



the **dplg**

Department:
Provincial and Local Government
REPUBLIC OF SOUTH AFRICA



National Disaster Management Centre

INAUGURAL ANNUAL REPORT 2006/2007

This Disaster Management Report should be read in conjunction with the **dplg** 2006/2007 Annual Report



the dplg

Department:
Provincial and Local Government
REPUBLIC OF SOUTH AFRICA



INAUGURAL ANNUAL REPORT

FINANCIAL YEAR 2006/2007

Acronyms and Abbreviations

AA	Automobile Association	ESF	Emergency Support Function
ACSA	Airports Company South Africa	ETQA	Education and Training Quality Assurer
ADRA	Adventist Disaster Relief Agency	EXCO	Executive Committee
AFIS	Advanced Fire Information System	FBS	Fire Brigade Services
AGIS	Agricultural Geo-referenced Information System	FDI	Fire Danger Index
ALOHA	Arial Locations of Hazardous Atmospheres	FEMA	Federal Emergency Management Agency
AU	African Union	FFA	Forest Fire Association
CAMEO	Computer-aided Management of Emergency Operations	FIT	Flood Information Tool
CATS	Consequence Assessment Tool	FPA	Fire Protection Agency
CBO	Community Based Organisation	GDE	Gauteng Department of Education
CDW	Community Development Worker	GEMC3	General Emergency Management Command and Control Centre
CGS	Council for Geoscience	GEOSS	Global Earth Observation System of Systems
CSIR	Council for Scientific and Industrial Research	GIS	Geographical Information System
CTMM	City of Tshwane Metropolitan Municipality	GNOME	General NOAA Oil Modelling Environment
DBSA	Development Bank of Southern Africa	HOD	Head of Department
DLGTA	Department of Local Government and Traditional Affairs	ICDM	Intergovernmental Committee on Disaster Management Incident Command System
DM	Disaster Management	ICS	International Decade for Natural Disaster Reduction
DME	Department of Minerals and Energy	IDNDR	Integrated Development Plan
DMIS	Disaster Management Information System	IDP	Institution of Fire Engineers
DMISA	Disaster Management Institute of Southern Africa	IFE	Inter-Ministerial Committee on Disaster Management
DMTP	Disaster Management Training Programme	IMC	Information Management System
DoA	Department of Agriculture	IMS	Inventory Collection Survey Tool
DoD	Department of Defence	InCAST	Indian Ocean Tsunami Warning System
dplg	Department of Provincial and Local Government	IOTWS	Intergovernmental Panel on Climate Change
DST	Department of Science and Technology	IPCC	International Strategy for Disaster Reduction
DTRA	Defence Threat Reduction Agency	ISDR	Justice, Crime Prevention and Security Cluster
DWAF	Department of Water Affairs and Forestry	JCPS	Japan Meteorological Agency
EIA	Environmental Impact Analysis	JMA	Key Focus Area
EMS	Emergency Medical Services	KFA	Key Performance Areas
EOC	Emergency Operations Centre	KPAs	King Sabata Dalindyebo
EPA	Environmental Protection Agency	KSD	Local Organising Committee
EPSOC	Emergency Planning Steering and Oversight Committee	LOC	Municipal Disaster Management Centre
		MDMC	

MEC	Member of Executive Council	SAESI	Southern African Emergency Services Institute
MIG	Municipal Infrastructure Grant	SAFFG	Southern African Flash Flood Guidance
MIS	Management Information System	SAFNET	Southern Africa Facilitator's Network
MODIS	Moderate Resolution Imaging Spectroradiometer	SALGA	South African Local Government Association
MSDS	Material Safety Data Sheet	SAMHS	South African Military Health Services
NAC	National Airways Corporation	SANDF	South African National Defence Force
NCOP	National Council of Provinces	SANRAL	South African National Roads Agency Limited
NDA	National Development Agency	SANSN	South African National Seismograph Network
NDDA	National Dolomite Development Authority	SAPS	South African Police Service
NDMAF	National Disaster Management Advisory Forum	SAQA	South African Qualifications Authority
NDMC	National Disaster Management Centre	SASAR	South African Search and Rescue
NDMF	National Disaster Management Framework	SASSA	South African Social Security Agency
NDMIS	National Disaster Management Information System	SATEWS	South African Tsunami Early Warning System
NDoH	National Department of Health	SAWS	South African Weather Service
NDVI	Normalised Difference Vegetation Indexes	SETA	Sector Education and Training Authority
NEAR	National Emergency Aerial Radio	SITA	State Information Technology Agency
NEPAD	New Partnership for Africa's Development	SOP	Standard Operating Procedure
NGO	Non-Governmental Organisation	SRS	Situation Reporting System
NISL	National Information Society Learnerships Programme	TEAM	Training, Education, Awareness and Marketing Programme
NMBMM	Nelson Mandela Bay Metropolitan Municipality	TNA	Technical Needs Analysis
NNR	National Nuclear Regulator	UN	United Nations
NOAA	National Oceans and Atmospheric Administration	UNDAC	United Nations Disaster Assessment and Co-ordination Committee
NQF	National Qualifications Framework	UNDP	United Nations Development Programme
PDMAF	Provincial Disaster Management Advisory Forum	UNEP	United Nations Environmental Programme
PDMC	Provincial Disaster Management Centre	UNFCCC	United Nations Framework Convention on Climate Change
PPO	Project Portfolio Office	UPS	Uninterrupted Power Supply
PROVJOINTS	Provincial Joint Operations and Intelligence Committee	USAID	United States Agency for International Development
PTWC	Pacific Tsunami Warning Centre	USAR	Urban Search and Rescue
RDP	Reconstruction and Development Programme	VOIP	Voice Over Internet Protocol
RSMC	Regional Specialised Meteorological Centre	WAN	Wide Area Network
SAACE	South African Association of Consulting Engineers	WMO	World Meteorological Organisation
SAC	Satellite Application Centre	WoF	Working on Fire
SADC	Southern African Development Community		
SAEOS	South African Earth Observation Strategy		

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Foreword by Minister Fholisani S Mufamadi



For the Government, the position is clear; we are committed to lessening the impact of such disasters on our people. We have made significant advances in respect of international standards and have made the paradigm shift from response and recovery to that of prevention and mitigation.

I am delighted to write a foreword for this very important publication, the inaugural annual report for the National Disaster Management Center (NDMC), for the 2006-2007 financial year.

This report comes at a key moment for the NDMC, at a time when climate change and global warming are matters occupying the minds of governments all over the world. In the South African context, this has meant that we have had to learn to cope with extreme weather conditions such as stronger and damaging gale-force winds, fires, devastating floods, violent hailstorms and increased snow falls. For the Government, the position is clear; we are committed to lessening the impact of such disasters on our people. We have made significant advances in respect of international standards and have made the paradigm shift from response and recovery to that of prevention and mitigation.

Furthermore, we are continually improving on our institutional capacity to proactively plan for, and react to, natural and human-induced disasters. In the period under review several governance structures have been established. They include the Intergovernmental Committee on Disaster Management, the National Disaster Management Advisory Forum as well as the Provincial Disaster Management Committee.

This report serves as a benchmark and will ensure accountability across all 3 spheres of government. It documents the achievements and challenges experienced in the 2006-2007 financial year. Amongst others, it also demonstrates the environmental management responsibilities that have been widely embraced by all stake-holders.

As this is the inaugural annual report, we can look forward to many more reports that will ensure sustainable development and resilient communities through improved risk assessments and contingency planning, as well as the implementation of people-centric early warning systems in dealing with natural and human-induced disasters.



A handwritten signature in black ink, reading 'Fholisani S Mufamadi', written over a horizontal line.

Fholisani S Mufamadi
Minister for Provincial and Local Government

Overview by the Director General and Head of the National Disaster Management Centre



Despite the inevitable challenges experienced during the implementation of the Disaster Management Act, significant strides have been taken with regard to the successful implementation and operationalisation of the Disaster Management legislation.



Ms Lindiwe Msengana-Ndlela
Director-General



Mr Lance Williams
Head: National Disaster Management Centre

As this is the Inaugural Annual Report of the NDMC it reflects on the significant milestones achieved since the promulgation of the Disaster Management Act (No. 57 of 2002) and the publication of the Disaster Management Framework (2005) and places an emphasis on achievements and challenges experienced while implementing the Disaster Management legislation through to the end of the 2006/07 financial year.

In accordance with section 24 (1) of the Disaster Management Act this report will highlight:

- (a) The NDMC's activities during the period under review;
- (b) The results of the NDMC's monitoring of prevention and mitigation initiatives;
- (c) Disasters that occurred during the year in each province;
- (d) The classification, magnitude and severity of these disasters;
- (e) The effects they had;
- (f) Particular problems that were experienced-
 - (i) in dealing with these disasters; and
 - (ii) generally in implementing the Act and the national disaster management framework;
- (g) the way in which these problems were addressed and any recommendations that the NDMC wishes to make in this regard;

- (h) progress with the preparation and regular updating in terms of sections 25,38,39, 52 and 53 of disaster management plans and strategies by organs of state involved in disaster management; and
- (i) an evaluation of the implementation of such plans and strategies.

This report also includes inputs from relevant National Departments as well as affiliated entities.

It is comforting to note that despite the inevitable challenges experienced during the implementation of the Disaster Management Act that significant strides have been taken with regard to the successful implementation and operationalisation of the Disaster Management legislation.

It is worth noting that Disaster Risk Reduction, which is defined by the United Nations International Strategy for Disaster Reduction (UN-ISDR) as “the systematic development and application of policies, strategies and practices to minimise vulnerabilities and disaster risks throughout a society, to avoid or to limit the adverse impact of hazards, within the broad context of sustainable development (2002, 25)” should result in a reduction of loss of human lives, livelihoods and property as well as social, economic (and environmental) setbacks that result from natural disasters.” The aim of Disaster Risk Reduction policies is to increase resilience to natural hazards while ensuring that development efforts do not increase vulnerability to these hazards.



Ms Lindiwe Msengana-Ndlela
Director-General



Mr Lance Williams
Head: National Disaster Management Centre

A note on terminology

Disaster Risk Management

The term ‘disaster risk management’ refers to integrated, multisectoral and multidisciplinary administrative, organisational, and operational planning processes and capacities aimed at lessening the impacts of natural hazards and related environmental, technological and biological disasters. This broad definition encompasses the definition of ‘disaster management’ as it is used in the Disaster Management Act, 2002 (Act No. 57 of 2002). However where appropriate, the more updated term ‘disaster risk management’ is preferred in this document because it is consistent with the use of the term internationally.

The NDMC at a glance

Things to know	
1.	The objective of the National Centre is to promote an integrated and coordinated system of disaster management, with special emphasis on prevention and mitigation, by national, provincial and municipal organs of state, statutory functionaries and other role-players involved in disaster management and communities.
2.	Through its strategic objective, namely to build and strengthen the capability and accountability of Provinces and Municipalities to implement their constitutional mandate, the NDMC aims to contribute to the overall resilience of communities and infrastructure to reduce disaster risk, to strengthen the capacity of provinces and municipalities in pre-empting and responding to disasters, as well as ensuring cross-functional disaster management in all spheres of Government.
3.	The NDMC mobilised R1,091m during the 2006/07 financial year to assist with humanitarian and infrastructural relief.
4.	Key focus areas include – <ul style="list-style-type: none"> • Establishment and functioning of political and technical structures • 2010 FIFA World Cup – a catalyst for fast-tracking the implementation of the Disaster Management Act, 2002.
5.	The organisational structures of the NDMC consist of – <ul style="list-style-type: none"> • Disaster Policy and Compliance Management • Disaster Intervention and Support • Information Technology • Capacity Building and Research.
6.	The actual centre has been designed in such a manner that it can also be converted into an Operational Centre in the event of a national emergency.

Chapter 01

Orientation



An active partnership between national, provincial and local governments, statutory and voluntary organisations and communities is needed in order to develop and implement effective disaster management strategies. The role of national government is to provide guidance and support to the provincial and local governments in developing their capacity for dealing with disasters, and to provide assistance if requested.

1.1 Background

Throughout our history, disasters have inflicted a heavy cost in human, material and physical resources, and damage to the environment. They represent a potentially significant obstacle to economic growth and development.

A disaster is an event which disrupts the daily life of the population of a community or country and can result in substantial loss of life and social upheaval, leading to many persons becoming homeless, helpless and hungry. The situation is further aggravated by the disruption, dislocation or loss of vital economic production and national infrastructure, including water and power supplies, communications and transportation.

Disasters occur when hazards impact on a community to the extent that available resources cannot cope with the problem effectively. The community itself needs support and assistance to prevent and cope with disasters and their effects.

Adequate procedures to deal with disaster situations and relief measures must be planned prior to the event, with strong legislation to empower those responsible to carry out the tasks. Regular training must be conducted covering all aspects of disaster management. Careful planning must be in place to coordinate the effective use of resources, both human and physical, for the saving of lives and property, limiting damage to the environment, and the return to a normal lifestyle as soon as possible.

The development of disaster management strategies must be undertaken before the event. Disaster management requires effective community-based strategies which will include programmes and measures to:

- Prevent or reduce the severity of hazard impact
- Ensure the preparedness of the arrangements and of the community itself
- Provide an effective response should impact occur
- Provide for the recovery of a community affected by such an impact.

Measures must also be in place to request and receive assistance from outside the country. Many authorities and organisations are routinely involved in dealing with incidents and disasters which arise when natural or technological hazards impact on our communities.

An active partnership between national, provincial and local governments, statutory and voluntary organisations and communities is needed in order to develop and implement effective disaster management strategies.

The role of national government is to provide guidance and support to the provincial and local governments in developing their capacity for dealing with disasters, and to provide assistance if requested.

All of the above indicates the dire need for disaster risk reduction – the conceptual framework of elements considered with the purpose of minimising vulnerabilities and disaster risks throughout society in order to avoid (prevention) or to limit (mitigation and preparedness) the adverse impacts of hazards and facilitate sustainable development.

Disaster risk reduction is a cross-cutting and development issue. The process of disaster risk reduction is a complex one consisting of political, technical, participatory and resource mobilisation components. Therefore disaster risk reduction requires collective wisdom and efforts from national policy and decision makers from various government sectors and representatives from civil society, including academic institutions, the private sector and the media.

1.2 Disaster Trends²

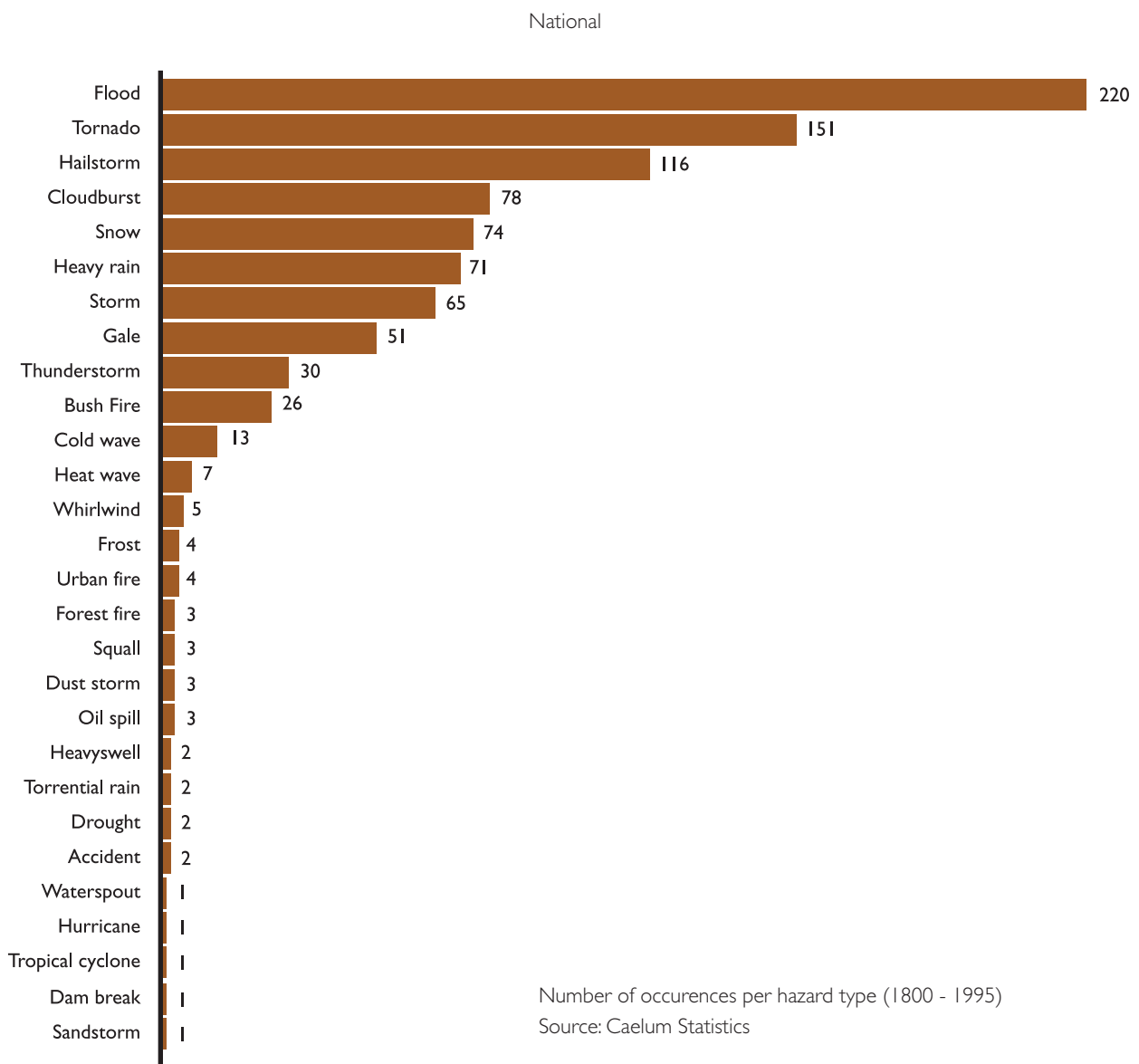
Natural disasters such as devastating floods, violent hailstorms, heavy snowfalls and gale-force winds are a regular occurrence in South Africa. Such disasters are often described as being the worst in living memory, a claim which usually cannot easily be confirmed or discounted. Consequently the South African Weather Service maintains a record of significant weather events of the past and captures information such as the actual

date of occurrence, the extent of the damage and area affected, as well as the frequency of a particular type of disaster occurring in a specific region.

The diagrams below highlight the significant weather events in the history of South Africa and serve as a useful reference.

A total of **946** hazardous events were recorded in South Africa during the period between the years 1800 to 1995. The number of occurrences per hazard type is as follows:

Figure 1: Number of occurrences per hazard type (1800 – 1995)



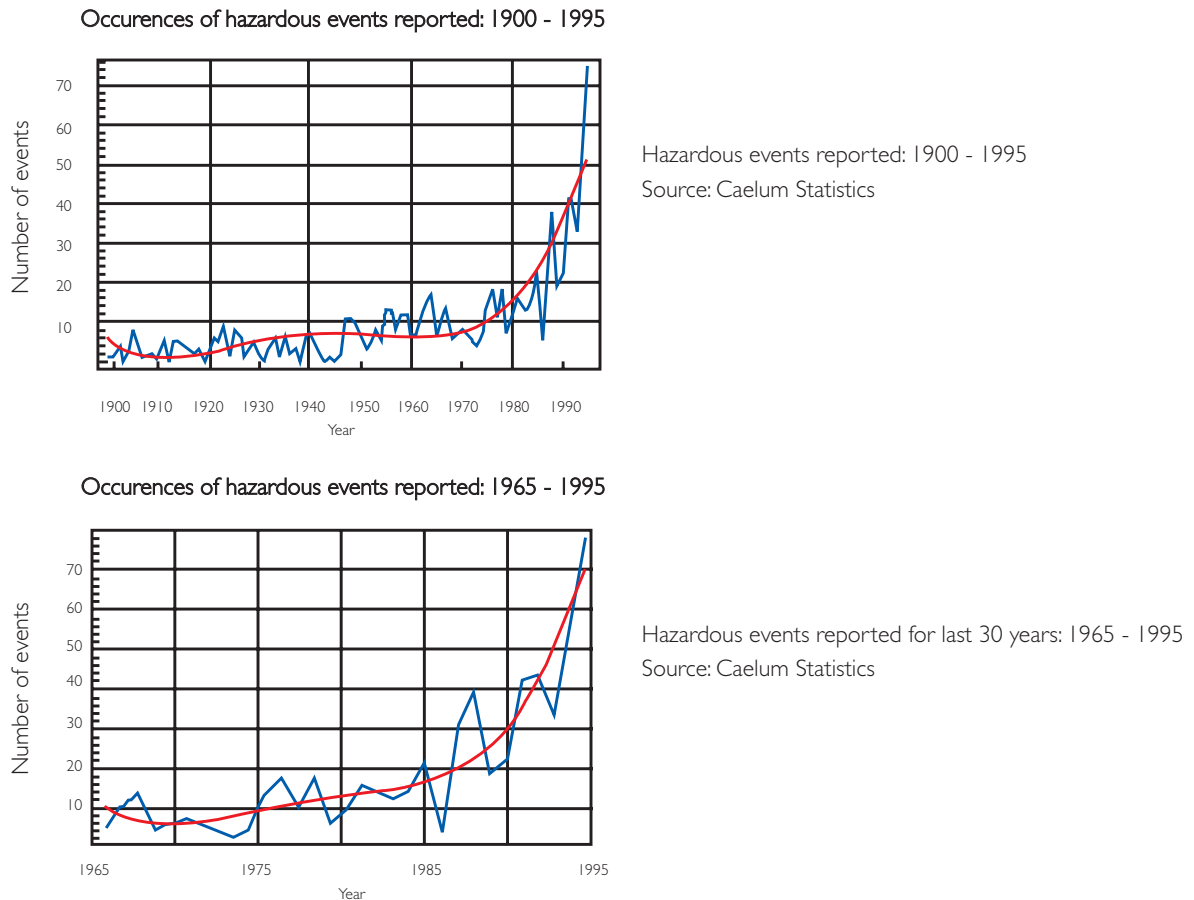
Grouping them together by the nature of the hazardous events, it can be concluded that South Africa is a 'wet and windy' country:

- 'Wet' events occurred in approximately 59% of cases (flood, hailstorm, cloud burst, snow, heavy rain, torrential rain)
- 'Windy' events occurred in 33% of cases (tornado, storm, thunderstorm, gale, whirlwind, hurricane, sandstorm, waterspout).

It is clear that the reporting of hazardous events, especially in the 19th century, was not as thorough as in the 20th century. Media attention from about the mid sixties and beginning of the seventies has increased. This can in all likelihood be coupled to the increasing attention of the media and public as a result of environmental awareness, global warming and climate change. (See detailed report on climate change in section 9 of this report).

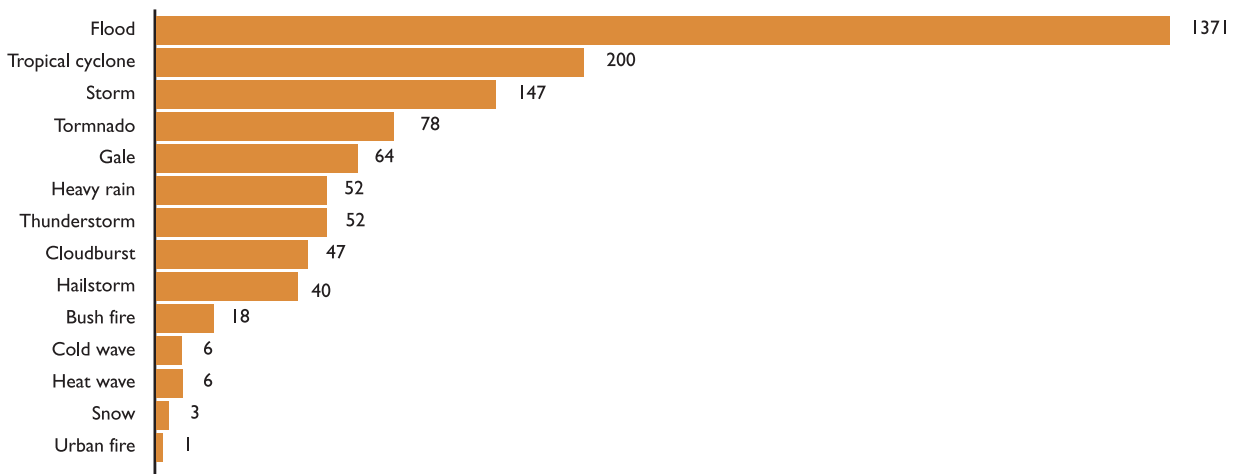
The next two graphs show the number of hazardous events from the beginning of the 20th century (blue line). It is clear, on both lines, that there has been a marked increase of hazardous events (Not only are the number of events increasing, but the frequency and efficiency of reporting of those events has also improved).

