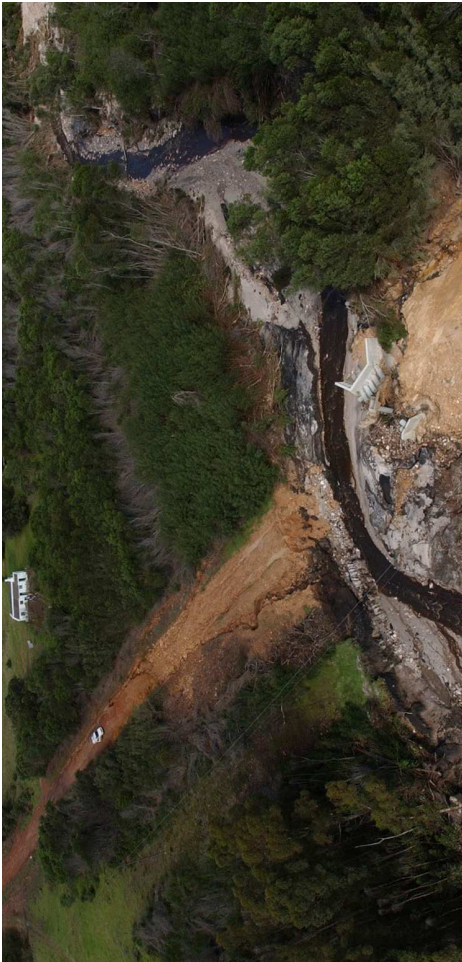


# THE EARLY WARNING SYSTEM OF THE SA WEATHER SERVICE: Flash Flood Warnings

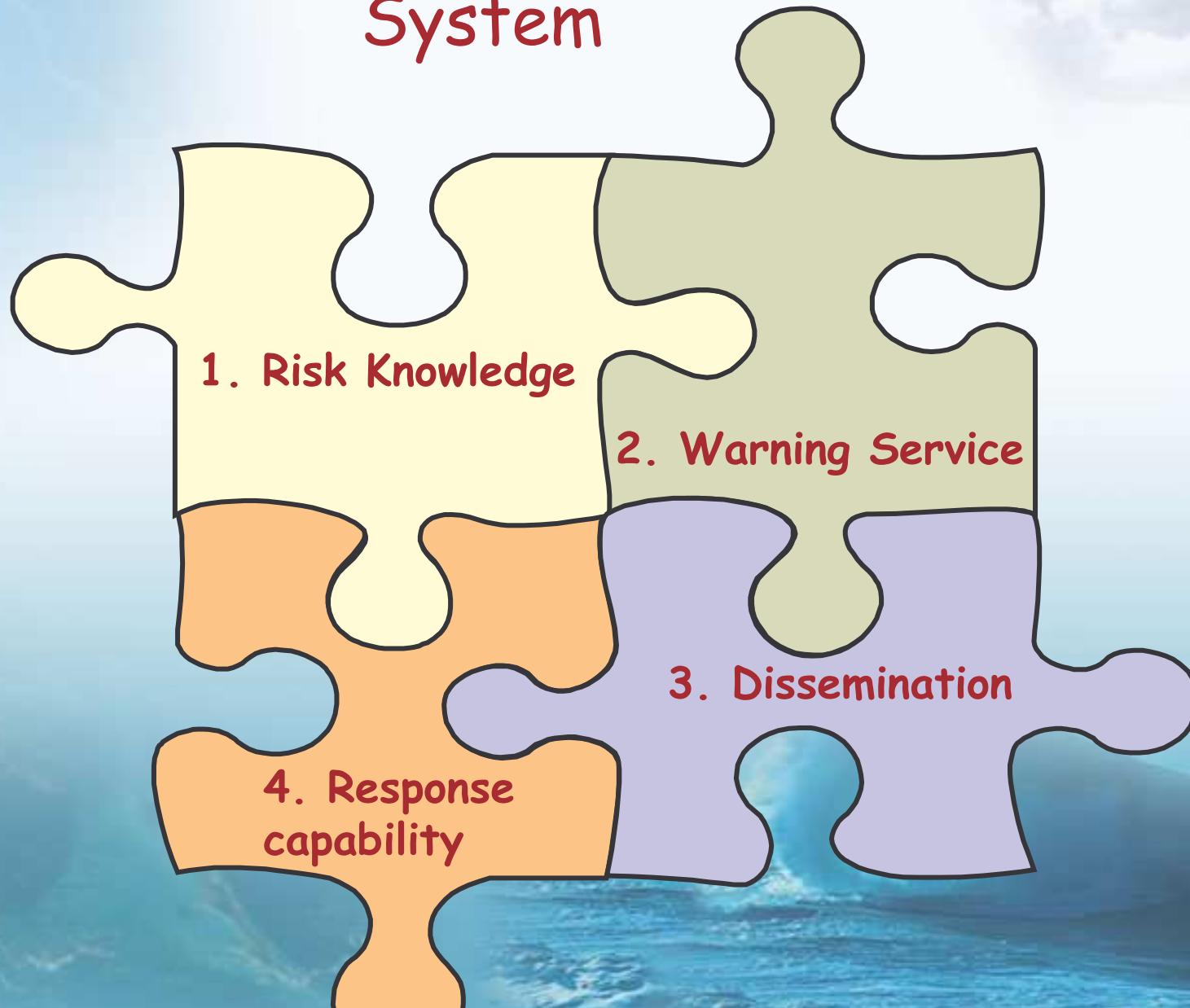
Eugene Poolman  
South African Weather Service





