



South African
Weather Service

ISO 9001 Certified Organisation

SWFDP-SA: Overview

Eugene Poolman

CF: DRR

South African Weather Service

DEVELOPMENT OF REGIONAL EARLY WARNING SYSTEMS

Adaptation through Enhanced Early Warning Systems

- The IPCC Special Report on Managing the Risks of Extreme Events and Disasters (Nov 2011), stating:
 - *“A changing climate leads to changes in the **frequency, intensity, spatial extent, duration and timing** of extreme weather and climate events, and can result in **unprecedented extreme weather and climate events**”*
 - *Developing countries are more at risk*
 - *“It is likely that the frequency of heavy precipitation....will increase in the 21st century...”*
- This calls for EWS even at the shortest timescales, tailored to local levels, because that is where the impact of increased number of disasters will be felt most strongly

Progress in the Development of Regional EWS in Southern Africa

SARCOF: Consolidated seasonal climate forecasts in September on the likelihood of above / below normal rain for the coming summer season over SADC

6 months

Late 1990's

Progress in the Development of Regional EWS in Southern Africa

SARCOF: Consolidated seasonal climate forecasts in September on the likelihood of above / below normal rain for the coming summer season over SADC

6 months

SWFDP: Enhancing capacity in NMSs to issue severe weather warnings for the next 5 days

Days

Late 1990's

2006

Doc Ref no: FCAST-PRE-SWFDP-20121112-001.1

Progress in the Development of Regional EWS in Southern Africa

SARCOF: Consolidated seasonal climate forecasts in September on the likelihood of above / below normal rain for the coming summer season over SADC

6 months

SWFDP: Enhancing capacity in NMSs to issue severe weather warnings for the next 5 days

Days

SARFFG: Developing technology for flash flood warnings

Few Hours

Late 1990's

2006

2012/2013

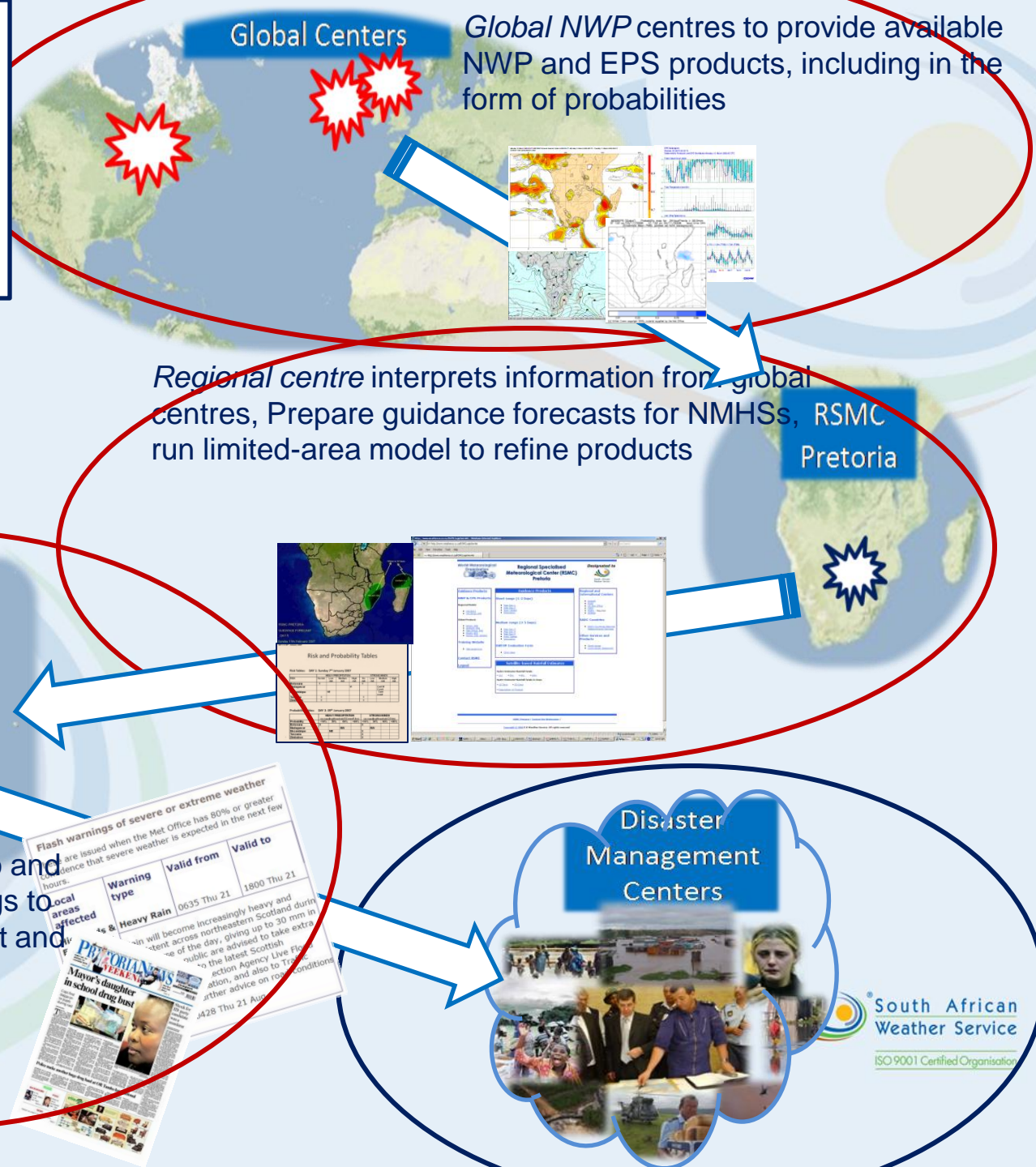
Doc Ref no: FCAST-PRE-SWFDP-2012-112-001.1