Figure 2: Hazardous events reported: 1900 – 1995



The most critical aspect of hazardous events are the consequences with regard to loss of life and injuries. The total number of fatalities in the graph is approximately 2 085 people (Note: these figures should be used as indicative only):

Figure 3: Fatalities per event type



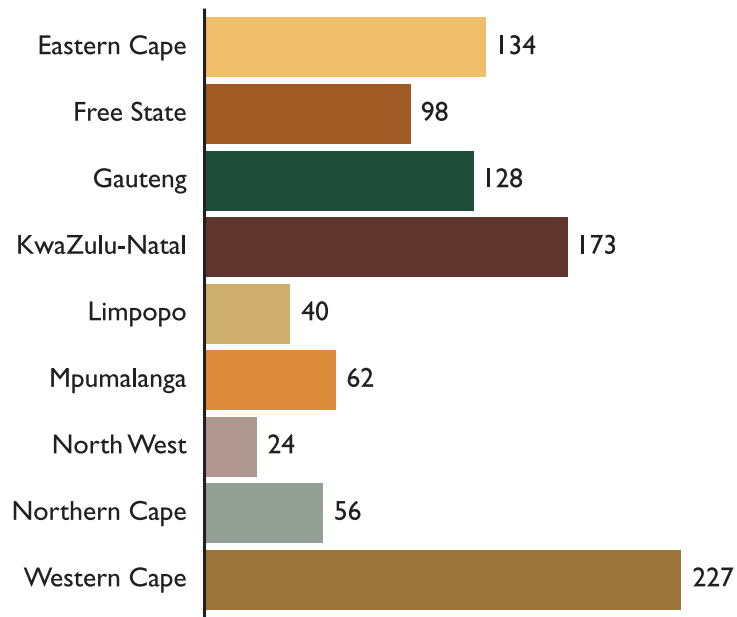
Provincial perspective between Year 1800 and 1995
 Source: Caelum Statistics (1800-1995)

According to the above graph the biggest single 'killer event' are floods (± 66%).

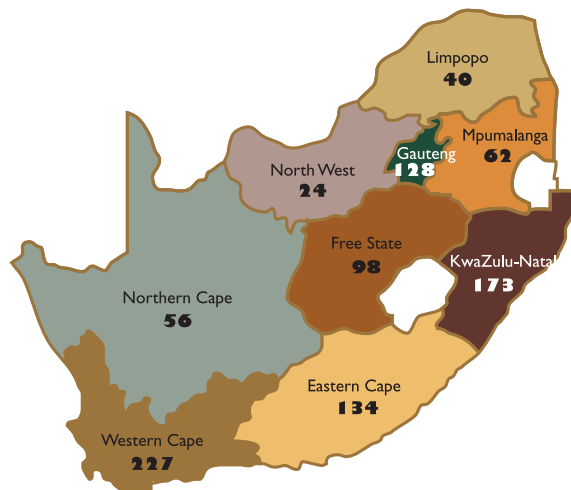
The graph and map below indicate the number of events per province from the year 1800 – 1995. Predictably the most frequently affected provinces are the coastal provinces. In descending order the most frequently affected Provinces are the Western Cape and KwaZulu-Natal, followed by the Eastern Cape.

Figure 4: Events per province

Fatalities per event type (2085 in total)
 Source: Caelum Statistics (1800 - 1995)



Total number of events per province (graph)



Total number of events per province (map)

1.3 Intergovernmental Relations

The NDMC, through its endeavours to promote the concept of disaster management, has placed an emphasis on intergovernmental relations. This is demonstrated by its initial efforts in convincing national departments and national public entities to 'come on board' the disaster management 'vehicle' in the NDMC's quest to strive towards a culture of risk avoidance, and to build more resilient communities to be prepared for, and effectively cope with, the consequences of disasters.

The NDMC, in order to promote this approach, constantly through its public awareness campaigns, has maintained the theme of 'disaster management is everybody's business'. The fact that a large number of representatives over a very wide spectrum participate in the National Disaster Management Advisory Forum is a reflection of this approach.

1.4 Key Disaster Management Messages

The Disaster Management Act, based on the above international perspective, focuses on disaster prevention and risk reduction; mitigation of severity and consequences of disasters; emergency preparedness; and a rapid and effective response to disasters leading to restoration of normal conditions.

Disaster Management must facilitate advocacy against building of homes/commercial structures in flood planes; education of vulnerable communities on hazard, risk and threat identification and prevention; identification and isolation of dolomite threats; and involvement of communities-at-risk, in practical early warning systems.

1.5 South Africa's State of Readiness

The question most frequently asked in the Disaster Management context is in relation to the State of Readiness or Preparedness of South Africa to respond to a large-scale disastrous event.

Notwithstanding the fact that it is impossible to make a general statement in respect of something as unpredictable as a natural or human-made disaster, evidence would suggest that South Africa has adequate capability to deal with large-scale disastrous events. South Africa's response to international disasters (earthquake disaster in Kashmir; Pakistan in 2005, tsunami assistance in 2005), regional disasters (2000 floods as well as the support provided to SADC countries during the tropical cyclone and flooding seasons from Dec – April of each year) and local disastrous events (droughts and flood responses) would appear to support this statement.

It should also be noted that at present South Africa is the only country in the SADC region with an Urban Search and Rescue capacity and has refined the system to such an extent that it is possible to respond within an 8 hour period to disasters occurring outside South Africa.

South Africa's ability to respond timeously to disastrous events within our borders is largely determined by the relevant disaster management structures and capacities being in place at the Provincial and Local Municipal levels. At the end of the 2006/07 financial year, the provinces reported the following with regard to their state of readiness:

"Disaster Risk Reduction is Everybody's Business – Make it Yours !!"

Table 1: State of readiness of the Provinces

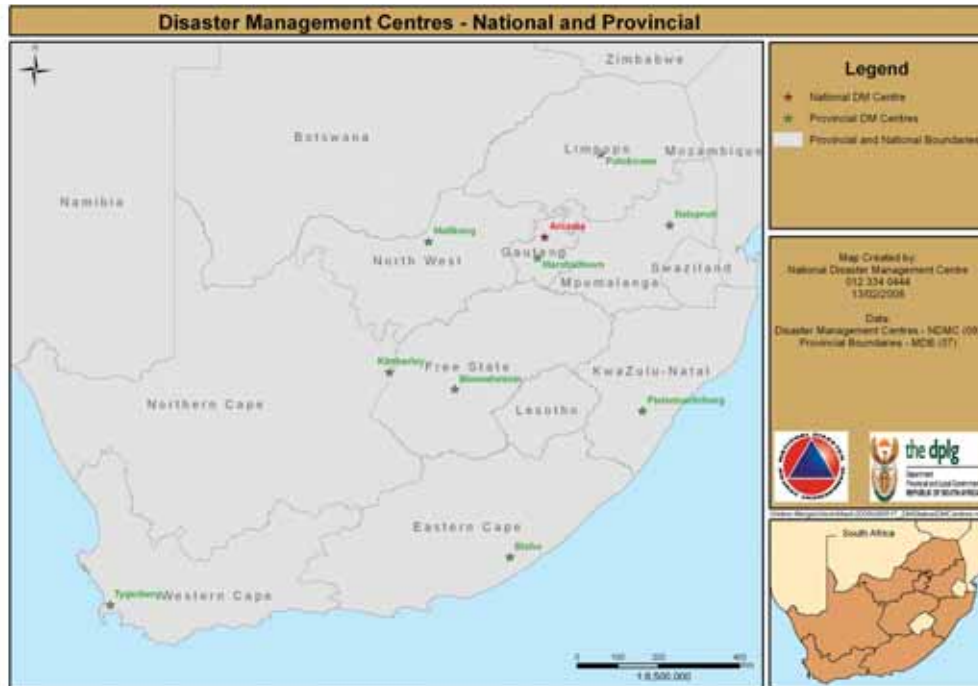
Province	Disaster Management Centre	Fully Functional	Head of Centre Appointed	Forums Established	Disaster Management Plans Finalised
Eastern Cape	Yes	Yes	Yes (Acting)	Yes	Draft
Free State	Yes	Yes	Yes	Yes	Yes
Gauteng	In process	Yes	Yes	Yes	Yes
KwaZulu-Natal	Yes	–	–	Yes	In process
Limpopo	Yes	Yes	Yes	Yes	In process
Mpumalanga	In process	–	–	Yes	–
Northern Cape	–	–	–	Yes	–
North West	Yes	–	–	Yes	–
Western Cape	Yes	Yes	Yes	Yes	In process

The above table indicates that South Africa's institutional capacity to proactively plan for, and react to, natural and human-made disasters has gradually improved since the promulgation of the Disaster Management Act.

As detailed in the report, the focus on the development of people-centric early warning systems has also improved the capability of the respective disaster management role-players to put measures in place to prevent, mitigate or respond to disastrous events.

1.6 Geographic Location of Disaster Management Structures in South Africa

Figure 5: Location of Disaster Management Centres



1.7 Successes achieved in the 2006/07 financial year

1. The NDMC actively participated in the following forums –

- International Strategy for Disaster Reduction;
- United Nations Disaster Assessment and Coordination Committee;
- ProVention Global Disaster Risk Reduction Forum;
- Southern African Development Community; and
- Emergency Operations Committee.

2. The Working on Fire programme operated efficiently and the International Strategy for Disaster Risk Reduction Week was held. Support was rendered by the NDMC to Mozambique and Burundi.

3. The NDMC supported affected provinces and municipalities during the following disaster-related incidents –

- Taung flood disaster during April 2006;
- Flood disaster in the Western and Eastern Cape Provinces during July/August 2006;
- Snow disaster in the Eastern Cape Province during August 2006; and
- Veld fires in the Northern Cape during December 2006.

4. Further local support rendered includes the Drought Relief Programme in collaboration with DWAF and affected municipalities, and continuation of drought recovery programmes.
5. With regard to IT, Phase I of the integrated Disaster Management Information System has been implemented (Live Fire Early Warning system in place) and Project Portfolio Office (PPO™) has been implemented to monitor and track the implementation of the Act.
6. The Integrated Disaster Management Information System – Pilot Project in the Eastern Cape has been completed and demonstrated to the rest of the provinces. A process of identifying local providers of similar systems is underway.
7. Training and education standards for a professional disaster management career path were developed in collaboration with SAQA. Unit Standards for NQF Level 7 have been developed.
8. A Research Learnership Programme focussed on Disaster Management and Early Warning Systems was implemented, based on the Masters Degree for Disaster Management from the University of the Free State (in collaboration with DST, DWAF and the CSIR).
9. The Intergovernmental Committee on Disaster Management (ICDM) was established on 13 June 2005 in terms of section 4 of the Disaster Management Act.
10. The National Disaster Management Advisory Forum (NDMAF) was established on 26 January 2007 in terms of section 5 of the Disaster Management Act.
11. The Provincial Disaster Management Committee was operationalised.
12. A Fire Brigade Board Technical Team was established to draft proposals for the amendment of the Fire Brigade Services Act, 1987. Two Fire Brigade Board meetings have been held, chaired by the Deputy Minister for Provincial and Local Government.
13. Functional Provincial Disaster Management Centres have been established in 8 of the 9 provinces, with the Northern Cape being the exception. The reason is the fact that the Provincial Disaster Manager was only appointed during 2006.
14. Priority Guidelines have been identified and an extensive consultative process with all relevant stakeholders has started.
15. A fully operational Disaster Management Centre was established on 1 May 2006 in terms of section 8 of the Disaster Management Act.
16. The Head of the National Disaster Management Centre was appointed on 1 May 2006 in terms of section 10 of the Disaster Management Act.

1.8 Challenges experienced during the 2006/07 financial year

1. Financial constraints included:
 - Disaster risk reduction activities have not been included in the budgeting process of the municipalities.
2. Capacity constraints were experienced in relation to:
 - Disaster Management Specialists;
 - Disaster Management Engineering Capacity;
 - Project Management Capacity;
 - Disaster Management Information Technology Specialists; and
 - The shortage of suitably qualified personnel.
3. The funding mechanism for disaster reconstruction and rehabilitation is perceived to be lengthy and cumbersome. Some municipalities lack the capacity to implement recovery projects utilising the allocated funds.
4. The need has also been identified for strengthened monitoring, reporting and evaluation in respect of post-disaster recovery and rehabilitation projects.

Chapter 02

Executive Summary



South Africa must learn to cope with extreme weather conditions due to climate change and global warming.

In order to achieve this, we need to build resilient communities with a social foundation that provides for health, respects cultural diversity, is equitable and considers the needs of future generations.

In terms of section 24 of the Disaster Management Act, 2002 (Act No. 57 of 2002), the National Disaster Management Centre (NDMC) must submit a report annually to the Minister responsible for the administration of the Act.

The Minister must within 30 days of receipt of the report submit the report to Parliament. At the same time that the report is submitted to the Minister, the NDMC must submit a copy of the report to each provincial and municipal disaster management centre.

This report has been structured in such a way that it reflects all the aspects provided for in section 24 of the Act. As this will be an inaugural disaster management report, it must be noted that the report in some way goes beyond the scope of the aspects mentioned in section 24. This has been done in order to reflect on where the Act originated from, and the process that was followed to result in fully-fledged legislation. Furthermore, a number of disaster management related issues have been added to try and establish the link between these issues and the subject matter of disaster management, e.g. the link between climate change and disaster management and also the role indigenous knowledge plays in disaster management.

Whereas development and disaster-related policies have largely focused on emergency response in the past, leaving a serious under-investment in natural hazard prevention and mitigation, South Africa will have to learn to cope with extreme weather conditions due to climate change and global warming. In order to achieve this, we need to build resilient communities with a social foundation that provides for health, respects cultural diversity, is equitable and considers the needs of future generations. This cannot be achieved without the incorporation of disaster risk reduction strategies.

The report highlights achievements and challenges experienced while implementing the Disaster Management legislation from promulgation of the Act through to the end of the 2006/07 financial year.

The aim of Disaster Risk Reduction policies is to increase resilience to natural hazards while ensuring that development efforts do not increase vulnerability to these hazards.

2.1 The Development of Legislation in South Africa

The changes to South Africa's disaster management policy and legislation unfolded during a period of massive legislative reform in post-Apartheid South Africa. It traversed a period of 11 years, from June 1994 to April 2005. There were a number of distinct phases in this development, namely the Green Paper on Disaster Management (Feb 1998); the White Paper on Disaster Management (Jan 1999); the Disaster Management Bill (Jan 2000); Disaster Management Bill (58-2001 in Sept 2001); Disaster Management Bill (B21-2002 in May 2002); the Disaster Management Act (No. 57 of 2002 promulgated in Jan 2003) and the National Disaster Management Framework (Apr 2005). There were six clear preconditions that facilitated this process. The major accomplishment of this legislative reform process in South Africa was its nation-wide transformation of the policy and practice of disaster risk management.

2.2 Activities of the National Disaster Management Centre

The purpose of the NDMC is to promote an integrated and co-ordinated system of disaster management, with special emphasis on prevention and mitigation, by national, provincial and municipal organs of state, statutory functionaries, other role-players involved in disaster management and communities. Through the overall strategic objective of the **dplg**, namely **"To build and strengthen the capability and accountability of Provinces and Municipalities to implement their constitutional mandate"**, the NDMC aims to contribute to the overall resilience of communities and infrastructure to disaster risk, to strengthen the capacity of provinces and municipalities in pre-empting and responding to disasters, as well as ensuring cross-functional disaster management in all spheres of Government. Information on various situations in South

Africa is presented, leading to a discussion of the various areas in which the NDMC would like to focus its efforts. The 2010 FIFA World Cup is viewed by the NDMC as a catalyst for fast-tracking the implementation of the Disaster Management Act.

“Disaster Risk Reduction is Everybody’s Business – Make it Yours!!”

Political and technical governance structures are pointed out, as well as the organisational placement of the NDMC within the **dplg** and the various directorates namely Disaster Policy and Compliance Management; Disaster Intervention and Support; and Information Technology within the NDMC.

Disaster Policy and Compliance Management

Under the leadership of this directorate compliance to the Act is implemented. This includes the formation of the National Disaster Management Advisory Forum (NDMAF) during the reporting period. Various projects are currently running, including the development of regulations and guidelines, contribution to the development of Unit Standards under the leadership of SAQA to establish a career path for disaster risk management practitioners, and support to the development of and implementation of disaster management plans down to local level. To support this, a project and programme management programme was purchased and customised to comply with the requirements set by the NDMC. This is made available to all the levels of government on an annual licence basis. The Monitoring and Evaluation Instrument was also developed to measure compliance.

Disaster Intervention and Support

This directorate is responsible for the rendering of support to the identification and assessment of disaster risk, hazards and community capacities at all levels, and coordinating and providing guidance for disaster-stricken areas before, during and after disaster incidents. A disaster occurs only if a community or population is

exposed to the hazard and cannot cope with its effects. In this section, information is provided on the cost of disasters that have occurred during the reporting period. With regard to programmes implemented, details are given on the Drought Programme, Working on Fire Programme and Indian Ocean Tsunami Early Warning and Mitigation System. Participation in the following forums takes place on a regular basis:

- Provincial Disaster Management Committee (PDMC)
- International Strategy for Disaster Reduction (ISDR)
- Southern African Development Community (SADC)
- African Union (AU)
- United Nations Disaster Assessment and Co-ordination Committee (UNDAC)
- United Nations Environmental Programme (UNEP).

Assistance is also provided on an international level as and when required. The Emergency Operations Committee (EOC) was established as a result of the Asian Tsunami Disaster in December 2004 and comprises key role-players from national and provincial departments as well as relevant non-governmental organisations (NGOs), depending on the type of disaster. The purpose of the EOC is to coordinate international response to a disaster. In the reporting period, assistance was rendered to Mozambique. The situation in Zimbabwe has a big influence on South Africa. Taking that into account, the NDMC convened a task team comprising all the relevant participants to update the Contingency Plan for the Mass Influx of Refugees, 2001.

Information Technology

Effective early warning systems need to consider the hazards and community vulnerabilities. The early warning indicators for vulnerability are growing poverty, environmental degradation, populations located in high risk areas, civil strife, and lack of knowledge and preparedness. The key to effective early warning is the use of technology, the translation of such information into understandable language and making the information accessible to the communities at risk. Geographical Information Systems (GIS) play a critical

role in the development of the National Disaster Management Centre's enhanced Disaster Management Information System (DMIS). The system can be seen as an all encompassing IT solution that relates to various aspects of Hazard Analysis, Vulnerability Assessment, Risk Reduction, Contingency Planning, Incident Reporting Systems as well as Early Warning Systems.

Fire Brigade Board

The Fire Brigade Board decided that a legislative task team, comprising all relevant role-players including the dplg, provinces and South African Local Government Association (SALGA) be established to proceed with the drafting of the new Fire Brigade Service legislation.

2.3 Key Disaster Management Stake-holders

The **Department of Agriculture** has employed a multi-pronged approach to its agricultural risk mitigation activities. Besides awareness in the provinces, plans are underway to support community radio and television programmes aimed at raising awareness of agricultural development, especially pertaining to rural areas. They implemented certain programmes during the reporting period, focusing on awareness and disaster risk reduction (prevention and mitigation).

One of the challenges encountered with regard to dealing with disasters is that the provinces do not have dedicated Disaster Risk Management units for responsible disaster risk reduction and management; this is dealt with as an add-on function or on an ad hoc basis. This challenge creates inconsistency regarding disaster risk management functions and ultimately hinders progress. To address this dilemma, the Department of Agriculture has entered into an agreement with National Treasury. Inter-governmental synergy also requires improvement, particularly with the participation from other institutions. There are critical bottlenecks in early warning information dissemination in the provinces to the intended beneficiaries. The Department has, to this end,

acknowledged the importance of addressing disaster risk reduction within the agricultural sector. The Department of Agriculture has completed two policy documents.

The **Department of Health** has set specific objectives which were achieved by the Directorate: EMS and Disaster Management for the financial year 2006/07. This includes the development of policies and disaster management plans in certain areas. The Department has also played a significant role in respect of resources in response to disasters.

The **Department of Minerals and Energy** (DME) is responsible for coordination and management of matters related to nuclear disaster management at a national level. Whilst on-site nuclear emergency plans for nuclear installations are regulated and managed in terms of the National Nuclear Regulatory Act, off-site nuclear disaster management plans are the responsibility of the relevant three spheres of government in terms of the Disaster Management Act. The City of Cape Town (Disaster Management), as the first responder, has over the years successfully demonstrated during emergency exercises its capacity to respond to an off-site nuclear emergency at Koeberg in accordance with formal procedures, and a procedure is in place for joint management of an off-site nuclear disaster by the three tiers of government. No nuclear emergency has occurred during the reporting year (or any other year) and the probability of a nuclear emergency affecting the off-site public is extremely low.

The **National Department of Public Works** is custodian of an extensive asset register with properties located in many of the 70 magisterial districts and 126 local authorities situated on dolomite. The Department has fully implemented a risk management strategy on its own assets in Gauteng and is currently extending the strategy to all assets and infrastructure on its register in the dolomite areas of South Africa. This targeted process has reduced sinkhole formation by 90 per cent in the military complex in southern Tshwane. In order to achieve full buy-in from all role-players, training is used to raise awareness. The Department has initiated and

sponsored the development of a document pertaining to a code of practice for development on dolomite.

The **Department of Science and Technology (DST)** has initiated a Research Learnership Programme focussed on Disaster Management and Early Warning Systems. This programme is part of a larger DST programme titled the 'National Information Society Learnerships Programme' (NISL). The overall aim of the NISL Programme is to improve public sector decision-making through the development of IT-based analytical competencies. Another programme that is linked to disaster risk management is the South African Earth Observation Strategy (SAEOS), whose objectives is to coordinate the collection, assimilation and dissemination of Earth Observation data, in order to support policy, decision-making, economic growth and sustainable development in South Africa. The NDMC has been identified as a partner to provide data to feed into the SAEOS framework, and the activities and outputs of the SAEOS will be beneficial for disaster risk and management activities in South Africa. A bilateral relationship was established with the NDMC with a view to coordinating the sourcing of earth observation data for beneficial use by state entities.

Furthermore, DST is involved in the development of a technology needs assessment for climate change. The United Nations Framework Convention on Climate Change identifies technology transfer as a key mechanism to address climate change and requires developed countries to support technology development and utilisation in developing countries. The final technology needs assessment document, which was submitted to the United Nations Framework Convention on Climate Change at the end of 2007, and will aid in indicating what South Africa's priorities are in terms of climate change technologies. It is an opportunity to highlight the technologies that are required from a disaster risk and management point of view.

The **Department of Water Affairs and Forestry (DWAF)** is the custodian of the country's forest and water resources.

DWAF deals with veld and forest fires in terms of the National Veld and Forest Fire Act. This is done primarily through the establishment of Fire Protection Associations (FPAs) to reduce fire incidents and their consequences. The Department is managing systems such as the national fire danger rating system, veld fire integrated institutional development and additional veld fire management measures.

In terms of the National Water Act (No 36 of 1998), DWAF is responsible for the equitable, sustainable and efficient management of our water resources. As the water sector leader, DWAF spearheads initiatives to ensure access to basic water services and the more robust access to reliable water sources. The extremely variable South African climate still leads to hardships due to water-related disasters. During these conditions of stress, DWAF makes use of its own regional structures to assess the situation.

The **South African National Defence Force (SANDF)** is mandated to provide humanitarian aid and support, nationally and internationally, in disaster situations. The SANDF provides assistance in the form of disaster aid (rendering support with available resources for the protection of life, health and property at the cost of the SANDF for the first 72 hours) as well as disaster relief provision (assistance upon request from a department at the department's cost, depending on the availability of resources).

The **South African Police Service** has made significant strides to ensure legal compliance through the development of a disaster management strategy and policy.

The **South African Qualifications Authority (SAQA)** is a statutory body responsible for overseeing the implementation of the National Qualifications Framework (NQF). SAQA registered the National Certificate: Disaster Risk Management on Level 7 of the NQF. Work is currently being done on the development of a full career path. The framework is set for the development and recognition of qualified Disaster Managers.

South African Urban Search and Rescue has been primarily involved in foreign Urban Search and Rescue (USAR) response since 1999. A training course was developed whereby responders are trained in various aspects of rescue. These courses provide South Africa with a base of trained persons able to be utilised for response to foreign disasters and major incidents taking place within South Africa. At present South Africa is the only country in the SADC region with a USAR capacity. An important feature of South Africa's capacity, which sets it apart from similar international teams, is its ability to respond to a wider variety of incidents such as floods and chemical incidents.

The **South African Weather Service (SAWS)** plays an integral role in disaster risk reduction activities in South Africa. The SAWS has established links for dissemination of advisories and warnings to the NDMC and a number of disaster management centres. The SAWS maintains a climatological database of weather data over South Africa that is used regularly in disaster risk reduction and mitigation activities by various role-players.

2.4 Disaster Management Activities by Provincial Disaster Management Centres

The individual reports by provinces is an indication of progress made with regard to the implementation of the Disaster Management Act, based on the four Key Performance Areas (KPA's) and three Enablers of the National Disaster Management Framework.

KPA 1: Integrated Institutional Capacity for Disaster Risk Management

Heads of Provincial Centres have been appointed in all provinces, with the exception of Mpumalanga and KwaZulu-Natal. The Disaster Management Centres are either established or in the process of being established. Gender representation within Provincial Disaster Management Centres is on an equal basis. Provincial Disaster Management Advisory Fora have been established, or are in the process

of being established. No arrangements for co-operation with neighbouring SADC countries are in place. The only province that indicated some international involvement is Gauteng.

KPA 2: Disaster Risk Assessment

A number of risks have been identified in the provinces, ranging from the most prevalent natural events to transportation, hazardous materials and technological risks such as those created by industrial and other developments. Where more detailed risk assessments were conducted, the vulnerability of people was also assessed. The main priorities should be to improve capacity and conduct more detailed research.

KPA 3: Disaster Risk Reduction

The current status of disaster management plan, development and integration with IDPs varies greatly. The same applies to the question of whether priorities were established with regard to vulnerable communities. Efforts should be made to reduce impact of disasters. Early warning messages from the SAWS are forwarded to various district municipalities and affected local municipalities through regional forecast offices. In some areas community radio stations are utilised to inform communities of the warning messages.