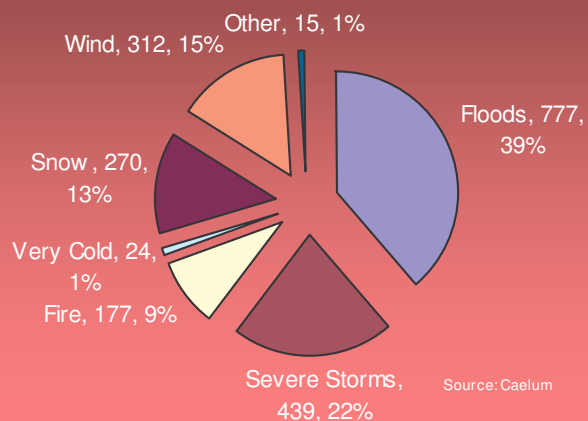


# Components of an Early Warning System

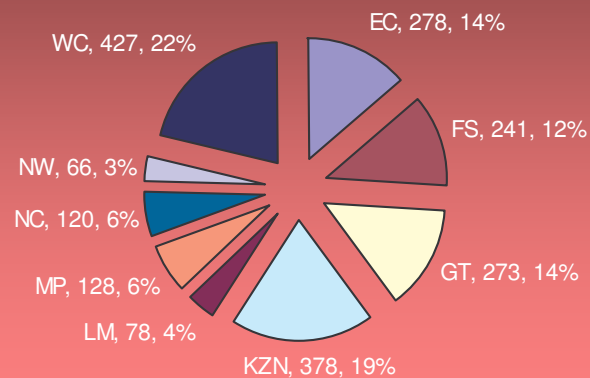


# 1. Risk Knowledge: General Hazard Analysis

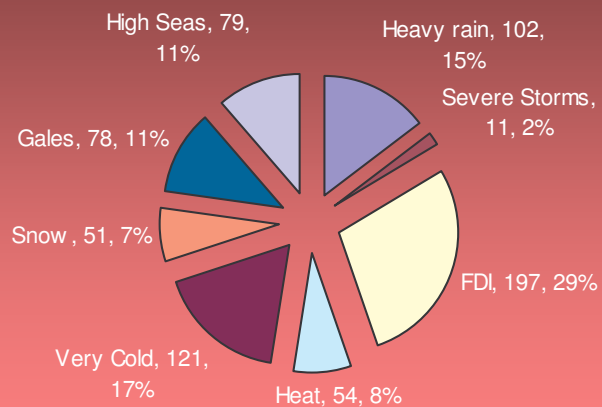
Hazard Analysis  
South Africa  
Major Categories 1961-2005



