  
ARY MAROANTSETRA.

FILAZANA MANARAKA :

-----NOSY-BE, AMBANJA, AMBILOBE, BEALANANA, BEFANDRIANA  
AVARATRA, MANDRITSARA, MANANARA AVARATRA, SOANIERANA IVONGO, SAINTE  
MARIE, VAVATENINA, FENERIVE-EST, ARY TOAMASINA I-II.  
IREO MPANJONO ANY AMIN'NY MORONTSIRAKA EO ANELANELAN' ANTSIRANANA SY  
SAINTE MARIE DIA IANGAVIANA MBA HITANDRINA FA MAHERY BE NY  
RANOMASINA.

N.B : MBA VAKIANA MATETITETIKA. MISAOTRA TOMPOKO

imprimer : 02

14 MAR 2007

BULLETIN METEOROLOGIQUE SPECIAL  
DU 14 MARS 2007 A 10 HEURES LOCALES

=====  
LE CYCLONE TROPICAL ' INDLALA ' DANS L'OCEAN INDIEN SE DEPLACE VERS  
LE SUD-OUEST. A 09 HEURES LOCALES IL EST LOCALISE A 220 KM AU  
NORD-EST DE SAMBAVA. LA MASSE NUAGEUSE QUI LE PRECEDE PROVOQUE DES  
PLUIES ACCOMPAGNEES DE COUPS DE VENTS SUR LA PARTIE NORD DE L'ILE.  
PAR CONSEQUENT, LES AVIS D'ALERTE LANCES AUX DISTRICTS CONCERNES  
RESTENT EN VIGUEUR :

AVIS DE MENACE :

-----ANTSIRANANA I-II, VOHEMAR, SAMBAVA, ANTALAHA, ANDAPA,  
MAROANTSETRA.

AVIS D'AVERTISSEMENT :

-----NOSY-BE, AMBANJA, AMBILOBE, BEALANANA,  
BEFANDRIANA AVARATRA, MANDRITSARA, MANANARA AVARATRA, SOANIERANA  
IVONGO, SAINTE MARIE, VAVATENINA, FENERIVE-EST ET TOAMASINA I-II.  
LES PECHEURS DES COTES COMPRISES ENTRE ANTSIRANANA ET SAINTE MARIE  
SONT PRIES D'ETRE PRUDENTS CAR LA MER SERA TRES FORTE.