KPA 4: Response and Recovery

The method applied to assess, classify, declare and review disasters is based on the direction given by the Act and the NDMF. With regard to communication, the country faces massive challenges in relation to effective communication mechanisms. In some cases, sophisticated systems are utilised, while other provinces still utilise standard communication equipment, such as landline and cell phones. The use of available resources is an area where the integrated way in which disaster management should be structured, is clearly highlighted. The provinces reported that they are waiting for the

finalisation of national priority guidelines as well as regulations on volunteers. Volunteers are used in the various local municipalities in incidents for which they are trained. Incident management is in various phases of implementation. Communication with the media is done in a structured way, determined by the approach of the specific municipality.

Enabler 1: Information Management and Communication

An Information Management and Communication System is a very expensive item which has not been implemented in all provinces, due to the complexity and affordability of such a system. The Free State, Northern Cape and North West Provinces have not yet started the process. The Eastern Cape and the NDMC have piloted a system. The Gauteng and Western Cape Provinces are in the process of implementing their systems. KwaZulu-Natal has developed a Management Information System. Limpopo has started the process to acquire a system.

Enabler 2: Education, Training, Public Awareness and Research

A wide variety of training courses and awareness programmes are implemented throughout the provinces and municipalities. This varies from basic training in supportive programmes, short workshops and longer academic training and education programmes.

Enabler 3: Disaster Management Funding

The report does not include financial details at a provincial level.

2.5 Disasters and Major Incidents

During the reporting period, various disasters and major incidents took place. Complete descriptions are given of:

- Taung Disaster – January-April 2006
- Nelson Mandela Bay Floods – 2 and 3 August 2006
- Floods in Southern Cape – 31 July 2006

- Kwadukuza Hailstorm Disaster – 18 & 19 May 2006
- Kwadukuza Coastal Tidal Disaster – 18 March 2007

2.6 Best Practices

Examples of best practices include a Disaster Management Primary School Guide Pack implemented by the City of Tshwane; the Flash Flood Warning System from Nelson Mandela Bay Metropolitan Municipality; work done by Department of Agriculture and Environmental Affairs, KwaZulu-Natal; the Awareness campaigns from Mopani District Municipality; the Disaster Management Centre Activation Measurement System from eThekweni Metropolitan Municipality; Shared Fire-fighting Services: Project Consolidate in Uthungulu District Municipality; and Snow Incident Management in the Thabo Mofutsanyana District Municipality.

2.7 Climate Change

South Africa faces challenges due to climate change. The Act calls for finding effective ways and means for all stake-holders to determine levels of risk; assess the vulnerability of communities and households to disasters that may occur; increase the capacity of communities and households to minimise the risk and impact of disasters, etc. This requires finding effective and implementable ways of enhancing the country's ability to reduce the risks associated with climate variability and change.

2.8 Indian Ocean Tsunami Warning System

The occurrence of the tsunami on 26 December 2004 in the Indian Ocean caused widespread alarm across the world and in South Africa, resulting in the establishment of an Indian Ocean Tsunami Warning System (IOTWS). Although the probability of tsunamis off the coast of Southern Africa is low, the potential risk cannot be neglected. Following the concern of future threats of a tsunami and its disastrous effects to the economy and its people, the South African Government approved funding for the establishment of a South African Tsunami Early Warning System (SATEWS). The scientific and

technical support for the South African Tsunami Early Warning System should initiate the research on evidence of historic tsunamis in South Africa. The project should result in the compilation of a national database of historic tsunami events. It should also stimulate development of the South Africa tsunami hazard and risk models resulting in scientific assessment of South Africa's vulnerability to tsunamis.

2.9 Indigenous knowledge

Indigenous knowledge may be defined as knowledge that has been created and developed over a period of time. Research showed that indigenous knowledge is reflected in stories about beliefs, knowledge and rituals which the older community perform in trying to cope with an event. Indigenous knowledge is constantly being adapted to the changing environment of each community and will remain current as long as people use it. Thus indigenous knowledge is dynamic, as new knowledge is continuously added to it.

2.10 The Disaster Management Institute of Southern Africa

The Disaster Management Institute of Southern Africa

(DMISA) is a non-profit association for disaster management professionals in Southern Africa. DMISA aims to create learning and networking opportunities for its members – furthering the interests of the disaster management profession in Southern Africa and ultimately reducing Southern African vulnerability to disasters. The Institute liaises with Government agencies and Non-Government Organisations, at the request of its members, to resolve issues and to help ensure sound implementing strategies of the function.

2.11 Conclusion

The report is an indication of the steady progress of the implementation of the Disaster Management Act No. 57 of 2002 by all spheres of government. The NDMC has made good progress in establishing national disaster management structures such as the Intergovernmental Committee on Disaster Management and the National Disaster Management Advisory Forum and providing advice to disaster management stake-holders, with the implementation of the Disaster Management Act. It has also commenced with its overall monitoring and evaluation role in terms of the Act by developing the necessary monitoring and evaluation and project management mechanisms.

Chapter 03

The Development of Legislation in South Africa³



South Africa's **Disaster Management Act**, promulgated in January 2003, has been applauded internationally as a groundbreaking example of national legislation that promotes disaster risk reduction.

This section contains the full background on the legislative process to establish disaster risk management as a discipline according to international trends with the necessary supporting legislation.

3.1 Introduction

South Africa's Disaster Management Act, promulgated in January 2003, has been applauded internationally as a groundbreaking example of national legislation that promotes disaster risk reduction. Moreover, as the promulgation predated both the World Conference on Disaster Reduction and the Hyogo Framework for Action, it has generated particular interest as an example of international best practice. In this context, many of the formal processes that reflected the evolution of the new legislation have already been documented and disseminated (Living with Risk, 2004, UNDP, 2004).

However, there are complementary aspects of South Africa's legal reform process that have yet to be profiled, including the unique preconditions that facilitated change, as well as the broader consequences which the reform process itself enabled. This requires reflection on the powerful political forces and influences that prevailed in South Africa during the 1990s. Similarly, it is necessary to examine the outcomes of the legislative reform process for its effectiveness in expediting the mainstreaming of disaster risk reduction in South Africa.

An understanding of these elements – both the preconditions that facilitated legislative reform and the mainstreaming outcomes of the reform process – are essential for effectively interpreting and applying the South African experience in other contexts.

3.2 The Context for Change

Changes to South Africa's disaster management policy and legislation unfolded during a period of massive legislative reform in post-Apartheid South Africa. It traversed a period of 11 years, from June 1994 to April 2005 in which the country's political, social and administrative landscape was dramatically transformed.

The period was characterised by the systematic dismantling of the architecture of the Apartheid-era, the adoption of an encompassing Constitution, introduction of a new spatial configuration of local and provincial administrations and, from 1994-2003, the passage of more than 800 Acts of Parliament.

It also took place during a time of intensifying disaster risk in southern Africa. The 1990s were punctuated by severe recurrent droughts – and in 2000, the devastating floods that affected Mozambique as well as other southern African countries, generated severe losses, especially in South Africa's Limpopo Province. During this eleven-year period, recurrent wild-land, urban fringe and informal settlement fires became more severe in South Africa – while urban flooding in the country's densely congested informal settlements emerged as a critical urban development concern. Similarly, this period saw South Africa record the highest number of HIV infections of any country world-wide.

South Africa's journey of legal, institutional and professional transformation in disaster risk reduction was inescapably shaped by these events and processes. In addition, the evolution of the country's disaster management policy was significantly influenced by international developments related to disaster management and disaster risk reduction. These included the UNDP's Disaster Management Training Programme in the early-mid 1990s, as well as the International Decade for Natural Disaster Reduction and the International Strategy for Disaster Reduction from 2000-on.

It is this interplay of powerful internal transformative forces, combined with international consensus-building on disaster risk reduction, that created and sustained an incremental process of progressive reform.

3.3 Key Stages in the Legislative Reform Process

Following the first democratic national elections in April 1994, it is possible to identify three distinct stages in the evolution of South Africa's disaster management policy and law. These are reflected in the table below.

Table 2: Key Stages in the evolution of South Africa's disaster management legislation

Stage	Dates	Outcomes	Focus Areas
I	June 1994 – January 1999	<ul style="list-style-type: none"> February 1998: Green Paper on Disaster Management January 1999: White Paper on Disaster Management 	<p>National discussion paper</p> <p>National policy document</p> <p><i>Focus on broad stake-holder consultation and policy reorientation</i></p>
II	February 1999 – January 2003	<ul style="list-style-type: none"> January 2000: Disaster Management Bill September 2001: Disaster Management Bill [58-2001] May 2002: Disaster Management Bill [B21 -2002] January 2003 Disaster Management Act [No. 57 of 2002] 	<p>Drafting of legislation and public comment</p> <p>Portfolio Committee debate</p> <p>Focus on the legislative process</p>
III	February 2003 – April 2005	<ul style="list-style-type: none"> April 2004 National Disaster Management Framework (NDMF) April 2005 National Disaster Management Framework 	Drafting of national implementing framework
IV	May 2005 +	<ul style="list-style-type: none"> Piloting of roll-out of implementation framework 	

3.3.1 The institutional context for change – 1994

While the 1990s were characterised by the formulation of a coherent national policy on disaster management, it is significant to note that in 1994 institutional structures for civil protection did exist at national and municipal levels. Within the national sphere, this was reflected in the presence of a Directorate of Civil Protection and Fire Brigade Services located within the Department of Local Government and Housing. This directorate was responsible for overseeing the implementation of the Civil Protection Act 67, of 1977.

It is also important to record the existence of both a professional 'Civil Protection Association' as well as a 'Management Course in Civil Defence' that was offered as a distance-learning opportunity by the University of South Africa (UNISA). The existence of both a professional civil protection association as well as a formal course in civil defence provided institutional precedents for later policy formulation, capacity development and professional advocacy.

3.3.2 Stage I: June 1994-January 1999: Evolution of national disaster management policy

Just two months after the 1994 national elections, severe flooding occurred in the informal settlements of Cape Town's Cape Flats. This benchmark is frequently cited as the beginning point for South Africa's legislative process. It is partly true that the Cape Flats floods motivated Cabinet to formally assess South Africa's

ability to deal with risk reduction and disaster management (Green Paper, 1998). However, this overlooks the impact of other processes and relationships that developed in the early 1990s due to the severe region-wide drought of 1991-93, which significantly informed the subsequent policy.

Moreover, it was not until 1996-1997 (two years later) that the then Minister of Provincial Affairs and Constitutional Development tasked the chairperson of the Portfolio Committee for Agriculture, Water and Forestry to politically drive the reform process in disaster management. This led to the Disaster Management Task Teams that generated both the discussion paper in 1998 (Green Paper) and policy document (White Paper) a year later. Technical knowledge of South Africa's disaster risk profile – combined with political skill, explicit commitment to stake-holder consultation and focused ability to guide policy drafting teams – generated progressive policy documents that, even then, were fully consistent with current international thinking on disaster risk reduction.

These discussion and policy documents also illustrated an early understanding of the significant conceptual differences between 'risk reduction' and 'disaster management'. In this context, they explicitly and intentionally avoided subsuming the risk reduction remit within the disaster management paradigm, which was the dominant and widely promoted approach to disasters in South Africa at that time.

Table 3: The respective roles played by the Green and White Papers on Disaster Management

Why a Green Paper? (1998)	Purpose of the White Paper (1999)
<p>“The Green Paper Process is designed to convey a conceptual framework for Disaster Management and risk reduction. It aims to outline possible management strategies that can be pursued to deal with disasters and risk in a more appropriate manner. The Green Paper will hopefully also begin to establish what the different management requirements are for different types of disasters ...</p> <p>...The Green Paper provides all stake-holders with an opportunity to reflect on current approaches to Disaster Management and risk reduction. It intends to provoke thinking around a strategy or strategies that will be in keeping with international trends – strategies that are more appropriate to current and future needs within the country as well as the southern African region” (Green Paper on Disaster Management, 1998)</p>	<p>“This White Paper sets out the government’s disaster management policy for South Africa. The policy applies to all government institutions and other role-players as well as all activities related to disaster management.</p> <p>The purpose of the White Paper is twofold:</p> <ul style="list-style-type: none"> • To inform the public of the government’s objectives and how the government intends to achieve these objectives. • To inform government agencies and state organs of these objectives and what needs to be done to achieve these objectives.” <p>(White Paper on Disaster Management, 1999)</p>

Table 4: The progressive thinking as reflected in the White Paper

<p>“A further fundamental purpose of the policy is to advocate an approach to disaster management that focuses on reducing risks - the risk of loss of life, economic loss and damage to property, especially to those sections of the population who are most vulnerable due to poverty and a general lack of resources. It also aims to protect the environment.</p> <p>This approach involves a shift away from a perception that disasters are rare occurrences managed by emergency rescue and support services. A shared awareness and responsibility needs to be created to reduce risk in our homes, communities, places of work and in society generally ...</p> <p>... The policy seeks to integrate this risk reduction strategy into existing and future policies, plans and projects of national, provincial and local government, as well as policies and practices of the private sector” (White Paper on Disaster Management, 1999, p13)</p>

Table 5: The nuanced adjustment of the gazetted Bill to generate the subsequent Act

Disaster Management Bill 2001	Final Disaster Management Act 57 of 2002
<p>Contents of national disaster management framework</p> <p>6. The national disaster management framework must outline a coherent, transparent and inclusive policy on disaster management for the Republic as a whole with proportionate emphasis on disasters of different kinds, severity and magnitude that occur or may occur in Southern Africa, and must –</p> <p>...</p> <p>(f) facilitate –</p> <p>(i) the involvement of the private sector; non-governmental organisations, communities and volunteers in disaster management; and</p> <p>(ii) partnerships in this regard between organs of state and the private sector; non-governmental organisations and communities.</p>	<p>Contents of the national disaster management framework</p> <p>7.(1) The national disaster management framework must provide a coherent, transparent and inclusive policy on disaster management for the Republic as a whole</p> <p>(2) The national disaster management framework must reflect a proportionate emphasis on disasters of different kinds, severity and magnitude that occur or may occur in southern Africa, place emphasis on measures that reduce the vulnerability of disaster-prone areas, communities and households, and must</p> <p>...</p> <p>(f) facilitate –</p> <p>(i) the involvement of the private sector; non-governmental organisations, traditional leaders, technical experts and volunteers in disaster management</p> <p>(ii) Community participation in disaster management; and</p> <p>(iii) Partnerships for purposes of subparagraphs (i) and (ii) between organs of state and the private sector; non-governmental organisations and communities.</p>

Table 6: Structure of the National Disaster Management Framework

Thematic Area	Title
Key Performance Area 1	Integrated institutional capacity for disaster risk management
Key Performance Area 2	Disaster risk assessment
Key Performance Area 3	Disaster risk reduction
Key Performance Area 4	Response and recovery
Enabler 1	Information management and communications
Enabler 2	Education, training, public awareness and research
Enabler 3	Funding arrangements for disaster risk management

3.3.3 Stage II: February 1999-January 2003: The Legislative Process

As required by law, both written and verbal submissions in response to the Bill were openly and transparently presented to the Portfolio Committee. Moreover, under the leadership of the Portfolio Committee Chair, special provisions were made to ensure that Committee members were technically aware of the Bill's implications. These included a day-long orientation workshop for Committee members that presented the key issues related to the legislation – which was largely facilitated by individuals who had drafted the earlier Green and White Papers. It also involved the engagement of a technical adviser to the Portfolio Committee who had been actively involved in drafting the Green and White Papers, and who agreed to participate in the five to six weeks of Portfolio Committee hearings and debates.

It was the insightful political leadership and facilitation of these hearings that created the opportunity for strengthening the risk and vulnerability reduction themes in the eventual Disaster Management Act. This was only possible through the skilled and strategic mediation of the Portfolio Committee Chair who negotiated the often juxtaposed positions of the national department and the independent technical adviser – and who, with his committee colleagues, was able to successfully generate 'bridging legislation' that was broadly acceptable to both conservative disaster management and progressive risk reduction constituencies. In this context, it is significant to note that a proposed name change from the 'Disaster Management Act' to the 'Disaster Management and Risk Reduction Act' was set aside by the portfolio committee, on the grounds that it was unnecessary and potentially confusing.

Unfortunately, due to the absence of a formal assessment of the draft Disaster Management Bill by the Financial and Fiscal Commission in 2001, the progression of the legislation was delayed until 2002, when, for a third time, the Disaster Management Bill was gazetted – resulting in the eventual promulgation of the Disaster Management Act in January 2003.

3.3.4 Stage III: February 2003-April 2005: Generation of a coherent national disaster management framework

While the process of legislative reform that began in 1997 had required serious perseverance and commitment, it had been sustained and supported by enabling political leadership during both the policy formulation phase and generation of the Disaster Management Act.

A draft framework was gazetted for comment in April 2004 and then finalised in April 2005. The development of the national disaster management framework was also significantly enhanced by the engagement of a highly skilled editor and document management specialist from the last quarter of 2003 – thus ensuring that the drafters focus on specific technical areas.

The framework-generating process also provided a critical platform for once again aligning South Africa's Disaster Management Act with international best practice – and for introducing professional terminology along with the thematic areas listed below so these were broadly consistent with contemporary global thinking on risk reduction and disaster risk management.

3.4 Enabling Factors for Legislative Reform

The complexity of a lengthy reform process that commenced with an outdated Civil Protection Act and generated contemporary disaster risk management policy, internationally-recognised legislation and a progressive implementing framework has been illustrated. The following are some of the key preconditions that enabled these changes, as well as conditions that obstructed or delayed progress.

Six clear preconditions facilitated this process:

1. An enabling political and legal context, characterised by high levels of transformative energy and support
2. Understanding of a regional disaster risk context characterised by increasing severity and complexity
3. A local professional context seeking to align itself with international best practice.

4. An international professional context that supported and neither subverted nor undermined local initiative and responsibility
5. High levels of local agency, characterised by continuity and individual capacity, skill, integrity and creative initiative
6. A broadly defined process that enabled gradual professional reorientation and incremental policy adjustment.

While these six factors served as critical preconditions for change, there were occasions when they delayed progress. These are also discussed below.

3.4.1 An enabling political and legal context

As described earlier, for much of the 1990s, South Africa was characterised by far-reaching political, social and administrative transformation. During this period, explicit priority was placed on repealing outdated and often discriminatory legislation. It was also a time in which an entirely new national legal-political framework was established, along with the generation of new laws that were aligned both with international best practice and the new government's pervasive commitment to social equity. The dynamic character of this period provided both an enabling environment and political energy for policy and legislative reform across all sectors. It was also reflected in the establishment of transparent legal processes and administrative systems to accelerate wide-ranging reform. These included mechanisms to facilitate public consultation and debate, including the generation of Green and White Papers and opportunities for verbal and written submissions as part of Parliamentary hearings.

The reform of South Africa's disaster management legislation was significantly enabled by these conditions, which provided a systematic transparent 'institutional locomotive' for the disaster management reform process. Specifically, they safeguarded the public participation process at a minimum of three strategic points – in response to the Green and White Papers, and as part of the Parliamentary Portfolio Committee hearings. In this way, they provided a direct interface

between the public and law-makers that was neither mediated nor obstructed by departmental interests.

The one disadvantage, to implementing legal reform in the midst of massive political transformation is 'however,' the temporary lack of institutional architecture with which to execute change. In the South African case, this particularly applied to the two-year period immediately following the 1994 elections, during which time exacting negotiations were taking place on the National Constitution. Under these conditions of major political transformation – when new politico-legal structures and systems are being established – second-order legislation is clearly a subordinate priority and must wait until the macro politico-legal frameworks are in place.

3.4.2 Understanding of a regional disaster risk context characterised by increasing severity and complexity

The urgency for disaster management reform was significantly motivated by the severity of the weather-related emergencies and disaster events that occurred in southern Africa during the period 1991-2000. These included severe and recurrent droughts as well as destructive riverine flooding that particularly affected the KwaZulu-Natal, Mpumalanga and Limpopo Provinces.

However, much of the early critical thinking on vulnerability reduction that prevailed through the entire reform process was actually driven by the experience of the severe droughts of the early 1990s. Within South Africa, this was strongly influenced by the Drought Relief Forum established in response to the 1991 drought, and which predated the democratic elections of 1994. The Drought Relief Forum was a multisectoral platform that brought together a wide range of government departments and other skilled role-players to reduce the impact of severe water shortages on highly vulnerable households who were also affected by stresses in the agricultural sector:

Table 7: The previous prevailing global paradigm on disaster risk reduction

“The media invariably only reports on major disasters. This gives the public a sense of being witness to a spectacle. On occasions, there is a great deal of emotion and members of the public make donations.

However, **it’s the smaller community disasters that very often escape our attention. These occur frequently in the townships, informal settlements and in the remote rural areas. It is at the level of these ‘localised disasters’ where the financial and human costs are hardest felt and the need for urgent attention is greatest”**

(White Paper on Disaster Management, Foreword by Mohammed Valli Moosa, Minister for Provincial Affairs and Constitutional Development, 1999, p. 8)

This is significant in relation to global approaches to disaster risk reduction, in which the early formulations of the International Decade for Natural Disaster Reduction explicitly excluded drought as a priority hazard. Yet, extensive literature, policy and practice on food insecurity and drought in Africa had for many years profiled the critical need for vulnerability reduction.

Similarly, South Africa sought to profile the urban vulnerability of historically disadvantaged households that sustained recurrent losses to small-scale fires and flooding in informal settlements – events that seldom attracted international attention and ‘did not fit’ neatly into the then prevailing global paradigm on disaster risk reduction.

In this way, South Africa’s process of risk reduction policy formulation reflected a synthesis of knowledge on vulnerability reduction related to drought and food insecurity, as well as information drawn from engagement with the International Decade for Natural Disaster Reduction, combined with its own experience of responding to large flood emergencies and commitment to alleviating the hardships of the urban poor. While risk reduction policy was indeed informed by international trends, the priorities were very much defined internally – reflecting an independence of thought and initiative.

3.4.3 A local professional context seeking to align itself with international best practice

A Civil Protection Association and Management Course in Civil Defence existed prior to 1994. A key factor in the legislative reform process was the respective roles both of South Africa's national disaster management professional association and the institutions of higher learning that also actively supported, facilitated and in-part led the governmental reform process.

It should be recalled that South Africa had been politically excluded from formal participation in many international processes during the 1980s. Yet, culturally, politically, commercially, scientifically and professionally, South Africa is outward-looking, seeking to align itself – to be associated with – and to shape international best practice. With particular respect to risk reduction policy and practice, these aspirations resulted in a sustained drive to take on board what was viewed as international best practice in disaster-related work. This resulted in a two-stage professional reorientation in South Africa of what began as 'civil protection' in the early 1990s, then transformed into 'disaster management' in the mid 1990s, and is now represented as 'disaster risk management' in the mid-2000s.

In response to these trends, the Civil Protection Association also reoriented itself three times, and in the ten years after 1994, became the Emergency and Disaster Management Association of Southern Africa, the Disaster Management Association of Southern Africa and eventually the Disaster Management Institute of Southern Africa. This forum for disaster risk managers has provided an important professional vehicle for communicating developments in international best practice and for facilitating change.

In addition to this, by the late 1990s, South Africa was characterised by the establishment of several teaching, learning and training initiatives related to disaster risk – all based in institutions of higher learning. Certainly, the establishment of the Disaster Management professional course at Technikon SA in the mid 1990s, based on the

thirteen United Nations Development Programme Disaster Management Training Programme modules, was a critical juncture in professional development related to disasters.

Since the mid-late 1990s, other capacity development initiatives at the Universities of Cape Town, the Free State and North West have been instrumental in collectively reaching hundreds of disaster management practitioners as well as associated disciplines, both through short courses, as well as formal undergraduate and post-graduate programmes.

These two important internal capacities – a professional national association and higher education teaching and learning programmes, all aspiring to align themselves to international best practice – have been critical factors in supporting the legislative changes and for disseminating both national and international frameworks related to risk reduction.

3.4.4 An international professional context that supported and neither subverted nor undermined local initiative and responsibility

During the ten years that spanned the legislative reform process, there were three major international initiatives that indirectly facilitated the change process. These were the United Nations Development Programme's (UNDP) Disaster Management Training Programme, the International Decade for Natural Disaster Reduction (IDNDR) and the International Strategy for Disaster Reduction (ISDR).

The UNDP's Disaster Management Training Programme was launched in southern Africa in 1993, and was pivotal in establishing Technikon SA's Disaster Management professional courses, drawing heavily on the modules developed by UNDP's DMTP in the early 1990s. However, it was the individual support of both Cranfield University and the University of Wisconsin that built internal capacity and credibility. Moreover, Cranfield at that time, provided intensive disaster management

training in the United Kingdom for selected South Africans – several of whom later became key drivers of internal professional reform in South Africa.

The IDNDR spanned the 1990s, overlapping with the period of substantive policy development. It was fortuitous that the chairperson of the Portfolio Committee for Agriculture, Water and Forestry – who subsequently led the policy reform process – actively participated in the National IDNDR Committee. It was also beneficial for the policy development process that two representatives from South Africa were members of the IDNDR's Scientific and Technical Committee for the latter part of the decade. This allowed for an almost seamless information flow between the IDNDR secretariat and the policy development process.