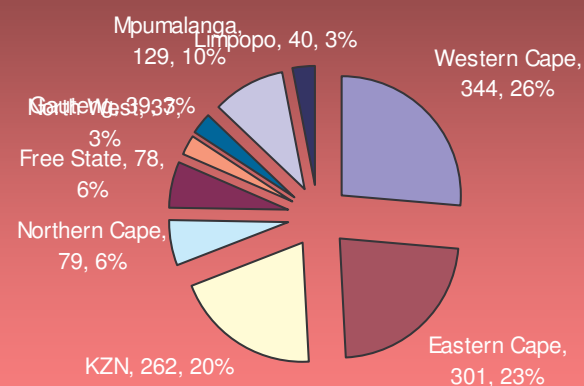
Hazard Analysis  
Provincial Breakdown  
Major Categories 1961-2005



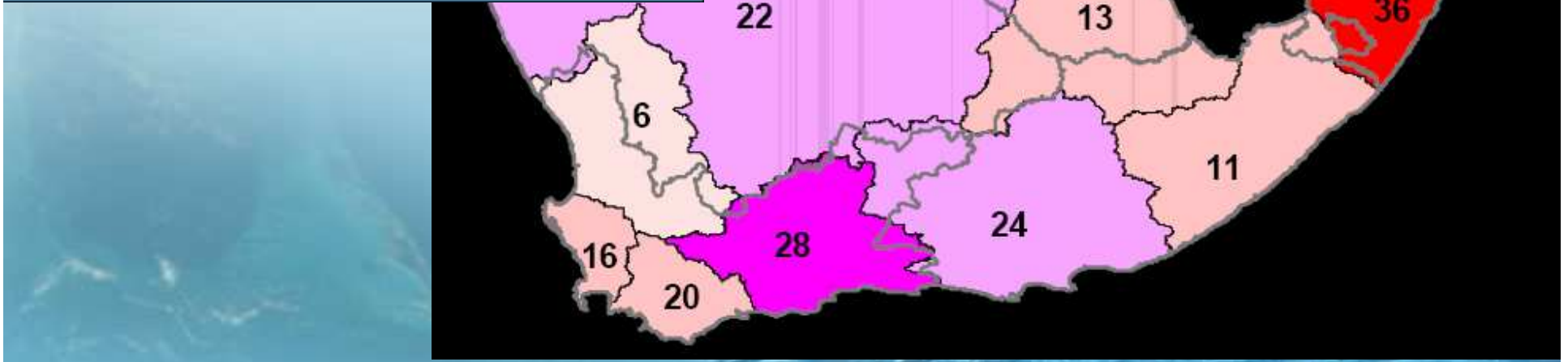
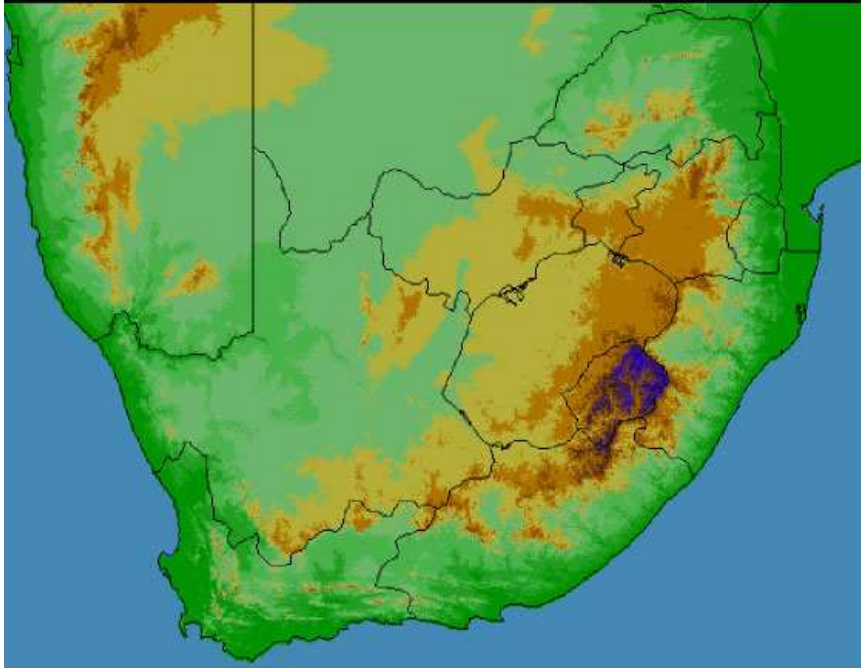
Warning Analysis South Africa  
Warnings Days per Category  
(# of days a warning of a category was issued)  
Jan 2005 - Aug 2006



