STATUS OF THE REGIONAL SUBPROJECT

PERIOD: 1 June 2007 – 31 August 2007

NMS: ZIMBABWE

1. HIGHLIGHTS OVER THE PERIOD

The period of the third quarter (June – August) is typically the driest of the project year in Zimbabwe. There is little moisture in the air, and above 3 kilometres where there is a persistent temperature inversion, the air is extremely dry. The normal regime is therefore one of fair, mild days with little or no cloud. Thus, it is not unusual that according to the Severe Weather Forecasting Demonstration Project (SWFDP) criteria, there were no severe weather events during this period. However, there was a short lived winter wet spell which occurred on 2 June 2007. Widespread rainshowers and thunderstorms affected the country although rainfall amounts recorded were below 50 mm. The event was detailed as a case study in the second quarterly report of Zimbabwe to the SWFDP.

As expected, the wind regime over Zimbabwe was generally weak and by far below the critical thresholds (according to SWFDP criteria) throughout the third quarter.

Historically, the review period is also the coldest period of the year in Zimbabwe. Thus, the only significant weather events that occurred were associated with very cold spells which resulted in severe morning ground frosts. As a result, a significant hectarage of the winter crop was affected by frost bite. The SWFDP global and regional products and guidance added significant skill to frost forecasting in Zimbabwe.

In the absence of severe weather, the regional and global guidance products are evaluated in this report in terms of their contribution to weather forecasting in general.

2. OVERVIEW OF PRODUCTS

a. Usefulness of RSMC-Pretoria guidance

The short and medium range maps, risk tables and discussions of RSMC Pretoria have continued to provide a quick guide to the weather over southern Africa. The weather discussion by the Severe Weather Forecaster at RSMC-Pretoria is a useful briefing for the duty Forecaster.

Nearly every day during the third quarter, the risk maps were blank over the SWFDP forecast area indicating the absence of severe weather over the subcontinent.

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

As expected during the dry season, synoptic scale systems dominate the weather and as reported previously, the models do not have any difficulty resolving synoptic scale features but rather with mesoscale or localised features. Thus, predictability was very high and it is not useful to rank the models' performance for this quarter.

EPSgrams' remain an invaluable tool because of their ability to give a medium term outlook for various meteorological parameters at a single point.

3. PROJECT EVALUATION AGAINST SWFDP GOALS

SWFDP GOAL	IMPACT
To improve the ability of NMCs to forecast severe weather events	The improved skill of weather forecasting in general is noted by Zimbabwe and largely attributed to the SWFDP.
To improve the lead time of alerting these events	For the third quarter, there were no severe events to alert of. However, Press Releases for hard frosts were disseminated some

	three to four days ahead of the event.
To improve the interaction of NMCs with Disaster Management and Civil Protection authorities before, during and after severe weather events	The interaction with Civil Protection and Disaster Management Authorities remains strong, as our Service is continually requested to participate in outreach programmes to vulnerable communities organised by them in preparation for the upcoming rainfall season.
To identify gaps and areas for improvements	The gaps are being identified although some are not directly related to the project itself such as Internet speed, power blackouts and other infrastructure such as weather radars.
To improve the skill of products from Global Centres through feedback from NMCs	There was no feedback this quarter through the evaluation forms and email postings to the project website as there were no severe events. The models did well..

4. EVALUATION OF WEATHER WARNINGS (feedback from customer?, standardized questions to disaster authorities?)

A number of advisories and warnings were issued this quarter mainly with regards severe frosts in susceptible places. These were particularly useful to the farming community who were consulting throughout the cold season. For those whose winter crops or horticulture products were affected by frost bite, it was definitely not a result of lack of warnings from the National Meteorological Service. A lot more guidance has become available to Forecasters for frost forecasting through participation in the SWFDP.

There were no warnings or advisories issued specifically to Disaster Management and Civil Protection Authorities (DMCPA), thus there is no feedback from these for this quarter. As indicated in the second quarterly report, a number of other

specialised forecasts such as aviation forecasts, fire-weather forecasts, fog forecasts and medium term forecasts which are outside the scope of the SWFDP have been improved remarkably in terms of accuracy, timeliness and relevance – according to feedback from users of this information.

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

In view of the impact of severe frosts on winter agriculture and livelihoods, it is recommended that WMO consider extending the criteria for severe weather to other extreme meteorological phenomena for subsequent demonstration projects in other regions. These include hard frosts, extreme heat and exceptional fire hazard depending on the vulnerability of that region to the phenomena.

Forecasters can now access model guidance from the various websites in a shorter period which is a significant improvement compared to the period of the first quarter. However, as indicated in previous reports a few challenges remain with regards the local Internet connection which is still rather slow. The ideal situation is one of broadband or satellite connection. Disruptions to the forecast process are also caused by power blackouts which sometimes lead to Internet servers being unavailable.

No significant improvement is noted in terms of availability of surface and upper air observations since the commencement of the SWFDP in November 2006. Observations are nearly always incomplete and data transmission is often delayed by communication problems. As indicated in the second quarterly report, observations (surface, upper-air, satellite and radar) form the basis of any forecast process. Their incompleteness or delay has significant impact on the timeliness and accuracy of severe weather forecasts.

Unlike the second and third quarters, a significant number of severe weather events are likely during the last quarter of the SWFDP. Often, violent thunderstorms occur during the early part of the main rainfall season in Zimbabwe which commences

usually in early October. For the longer-term forecast, there are enhanced chances for normal to above normal rainfall over Zimbabwe throughout the upcoming rainfall season from early October to about early April 2008 which may suggest increased incidence of flood events during the season.

Zimbabwe was invited to participate in the RA1 Training Workshop on the use of Global Data Processing and Forecasting System (GDPFS) Products and Public Weather Service in Support of Natural Disaster Reduction which is organised and supported by WMO and will be held in Pretoria, South Africa from 28 October – 9 October 2007. The main purpose of the Training workshop is to update and widen the knowledge of staff responsible for operational weather forecasting to ensure the optimal use of existing Numerical Weather Prediction products, in particular with knowledge of probabilistic predictions and use of products especially for severe weather forecasting. The Workshop will also deal with a broad range of topics related to Public Weather Services including impacts of changing environment on service delivery to the public, improved relations with stakeholders, coordination with the media and emergency management, media and communications skills, socio-economic applications of Public Weather Services, forecast verification and service assessment. Zimbabwe was given exception by WMO to send two participants to this workshop and it is expected the education and training gained will be of immense benefit to Zimbabwe as well as to the spirit and intent of the SWFDP.

In conclusion, the benefits of the SWFDP to Zimbabwe are without precedent and therefore it is hoped this wide range of products and guidance will remain available beyond the duration of the Demonstration Project.

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

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
Dd/mm/yy		Mesoscale rainfall or synoptic scale rainfall or strong winds (covective or synoptic)		(mm/24hrs)	Amount predicted	Usefulness (1-4) 4 is best	List by centre		
NIL	NIL	NIL	NIL	NIL	NIL	NIL	NIL	NIL	NIL
In a number of cases, particularly in July, severe ground frost occurred over exposed surfaces in susceptible areas			Ground temperatures below – 3°C in traditionally susceptible areas of Matopos, Kezi, West Nicholson, Gweru, Marondera, and Nyanga A ground minimum temperature of – 7°C was recorded at Matopos on the 28th July 2007.				All models and guidance were in remarkable agreement throughout.	In all cases	Significant hactarage of the winter wheat crop and horticultural products were damaged by frost bite.