Since 2000, several of the drafters of the national disaster management framework have also worked closely with the ISDR. This has specifically involved writing entire sections of the ISDR publication 'Living with Risk', receiving grants from ISDR to finance the attendance of African participants at disaster risk reduction short professional courses hosted by South African institutions, and the actual co-facilitation of short professional courses by ISDR personnel in South Africa. The hallmark of this international support has been its enabling character that has not undermined local responsibility and initiative. Moreover, since the early 2000s, the closer convergence of the messages from UNDP and ISDR has provided a more uniform global framework for directing national disaster risk reduction efforts. This contrasts significantly with the mid-late 1990s when there was unevenness in the respective emphases of the IDNDR and UNDP DMTP.

This lack of coherence in international approaches to disaster risk has potential to severely strain, distract and derail country efforts from the focused development of national policy, especially when external funding is linked to agency-specific agendas and disparate disaster management paradigms. Fortunately, in South Africa's case, where the policy development and legislative reform were funded internally, the financial independence provided a platform for policy innovation that might not have occurred otherwise.

3.4.5 High levels of local agency, characterised by continuity and individual capacity, skill, integrity and creative initiative

One of the most compelling factors that facilitated legislative reform were the high levels of local agency – specifically, the skills, moral and professional integrity as well as creative initiative of the people involved – that brought about change.

It must be recalled that the profession now identified in South Africa as 'disaster (risk) management' evolved from civil protection, which itself emerged from civil defence. The historic links between civil defence and national defence in South Africa were so close that in the 1980s Civil Protection was overseen by the Special Services Branch of the Armed Forces. This underlines the sheer magnitude of the legislative challenge – to completely reorient the field of disasters away from a preoccupation with militaristic response – to developmental risk and vulnerability reduction. Such an accomplishment was largely achieved due to the individuals at the heart of the transformation process.

This is evidenced at the political level by the skilled policy navigation and stake-holder negotiation and skillful non-partisan consensus-building by the Portfolio Committee chairperson. In both these instances, it was skills, energy and personal ethics that successfully steered the process from concept through policy to its conclusion as a progressive law.

In addition, a small group of individuals remained committed to the process from the first discussions in 1997 to the eventual generation of the national framework in 2005. With extensive disaster risk experience, administrative knowledge and technical skill, they provided input consistently throughout the process, ensuring both continuity and robustness to the policy, law and framework that resulted.

Additionally, these individuals were also linked to South Africa's professional disaster management body, Disaster Management Institute of Southern Africa (DMISA), or

to university-based teaching and learning programmes in disaster risk reduction. This enabled informal consultation on possible policy options among a wide range of audiences, along with rapid dissemination across a diversity of stake-holders. The high level of committed involvement was motivated by the powerful ethics and integrity of the individuals concerned – who clearly placed the public good above monetary remuneration or professional profile.

3.4.6 A broadly defined process that enabled gradual professional reorientation and incremental policy adjustment

The duration of the policy and legislation reform process extended over eight years. On one hand, this potentially undermined sustained momentum for change. On the other, it allowed for incremental adjustments in thinking and understanding across a wide range of stake-holders. In addition to this, it allowed the framework drafting process to incorporate key lessons learned in the early implementation of the Disaster Management Act.

3.5 Legislative Reform and Disaster Risk Reduction: Mainstreaming Outcomes

The major accomplishment of this legislative reform process in South Africa was its nation-wide transformation of the policy and practice of disaster risk management. This included the establishment of far-reaching institutional arrangements, the implementation of risk assessments and a priority on risk reduction. In this regard, a complete national reorientation of the disaster management discipline was internally effected or 'mainstreamed'.

However, the transversal 'mainstreaming' of disaster risk management into all organs of state across national, provincial and municipal spheres has not significantly progressed, although required by the Disaster Management Act. There are several explanations for this.

Firstly, the limited nationally-led stake-holder

consultations both prior to the Parliamentary Portfolio Committee deliberations and during the formulation of the national disaster management framework may have prevented other stake-holders, including government departments and non-governmental organisations, from acting on their respective risk reduction obligations.

The impact of constrained stake-holder consultation in the advanced stages of the legislative process was evidenced by the limited number of written and verbal submissions presented to the Portfolio Committee, with only twelve submissions received. Not one of these was generated by a national or provincial government department, humanitarian assistance agency or nationally recognised non-governmental organisation.

This impact of the limited consultation within the national sphere was most significantly reflected in the absence of an unambiguous and enabling funding framework approved by National Treasury for the implementation of the Act – three years after it was promulgated. The resulting lack of national funding has clearly constrained implementation and contributed to a sense of frustration and disempowerment.

Secondly, the legislative reform process itself may have militated against mainstreaming – by demanding high levels of sectorally-biased introspection in the course of the reform. This pressure to rapidly transform within one institutional silo may have prevented interdisciplinary engagement with other sectors, perversely discouraging subsequent cross-sectoral mainstreaming. Moreover, South Africa's vigorous generation of transformative legislation in the 10 years after 1994 has also resulted in exacting implementation demands of all government departments in each sphere, requiring organs of state to simultaneously transform and meet their own demanding service delivery obligations.

Again, this has forced high levels of internal departmental introspection, significantly limiting institutional capacity to absorb the strategic requirements of other legislation that is not viewed as directly linked to a department's

'core business'¹. Under such conditions, it may be unrealistic to expect automatic uptake and adoption of the obligations contained in the Disaster Management Act by other government departments – especially when similar requirements are being applied simultaneously from a wide range of legislative frameworks. In this context, mainstreaming of transversal initiatives, including climate change adaptation, environmental management, and poverty reduction requires careful consideration of the capacity constraints to effective integration.

Thirdly, despite representations to the Portfolio Committee that the 'Disaster Management Function' be located in the highest level of executive authority (i.e. in the Office of the President or Deputy President) and similar guidance from the national disaster management framework², the function has remained within the national **dplg**.

3.6 Conclusion

This section maps the process of disaster management legislative reform in South Africa, from the early 1990s until the finalization of the national disaster management framework in 2005. It highlights the complexity of the process, both politically and institutionally, and identifies the preconditions that enabled the successful reform to occur:

The pervasive lesson from this experience is the pivotal role of skilled and insightful political stewardship in successfully navigating the reform process.

It also underlines the critical value of sustained individual energy and commitment for those at the centre of the lengthy and uneven reform process, underlining the significance of creative initiative and innovation. It also includes an appreciation that the responsibility for crafting strategic national reform well exceeds the parameters of a 'normal' consultancy. In this context, the links between those centrally involved in the reform process and the various disaster risk reduction

constituencies – specifically, the national professional association and disaster risk management-associated teaching and learning institutions – were essential for enabling and facilitating a groundswell of support for change.

Similarly, it emphasises the positive value of coherent and consistent messages from international partners throughout the process, underlining the difficulties when guidance from international agencies does not converge, conflicts with or undermines national efforts to generate meaningful policy and law.

Lastly, the South African experience illustrates that even progressive legislative reform does not automatically translate into the 'mainstreaming of risk reduction'. In fact, it shows how the reform process itself – at least in the short-term – can force high levels of sectoral introspection which directly militate against wider collaboration with, and transversal integration into, other disciplines. This is particularly the case in countries undergoing far-reaching legislative transformation, as the pressure to rapidly transform within institutional silos effectively discourages interdisciplinary engagement with other sectors.

In this context the process of 'mainstreaming' may best be undertaken as a gradual process that strategically integrates those elements of the risk reduction agenda that are selectively meaningful to a particular organisation or government department's core business – and sets aside those elements that are less relevant. It proposes that the most effective role-players in facilitating transversal mainstreaming of risk reduction are often those who are not viewed as sectorally-biased and have high levels of adaptive and strategic capacity. This includes national non-governmental organisations, national research institutions, national universities and the private sector, including skilled individual consultants who are better able to customise their support for different institutional contexts and clients.

¹ One exception to this is section 26(g) of the Municipal Systems Act (No. 32 of 2000) that requires that disaster management plans are incorporated into Integrated Development Plans in the municipal sphere.

² Refer to paragraph 1.2.1 of the NDMF

Extract from the Disaster Management Act, No. 57 of 2002

Act to provide for-

- an integrated and co-ordinated disaster management policy that focuses on preventing or reducing the risk of disasters, mitigating the severity of disasters, emergency preparedness, rapid and effective response to disasters and post-disaster recovery;
- the establishment of national, provincial and municipal disaster management centres;
- disaster management volunteers; and
- matters incidental thereto.

Chapter 04

The National Disaster Management Centre



The NDMC is the principal functional unit for disaster risk management in the national sphere. In essence, the NDMC is responsible for guiding and developing frameworks for government's disaster risk management policy and legislation, facilitating and monitoring their implementation, and facilitating and guiding cross-functional and multidisciplinary disaster risk management activities among the various organs of state.

This section provides a detailed overview of the activities of the National Disaster Management Centre during the reporting period. It also discusses the placement of the NDMC within the **dplg**, as well as achievements and challenges experienced.

4.1 Purpose of the NDMC

The purpose of the NDMC is to promote the implementation of the Disaster Management Act (Act 57 of 2002), as indicated in Chapter 3 section 9:

Table 8: Objective of the NDMC

The objective of the National Centre is to promote an integrated and co-ordinated system of disaster management, with special emphasis on prevention and mitigation, by national, provincial and municipal organs of state, statutory functionaries, other role-players involved in disaster management and communities.

4.2 Strategic Objectives

The dplg's Strategic Objective 3 is: **"To build and strengthen the capability and accountability of Provinces and Municipalities to implement their constitutional mandate."** This is supported by Strategy 3.8, namely: **"Support implementation capacity for Disaster Management in Provincial and Local Government"**. Through this strategic objective, the NDMC aims to contribute to the overall resilience of communities and infrastructure to disaster risk, to strengthen the capacity of provinces and municipalities in pre-empting and responding to disasters, as well as ensuring cross-functional disaster management in all spheres of Government.

This will be achieved through the following strategies:

- Support the identification and assessment of disaster risks, hazards and community capacities at all levels;
- coordinate and provide guidance for disaster-prone areas before, during and after disaster incidents;
- Operationalisation of people-centric early warning systems and community awareness activities;
- Manage and update a comprehensive stake-holder database;
- coordinate the development of comprehensive

disaster management training and capacity building strategies;

- Promote disaster management capacity building, training and education;
- Promote the recruitment, training and participation of volunteers in disaster management;
- coordinate disaster management research;
- Design systems and processes for efficient and effective disaster information and communication management – Geographical Information System Mapping, Satellite Applications, Remote Sensing, etc;
- Manage the development and implementation of national disaster management policies, legislation and guidelines;
- Develop and implement a monitoring and evaluation system to measure the overall impact of the implementation of disaster management;
- Administration of the Fire Services legislation;
- Management of Disaster Risk Reduction and Relief plans across the three spheres of government.

4.3 Resources Mobilised – 2006/07

A summary of the resources mobilised during the course of the 2006/07 financial year are summarised in the table below.

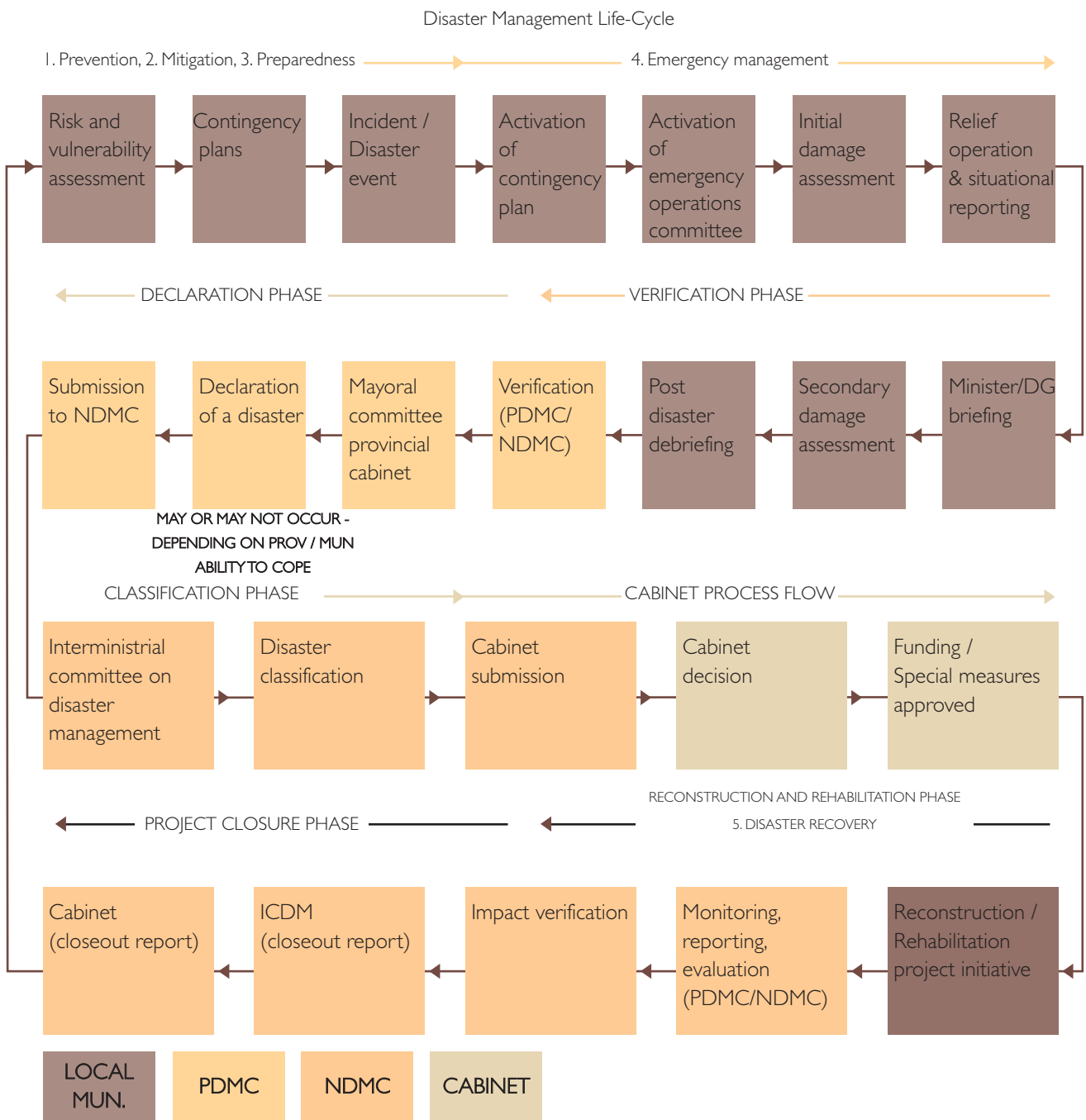
Table 9: Resources mobilised in the 2006/07 financial year

Category	Description	Resource	Quantity
Drought Relief	Provision of emergency water services	Funding	R311 m for 2006/07
Taung Flooding	Rehabilitation – Housing	Funding	R80 m
	Rehabilitation – Roads and infrastructure	Funding	R25 m
Western Cape / Eastern Cape Flooding	Rehabilitation of roads and infrastructure	Funding	R650 m
Northern Cape Flooding	Rehabilitation of roads and infrastructure	Funding	R25 m
Mozambique	Flooding and Tropic Cyclone relief	SANDF Aerial Support	100 people; 3 Helicopters
		Water Purification Plants SANDF	5 water purification plants
	Munitions Store Explosion		50 people; De-mining equipment
Burundi	Flood Relief Assistance	Medical Equipment	R1,6 m
		Food	R690 000
		Storage and Transportation	R950 000
Fire Support	Working on Fire SANDF	Aerial Support	R14 m

4.4 Disaster Management Life-cycle

The diagram below illustrates the potential interaction of various role-players across the three spheres of government. It is an attempt to highlight the proactive as well as reactive nature of the Disaster Management Life-Cycle and serves as a means of identifying areas that may need optimisation to ensure that activities are timely and effective.

Figure 6: The interaction of various role-players across the spheres of Government in the Disaster Management Life-Cycle



It should be noted that process steps may follow a different sequence depending on the scale and nature of the incident/disaster.

Typically the Disaster Management Life-Cycle is broken up into five distinct phases, namely: Prevention, Mitigation, Preparedness, Emergency Management and the Disaster Recovery Phase.

The above diagram, in addition to the five phases mentioned, also illustrates the additional process steps typically followed in the South African context. These steps include the verification, declaration and classification phases, the Cabinet process phase as well as the project closeout phases.

4.5 Key Focus Areas

The NDMC focussed its efforts on the following key focus areas in the 2006/07 financial year:

A need was identified for strengthened monitoring, reporting and evaluation in respect of post-disaster recovery and rehabilitation (it has been decided that budgets for monitoring, reporting and evaluation will be built into future funding requests). The process around roll-overs of disaster management funds was also identified as needing revision. The NDMC, while focusing on prevention and mitigation, also identified the need for a "build back better" philosophy for post-disaster reconstruction and rehabilitation.

The capacity constraints in the disaster management discipline, especially with regard to disaster management specialists, engineering capacity, project and programme management capacity, information technology specialists and retention of scarce skills has been identified as an impediment to the successful implementation of the Disaster Management legislation.

Various capacity building initiatives have been launched to rectify the above situation. Training and education standards for a professional disaster management career path are being developed in cooperation with the South African Qualifications Authority. Unit Standards for

National Qualifications Framework (NQF) Level 7 have been developed. Currently there is a workgroup that is busy with levels 3 – 6. There is an Internship Programme for Disaster Management (in collaboration with the Department of Science and Technology, Department of Water Affairs and Forestry, University of the Free State and the Council for Scientific and Industrial Research). The appointment of an education and training quality assurer (ETQA) for disaster management is in process. Memoranda of understanding with the South African Association of Consulting Engineers (SAACE) and the establishment of the National Technical Advisory Committee are underway.

In line with Project Consolidate, the NDMC has also focussed on hands-on support, for example through the development of provincial strategies, frameworks and plans in the following provinces: Gauteng (still in draft format), Eastern Cape, KwaZulu-Natal, Limpopo, North West, Northern Cape and Free State. Tools were made available to assist in the implementation of the Act and Framework, namely PPO™ and the Monitoring and Evaluation Instrument which will be linked to PPO™ Instrument³. Training on the Situation Reporting System was conducted in provinces and in the Eastern Cape a pilot project was run, focusing on the implementation of the Disaster Management Act and the National Disaster Management implementation Strategy.

The need to enter into a Memorandum of Understanding with the South African Weather Service has also been identified.

4.6 2010 FIFA World Cup and Disaster Management

The NDMC views the 2010 FIFA World Cup as a catalyst for fast-tracking the implementation of the Disaster Management Act. An internal review of the Guideline for 2010 Contingency Planning for Host Cities is ongoing and to inform contingency planning, a risk and hazard analysis for host cities must be conducted. The NDMC is busy looking at resource mobilisation and recapitalisation of the Fire-Brigade Services. The Volunteer Regulations should be finalised shortly and Norms and Standards for the Fire Services published. There is also a National Tender for the

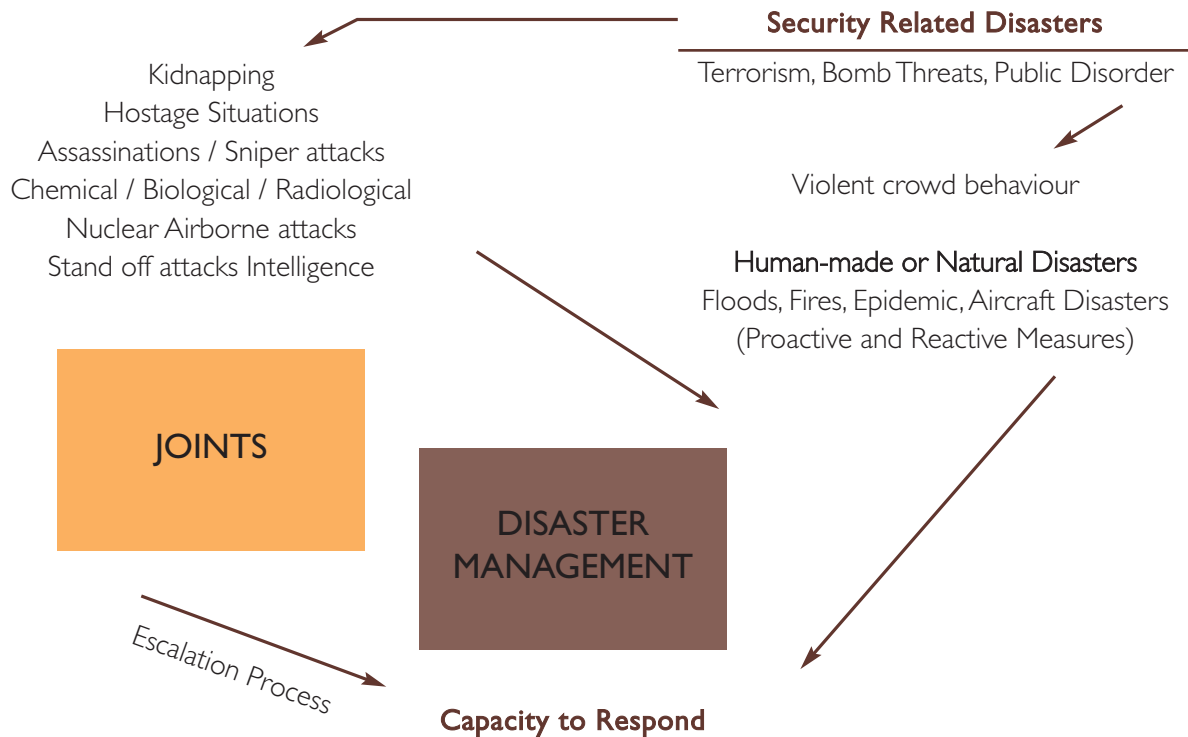
³ Refer to "Programmes and Projects"

Procurement of Fire Vehicles and Equipment published by National Treasury (RT77).

With special focus on the 2010 FIFA World Cup, the NDMC is participating in the National Safety and Security Structure, the Chemical / Biological Task Team and the Stadium Design and Safety Task Team. The following diagram illustrates the involvement of disaster management in the whole process.

Figure 7: 2010 and Disaster Management⁴

Contingency Plans



The NDMC advises the Local Organising Committee (LOC) on policy/legislative mandate/role of the sector as well as disaster related risk analysis and mitigation. The NDMC is participating in the development of safety standards for stadiums and serves on the Host City Security Forum. The NDMC is also participating in the formulation of stadium safety public awareness strategy and conceptualisation and standardisation of initiatives with Host Cities. Inspections and operational support will be rendered during FIFA/LOC official pre-world cup events, as well as inspections and operational support during official matches.

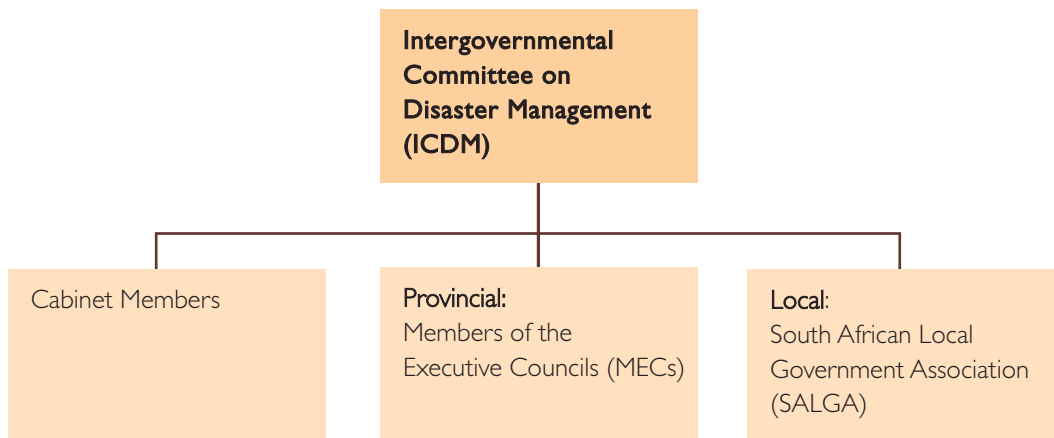
⁴ Courtesy of SAPS, February 2006

4.7 Legislative Review Processes

There are a number of reviews currently taking place, namely the Fire Brigade Services Act and Disaster Management Regulations for Volunteers, as well as essential records for prevention and mitigation initiatives, development projects, procurement of essential goods and services, and response planning for identified hazards. The finalisation of the funding chapter of the national Disaster Management Framework is also a priority.

4.8 Governance Structures – Political

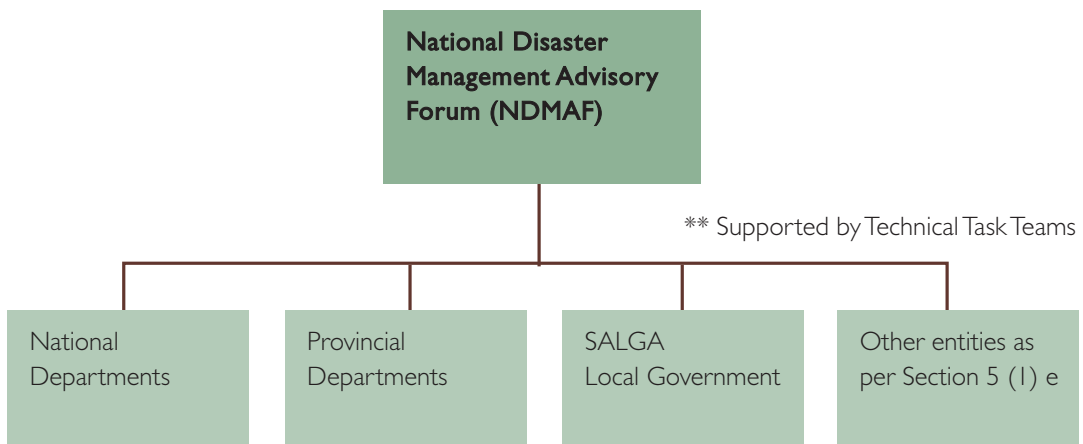
Figure 8: Structure of the Intergovernmental Committee on Disaster Management



The Intergovernmental Committee on Disaster Management (ICDM) was established by the President and has thus far just met on an ad hoc basis. It must ensure co-operative governance on issues relating to disaster management, report to Cabinet on the co-ordination of disaster management among the spheres of government and advise and make recommendations to Cabinet.