SWFDP-SA: OVERVIEW

Aim of the WMO SWFDP Program

- To improve ability of National Meteorological Services (NMSs) to forecast severe weather events for the next 5 days using existing technology – to close the technology gap
- To improve interaction of NMSs with Disaster Management Agencies
- SWFDP is about *enhancing delivery of warning services as adaptation against a likely increase of disasters due to climate change and socio-economic vulnerabilities*

SWFDP Cascading Process



Flash warnings of severe or extreme weather are issued when the Met Office has 80% or greater confidence that severe weather is expected in the next few hours.

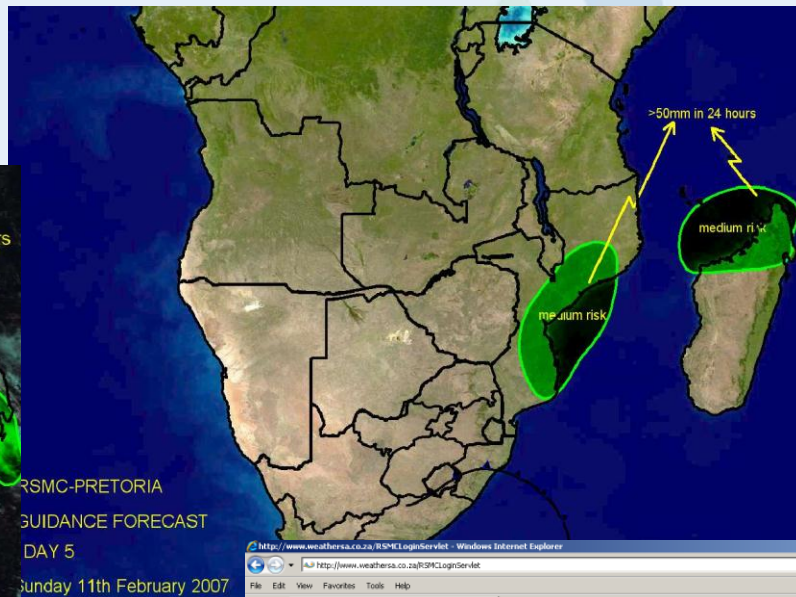
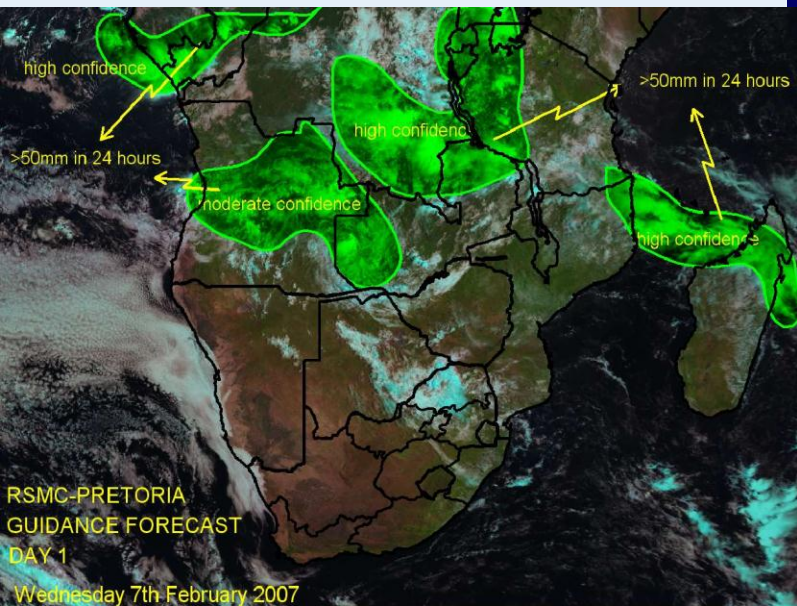
Local areas affected	Warning type	Valid from	Valid to
Heavy Rain		0635 Thu 21	1800 Thu 21