Warning Analysis South Africa  
Warnings per Province  
(# of warnings issued in each province)  
Jan 2005 - Aug 2006



# Number of Floods per Water Management Area 1800 - 1995



## 2. Warning System: SAWS and the Disaster Management Act

- SAWS is involved in all phases of disaster risk management:
  - From prevention, preparedness to response and even recovery
- DM and SAWS Acts specifically defines the role of the SAWS as the *sole provider of weather related warnings in SA*

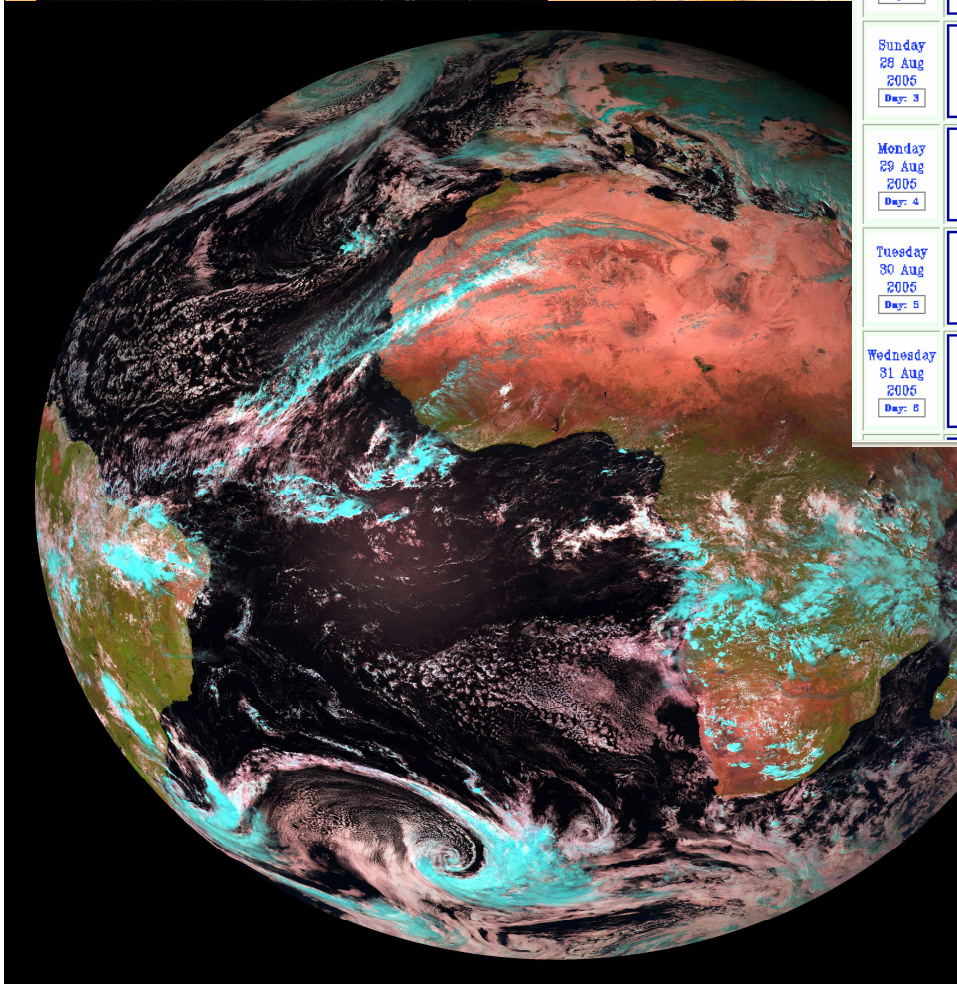
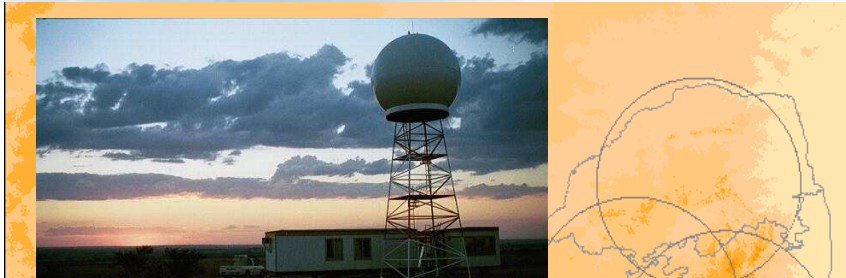