4.9 Governance Structures – Technical

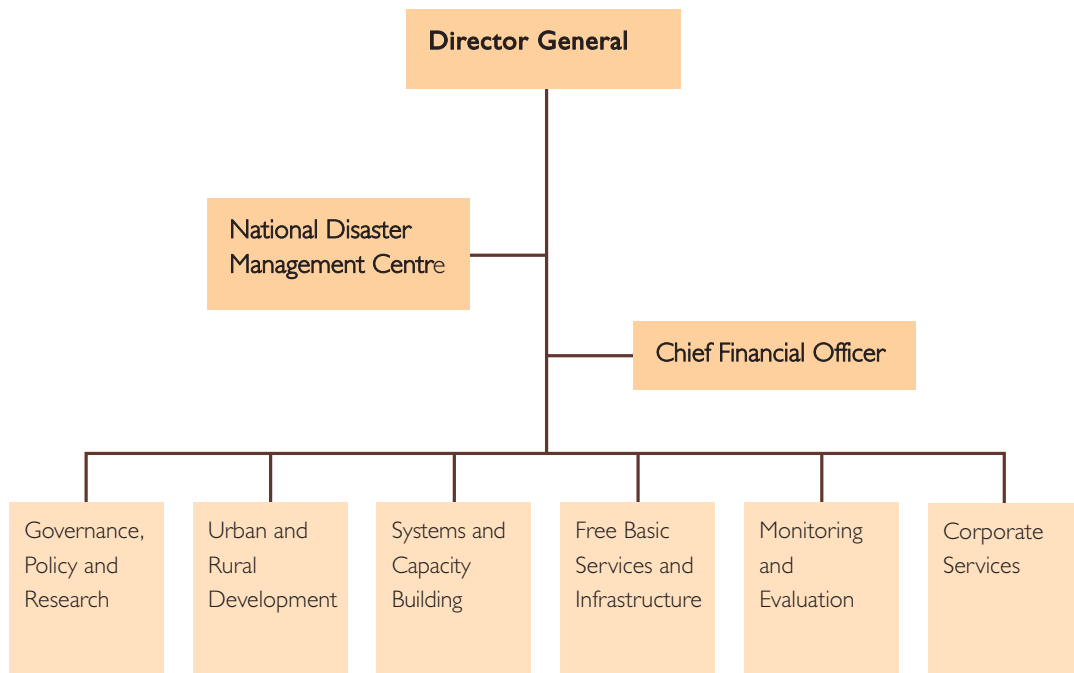
Figure 9: Structure of the National Disaster Management Advisory Forum



The National Disaster Management Advisory Forum (NDMAF) is established by the Minister and meets quarterly. It is a body in which national, provincial and local government and other disaster management role-players consult one another and coordinate their actions on matters relating to disaster management. It must make recommendations concerning the NDMF to the ICDM and may advise any organ of state, statutory functionary, NGO or community or the private sector on any matter relating to disaster management.

4.10 The Location of the NDMC within the dplg

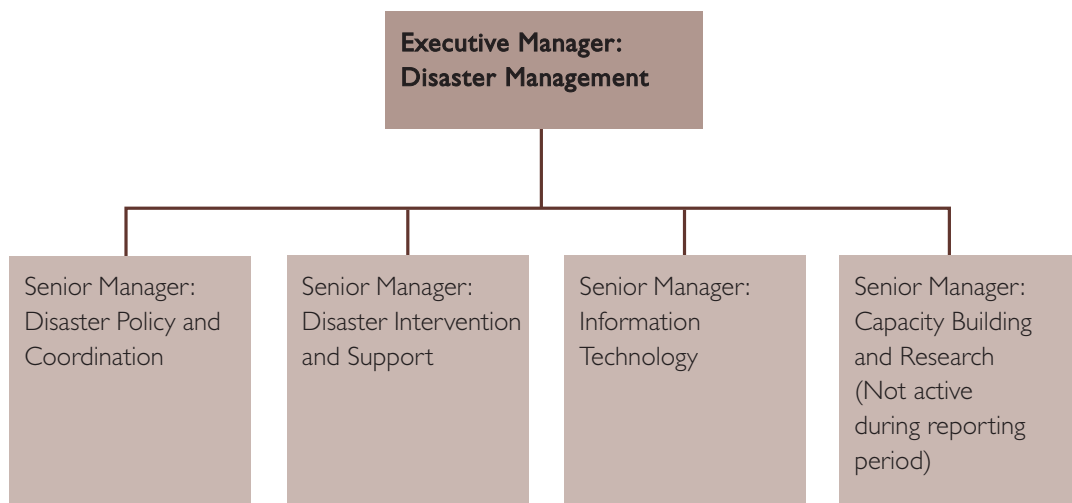
Figure 10: Structure of the dplg



During the course of the 2006/07 financial year the National Disaster Management Centre was moved from the Systems and Capacity Building Branch and now reports directly to the Office of the Director-General. This was done with a view to streamlining the process once a disaster occurs or threatens to occur.

4.11 NDMC Organisational Structure and Activities

Figure 11: Organisational Structure of the NDMC



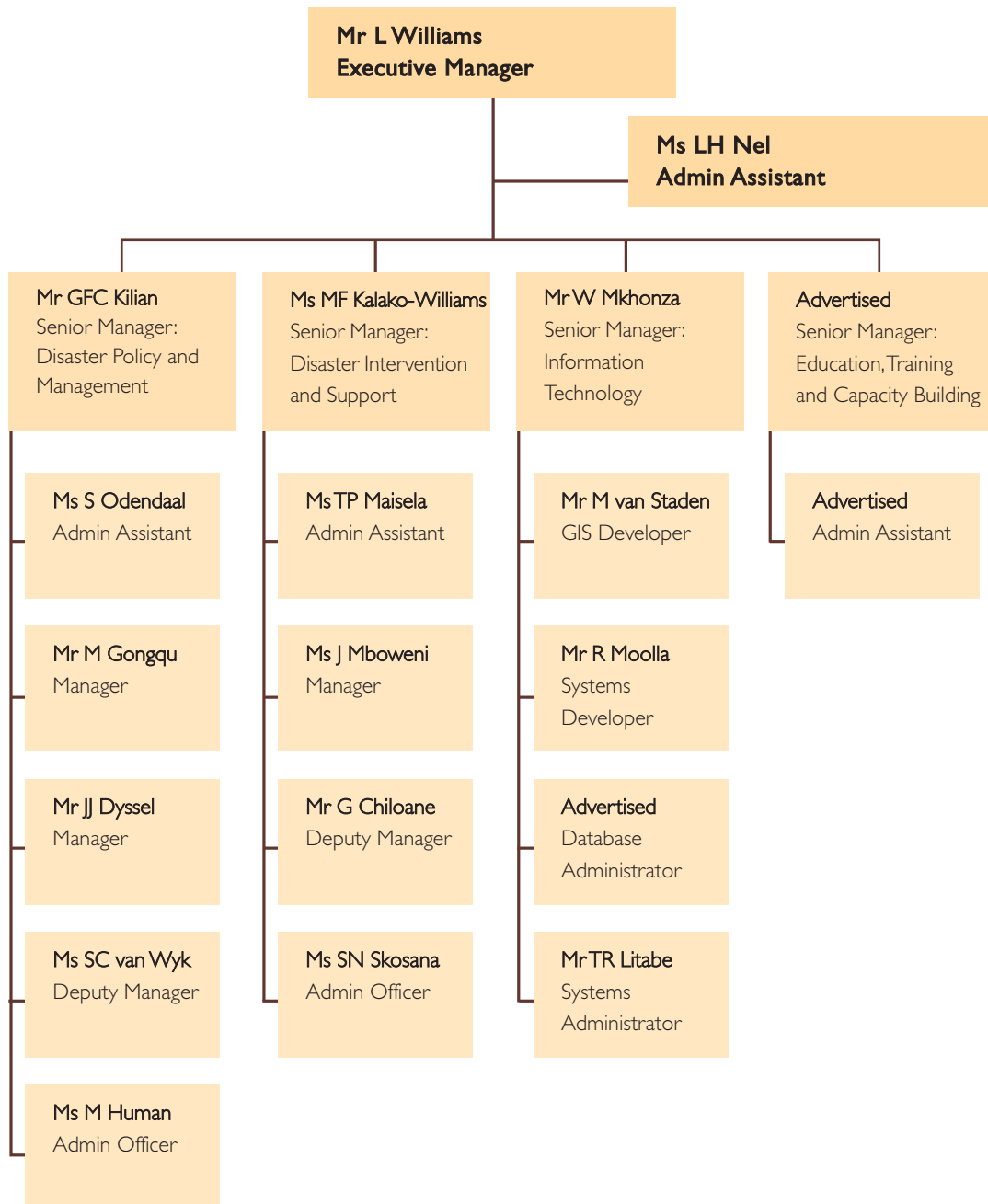
Disaster Policy and Compliance Management is responsible for the management of the development and implementation of the national disaster management policy, the management of disaster management plans and strategies and the administration of the Fire Brigade Services legislation.

Disaster Intervention and Support is responsible for the rendering of support to the identification and assessment of disaster risk, hazards and community capacities at all levels, the coordination and provision of guidance for disaster-stricken areas before, during and after disaster incidents. It also manages and updates the implementation of contingency plans in relation to disaster incidents and is responsible for the operationalisation of people-centric early warning systems and community awareness activities

Information Technology is responsible for gathering disaster management information and disseminating it to all disaster management stake-holders, including vulnerable communities. They also develop and establish early warning systems establish satellite and geographical information system capability and maintain a database of institutional role-players.

Capacity Building and Research coordinates the development of comprehensive disaster management training and capacity building strategies, promotes disaster management capacity building, training and education as well as the recruitment, training and participation of volunteers in disaster management it also coordinates disaster management research.

National Disaster Management Centre



4.1.1.1 Directorate: Disaster Policy and Management

4.1.1.1.1 Institutional Arrangements

The following institutional arrangements and mechanisms have been established for systematic coordination for disaster risk reduction:

The National Disaster Management Centre

A fully operational Disaster Management Centre was established on 1 May 2006 in terms of section 8 of the Disaster Management Act.

Appointment of the Head of the Centre

Mr Lance Williams, Executive Manager: Disaster Management, was appointed as Head of the Centre on 1 May 2006 in terms of section 10 of the Disaster Management Act.

Intergovernmental Committee on Disaster Management (ICDM)

The ICDM was established on 13 June 2005 in terms of section 4 of the Disaster Management Act, comprising –

- Cabinet members involved in disaster management;
- MECs of each province involved in disaster management; and
- Members of municipal councils selected by the South African Local Government Association (SALGA)

National Disaster Management Advisory Forum (NDMAF)

The NDMAF was established on 26 January 2007 in terms of section 5 of the Disaster Management Act, comprising –

- Senior representatives of national departments whose Minister is a member of the ICDM;
- Senior representatives of provincial departments whose MEC is a member of the ICDM;
- Municipal officials selected by SALGA; and
- Representatives of other disaster management role-players (i.e. NGOs, organised business, etc.)

4.1.1.2 Regulations and Guidelines

Volunteer Regulations

Chapter 7 of the Disaster Management Act provides for disaster management volunteers. In terms of section 58 of the Act a metropolitan or district municipality may establish a unit of volunteers to participate in disaster management in the municipality.

After a very wide initial consultative process, a Working Group was established to re-write the Draft Volunteer Regulations that were published for public comment on 9 September 2005. Several workshops and meetings have been held so far to discuss the content of the proposed regulations. The **dplg** is currently considering these regulations, and will be submitted to the National Council of Provinces (NCOP) on completion of the internal review process.

With regard to the FIFA 2010 Soccer World Cup, the regulations will in a structured way, enable municipalities to make provision for the recruitment of ordinary people as volunteers over a wide spectrum. The volunteers will be trained in various disciplines such as administration, first-aid, crowd control, fire fighting services, logistical support, general medical services and the like to foster the capacity of municipalities in times of emergencies.

Priority Guidelines

The need for the development of guidelines to facilitate the implementation of the Disaster Management Act, and the National Disaster Management Framework (NDMF) was highlighted during the very successful National Road Show embarked on during June and July 2006 to present the envisaged strategy for the implementation to Provinces and National Organs of State. Participants considered the availability of national guidelines as required by the NDMF as crucial if consistency, uniformity and integration are to be achieved.

Although the NDMF calls for the development of

29 sets of guidelines in total as well as two sets of regulations, cognisance was taken of the fact that it would be unrealistic to attempt to develop the entire package of guidelines simultaneously. Accordingly, participants at the roadshow workshops were invited to identify those guidelines considered to be a priority to assist the provinces, municipalities and to a lesser extent relevant national organs of state to initiate the implementation of the legislative requirements in the short term.

4.1.1.3 Training and Capacity Building

The South African Qualifications Authority worked closely with the National Disaster Management Centre, to establish a standard generating body for the development of national a qualifications standard in disaster management. SAQA registered the National Certificate: Disaster Risk Management on Level 7 of the NQF. Work is currently being done on the development of Levels 4, 5 and 6 qualifications to complete the suite of qualifications in disaster management that will allow for a career path in disaster management with national qualifications.

Enrolling graduates for post graduate studies in disaster risk management

During the 2006/07 financial year, the NDMC, Department of Science and Technology, Department of Water Affairs and Forestry, the Council for Scientific and Industrial Research and the University of the Free State embarked on a programme for the education and training of fifteen full time students from a B.Sc. background in post graduate studies in disaster risk management.

The hands-on experience of the students through the practice of rotation has many benefits. Students have the opportunity to select a specific department, in a specific sphere of government, for his/her career-pathing in an informed way, with substantial knowledge about the status quo and methodologies of the other major role-players. The participating departments have the opportunity to evaluate these students with a view to future permanent employment, and take part in the initial selection process focusing on their specific line-function requirements.

4.1.1.4 Disaster Management Plans

It is generally accepted that the costs of a disaster sets back development. Projects are often delayed due to the diverting of funds for post disaster rehabilitation and distribution (recovery). On the other hand, when disasters occur they provide an opportunity to rebuild "smarter", i.e. to avoid the likelihood of repetition of the disaster, and to plan for a sustainable and safe future. Unsafe or inappropriate development increases vulnerability while adequate attention to risk in the planning phase of the development process will reduce vulnerability.

Section 53(2)(a) of the Disaster Management Act, 2002 specifically states that a disaster management plan for a municipal area must form an integral part of the municipality's integrated development plan (IDP).

The Integration of Disaster Management into the 2005/2006 IDP Review involved the following:

- i. Identifying areas of risk relating to where and what investment is required from a disaster management perspective
- ii. Identifying disaster recovery projects – these could influence the priority projects within the municipality as well as in terms of the sector department and involve the reallocation of resources. An example would be if an area within the municipality is identified as a high risk cholera area and a municipality has some funds for sanitation projects, this area could be prioritised over and above other areas within the municipality. Another example would be where a municipality has allocated resources for a project but due to the occurrence of a disaster, these funds have to be reallocated to assist the community affected instead.
- iii. Identifying "priority" projects that would enable a municipality to address prevention, mitigation, response, preparedness and recovery. These projects should be aimed at creating a basis for further development of disaster management e.g. establishing a Disaster Management Centre, institutional development, funding for a comprehensive Disaster Management Plan. It should address strategically what

is going to have an impact on budgeting processes or the prioritisation of municipal projects.

In terms of the IDP review for 2005/2006, municipalities only reviewed certain aspects of the IDP with specific emphasis on those aspects of disaster management planning that could be incorporated into the 2005/2006 IDP review, bearing in mind that different municipalities are at different stages of disaster management planning.

4.1.1.5 Programmes and Projects

Monitoring and Evaluation Instrument

Sections 15, 21, 34 and 48 of the Disaster Management Act, 2002 specify the role of the National, Provincial and Municipal Disaster Management Centres regarding monitoring and evaluation. The NDMC has acquired a Monitoring and Evaluation Instrument that has been developed specifically for this purpose. The key approach was to create something that is generic and standardised for the whole country. The focus is to rework the key performance areas in the NDMF into a measurement instrument, which will create a holistic picture of the status of disaster management in the country. This can also be done for each sphere of government. All organs of state can utilise this instrument. The instrument covers all the key performance areas and all the enablers as identified in the NDMF. Once implemented, the Monitoring and Evaluation Instrument will be of great value when compiling Annual Reports.

Project Portfolio Office (PPO™)

During workshops held in each province and with national organs of state during 2005, the need was identified for the effective and efficient implementation of the Disaster Management Act in all its facets and to keep track of all the projects and activities that will be rolled out in terms of the Act. An integrated and uniform Programme and Project software management system

for the three spheres of government was of cardinal importance.

During 2005, the NDMC acquired a Portfolio, Programme and Project Management application in order to assist all participants at all spheres of government with the planning, execution and control of all disaster risk management related programmes and projects. The software package is called Project Portfolio Office (PPO™).

This application is web-based and is available online to any subscribing organ of state in all three spheres of government. As part of the uniformity drive it was intended that the system be implemented at all the Disaster Management Centres in the National, Provincial and Municipal spheres to coordinate and integrate all disaster risk management related projects and programmes in a uniform and consistent manner. A limited number (100) of licences were acquired with the initial system purchase. All the Disaster Management Centres at National, Provincial and Municipal (Metro and District) spheres as well as the Eastern Cape Pilot Project Local Municipalities were issued with the necessary licences.

This system allows all registered license-holders to plan, coordinate and report on all their Disaster Risk Management Projects as required by the Disaster Management Act, 2002 and the National Disaster Management Framework. This will also allow management at all spheres to track their project progress and manage resource allocation and budgets.

Officials across the three spheres of government who received the initial 100 licences all received training and a further 49 licences were obtained. The total number of licencees is 149 with 265 officials having been trained since the software was purchased.

Table 10: Allocation of the initial 100 licences

NDMC	5
National Departments	10
Sub total	15
Eastern Cape Pilot Project	
Province Disaster Management Centre	2
Project Team Members	4
Amathole District DM Centre	2
Amathole District departments	3
Local Municipalities	6
Sub total	17
Provincial Disaster Management Centres (2 per province)	16
Metros (one per metro)	6
District Municipalities (one per municipality)	46
Sub total	68
TOTAL	100

4.11.2 Directorate: Disaster Intervention and Support

4.11.2.1 Background

Natural hazards, such as severe weather conditions, droughts, or earthquakes, need not spell disaster. A disaster occurs only if a community or population is exposed to the hazard and cannot cope with its effects. In terms of section 1 of the Disaster Management Act, 2002, a “disaster” means a progressive or sudden, widespread or localised natural or human-caused occurrence which causes or threatens to cause death, injury or disease; damage to property, infrastructure or the environment; disruption of the life of a community; and is of a magnitude that exceeds the ability of those affected by the disaster to cope with its effects using only their own resources. Torrential rain in the middle of a well planned and developed suburb will not cause a disaster, but the same heavy rainfall on a vulnerable

informal settlement in a flood prone area may result in loss of life and threatened livelihoods. Here we need only look at what happened in the Taung region in the North West Province. The heavy rains that occurred in the Bophirima District, between January and April 2006, resulted in flooding which caused extensive damage to infrastructure in the Greater Taung Municipal area. Communities were isolated and six lives were lost. Apart from the fact that approximately 1 500 homes were completely destroyed and several thousand people were left without shelter, food or clothing, vulnerable groups such as women and children could not reach clinics or schools.

4.11.2.2 Disasters and what they cost the country

North West Province

Taung Disaster – January-April 2006

In assessing the damage caused by the devastating flood disaster that occurred in the Bophirima District, North West Province between January and April 2006, resulting in extensive damage to infrastructure in the Greater Taung Municipal area, national government has made the following funds available for reconstruction purposes –

- R 11,451 million for roads and bridges in the municipal area;
- R 84,014 million for housing purposes; and
- R 15,081 million for reconstruction of provincial roads.

Eastern Cape Province

Nelson Mandela Bay – 2 and 3 August 2006

Nelson Mandela Bay experienced extreme weather conditions on 2 and 3 August 2006. The total rainfall recorded over a 48-hour peak storm period was just over 200 mm, causing extensive flooding.

Electricity outages were experienced in large parts of the area, and a number of roads were destroyed or flooded (particularly along riversides). Commuters were left stranded. Sadly, six residents were confirmed dead, while many thousands of residents were affected, particularly the 25 000 families residing in shacks in the low-lying floodplain areas.

Table 11: Amounts allocated to Eastern Cape

Municipal areas affected	Cost Implications	
Nelson Mandela Bay Amathole Alfred Nzo Cacadu Chris Hani OR Tambo Ukhahlamba	Total Loss	R361 503 798
	Insured Losses	R0
	Non-Insured Losses	R361 503 798
	Budget Available / Insured Losses	R8 000 000
	Emergency Funding Required/Shortfall	R353 503 798

Table 12: Distribution of allocated amounts

Description	Approved Amount
Provincial Departments	
Agriculture	R12 402 739
National Departments	
DWAF	R1 550 000
Municipalities	
Nelson Mandela Bay	R106 346 000
Amathole	R19 295 000
Alfred Nzo	R5 067 875
Cacadu	R187 601 400
Chris Hani	R11 525 000
OR Tambo	R3 055 794
Ukhahlamba	R6 659 990
Grand Total:	R353 503 798

Western Cape Province

Floods in Southern Cape – 31 July 2006

A cold front that passed through the Southern Cape on 31 July 2006 resulted in heavy rain and flooding from Montague to the Storms River. The areas where most damage was experienced were in the catchments of the coastal rivers between Mossel Bay and Plettenberg Bay. The heaviest rainfall was reported in George where a record of 230 mm was measured over 24 hours. Most of the damage was in low-lying areas where the storm-water drainage systems could not cope with the exceptional downpours. All the DWAF dams between Swellendam and George overflowed.

Table 13: Amounts allocated to Western Cape

Municipal areas affected	Cost Implications	
Eden	Total Loss	R602 162 897
Hessequa		
Knysna	Insured Losses	R240 547 298
George		
Mossel Bay	Non-Insured Losses	R361 615 599
Kannaland		
Bitou		
Breederiver / Winelands	Budget Available / Insured Losses	R226 247 298
Prince Albert		
Oudtshoorn	Emergency Funding Required / Shortfall	R352 670 599
Theewaterskloof		

Table 14: Distribution of allocated amounts

Description	Approved Amount
National Departments/Entities	
SANParks	R1 800 000
DWAF	R6 000 000
Provincial Departments	
Housing	R16 205 685
Agriculture	R33 000 000
Roads	R90 940 000
Social Development	R0
Public Works	R10 710 000
Cape Nature	R1 987 600
Municipalities	
Eden DM	R5 768 393
Hessequa	R18 913 939
Knysna	R31 818 677
George	R26 049 869
Mossel Bay	R19 937 437
Kannaland	R800 000
Bitou	R1 076 000
Breederiver / Winelands	R1 428 499
Prince Albert	R232 000
Oudtshoorn	R7 000 000
Theewaterskloof	R1 098 500
TOTAL:	R274 766 599

Northern Cape Region
Flood damage: May 2006

Table 15: Amounts allocated to Northern Cape

Municipal areas affected	Cost Implications	
Namakwa Pixley ka Seme	Total Loss	R25 723 482
	Insured Losses	R0
	Non-Insured Losses	R25 723 482
	Budget Available / Insured Losses	R0
	Emergency Funding Required/Shortfall	R25 723 482

Table 16: Distribution of allocated amounts

Description	Approved Amount
Municipalities	
Namakwa District Municipality	R17 899 000
Pixley ka Seme District Municipality	R7 824 482
TOTAL:	R25 723 482

Runaway fires: 14 December 2006

Runaway fires started in Koopmansfontein in the Dikgatlong Municipality, Northern Cape Province as a result of lightning. The fires started on 14 December 2006. The Northern Cape Provincial Disaster Management Centre requested the NDMC to approach the South African Air Force for assistance on 16 December 2006. One command and control and two operational helicopters were dispatched from Pretoria at 05:30 on 17 December for Kimberly. A Joint Operations Centre was established to coordinate the response efforts. Assistance was provided by the neighbouring Kgalagadi District Municipality.

The fire was brought under control on 17 December 2006. Extensive damage to fencing, livestock and pastures were recorded. There were no fatalities or casualties. It was estimated that 40 000 ha was destroyed.

4.11.2.3 Programmes and Projects

Drought Programme

From 2003 through to 2006 the country experienced below normal rainfall which resulted in devastating drought. During the financial year 2003/2004, in seven of nine provinces of the country a disaster was declared as a result of drought. This included: Limpopo, KwaZulu Natal, North West, Free State, Eastern Cape, Mpumalanga and Western Cape Provinces.

In January 2004, R280 m was made available for the country by the Minister of Finance from the national contingency reserve for emergency water supply services. The funds were appropriated to the **dplg's** budget and **dplg** maintained overall responsibilities for disbursing and transferring the funds to municipalities as per schedule in collaboration with Department of Water of Affairs and Forestry.