...in will become increasingly heavy and intense across northeastern Scotland during the course of the day, giving up to 30 mm in rain to the latest Scottish weather forecast. The Met Office has issued a Flash Flood Warning for the region, and also to the public to take extra care on roads. Further advice on road conditions will be issued as they develop.

428 Thu 21 Aug

PRYORIAN
Mayor's daughter in school drug bust

Examples of SWFDP Guidance Products from RSMC Pretoria



World Meteorological Organization
Regional Specialised Meteorological Center (RSMC) Pretoria
Designated to South African Weather Service

Guidance Products

NWP & EPS Products

Regional Models

- UM 24x2
- UM Africa LAM

Global Products

- BOA/L, EPS
- ECMWF, EPS
- Met Office, EPS
- BOA/L, EPS
- BOA/L, EPS (SARF)
- ECMWF

Training Website

- MetLearnings

Contact RSMC

Logout

Guidance Products

Short-range (1-2 Days)

- Map Day 1
- Map Day 2
- Risk Tables
- Discussion

Medium-range (3-5 Days)

- Map Day 3
- Map Day 4
- Map Day 5
- Risk Tables
- Discussion

SWFDP Evaluation Form

- Click here

Satellite-based Rainfall Estimates

Hydro-Estimator Rainfall Totals

- 1hr
- 3hr
- 6hr
- 24hr

Hydro-Estimator Rainfall Totals In Days

- 10 Days
- 30 Days
- Description of Product

Regional and International Centers

- SWFEP
- SIEM
- UM Met Office
- WMO
- RSMC - Reunion
- SCMIS

SADC Countries

- SADC Countries National Meteorological Services

Other Services and Products

- Short-range
- Long-range (Seasonal)

RSMC Pretoria / Contact the Webmaster /
Copyright © 2006 SA Weather Service. All rights reserved.

Risk and Probability Tables

Risk Tables: DAY 1: Sunday 7th January 2007

RISK	HEAVY PRECIPITATION				STRONG WINDS			
	No risk	Low risk	Medium risk	High risk	No risk	Low risk	Medium risk	High risk
Botswana	X				X			
Madagascar				W			Cent W Coast	Cent coast
Mozambique		NE						
Tanzania	X				X			
Zimbabwe	X				X			

Probability Tables: DAY 3: 09th January 2007

Probability	HEAVY PRECIPITATION (exceeding threshold 50 mm/6 hrs)				STRONG WINDS (exceeding threshold 20 kts)			
	<10%	30%	60%	>80%	<10%	30%	60%	>80%
Botswana	X				X			
Madagascar			NW				NW	
Mozambique		NE			X			
Tanzania	X				X			
Zimbabwe	X				X			

Doc Ref no: FCAST-PRE-SWFDP

Evolution of the SWFDP-SA Project

- Phase 1: July 2006 – Oct 2006
 - started with a planning meeting in Aug 2006 in Pretoria, South Africa, followed by the first regional training session in November 2006 in Pretoria, South Africa
- Phase 2: Nov 2006 – Nov 2007
 - The demonstration phase based on 5 NMCs, RSMC, 3 Global Centres
- Phase 3: Dec 2007 – Dec 2011
 - MASA requested WMO to roll SWFDP out to the entire region, based on the successes of the demonstration phase
 - The SWFDP activities was rolled out to all 16 Southern African countries