# Recent Developments in EWS at SAWS:

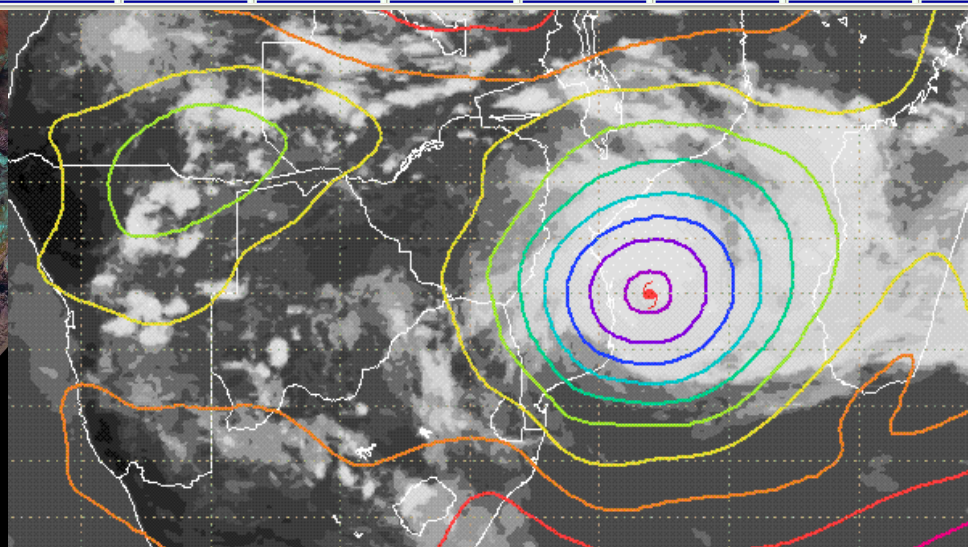


- Observations:
  - Meteosat 8, radar network, lightning detection network
- Forecast tools:
  - New weather prediction models, workstations
- Extending the forecasting range:
  - Seamless forecasting
- Forecasting practices:
  - Coordination between forecasting offices

# Developments in Science and Technology



Date of forecast	Probability of Rainfall > 1mm	Probability of Rainfall > 8.5mm	Probability of 24H Tx change > 2 deg	Probability of 24H Tn change > 2 deg	Mean-sea level Pressure	700 hPa Heights	500 hPa Heights	Prob 85 Thi
Friday 26 Aug 2006 Day: 1								
Saturday 27 Aug 2006 Day: 2								
Sunday 28 Aug 2006 Day: 3								
Monday 29 Aug 2006 Day: 4								
Tuesday 30 Aug 2006 Day: 5								
Wednesday 31 Aug 2006 Day: 6								