Table 17: Drought Relief Conditional Grants: 1st Allocation: R280 m

Summary by province	Allocated
Eastern Cape	R85 230 000
Free State	R2 750 000
Gauteng	R2 500 000
KwaZulu Natal	R89 723 000
Limpopo	R21 933 000
Mpumalanga	R12 200 000
Northern Cape	R24 323 000
North West	R31 341 000
Western Cape	R10 000 000
TOTAL:	R280 000 000

During the financial years 2005/06, drought conditions continued to prevail in all the provinces of the country. A further drought allocation totalling R311 m was made available for emergency water services. The funds were also allocated to the **dplg's** budget for disbursement.

Table 18: Drought Relief Conditional Grants: 2nd Allocation: R311 m

Summary by province	Allocated
Eastern Cape	R41 645 000
Free State	R9 278 000
Gauteng	R5 024 000
KwaZulu Natal	R60 000 000
Limpopo	R75 610 000
Mpumalanga	R7 247 000
Northern Cape	R37 917 000
North West	R48 027 000
Western Cape	R26 251 000
TOTAL:	R311 000 000

Lessons learned

The drought and consequent impacts of the drought are exacerbated by several factors:

- Poor and in most cases non-existent drought mitigation and risk reduction measures;
- Inadequate drought policy for all sectors;
- Inefficient financial support; and
- Lack of knowledge and awareness of the vulnerable and those hardest hit by the drought also limit much of the responses to drought.

Monitoring of the Drought Relief Programme

Even though the funds were transferred through the **dplg's** budget, water provision is still the responsibility of the Department of Water Affairs and Forestry. To track the progress and measure the performance of the programme, DWAF appointed a service provider to collect and collate information from the municipalities on the progress of the projects. These reports were submitted on a monthly basis. The reports included Gazetted amount, transferred value, financial expenditure, physical progress and comments on the project.

Working on Fire Programme

The devastating losses suffered in the country as a result of veld fires focused the need to establish an integrated plan for fire management. During 2002 the National Disaster Management Centre (NDMC) and the Department of Water

Affairs and Forestry (DWAF), in collaboration with the forestry industry and various government departments, initiated the Working on Fire Programme (WoF). This started out as a pilot programme funded through the Poverty Relief allocation that seeks to promote an integrated approach to fire management in South Africa. The project has been a huge success. Ground crews (to support aerial fire-fighting capacity) and fire control teams (to do prescribed burning) are comprised of unskilled men and women who are trained to do the work and many jobs have been created in the process. The Head of the National Disaster Management Centre (NDMC) exercises overall control of the aerial fire-fighting section of the WoF programme. The **dplg** allocated an amount of R6m for payment of actual flying hours for the 2006/07 financial year.

Indian Ocean Tsunami Early Warning and Mitigation System

As a result of the tsunami that ravaged several countries in South East Asia and badly affected some countries in Africa on 26 December 2004, the Inter-Ministerial Committee on Disaster Management resolved that South Africa should participate in the development of an Indian Ocean Tsunami Warning System (IOTWS).

The Council for Geoscience indicated that as far as the contribution towards the development of an IOTWS is concerned, it would be necessary for the communication infrastructure as well as the seismic facilities to be upgraded. The cost estimate for upgrading of remote seismographs and National Data Centre facilities of the Council for Geoscience to accommodate seismic data management and the purchase of spare equipment for quick turn-around during instrument failure was estimated at R 1,95 m. Subsequent to consultation with the Cabinet, the necessary funds were transferred from the **dplg** to the account of the Council for Geoscience.

Much progress has been made to upgrade the five seismograph stations, i.e. Messina, Pongola, Grahamstown, Ceres and Calvinia, as part of South

Africa's contribution towards the establishment of an Indian Ocean Tsunami Warning System (IOTWS).

4.1.1.2.4 Participation in National Forums

Provincial Disaster Management Committee (PDMC)

The PDMC, comprising of officials from each Provincial Disaster Management Centre and chaired by the Senior Manager: Disaster Intervention and Support, convenes four times a year. Provincial Disaster Managers are provided with a unique opportunity to discuss matters of concern in their province. It is also a forum where ideas are discussed and exchanged.

Participation in other Forums

An official from the Directorate: Disaster Intervention and Support regularly participates in forums such as South African National Roads Agency Limited (SANRAL), South African Search and Rescue (SASAR), National Nuclear Regulator (NNR), etc.

4.1.1.2.5 Participation in International Forums

International Strategy for Disaster Reduction (ISDR)

In terms of the UN's International Strategy for Disaster Reduction (ISDR), South Africa is among the countries whose annual activities and plans are in conformity with the expected standards which are: observing annual ISDR themes, involving disaster prone communities in relevant disaster risk reduction campaigns, as well as participating in the various UN fora related to global disaster risk management.

The theme for ISDR 2006/07 was "Disaster Risk Reduction Begins at School." Various activities were planned in most Provinces, with schools and learners being the focus of the celebrations. These ranged from printing of educational materials, posters, banners, rallies/marches to music, art and drama competitions. The Chris Hani District Municipality requested to host the national ISDR observance activities, with support from the NDMC.

The concept involved learners in Primary, Secondary and High Schools, competing in Art, Music and Drama, portraying the impact of disasters on communities, how

these could be prevented, as well as the role of communities in increasing their own resilience to disasters. A multi-sectoral Planning Committee, comprising all relevant sectors, was put in place to ensure integration of Health, Environment, Agriculture, Education, Water Affairs and Forestry, etc, in the concept formulation. The Chris Hani District Municipality Disaster Management team briefed both educators and competition adjudicators on the focus for the ISDR theme, and supported them in setting the standards and developing the competition guidelines. Elimination competitions started at the local levels, with the District finals being held as the last event during October 2006. The winning groups received trophies and prizes, while all participating schools were also rewarded with items identified as crucial to their development, e.g. computer or laboratory equipment.

The concept appealed to both the learners and the educators, as it used the enthusiasm and creativity of children for disseminating valuable information on reducing the impact of disasters. The Chris Hani District Municipality combined the event with the official opening of their Disaster Management Centre in Queenstown. The venture also enjoyed the full support and backing of the Chris Hani District Municipality Mayor as well as the Mayors of all Municipalities within the District.

Southern African Development Community (SADC)

At the regional level, the NDMC is a member of the SADC Disaster Management Committee, serving on the Task Force charged with reviewing the region's Disaster Management Strategy. The new strategy takes into account the slow progress made in implementing the strategy that was approved by the Council of Ministers in 2001. It also focuses on ensuring alignment to such continental initiatives as the AU and NEPAD. The guiding principles of the Strategy include a clear expectation that "disaster risk reduction must be part and parcel of the overall development process, without limiting it to activities of a contingency or emergency nature." Emphasis is also laid on strengthening governance, legal and institutional frameworks at all levels of risk reduction, through rigorously applying these

in member states, mobilising and applying resources, and ensuring full participation of disaster-prone communities. In all of these, the role of the NDMC is that of facilitating and coordinating a harmonious countrywide and regional implementation of integrated disaster management. This mammoth task had to be executed against the backdrop of limited human, material and financial resources. This made it all the more urgent for all partners and stake-holders to engage in serious integration of disaster management into development plans – to get more value from all resources, but most critically, to ensure that the resilience of our communities to disasters are enhanced.

African Union (AU)

Representatives from the NDMC regularly participate in meetings of the AU. The Africa Multilateral Branch within the Department of Foreign Affairs is responsible for arranging South African participation in various African Union (AU) fora. Any South African involvement in AU fora is co-ordinated between the South African Embassy in Addis Ababa, Ethiopia and the Africa Multilateral Branch in the Department of Foreign Affairs.

United Nations Disaster Assessment and Co-ordination Committee (UNDAC)

The Head of the NDMC and a representative from the Department of Foreign Affairs attended the Board Meeting of the United Nations Disaster Assessment and Co-ordination Committee in Geneva on 19-20 February 2007. Since it was a Board meeting, all the contributing countries that participated in the United Nations Disaster Assessment and Co-ordination Teams were represented there.

Immediately after a disaster occurs, a UNDAC mission notifies the focal point within the country through the Office for the Co-ordination of Humanitarian Affairs. Within a period of approximately two hours, the participating country is meant to respond and indicate whether they have the capacity to deploy people to affected disaster areas. It was agreed that the NDMC, in collaboration with the Department of Foreign Affairs, would contribute to the central fund in the UN that makes funding available for travel arrangements for

UNDAC participants to respond timeously. South Africa requested the UN to consider doing a SADC training course. The UN agreed that they would in all likelihood do a bridging course in South Africa. It was agreed that the NDMC would coordinate the SADC participation.

South Africa was asked by the UN to nominate a few candidates for the UNDAC training during 2007. Specific requirements were specified by the UN for participants. The NDMC through the **dplg** sponsored two persons to attend the UNDAC training course.

United Nations Environmental Programme (UNEP)

The NDMC was approached by UNEP to identify environmental specialists within the country who could respond to a toxic spill or other disasters that affect the environment to a significant degree.

The NDMC is involved in discussions with UNEP and the Department of Foreign Affairs in terms of identifying certain agencies within the country that are willing to participate. There is also a training course that they would like to have representatives attend. UNEP indicated that they were planning a meeting during June/July 2007 and that they would like a representative from South Africa to attend. UNEP indicated that it was desirable that South Africa should play a larger role in the international response system to environmental emergencies.

4.11.2.6 Assistance in International Disasters

The Emergency Operations Committee (EOC) was established as a result of the Asian Tsunami Disaster in December 2004 and comprises key role-players from national and provincial departments as well as relevant NGOs (depending on the type of disaster). The purpose of the EOC is to coordinate international response to a disaster.

Mozambique Intervention

On 21 February 2007 the SA Weather Service alerted the NDMC to the weather situation in Mozambique. Mozambique was already experiencing challenges due to previous floods that had affected the Zambezi Valley

area. On 22 February 2007 the NDMC had an urgent meeting with key international responders, i.e. the SANDF, Foreign Affairs, DWAF, Department of Health and the SAPS.

Since Mozambique had not officially requested assistance from South Africa, the only option was to assess contingency plans and the overall state of readiness to assist, if the request came through. The NDMC was also concerned that the cyclone would veer southwards and affect South Africa. Officials from the relevant provinces, i.e. Limpopo, Mpumalanga and KwaZulu-Natal were alerted. The NDMC also had to stay alert for Zimbabwe and Zambia. Shortly hereafter, the Minister of Provincial and Local Government, (Mr F.S Mufandi), and Deputy Minister of Foreign Affairs, (Mr A Pahad), accompanied by a group of officials from the various line function departments, went to Mozambique where they had discussions with their counterparts and pledged South Africa's support. It became clear that the only support required was to airlift relief goods from within Mozambique to distribution areas. The SANDF took an assessment team to Mozambique to assess logistics, landing strips, sources of fuel, location of relief items, drop-off destinations and accommodation for crews. A full team of pilots and other members of the SANDF were subsequently deployed to Mozambique and were responsible for airlifting relief supplies between Caia, Beira and the identified community shelters. The SANDF carried close to 57 tons of food and other supplies and had put in more than 75 flying hours.

Lessons learned

- Mozambique was prepared. They had activated a contingency plan some five months before the actual incident, which means that they had heeded all the projections that they were receiving regarding their rainy season.
- They had stockpiled relief items and started evacuating vulnerable communities ahead of the cyclone.

The Security Situation in Zimbabwe

The NDMC noted that, due to the increasing economic crisis in Zimbabwe; i.e. inflation at 1 700, unemployment at 80%, the huge shortfall in fuel, food

and foreign exchange and other problems, there was a sharp increase of illegal immigrants into South Africa. Approximately 700 people were crossing the South African border every 24 hours. Relevant national departments and the Limpopo Province were alerted to take note and start updating the contingency plans that were developed in 2001 in respect of the possible mass influx of refugees.

4.1.1.3 Information Technology

4.1.1.3.1 Background

Effective early warning systems need to consider hazards and community vulnerabilities. The early warning indicators for vulnerability are growing poverty, environmental degradation, populations located in high risk areas, civil strife, a lack of access to information and low preparedness. The key to effective early warning is the use of technology as an enabler; the translation of available information into understandable language and making the information accessible for the communities at risk.

The intent is to provide early warnings well ahead of a hazardous event. Weather forecasters observe the start of hurricanes and tropical storms and can calculate their likely future strength and tracks. Drought experts estimate the chances of rain and oceanographers plumb the depths of the Pacific Ocean for signs of the El Niño and plot the travel of ocean-crossing tsunamis caused by earthquakes.

The NDMC has made substantial progress in the use and implementation of programmes and Geographic Information Systems (GIS) for hazard mitigation activities and early warning.

GIS plays a critical role in the development of the National Disaster Management Centre's enhanced National Disaster Management Information System

(NDMIS). The system can be seen as an all encompassing IT solution that relates to various aspects of Hazard Analysis, Vulnerability Assessment, Risk Reduction and Contingency Planning, Incident Reporting Systems as well as Early Warning Systems.

4.1.1.3.2 Situation Reporting System

The Situation Reporting System (SRS) is a web-based system used by disaster management officials to capture data relating to disaster events occurring across the country. The system has a spatial dimension and all reports are linked to the NDMC GIS for spatial querying, analysis and display.

Due to the sensitive nature of the information stored, access to the system is restricted and controlled.

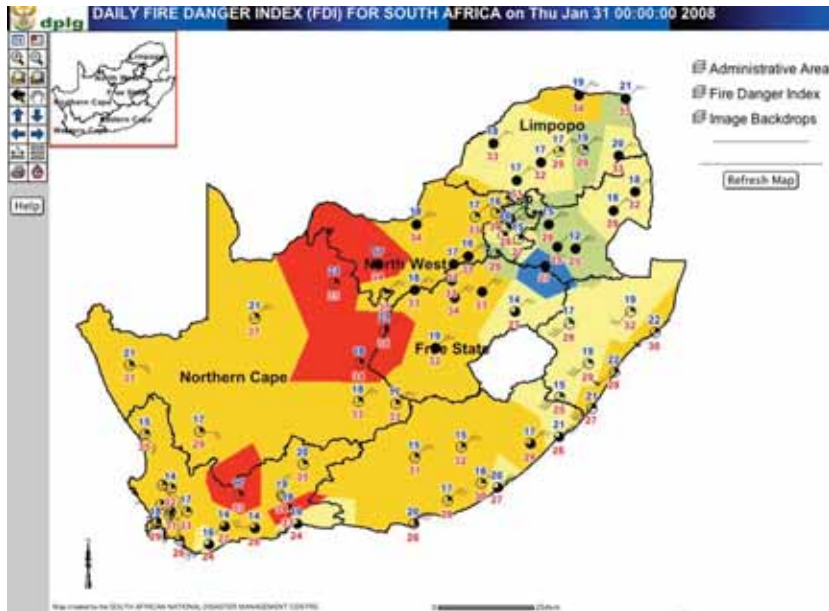
4.1.1.3.3 Early Warning System focussed on fires, floods and tropical cyclones

Early warning relating to fires is maintained through two systems, namely the AFIS (Advanced Fire Information System) and the FDI (Fire Danger Index). Both systems make use of satellite technology combined with GIS (Geographic Information Systems) to monitor fire events and then warn relevant role-players through Short Messaging Service (SMS).

The FDI (Fire Danger Index) is a web mapping application that combines data gathered from weather stations throughout South Africa. The data is collated, organised and further processed so as to serve as an input into the FDI Model that determines what weather conditions are conducive to fire events. The final product is an ESRI ArcIMS map that shows which areas are considered high risk for that particular time.

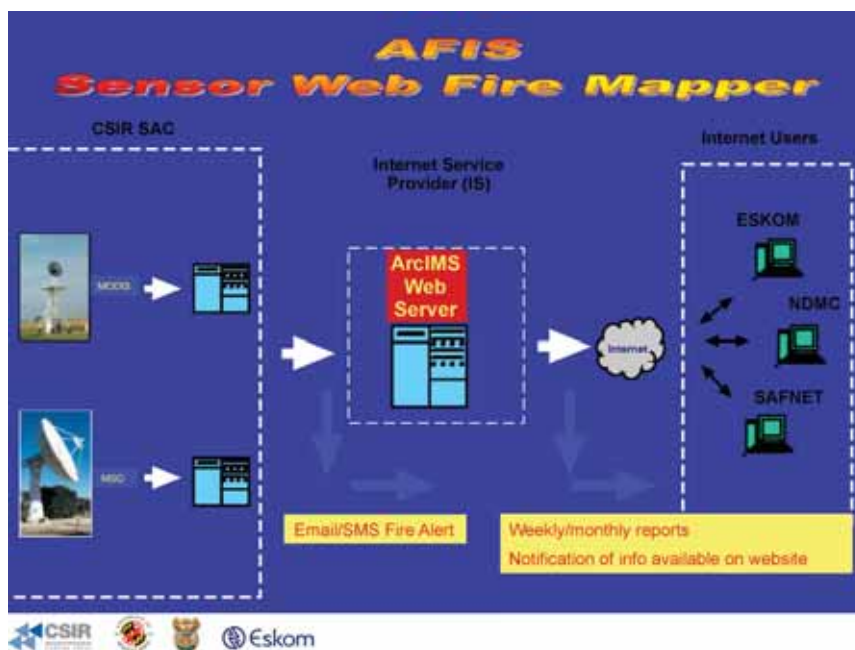
The FDI is updated twice daily and the use of SMS is utilised to inform the relevant role-players of the status of their designated areas in relation to fire risk.

Figure 12: Fire Danger Index Web Application



The AFIS (Advanced Fire Information System) is the first near real time operational satellite fire monitoring system in Southern Africa. The use of satellite technology is employed to monitor live fires at 15 minute intervals and display information related to these live fires on a web mapping application.

Figure 13: AFIS Workflow Diagram



As the workflow diagram illustrates, the use of the MODIS (or Moderate Resolution Imaging Spectroradiometer) instrument on board NASA's Aqua and Terra satellites, as well as the Meteosat Second Generation (MSG) geostationary satellite from Eumetsat, serves as input to the ArcIMS Web Server; which in turn serves the online mapping to the public and its primary stake-holders (NDMC, Eskom and SAFNET). The use of e-mail and SMS alerts to notify relevant parties is also employed as in the FDI Model.

Figure 14: AFIS Web Application



The CSIR Satellite Application Centre is in the process of customising and further developing AFIS to enable not only the detection of fires but also the prediction and assessment of fire events in the future.

Furthermore, the NDMC has developed various links to other web sites containing dynamic information on various warnings. These include:

1. Vulnerability Atlas focusing on hydrological drought (maintained by the Department of Water Affairs and Forestry); and
2. Tropical cyclones watch along the Indian Ocean (hosted by the University of Hawaii).

4.1.1.3.4 National Disaster Hazard and Vulnerability Atlas

The NDMC also tracks and collates information on all disaster events on a spatial and temporal level with the Disaster Atlas. The Atlas documents events on an annual basis with information derived from the situation reporting tool populated by provinces. The Atlas serves as a tool for establishing trends in disaster events over given periods of time.

The functionality of the Atlas is to be further developed in the near future to incorporate an assessment of vulnerability of selected areas.

4.1.1.3.5 The use of Space Technology in Disaster Management

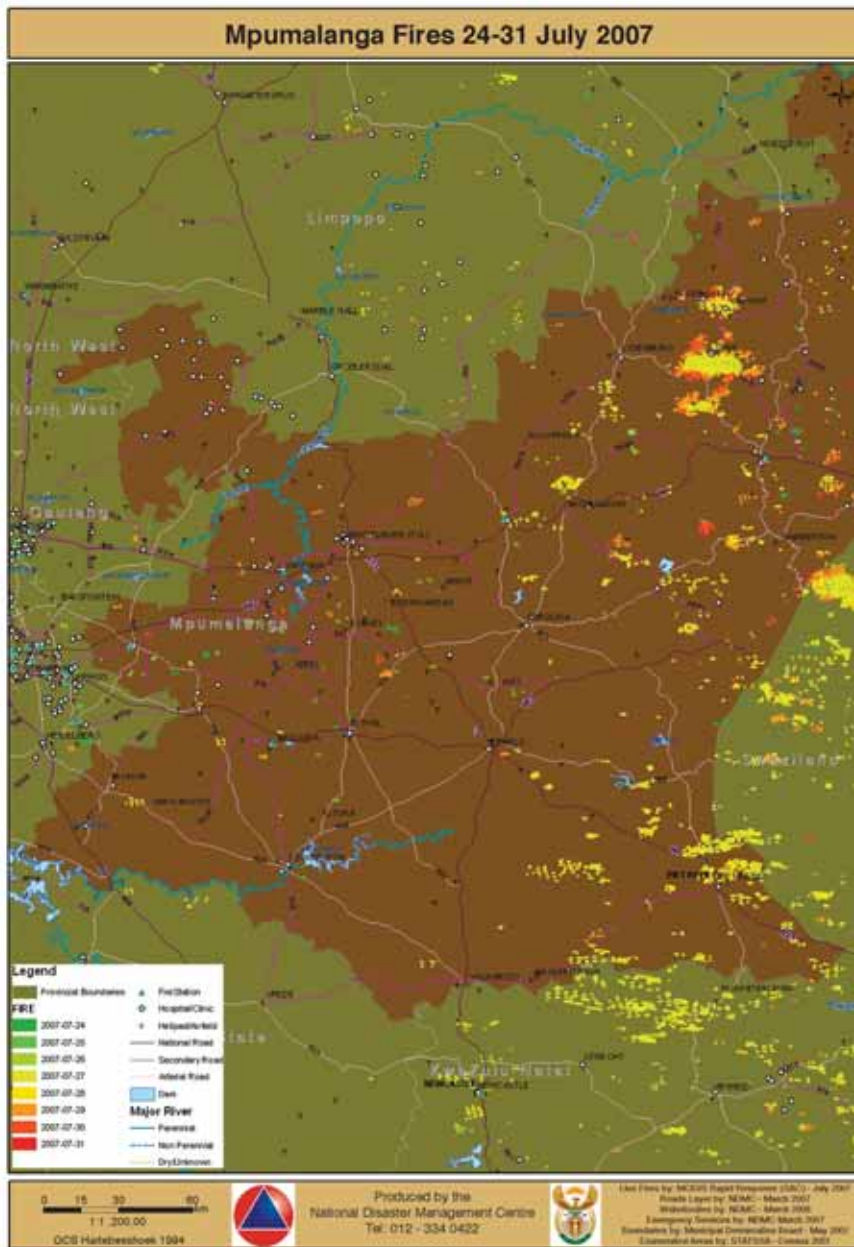
The NDMC has entered into an agreement with the Satellite Application Centre (SAC) to procure their sensor portfolio to assist and enhance the National Disaster Management Information System (NDMIS). The system relates to various aspects concerning hazard analysis, vulnerability assessment, contingency planning, reporting systems as well as early warning systems.

A host of applications can be derived from the interaction between satellite imagery, remote sensing techniques and intelligent GIS information. Feature extraction with remote sensing techniques will help to identify communities and assets at risk. The quantification of disasters will also be assisted by the identification of burn scars and extent of live fires, floods and storms.

Figure 15: Aerial photograph during fires in Mpumalanga

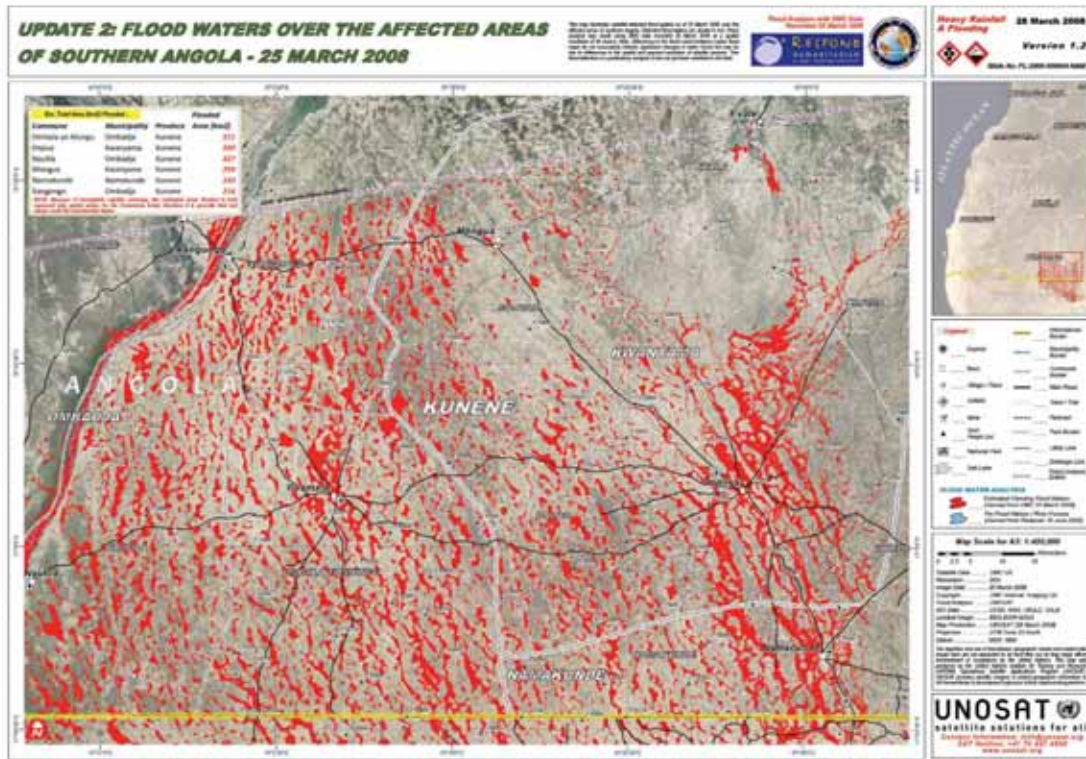


Figure 16: Fire Damage Assessment – Mpumalanga



Post disaster damage assessment techniques can be employed in relation to fires, floods, earthquakes and storms. Ad hoc requests over priority areas will enable change detection (before / after picture) of disaster stricken areas to enable analysts to quantify damage to the area. The monitoring of urban development as far as housing and infrastructure are concerned, together with settlement data, provides valuable information to decision makers to further disaster preparedness and to formulate response strategies.