Evolution of the SWFDP-SA Project: Phase 4

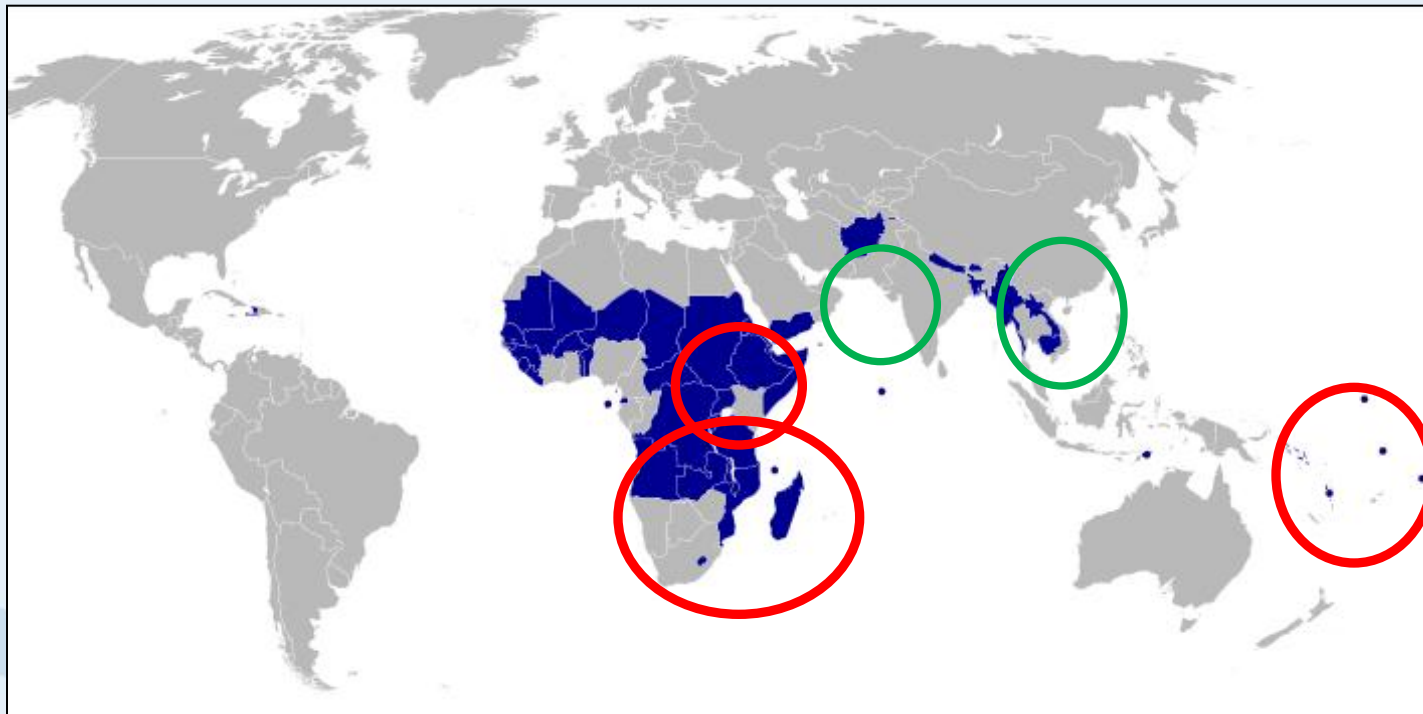
- Phase 4: Jan 2012 - ?
 - Long-term sustainability and continuous development phase
 - SWFDP-SA oversight has been transferred from WMO to MASA
 - Embracing other warning system into the basic framework established by SWFDP – flash flooding through SARFFG, etc.
- Recognized that some countries need more help to fully benefit from SWFDP = specific efforts will continue to support those countries
- SWFDP developed a framework for collaboration among NMSs, and with their disaster management structures and media to be used by other programmes

Successes and Challenges of SWFDP

- SWFDP was generally successful in building the forecasting capacity and improving warnings services in many countries, because:
 - ✓ Of its simplicity and operational focus (NMSs only needed internet)
 - ✓ It built capacity that could be immediately used in an operational environment by all countries involved
- It opened channels between weather forecasters and disaster managers in countries where they did not exist in the past
- It highlighted the challenges in effective warning dissemination to end-users, and with disaster management structures
- Highlighted the need for enhancing in-country public responsiveness through public awareness campaigns

International Impact of SWFDP

- The SWFDP concept is now also implemented by WMO in the Southern Pacific islands and East Africa, and WMO is targeting at least 2 new regions, all based on the success in Southern Africa





Thank you