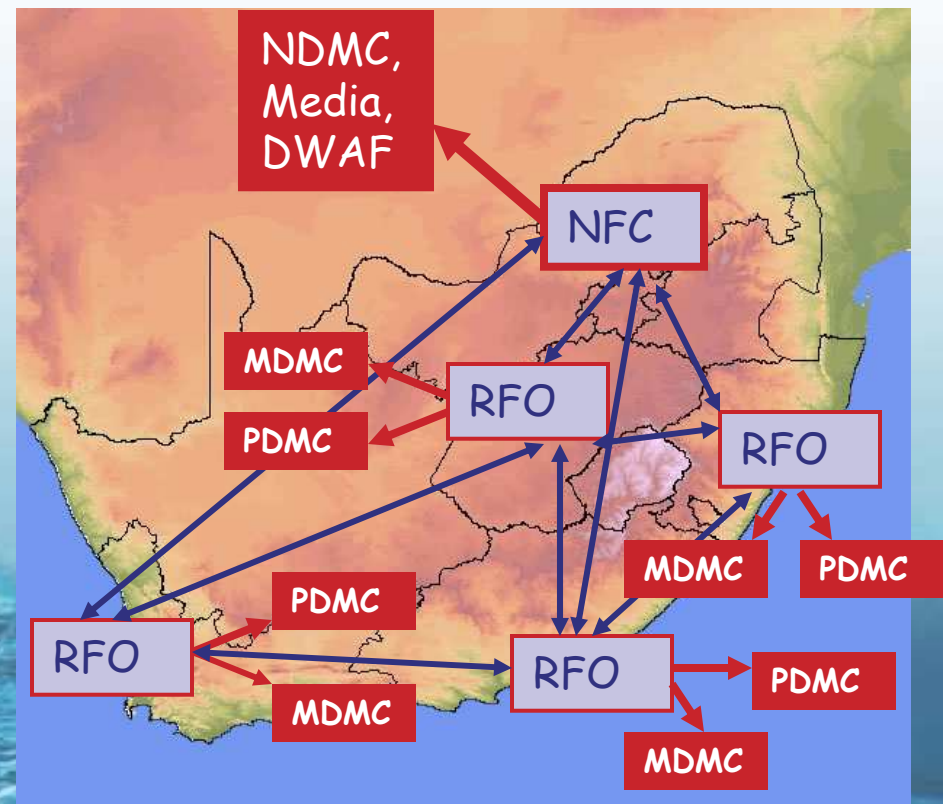


# Development in Forecasting Coordination

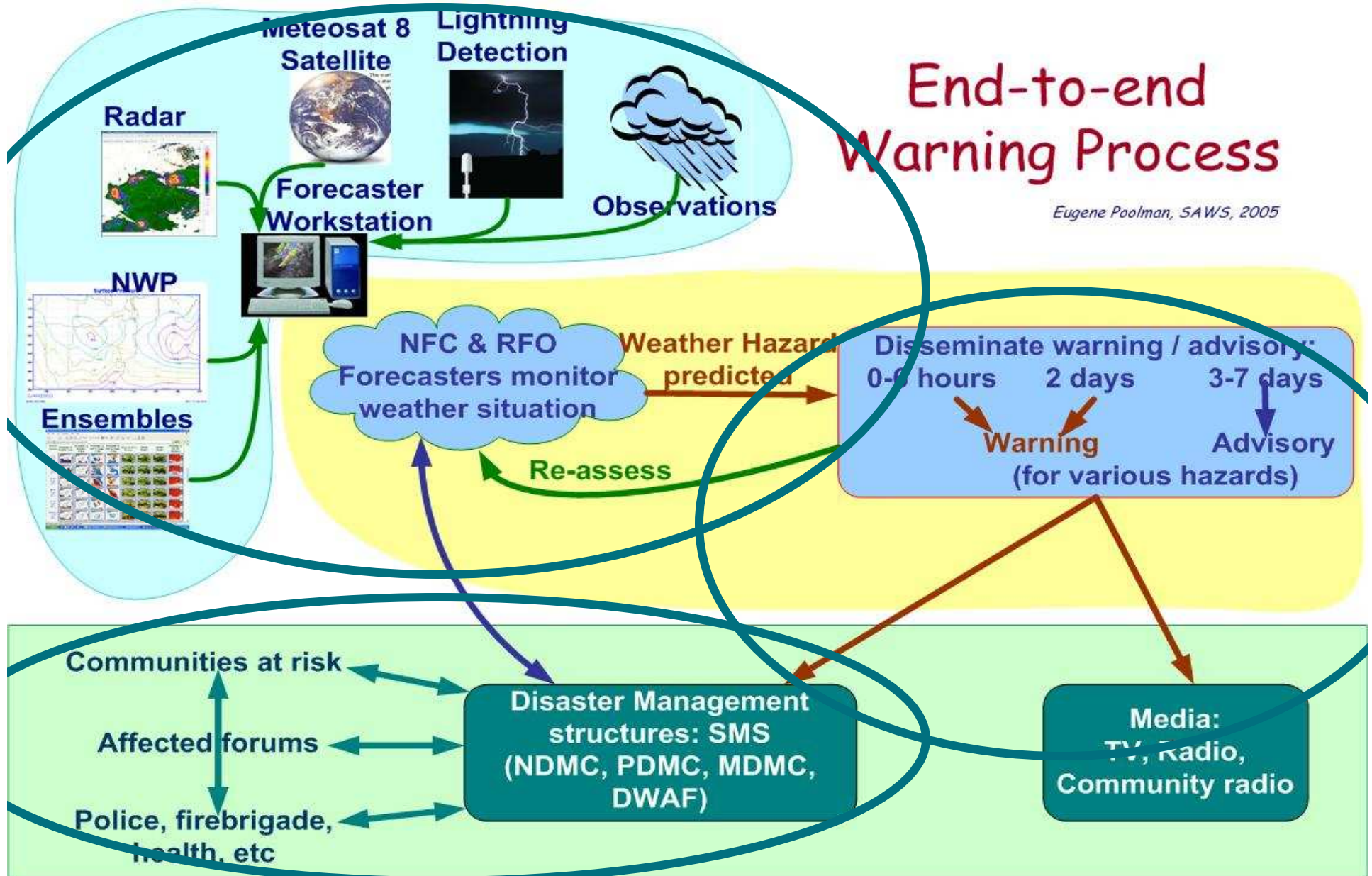
- Within communications loop before, during and after severe weather events
- Attending national and provincial DM Advisory Forum meetings
- Direct contact between forecasters and disaster managers
  - Before and during
  - "Wash out" meetings afterwards
- Members of DMISA
  - Attend conferences
  - Participate in workshops
  - Give presentations
- Forecast offices involved in community outreach within their regions

2005

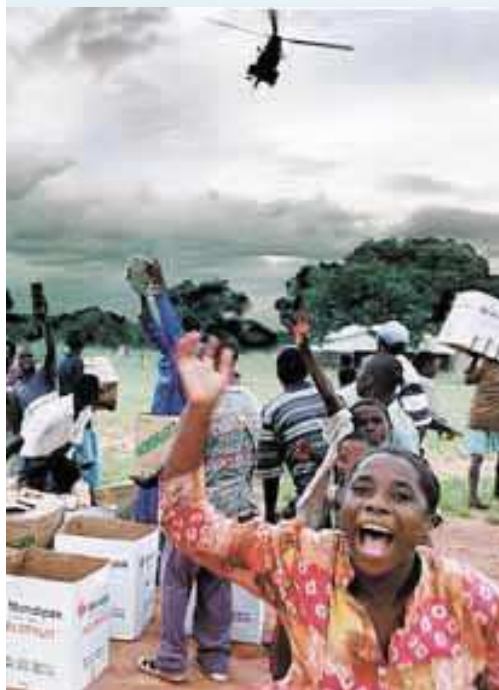
3-dimensional



# 3. Warning Dissemination



# Challenges to Early Warning Service for Flash Floods



- Current flash flood warning: “..heavy rain expected with potential for flash floods....” (no idea about hydrological response)
- Need for a rainfall & hydro based FFG system to determine areas in danger
- Integration with Disaster Management Centers
- Communication of warnings to communities at risk

# SUMMARY

- There were tremendous developments in all the components of the EWS recently
- EWS is a crucial component in disaster management
- An excellent nowcast is useless if a warning was not issued timeously to communities at risk
- Strong partnerships between all role players!
- Enhance EWS = flash flood warning system