Figure 17: Flood Damage – Southern Angola



The technology lends itself to the creation of current and accurate vegetation and land cover outputs at the micro level for environmental monitoring. Through the creation of seasonal Normalised Difference Vegetation Indexes (NDVIs), drought, desertification and deforestation can be monitored.

Where weather related occurrences such as hurricanes are concerned, monitoring and tracking of storms coupled with modelling of paths and forecasts could add great value to early warning systems and assist communities in preparation for events.

Lastly it is important to note that a substantial amount of archived satellite imagery is available. This enables analysts to view temporal change of phenomena; be it human or environmental. Combining this information with historical events could shed light on reasons why certain events occurred in the past and assist with modelling of future events.

The procurement of this data source and its subsequent licence agreement cascades down to the provincial and district municipal spheres as well as across national departments within the **dplg**. This means that the data will be made available to other national departments by the NDMC and thereby a completely different range of derivatives as far as application development is concerned will be enabled.

Furthermore, the data will also be shared amongst provincial and district municipal disaster management entities in order to empower decision makers, disaster managers and community leaders to better employ disaster management procedures and improve readiness.

4.12 Fire Brigade Board

On 20 April 2006, the Minister for Provincial and Local Government granted approval for the review of the Fire Brigade Services Act, 1987. The Fire Brigade Board subsequently decided that a legislative task team, comprising all relevant role-players including the **dplg**, provinces and South African Local Government Association (SALGA) be established to proceed with the drafting of the new Fire Services legislation.

Although the nominations received were not representative of the whole country, the legislative task team had its first meeting on 13 February 2007. The task team decided that it should include representatives from the following additional entities/stake-holders and should be as inclusive as possible: SASOL, Eskom, Spoornet, Airports Company South Africa (ACSA), Department of Water Affairs and Forestry (DWAF), Institution of Fire Engineers (IFE), Rural Metro and South African National Defence Force (SANDF).

The task team decided that a drafting team should be formed to attend to a more detailed discussion document. The drafting team comprises members from the following entities: SANDF, KwaZulu-Natal Province, the **dplg**, SAESI, Western Cape Province.

4.13 Local Government Strategic Agenda

A number of issues identified by Project Consolidate and later confirmed and elaborated on in a study undertaken by **dplg** of all the provincial departments responsible for local government revealed that provincial departments are generally not effectively fulfilling their co-ordination, guidance and monitoring role in relation to the local sphere.

This led to the adoption of the 5 Year Local Government Strategic Agenda (2006 – 2011) in January 2006, explicitly identifying the need to address matters of structural reform of the state and policy refinements as it affects the government's arrangements of the state.

The progress made with regard to disaster management institutional capacity in dealing with the establishment of the disaster management centres, appointment of Heads of Centres, the establishment of forums and development of disaster management plans in the national, provincial and local spheres of government is directly linked to the 5 Year Local Government Strategic Agenda (5YLGSA) as a cross-cutting issue in the MTEF Plan (2008 – 2011).

During the year under review the NDMC made significant capital investments primarily in relation to the acquisition of software products and services. Furthermore it should be noted that an agreement was entered into with the Satellite Application Centre in respect of the provision of Satellite Imagery for the country as well as the Advanced Fire Information System. The NDMC also procured datasets for Geographical Information Systems for Disaster Management role-players across the three spheres of Government through the State Information Technology Agency (SITA).

The largest budget allocations for the 2006/07 financial year fall into the Professional Services and Helicopter Services categories (for the Working on Fire Program).

The NDMC Budget increases from R37,1 million in 2006/07 to R47,0 million in 2007/08, an increase of 26,8%.

The allocations for Disaster Management reflect an average annual real growth from 2006/07 to 2009/10 of 15,3%.

4.14 NDMC Financial Overview

4.14.1 Vote 5 – Analysis of the NDMC Budget

Table 19: NDMC Budget for 2006/07

Category		Total Expenditure
Capital	Machinery and Equipment	R267 000
	Software and Other Intangible Assets	R7 202 000
	Total	R7 469 000
Current		
	Compensation of Employees	R3 202 000
	Goods and Services (Including Working on Fire and Regional Assistance)	R26 895 000
	Total	R30 097 000
Other		R11 000
	Households	
	Provincial and Local Government	R2 000
	Total	R13 000
	Grand Total	R37 580 000

This increase is primarily as a result of an additional R10m in 2007/08, R15m in 2008/09 and R20m in 2009/10 for Disaster Intervention and Support activities. This has occurred subsequent to the 2006/07 Medium-Term Expenditure Committee process where the National Treasury, the NDMC and Disaster Management related line-function departments agreed upon new funding proposals for Disaster Management.

Table 20: Medium-term Expenditure Estimate

Subprogramme	Adjusted Appropriation	Medium-term Expenditure Estimate		
		R Thousand	2007/08	2008/09
Disaster Management	37 058	47 010	54 009	65 179

4.14.2 Funds solicited on behalf of stake-holders**Table 21: Funds allocated to events for specific reconstruction and rehabilitation projects**

Category	Description	Quantity
Drought Relief	Provision of emergency water services	R311 m
Taung Flooding	Rehabilitation – Housing	R80 m
	Rehabilitation – Roads and infrastructure	R25 m
Western Cape / Eastern Cape Flooding	Rehabilitation of roads and infrastructure	R650 m
Northern Cape Flooding	Rehabilitation of roads and infrastructure	R25 m
	TOTAL	R1,091 m

The above table indicates funds solicited by the NDMC on behalf of stake-holders. Detail in respect of the above is contained in the section on the Directorate: Disaster Intervention and Support. It should be noted that these funds have either been directly allocated to requesting entities or have been disbursed through the Municipal Infrastructure Grant.

Chapter 05

Overview of Disaster Management Activities by Key Disaster Management Stake-holders



The Act gives explicit priority to the application of the principle of cooperative governance for the purpose of disaster risk management and emphasises the involvement of all stake-holders in strengthening the capabilities of national, provincial and municipal organs of state to reduce the likelihood and severity of disasters. This section is dedicated to inputs from some of these stake-holders, with regard to their activities focused on disaster management during the reporting period.

5.1 Department of Agriculture

5.1.1 Introduction

Agriculture is a risky business due to the inherent variability of climatic parameters. This is especially true in South Africa where droughts and floods alternate frequently. Precipitation is mainly unreliable and erratic with drought becoming a major recurrent problem that in the main results in inferior crops and poor veld conditions. This situation is paralysing the crop and animal production enterprises, aggravated by disease outbreaks.

As the country continues to experience escalating losses from biological and natural disasters, it is increasingly clear that a new approach to hazard mitigation is needed. This should emphasise pre-disaster mitigation and the use of incentives to promote meaningful steps and measures to reduce the vulnerability of farming communities to flooding, drought, veld fires as well as other severe weather and disease outbreaks. Disasters can erase years of development and wear down family resilience and resource building efforts in a matter of minutes. The aspects of mainstreaming disaster and vulnerability issues in development planning are yet to gain ground in South Africa. Long-term initiatives like capacity building through awareness campaigns, information dissemination and enhancement of livelihood opportunities of the farming communities are the cornerstones of dealing with community vulnerabilities.

Following many generations of experience, people in different areas of the country have learned to cope with natural disasters in their own indigenous ways. Exploring traditional coping strategies and drawing lessons from community-based mitigation activities have been the basis from which DoA strategies are anchored. Awareness campaigns are viewed as useful tools for crystallising new ideas and attracting information flows between government and the communities it serves. The immediate post-disaster period is an appropriate time for opening the windows for opportunities to promote risk reduction awareness when hazards are still fresh in people's minds so that dialogue on the

inappropriateness of their land use can be discussed. However, in many instances, after the initial trauma of the occurrence of the natural disaster is over, it is relegated to historic memory until the next one occurs and the window of opportunity is left closed. This has been the farmer's practice since time immemorial.

Though disasters have been viewed as problematic, clear and explicit operational plans are still far from adequate. The government recently produced a set of policy documents and guidelines that provided a detailed framework for the management of national hazards. The implementation of these policies and plans, however, still remains a challenge.

South Africa has employed a multi-pronged approach to its agricultural risk mitigation activities. Besides awareness in the provinces, plans are underway to support community radio and television programmes aimed at raising awareness of agricultural development especially pertaining to rural areas.

5.1.2 Activities during the year

5.1.2.1 Disaster Risk Management Awareness Campaigns Progress

The Department of Agriculture rolled out an awareness programme to raise awareness and educate farming communities about disaster risk reduction principles. This approach is a perfect vehicle to capacitate farmers in preparing for disasters to elicit appropriate responses to minimise the impacts. There a number of risk reduction and climate change projects underway in the provinces .

5.1.2.2 Results of its monitoring of prevention and mitigation initiatives

The Department of Agriculture issues early warning information (NAC monthly advisories) and daily extreme weather warnings including precautionary measures for different hazards. These advisories are also uploaded on the NDA and AGIS websites. Disaster risk reduction measures are communicated to farming communities through these advisories. The Department

also embarked on awareness campaigns on the understanding, interpreting and usage of weather and climate information to teach and inform agricultural producers to mitigate natural hazards' impacts. Farmer's information days were also used to disseminate disaster risk information for avoidance, prevention, reduction and mitigation of disasters. An initiative to evaluate/assess the uptake of issued early warning information has been undertaken to identify gaps in information dissemination. Three provinces have been visited but assessments will be rolled out to other provinces.

Several research projects are in progress to monitor and mitigate the impact of natural hazards. These include hazard mapping and climate change mitigation, and adaptation research projects. These projects will not only guide departmental intervention in case of natural disasters, but will also direct policy focus.

5.1.2.3 Particular problems that were experienced in dealing with disasters

One of the challenges encountered with regard to dealing with disasters is that the provinces do not have dedicated Disaster Risk Management components (units) responsible for disaster risk reduction and management. The disaster risk reduction is dealt with as an add-on function or an ad hoc basis. This creates inconsistency regarding disaster risk management functions and ultimately hinders progress.

The provinces have capacity constraints to the extent that implementation of the disaster relief schemes is most often stalled. This problem results in provinces not implementing the scheme according to the disaster scheme framework and deviating from the signed memorandum of understanding.

The process of accessing funds is very tedious and complicated with extended lead time response paralysing the whole system. The provinces still depend on the national Department of Agriculture for disaster relief regardless of whether the disaster is local, provincial or national. The current scenario is that the Department of Agriculture does not have an allocation for disasters in the

annual budget and as a result requests funds from the National Treasury. The National Treasury on the other hand waits until budget adjustments in October/November to allocate disaster funds. This leads to huge delays before assistance reaches the affected farmers.

To address this dilemma, the Department of Agriculture made an agreement with National Treasury to draw funds forward during disasters while waiting for the Budget adjustments. The National Treasury will then reimburse the Department of Agriculture after the budget adjustments.

5.1.2.4 Particular problems that were experienced generally in implementing the Act and NDMF

Inter-governmental synergy leaves much room for improvement. Participation from other institutions (NGOs, Universities, Research Institutions, etc.) leaves a lot to be desired and poses a major challenge. Municipalities, both at district and local levels, as well as government departments have not reached a stage where disaster risk reduction is given top priority. The biggest challenge is to finance the implementation of the plan at the national and provincial level. The fact that the department observes two pieces of legislation is also a problem – Animal Health Act (reactive) and Disaster Management Act (reactive and proactive). The Animal Health Act was promulgated long before the Disaster Management Act and as a result they are in most cases in direct conflict. The Department of Agriculture is considering amending the Animal Health Act to align it with the Disaster Management Act.

There are critical bottlenecks in early warning information dissemination in the provinces to the intended beneficiaries. There is generally no communication infrastructure (computers, e-mails, telephones, etc.) to disseminate this information because of the dynamics within communities. Another challenge is the understanding and interpretation of early warning information by extension officers.

5.1.2.5 Progress with the preparation and regular updating in terms of section 25

The Department has, to this end, acknowledged the importance of addressing disaster risk reduction within the agricultural sector. The three documents discussed hereunder are based on the Disaster Management Act (2002) and the National Disaster Risk Management Framework (2005).

The Department of Agriculture has completed two policy documents: Agricultural Disaster Risk Management Plan and Drought Management Plan. The national stake-holder workshop was held to solicit further inputs and comments on the latter, and a working group was appointed to refine the document. Implementation guidelines are being drafted.

The Department of Agriculture hosted a national conference in Pretoria to discuss adaptation and mitigation strategies and more profound issues regarding climate change. The stake-holder consultation culminated in a climate change working document. The second stake-holder workshop will take place in February 2008. Subsequent to the workshop, a draft will be compiled as a contribution to the agricultural sector.

The Department of Agriculture is also working on the following documents as annexures: Agricultural Floods, Veld Fire, and Cold Spell Management Strategies, Agricultural Plant Pests, Diseases Strategy, Animal Disease Contingency Strategy, and Migratory Pests Strategy.

5.1.2.6 An evaluation of the implementation of plans and strategies

The disaster risk reduction principles and post-disaster recovery and rehabilitation are implemented in tandem with policy development and monitoring. Policy evaluation has been done on an ad hoc basis.

5.2 Department of Health

Specific objectives achieved by the Directorate: EMS and Disaster Management for the financial year 2006/07:

1. Draft Department of Health Disaster Management Policy completed and sent out for comments – March 2007
2. Draft Department of Health Disaster Management Plan 50% completed
3. Draft Department of Health, KwaZulu-Natal, Disaster Management Plan received for comments – March 2007
4. 2010 Disaster Management Sub-Committee was established and is meeting on a two-monthly basis – from October 2006 – with an emphasis on pre-hospital, forensic pathology and in-hospital disaster preparedness and response that will entail preparedness sign-offs, policies and procedures as well as training with an emphasis on institutional capacity and institutional disaster management/preparedness planning
5. Medical teams from the Gauteng, Free State and Western Cape Departments of Health placed on a 6-hour deployment stand-by in conjunction with the SAMHS for deployment to Vilanculos, Mozambique to provide health services and disaster recovery after the devastation caused by Tropical Cyclone Favio – February 2007
6. The Emergency Medical and Rescue Services of KwaZulu-Natal, Mpumalanga and Limpopo Provinces placed on stand-by and disaster response plans and resources were implemented for the possible flooding within those provinces post Tropical Cyclone Favio
7. Representatives from NDoH and Free State EMS attended the 4th Annual Hospital and Emergency Preparedness and Response Course in Bangkok, Thailand – December 2006.

5.3 Department of Minerals and Energy

In terms of the Disaster Management Act, 2002 the Department of Minerals and Energy (DME) is the “National Organ of State” for coordination and management of matters related to nuclear disaster management at a national level. The Minister of Minerals and Energy is responsible for national policy on nuclear matters and administration of nuclear legislation, namely the Nuclear Energy Act, 1999 (Act No. 46 of

1999) and the National Nuclear Regulator Act, 1999 (Act No. 47 of 1999). In accordance with the requirement in Section 25 of the Disaster Management Act the Director-General of Minerals and Energy submitted the "National Nuclear Disaster Management Plan" on 21 September 2005 and the DME has since then implemented the Plan and trained its departmental functionaries. Whilst on-site nuclear emergency plans for nuclear installations (Koeberg Nuclear Power Station, near Cape Town and Safari Reactor and related facilities at Pelindaba near Pretoria) are regulated and managed in terms of the National Nuclear Regulator Act, off-site nuclear disaster management plans (protective action response, recovery and national resources) are the responsibility of the relevant three tiers of government in terms of the Disaster Management Act. The DME is responsible for providing national coordination and oversight and in this regard the necessary Emergency Planning Steering and Oversight Committees (EPSOC) under the Chairmanship of DME have been established for the relevant nuclear installations and quarterly formal meetings are held.

The City of Cape Town (Disaster Management), as the first responder, has over the years successfully demonstrated during emergency exercises its capacity to respond to an off-site nuclear emergency at Koeberg in accordance with formal procedures and a procedure is in place for joint management of an off-site nuclear disaster by the three spheres of government. The capacity of the relevant local authorities responsible in terms of the Disaster Management Act to respond to an off-site nuclear emergency at Pelindaba remains a challenge. Whilst the South African Nuclear Energy Corporation has established the necessary in-house procedures to ensure a viable emergency plan at Pelindaba, steps have also commenced to address the capacity problem of the responsible local authorities.

No nuclear emergency has occurred during the reporting year (or any other year) and the probability of a nuclear emergency affecting the off-site public is extremely low. DME fulfils its obligations as the National Organ of State for nuclear disaster management from its routine annual financial baseline allocation.

5.4 Department of Public Works

The National Department of Public Works is the custodian of an extensive asset register with properties located in many of the 70 magisterial districts and 126 local authorities situated on dolomite. Sinkhole and doline formation, which is associated with dolomite land, can cause loss of life, damage to property and has financial implications. The Minister of Public Works has asked for the creation of a Dolomite Risk Management Section, which was established in the Professional Services Chief Directorate on the decision of Cabinet, the Minister has with created a National Dolomite Risk Management Working Committee consisting of the Departments of Public Works (Convenor), Water Affairs and Forestry, Provincial and Local Government, Agriculture and Land Affairs, Mineral and Energy Affairs, Transport, Housing, of Environmental Affairs and Tourism and Health. This Committee has, inter alia, established the need for co-ordination with the Disaster Management Programme, creation and implementation of national standards, liaison with local authorities and utilities, and motivated for the establishment of a National Dolomite Development Authority (NDDA).

The Department has fully implemented a risk management strategy on its own assets in Gauteng and is currently extending the strategy to all assets and infrastructure on its register in the dolomite areas of South Africa. The philosophy applied is that the Dolomite Risk Management Strategy permeates every level of Departmental decision-making in dolomite areas. The system involves the assessment of risk associated with the various properties and infrastructure, the determination of appropriate land use planning, maintenance, upgrading requirements and precautionary measures. The systematic assessment and determination of the risks associated with these properties on dolomite permits prioritisation of expenditure aimed at mitigating against sinkhole and doline formation. This targeted process has reduced sinkhole formation by 90 per cent in the military complex in southern Tshwane. The process of expenditure on projects in these areas is carefully

governed through the application for, and subsequent issue of, Dolomite Status Certificates. Project expenditure cannot be approved without a completed certificate indicating the risk associated with the site or project and that the project is appropriate and may proceed.

The Department of Public Works has, through extensive training programmes in its head office, Regional offices and Client Departments, involving staff, consultants, technical personnel etc, developed a level of awareness and vigilance. Staff are sensitised to the early warning signs of pending sinkholes or dolines and are aware of the reporting procedures to ensure rapid responses to potential disasters. In addition, the Department has initiated and sponsored the development of a four part SANS 1936 document pertaining to a code of practice for development on dolomite. These documents will serve to ensure standardised assessment of dolomite risk, appropriate development planning in relation to the risk, appropriate design of infrastructure and appropriate risk management.

5.5 Department of Science and Technology

The Department of Science and Technology (DST) is involved with the following activities which have linkages with disaster management:

5.5.1 Learnership Programme focussed on Early Warning Systems and Disaster Management

The DST has initiated a Research Learnership Programme focussed on Disaster Management and Early Warning Systems. This programme is part of a larger DST programme titled the 'National Information Society Learnerships Programme' (NISL). The overall aim of the NISL Programme is to improve public sector decision-making through the development of IT-based analytical competencies.

The Early Warning and Disaster Management Learnership has been designed to be implemented in departments dependent on constant monitoring, rapid analysis, trend analysis and information dissemination.

Departments which have been involved include Health, Water Affairs and Forestry, Transport, Defence, and the SAPS.

The Learnership involves the students undertaking a full time Masters degree in Disaster Management at the University of the Free State. This Masters degree is combined with practical work experience in various government departments, and a research project which is coupled with the work experience.

The Disaster Management and Early Warning Systems learnership started in 2006 with fifteen learners, seven unemployed science graduates and eight employed at different municipalities. Two of the unemployed graduates received job offers in 2007. Another group of nine learners were recruited in 2007 after the Department of Water Affairs and Forestry (DWAF) and the **dplg** became more actively involved in the learnership programme and have since contributed an extra R950 000 for this second group of learners for 2007. They are also helping with their practical work on a rotation basis. The Tshwane Metropolitan Municipality is also involved with students' practical work. The students are benefiting in dealing with real disaster situations at the three organisations and the organisations are obtaining equal benefit from the presence of the students in their organisations. The DST, DWAF and **dplg** are sharing a total of R1,1 million in 2007. In 2008, **dplg** and DWAF will pay a total of R1 million and in 2009 the two departments will share R200 000 for the second group of learners. A total of 24 learners are already enlisted in programme.

A steering committee has been established to guide the activities of the programme. This committee consists of representatives of the DST, CSIR, DWAF, **dplg** and Free State University. Other departments such as the Department of Health and the Department of Agriculture will form part of the committee in due course. The committee will also decide on the funding of the third group of students and further longer term arrangements for this programme. The 2007/08 financial year is the last year of the cycle for this learnership programme at DST.

5.5.2 The South African Earth Observation Strategy

The objective of the South African Earth Observation Strategy (SAEOS) is to coordinate the collection, assimilation and dissemination of Earth Observation data, in order to support policy, decision-making, economic growth and sustainable development in South Africa.

The objective of SAEOS will be met in the following ways:

1. Identification of gaps and opportunities for synergies in the sampling, data processing and dissemination processes;
2. Creating value-enhanced datasets by linking together previously independent, incompatible and mutually inaccessible observations;
3. Accessing relevant data from observation systems in neighbouring countries and from global observation systems, and in return supplying them with data which they need; and
4. Ensuring that the information needs of users are met, in the form that they require, when they need it, and at an affordable cost.

To achieve these goals, the SAEOS will create a framework for coordinating and integrating South Africa's various existing Earth Observation capacities, and linking them to complementary capabilities in neighbouring countries and to the Global Earth Observation System of Systems (GEOSS). SAEOS will constitute South Africa's implementation of GEOSS and will coordinate South Africa's engagement with the Earth Observation aspects of international treaties, agreements and initiatives.

SAEOS will be a 'system of systems', rather than a centralization of existing activities in the Earth Observation domain, which is exceptionally broad and diverse. SAEOS adds a minimalist layer of coordination and cooperation in order to make the whole greater than the sum of the parts. The key to this enterprise is interoperability between existing datasets: making the data in different observation systems accessible by one another and easily and seamlessly available to users.

SAEOS will provide a mechanism for high-level coordination and integration, so that the observing

systems can work together more effectively. It will do so by setting data interface and communication standards, by acting as a 'broker' in identifying user needs and connecting them with data suppliers, by convening expert groups to identify gaps and emerging issues, by developing work-plans to fill them, and by acting as an advocate for, and publicist of, the Earth Observation Systems.

A data theme of disaster advance warning, management and assessment has been identified. The kind of data that is included in this theme is data on fires, floods, earthquakes, tremors, subsidence and tsunamis. A theme on extreme weather and climate event forecasts has also been identified – data on droughts, wind, fire danger, snow, frost, extreme cold and heavy rain are included in this theme.

The NDMC has been identified as a partner to provide data to feed into the SAEOS framework and the activities and outputs of the SAEOS will be beneficial for disaster risk and management activities in South Africa. A bilateral relationship was established with the NDMC with a view to coordinate the sourcing of earth observation data for beneficial use by state entities. It is envisaged that the National Space Agency will play this role with a centralised budgetary process.

5.5.3 Development of a Technology Needs Assessment for Climate Change

South Africa is a signatory to the United Nations Framework Convention on Climate Change (UNFCCC). Article 4.5 of the Convention identifies technology transfer as a key mechanism to address climate change and requires developed countries to support technology development and utilisation in developing countries. In order to operationalise Article 4.5, parties agreed to introduce a mechanism known as a Technology Needs Assessment (TNA). Technology Needs Assessments are driven by countries and identify those areas where technology transfer aligns with the strategic and climate change goals of the country. The National Committee on Climate Change (NCCC) has mandated the DST to lead the development of a TNA in relation to climate change.

A TNA represents a set of country-driven activities that identify and determine the most appropriate mitigation and adaptation technology priorities of a country. Adopting a consultative process, it identifies the barriers to technology transfer and measures to address these barriers through sectoral analyses.

A group of technologies, termed 'cross cutting' technologies, has been identified in the process of developing the TNA. Technologies which are related to disaster management feature strongly in this group of technologies. Some of the technologies in this group include improved data management, processing and integration; improved communication and response in disaster management, and networks for information sharing and data integration.

The final TNA document, which will be submitted to the UNFCCC at the end of 2007, will aid in indicating to the international world what South Africa's priorities are in terms of climate change technologies. It is an opportunity to highlight the technologies that are required from a disaster risk and management point of view. The TNA document will be updated periodically and it is envisaged that a database of climate change technologies will be developed as a follow-up action from this project.

5.6 Department of Water Affairs and Forestry

The Department of Water Affairs and Forestry (DWAF) is the custodian of the country's forest and water resources.

