QUATERLY REPORT OF THE REGIONAL SUBPROJECT

PERIOD: November 2006 to February 2007

Tanzania Meteorological Agency

1. HIGHLIGHTS OVER THE PERIOD (NDJF)

- The first quarter was extremely drier than normal years
- November 2006 had highest incident of localized regions of strong winds not well predicted by models
- December, January, February period had few incidents of severe weather.

2. OVERVIEW OF PRODUCTS

a. Usefulness of RSMC-Pretoria guidance

RSMC – Pretoria guidance is very useful on large scale rainfall bearing systems. The guidance helps the forecasters in issuing warning well in time. It also guides them to find areas of possible activities of severe weather. However, sometimes the sites are not easily accessible due to unreliable internet connectivity.

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

As explained above, the SWFDP products received from the global centres are very useful because the products guide the forecasters to be able to identify areas of severe storms at least well beyond the five days which has not been possible in the past.

3. PROJECT EVALUATION AGAINST SWFDP GOALS

SWFDP GOAL	PROGRESS AGAINST GOALS
To improve the ability of NMCs to forecast severe weather events	The training of forecasters associated with the project prior and after the implementation is continuously improving the ability of the NMC to forecast Severe weather events.
To improve the lead time of alerting these events	Has improved the capacity of the forecasters to locate areas/times of potential Severe weather occurrences
To improve the interaction of NMCs with Disaster Management and Civil Protection authorities before, during and after severe weather events	This project has helped NMC to improve its interaction with the DMCPA. More efforts are being done to further improve this interaction between the two authorities who are the key players in the area of Disaster Management. These efforts should also be geared in getting proper feedbacks for the Agency to improve in this area. There have been several meetings held between NMC and other stakeholders in disaster matters and had agreed on streamlining Disaster Operational Structure.
To identify gaps and areas for improvements	Sometimes the models underestimate/overestimate the intensity of the precipitation. Since the models are global, they do not predict well localized strong winds due to meso-scale convection.
To improve the skill of products from Global Centres through feedback from NMCs	Other Global (ECMWF etc.) models need to give downscaled models such as those given by UK Met (ALAM).

4. EVALUATION OF WEATHER WARNINGS:

A) Feedback from the public

The public appreciates our warnings and the visibility of the NMC has tremendously improved. NMC is now capable of issuing advisories beyond five days and the public really appreciates that. However, the media like criticizing the NMC for failure to issue warning especially for localized strong winds which normally cause destruction to the communities.

B) Feedback from the DMCPA to include comments of the timeliness and usefulness of the warnings

The DMCPA in most cases are positive to warning given to them both in timeliness as well as usefulness. They use them to advise government authorities and disaster management stakeholders.

C) Feedback from the media

The media people appreciate our work but sometimes challenge us on lead time and specific timing of occurrence of expected severe weather events.

D) Warning verification by the NMCs

The warning is verified once the event was either observed or forecasted. NMC gets the impact of the warning from the District Disaster Management committee reports whether the warning was useful to them or not. In most cases warnings for heavy precipitation are issued.

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

- It remains a challenge to issue warnings due to localized strong winds from convection.
- NMC to collaborate with the National Disaster Management Department to set a 24x7 Operational Centre.
- Inadequate internet bandwidth for fast download of products.
- Project goals not well understood by most meteorologists in the NMC.
- Improved understanding of the use and interpretation of model output products by meteorologists at the NMC.

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

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

Starting date of the event	**SWFDP Evaluation Form Event Number**	**Type of event** **Heavy Precipitation or Strong Wind**	**Region affected**	**Highest observed value**	**RSMC Guidance**		**Which NWP/EPS forecast product(s) used by NMC**		**Local warnings issued?**	**Impact of the event**	**Impact of the warning**
dd/mm/yy		Indicate if extreme phenomena are the consequence of severe convection		(mm/period or kts, according to the phenomenon)	Amount predicted (same unit as in the preceding column)	Usefulness from 1 to 4 1- Misleading 2- Not useful 3 - Useful 4 - Very useful	(RSMC UM-SA12 ECMWF, Met-Office, NCEP)	Usefulness from 1 to 4 1- Misleading 2- Not useful 3 - Useful 4 - Very useful			
07.11.2006	1	Heavy precipitation	North eastern Highlands (Arusha)	109.6 mm/24h	Used but values not indicated	2	used	2	Warning was issued	No casualty	N/A
03.12.2006	2	Heavy precipitation	Southern area (Mahenge)	109.2 mm/24h	Used - -	2	used	2	Warning was not issued but NMC forecasted the event	No casualty	N/A

13.12.2006	3	Heavy precipitation	Northern coast (Zanzibar)	111.6 mm/24h	Used - -	3	ALAM	3	Warning was issued	Floods on the streets	Mitigated the impacts.
17.12.2006	4	Heavy precipitation	JNIA (Formerly Dar Airport	108.9mm/24h	Used - -	3	ALAM EPS (ECMWF) DET(ECMWF)	3 3 3	Warning was issued	Floods in many streets	
21-12-2006 22-12-2006 23-12-2006	5	Tropical Cyclone Bondo over Indian Ocean	Coastal areas Central and western areas Southwestern highlands	Average precipitation but severe thunderstorm with strong winds	Used - -	3	ALAM NCEP ECMWF	4 3 4	Warning on strong winds and heavy precipitation was given with more emphasis to marine users.	Roofs were torn and house destroyed	Awareness
29-12-2006	6	Heavy precipitation	Dar es Salaam (Ocean Rd)	90.0 mm/24h	Used - -	3	ALAM NCEP ECMWF	3 3 3	Warning was issued	Floods in some streets	Mitigated the impacts
11.01.2007	7	Strong winds	Mwanza	More than 50 knots in some places	Used - -	2	ALAM NCEP ECMWF	2 2 2	Warning was issued	Several houses had their roofs uprooted.	Mitigated the impacts