Veld and Forest Fires

The following key focus area (KFA) was identified in dealing with veld and forest fires in terms of the National Veld and Forest Fire Act: To create an enabling regulatory environment for the prevention and management of veld and forest fires to support local and rural socio-economic development. In order to achieve this, the strategic objective is: To ensure the establishment and effective operation of Fire Protection Associations (FPAs) to reduce fire incidences (consequences).

Establishment of FPAs in priority fire risk areas

Eighteen (18) FPAs were registered in the 2006/07 financial year, which brought the total number of FPAs to seventy seven (77).

Table 22: FPAs in South Africa

Province	Number Registered	Veld fire risk rating	Area (ha)	% area covered	Registration status
Eastern Cape	3	High – Extreme	1 69 915	7%	1 x 4 (4) – i.e. conditional registration
Free State	9	H – E	1 330 000	52%	4x4 (4)
Gauteng	2	E	134 000	5%	1 x 4 (4)
North West	1	E	360 523	14%	
KwaZulu-Natal	1	E	530 000	21%	
Western Cape	2	M – H	30 830	1%	1 x 4 (4)
TOTAL	18		22 555 268	99% (+1%)	

89% of the registered FPAs fall within "High – Extreme" veld fire risk areas while 11 % fall within "Medium – High" veld fire risk areas. There are no registrations from Limpopo, Mpumalanga and Northern Cape.

The following registrations are pending (per province):

- Aansluit, Sevrin, Vaalharts (Northern Cape)
- Brandfort, Winburg, Bultfontein, Bothaville, Verkeerdevlei (Free State)
- Cradock, Winterberg, Venterstad (Eastern Cape)
- Lephalale, Thabazimbi (Limpopo) – Letaba and Groblersdal to submit soon.

Veld Fire Management Strategies effectively implemented by FPAs

It seems that those driven by Forestry and Municipalities (Greater Cederberg and Potchefstroom) are effective. The fact that many of the evaluated FPAs are without Operational Plans indicates a need for intervention. Incorporation of Veld Fire Management Strategies into Integrated Development Plans has not been fully achieved. There is as yet no quantitative evidence of the number of FPAs that have achieved this objective. It seems that FPAs are not working closely with municipalities and where this is happening, the municipalities have their own priorities

Capacity building for registered FPAs

- Sphere 1 (internal staff) – about 60 internal personnel trained (including Call Centre)
- Sphere 2 (Communities) – 2 x sessions in N West, 2 sessions in Limpopo, 1 x session N Cape, KwaZulu-Natal pending March/ April 2007
- Magistrates and Prosecutors have been trained in various areas of the country.

With regard to policy on financial assistance to FPAs, consultations were undertaken with the **dplg** and Treasury on the possible approach.

Management of developed systems such as the National Fire Danger Rating System

The South African Weather Service tested and compared results using the Lowveld model. Chronic over/under rating were detected. To address this issue the Department of Water Affairs and Forestry is to

procure the services of the Council for Scientific and Industrial Research. A memorandum of understanding with US agencies is also being considered.

Veld Fire Integrated Institutional Development

In this regard, quarterly meetings of the National Disaster Management Advisory Forum (NDMAF) Fire working Group were convened and quarterly National Disaster Management Advisory Forum meetings attended.

Additional Veld Fire management measures

A three year contract has been entered into with the Forest Fire Association (FFA) (effective April 2007) to manage the Working on Fire. This capacity has proved to be valuable for the country and covers functional areas such as:

- Support to Registered Fire Protection Associations;
- Veld Fire Advocacy and Awareness;
- Detection, Dispatch and Coordination;
- Ground Operations;
- Aerial Support;
- Incident Command System;
- Capacity Building and Transformation;
- Monitoring and Evaluation; and
- Research and Development.

Management of Water Resources

In terms of the National Water Act (No 36 of 1998), DWAF is responsible for the equitable, sustainable and efficient management of our water resources. The Constitution outlines the provision of water services to users under their jurisdiction as a municipal responsibility. Consequent municipal roles and responsibilities are contained in the Water Services Act (No 108 of 1997) and the Municipal Structures Act (No 117 of 1998).

As the Water Sector Leader, DWAF spearheads initiatives to ensure access to basic water services and the more robust access to reliable water sources. Since democratization during 1994, billions of Rands were spent to ensure such access to water to millions of previously unserved South Africans. Despite this the extremely variable South African climate still leads to hardships due to water-related disasters. During these conditions of stress, DWAF makes use of its own

regional structures to assess the situation, while it utilises the National Disaster Management Structures to obtain additional funds. The Department develops and/or improves strategic water resource infrastructures, and also disburses funds to municipalities in need, monitors expenditures and assists municipalities on a wide front in various ways.

During major international disasters, such as the 2004 tsunami in the South East Indian Ocean, DWAF convenes the extremely capable South African Water Sector, largely situated outside Government. Assistance to other countries is then rendered on a partnership basis jointly between the government, the private sector and civil society. Government and civil society provide most of the seeding funds to initiate relevant overseas projects, while water-related knowledge, expertise and capacity are largely provided by the private sector and by parastatals such as universities, the Water Research Commission and Rand Water.

5.7 South African National Defence Force

5.7.1 Introduction

The South African National Defence Force (SANDF) is mandated to provide humanitarian aid and support to departments of state in states of emergency and/or disaster situations in order to prevent loss of lives and property of the country's citizens. The mandate of the SANDF is derived from the Constitution of the RSA, the Public Service Act (Proclamation 103/4), the Defence Act 42 of 2002, Disaster Management Act 57 of 2002 and the Public Finance Management Act Sections 38(1)(d), 44, 45, and 76(1)(d).

The South African National Defence Force provides assistance in the form of:

- Disaster Aid; to render support with available resources for the protection of life, health and property for the first seventy two (72) hours at SANDF expense.
- Disaster Relief; provision of assistance upon request to the lead department and at the lead department's cost, depending on the availability of resources.

5.7.2 Structures and Command and Control

The SANDF ascribes to Chapter 2 of the Disaster Management Act and is structured to coordinate as follows:

- At Inter-Governmental Committee on Disaster Management level – the Minister of Defence
- At Inter-Departmental Committee level – the National Disaster Advisory Forum – the Chief of SANDF has delegated senior representatives attending, especially members from Joint Operations Headquarters
- Provincial and Local Committees – the Provincial and Local Disaster Management Advisory Forum is attended by SANDF members from the Joint Tactical Headquarters as delegated by the Joint Operations Headquarters
- The Joint Operations Division is the nodal point for any request, as delegated by the Chief of the SANDF

5.7.3 Disaster Management Activities during the Financial Year 2006/07

- Support to the Department of Agriculture with regard to swine fever: 8 319 kg pork meat was confiscated and destroyed during the operation
- Support to the **dplg** with regard to fire-fighting: During December 2006, 34.2 hours were flown with an Oryx helicopter during which 185 buckets of water was transported at a cost of R1 019 084. During March 2007, 16.9 hours were flown with an Oryx helicopter during which 163 buckets of water was transported at a cost of R598 260
- Between March and April 2007 during Operation Litchi 11 in the flood affected Zambezi River basin in Mozambique, military air transport for humanitarian relief aid was provided at a cost of R1 3m.

5.8 South African Police Service

The South African Police Service as a National Organ of State has already taken initiatives to ensure compliance with the Disaster Management Act and

Framework by developing a Disaster Management Strategy, a disaster management Policy and a Contingency Plan. All Provincial representatives are involved in all planning sessions as well as all other activities being undertaken in terms of the Act and the Framework. A total number of 36 Provincial representatives and 30 Divisional representatives were involved in the formulation of the Disaster Management Strategy and have also participated in various work sessions pertaining to Disaster Management. Various provinces have also been involved in providing support during various Floods and Fire disasters that took place countrywide, and have been working in close cooperation with various stake-holders.

5.9 South African Qualifications Authority

The South African Qualifications Authority (SAQA) is a statutory body responsible for overseeing the implementation of the National Qualifications Framework (NQF). Part of SAQA's responsibility is to generate and register qualifications specifically in areas of identified need, and to oversee the quality of the delivery of the registered qualifications.

5.9.1 Registration of qualifications

The Directorate Standard Setting and Development worked closely with the NDMC to establish a standard generating body for the development of national qualifications standards in disaster management.

SAQA registered the National Certificate: Disaster Risk Management on Level 7 of the NQF. Work is currently being done on the development of a Levels 4, 5 and 6 qualification to complete the suite of qualifications in disaster management that will allow for a career path in disaster management with national qualifications.

5.9.2 Quality assurance

Various meetings between SAQA and the **dplg** on the quality assurance responsibilities of the newly developed qualifications were held. The purpose and rationale of the qualifications were discussed to ensure that the

implementation, uptake and throughput of learners on these qualifications will be best served by the appropriate education and training quality assurance body (ETQA). Care was taken to ensure that the implementation of the qualifications will lead to a career path for Disaster Managers. This process was completed and the framework is set for the development and recognition of qualified Disaster Managers.

5.10 South African Urban Search and Rescue

South Africa has been involved in foreign Urban Search and Rescue (USAR) response since 1999 when a volunteer team sponsored by the medical assistance company, Medical Rescue International, and consisting of volunteers from the Boksburg and Johannesburg Fire services, responded to the Izmet earthquake in Turkey. The fact that this team was able to respond was due to the establishment of a USAR capacity in the Eastern part of Gauteng province in 1996 in order to address the structural collapse threat posed by a large township which was constructed on top of high risk dolomitic ground. The (then) Boksburg Fire Department acquired a range of USAR equipment including seismic search devices, search cameras and stabilization equipment to address this challenge. A training course was also developed whereby responders were trained in the following aspects of technical rescue; rope rescue, confined space rescue, swift water rescue, trench collapse rescue and structural collapse rescue. This six-week course was presented to responders from the East Rand fire services and subsequently to Pretoria and Johannesburg emergency services.

These courses provided South Africa with a base of trained persons able to be utilised for response to foreign disasters and major incidents taking place within South Africa. South African teams have subsequently responded to disasters in Mozambique (2000), India (2001), Algeria (2003), Iran (2003) and Pakistan (2005). The team has always been "heavy rescue" capable, meaning that they are able to stabilise and enter major structural collapses (heavy construction). The team which responded to the earthquake in India in 2001 was also the largest foreign disaster team in the region (38 persons).

In 2005 the National Disaster Management Centre in cooperation with USAID presented an advanced USAR course to rescue instructors from throughout South Africa. The training was presented by instructors from the Fairfax and Los Angeles County USAR Task Forces and, since then, more than 90 additional rescuers have been trained.

At present South Africa is the only country in the SADC region with a USAR capacity and has been improving the system to a standard whereby it is able to respond within eight hours to disaster occurring outside South Africa (depending of the availability of air transport). The Gauteng Provincial Disaster Management Centre (PDMC) was approved for the acquisition and development of a fully equipped USAR team in preparation for the 2010 FIFA World Cup. This team was utilised to provide standby services during the World Summit on Sustainable Development in 2002.

An important feature of South Africa's capacity, which sets it apart from similar international teams, is its ability to respond to a wider variety of incidents such as floods and chemical incidents. This was proved during the earthquake disaster in Kashmir, Pakistan, in 2005 when the team was used to access victims in the Kashmir Mountains and carried out medical operations in a remote field hospital. More than 100 persons were rescued.

5.1.1 South African Weather Services

The South African Weather Service (SAWS) plays an

integral role in disaster risk reduction activities in South Africa. The SAWS is mandated by its Act to be the sole provider of severe weather-related warnings over South Africa in order to ensure that there is a single authoritative voice in this regard. The SAWS has therefore established links for dissemination of advisories and warnings to the National Disaster Management Centre and a number of the Provincial and Municipal Disaster Management Centres. Its officials also participate in the National and Provincial Disaster Management Advisory Forums, and in meetings and conferences related to disaster management activities.

Forecasters of the National Forecasting Centre in Pretoria and the Regional Forecasting Offices in Durban, Port Elizabeth, Cape Town and Bloemfontein have issued a number of advisories and warnings for severe weather events such as severe storms, heavy rain that can cause local flooding, veld fire danger and snow. Warnings are also issued via SMS specifically to disaster managers in relevant regions in support of their decision-making.

Excellent collaboration exists between the forecasters and disaster managers. This was highlighted again during the devastating storm that hit the country in early August 2006 causing millions of Rands of damage on the Cape South Coast, snow and even a tornado in Mpumalanga.

The SAWS maintains a climatological database of weather data over South Africa that is used regularly in disaster risk reduction and mitigation activities by various role-players.

Chapter 06

Overview of Disaster Management Activities by Provincial Disaster Management Centre⁴



The Disaster Management Act prescribes that every province must establish a disaster management centre with its associated activities. This section is a summary of the annual reports as received from the various centres, following the format of the National Disaster Management Framework.

6.1 Individual Reports from Provinces

6.1.1 Eastern Cape

The Province of the Eastern Cape is composed of six districts, one Metro and 38 local municipalities. It covers an area of approximately 1 000 square kilometres. It is neighbouring on Western Cape, Free State, Northern Cape and KwaZulu-Natal Provinces, as well as Lesotho. The Indian Ocean coastal strip covers an extensive area of the Province from Tsitsikamma to Port Edward.

The Provincial office was identified as a Pilot Project for the Disaster Management Information System for which an amount of R3 million was made available for the installation of the system at Buffalo City, as well as the King William's Town satellite centre, Amathole District Municipality and Nkonkobe, Nxuba, Ngqushwa, Mquma and Great Kei Local Municipalities. Funding for the installation of the system in five other districts and the Metro municipalities was made available to the targeted municipalities through the transfers.

The Province has been severely affected by disaster-related incidents in the year under review. To mention a few, there were veld and domestic fires, tornadoes and the August floods which were declared a Provincial State of Disaster. The Provincial office in its budget for disaster management prioritised the following areas:

- Establishment of Integrated Institutional Capacity for Disaster Risk Management in six District Municipalities, one Metro, Buffalo City and KSD – R4 000 000;
- Establishment of Integrated Response Recovery and Relief Measures at six District Municipalities, one Metro, Buffalo City and KSD – R4 000 000;
- Facilitate Disaster Risk Reduction Through Training, Education and Community Awareness Programmes at six District Municipalities, one Metro, Buffalo City and KSD – R3 000 000; and
- Facilitate the promotion of Fire and Emergency Services by purchasing of fire engines with equipment:

Cacadu, Amathole, Chris Hani, Alfred Nzo, OR Tambo and Ukhahlamba – R9 201 000.

6.1.2 Free State

Objectives

The following objectives of disaster risk management were defined:

- Establishment of integrated institutional capacity for disaster risk management policy and legislation;
- Establishment of a uniform approach to assess and monitor disaster risks that will inform disaster management planning and disaster risk reduction;
- Implementation of integrated disaster management plans and risk reduction programmes in accordance with approved frameworks;
- Development and implementation of effective and appropriate disaster response and recovery strategy, and
- The development of a comprehensive information management and communication system.

Achievements

The draft Provincial Disaster Management Framework has been developed and circulated to all relevant stakeholders. The Provincial Disaster Management Plan has been finalised and presented to the JCPS Political Cluster for noting and adoption. A vulnerability atlas has been developed and circulated to different stake-holders for inputs.

Challenges

Most district and local municipalities do not budget for disaster management activities and programmes. The appointment of the Head of District Disaster Management and appropriate personnel is still outstanding. Financial resources to establish an Integrated Information Management and Communication System that ensures communication links among spheres of government, sector departments and other role-players is not currently available. Establishment of Disaster Management Centres at district level as well as establishment of disaster management structures at district and local municipalities must be done. There is also a lack of a coordinated approach in dealing with disaster incidents.

Capacity Building

All district municipalities were trained on how to develop disaster management plans and how to align IDP programmes and projects to disaster management. District municipalities were also trained on components of the National Disaster Management Framework. Training on fire prevention, fire-fighting and first aid were provided to communities, officials and other stakeholders at Xhariep, Fezile Dabi, Lejweleputswa, Mofutho and Thabo Mofutsanyana District Municipalities.

Awareness Campaigns

The Provincial Disaster Management Centre facilitated training on the Disaster Management Framework to provincial disaster management officials, sector departments officials involved in disaster management and district/local municipal officials and politicians. Household fire awareness campaigns were held in the schools around Mangaung informal settlements.

Activities Embarked on by the Province

The Provincial Disaster Management Centre facilitated four Provincial Disaster Management Advisory Forums in the 2006/07 financial year. The Free State PDMC participated in the following forums:

- Classical Swine Fever Contingency Planning consisting of Department of Agriculture (Veterinary Service Department), SAPS, SANDF and PDMC;
- N3 Snow Protocol in which both Free State and KwaZulu-Natal jointly developed a contingency plan to deal with the snow that is usually experienced on the N3 during the winter period;
- Provincial Justice, Crime Prevention and Security (JCPS) technical cluster; and
- Provincial Joint Operations and Intelligence Committee (PROVJOINTS).

The PDMC embarked on the collection of statistics on fires that occurred in the province for the 2006/07 period. A survey was done on the status of fire services in the province.

6.1.3 Gauteng

The Gauteng Provincial Disaster Management Centre (PDMC) started 2006 facing a number of major

challenges in order to ensure compliance with the Disaster Management Act, as well as ensuring a safe province and effective response to major incidents and disaster that may occur.

The main priorities for the Directorate: Fire and Disaster Management included the following:

- Establishment of the Provincial Disaster Management Centre (PDMC) – Completion of the first phase of the project;
- Creation of institutional capacity for disaster risk management and fire/rescue response ability (The objective was to complete the year with at least 120 people capacitated to be able to deal with various identified risks);
- Comprehensive disaster risk assessment of all possible disasters in the province;
- Effective disaster risk reduction strategies for 50% identified disasters;
- Implemented incident management system;
- Identification of monitoring and coordination systems required to support the delivery of emergency services;
- Provision of interoperability systems and hazardous materials databases to all municipalities;
- Investigation into readiness of fire/rescue services; and
- Amendment of the Fire Brigade Services Act.

Activities

The following activities were identified and carried out in order to satisfy the above priorities:

Establishment of the Provincial Disaster Management Centre (PDMC)

Following a comprehensive assessment of the indicators for the physical placement of the Provincial Disaster Management Centre (PDMC), the Directorate: Fire and Disaster Management identified a location in the Midrand area which is a 10 000m² facility. The centre has been designed and built based on the Business Continuity Institute's best practice guidelines and offers a highly resilient recovery infrastructure, which includes:

- Multiple diesel generators and UPS systems;
- Multiple air-conditioning systems;
- Access control with video surveillance; and
- Multiple computer rooms (both dedicated as well as shared environments)

The centre consists of the following:

- A communications and monitoring room able to accommodate twelve workstations and one supervisor station;
- A command centre able to accommodate all role-players who would be utilised during a declared disaster;
- An executive command level boardroom to be used by senior government officials and the provincial leadership in the event of a disaster;
- A media briefing facility which can also be used as a training and conference facility;
- Office space to accommodate operational staff who will be required to work in the PDMC;
- Parking for all persons working in the centre on a full-time basis as well as additional secure parking to accommodate additional persons in the event of a disaster;
- Redundancies for all IT systems;
- Additional office space and boardrooms which can be used in the event of a disaster; and
- An area for the erection of a helicopter landing facility within the air-traffic control jurisdiction of Grand Central Airport.

Upon completion of the building works, the department embarked upon a development process for the centre. This included ensuring the following functionalities:

- Capacity planning (with provision for future growth);
- Network design (agility, scalability and provision for future expansion);
- Structured conduit cabling and LAN establishment, with both physical and wireless network access points with fibre optic backbone;
- Raised tiled floor server room layout design (data and telecommunications racks, server racks, etc.)
- Infrastructure elements to include the following areas:
 - Building works;
 - Fire system;

- Air conditioning system
- Electrical system, and access control system; and
- Environmental monitoring system.
- Procurement and installation of network devices (switches, routers, firewalls, IDS, IPS, etc);
- Procurement and installation of ± 200 desktops;
- Procurement and installation of domain, mail and proxy server software and hardware;
- Provision and installation of network management devices;
- Provision and installation of a storage area network with integration into application specific hardware;
- Provision for intrusion prevention, intrusion detection and perimeter security measures;
- Provision and installation of an automated faxing, scanning and printing solution;
- Establishment of messaging centre;
- Establishment of a mini call centre;
- Delivery of an IP telephony solution to include unified messaging, voice mail, wireless IP handsets, VOIP, leased cost routing and cell blockers;
- Internet connectivity, WAN connectivity to include voice and data to regional Disaster Management Centres as well as connectivity to a disaster recovery site;
- Cabling in four boardrooms for video conferencing and projection screens; and
- Provision and installation of video walls and video conferencing solutions.

The department also identified a comprehensive disaster management information system with the following functionalities:

- Emergency Management Portal: Scalable to 1000+ concurrent users performing queries and 200+ concurrent updaters with a solution architecture to provide a means for disaster recovery and remote standby capability through a replicated instance(s) of the entire system;
- Disparate directory integration;
- Crisis collaboration;
- Event and incident collection, reporting, management and resolution;
- Virtual emergency operations centre;
- Geo-spatial rendering; and
- Mobile computing.

Creation of institutional capacity for disaster risk management and fire/rescue response ability

Disaster Response Training

In partnership with the United States Agency for International Development, a capacity building programme for disaster responders was developed and successfully presented. The programme was aimed at capacitating emergency responders to respond to disasters involving catastrophic damage to, and collapse of, infrastructure. The programme was made available to all provinces and responders from Free State, Western Cape, North West, Mpumalanga, Northern Cape and Limpopo attended. A total of 90 persons completed this programme which was supported by the United Nations Office for Foreign Disaster Assistance.

This programme is the only one of its kind in the country and has been extremely successful in recent years. The Department was also responsible for organising and leading the South African Disaster Response Team to the earthquake disaster which struck Pakistan at the end of 2005, and was placed on standby to respond to the flood disasters in Mozambique if required.

Flood Response

The Department has identified the challenges of seasonal flooding in informal settlements and has embarked on the following projects to address this:

Swift Water Rescue Training

A programme aimed at capacitating emergency services officials in high risk flood areas commenced in November 2006. Thirty responders were placed on an intensive programme whereby they were trained to enter floods under extreme conditions in order to rescue victims trapped in rapidly flowing water.

Emergency Call Box System

The Department has also installed an emergency call system in high risk flood areas in the Johannesburg precinct which have been identified as having the highest levels of drowning incidents. These call boxes are linked to Emergency Management Services who are then able

to more rapidly respond to fires and floods.

Swimming Programmes

In order to increase the number of responders in the province able to respond to flood emergencies, the Department has commenced a programme of capacity building whereby members of emergency services from previously disadvantaged communities are provided with swimming lessons. Persons that are not able to swim at all are developed over a number of stages to the level whereby they are able to conduct complicated rescue operations in flood conditions.

Vehicle Accident Rescue Training

Due to the high incidence of motor vehicle accidents in the province the Department has developed a vehicle rescue training programme which was presented to emergency services personnel from throughout South Africa. The programme was attended by more than 200 emergency services officials and included other subjects such as rope rescue and emergency medical care.

Public Information, Education and Relations Programme (PIER)

The Department coordinates and oversees the largest public information, education and relations programme in the country. All local authorities are members of the programme which meets bi-monthly and is responsible for two large awareness programmes (Pre-Winter Fire Awareness, Pre-Rainfall Season Flood Awareness). More than 4 000 children attended these programmes and a significant drop in the incidence of informal settlement fires has been the result of this process.

The Department also coordinates a programme known as "Risk Aware" which is aimed at preventing accidental deaths of children aged under 14. This includes risks such as suffocation, electrocution, burns etc. Each local authority is given the responsibility of addressing a particular risk and receives financial support from the Department to do this.

Disaster Management Act Compliance

The Department has completed a process where all

district municipalities were assisted in complying with the requirements of the Disaster Management Act. The following was done:

Disaster Management Frameworks were developed for all District Disaster Management Centres. Strategic Disaster Management plans for all District Disaster Management Centres were developed. Disaster risk assessments and the scoping process for the establishment of District Disaster Management Centres were completed. Training for District Disaster Management Centres in incident management systems was completed. Disaster management plans were incorporated into Integrated Development Plans (IDPs).

Comprehensive disaster risk assessments of all possible disasters in the province

The Provincial Disaster Management Centre (PDMC) initiated a capacity building programme aimed at capacitating all municipal disaster managers to carry out disaster risk assessments. Furthermore, an audit of all available information which could be acquired in order to monitor prevailing disaster risks was conducted.

Effective disaster risk reduction strategies for 50% identified disasters

A wide range of strategies have been developed and are being implemented within the Provincial Disaster Management Centre (PDMC).

Implemented incident management system

The PDMC has developed a Provincial Incident Management System which is included in the Strategic Disaster Management Plan and is used by all emergency services in the province. As part of the roll-out of the system, the PDMC conducted training for incident commanders in the province at the end of the previous financial year.

Identification of monitoring and coordination systems required to support the delivery of emergency services

The province has completed the implementation of an advanced disaster management information system

which will be rolled out to all municipalities within the current financial year. In order to ensure uniformity in reporting and dealing with disasters, the Department has acquired licences for all municipalities which financially equates to a saving of approximately R5 million per municipality.

The Department has also acquired equipment which has been provided to all metros and districts in order to assist them in carrying out disaster risk assessments, as well as tactical radios to ensure tactical communications during operations.

Provision of interoperability systems and hazardous materials databases to all municipalities

Emergencies involving hazardous materials, including commercial chemicals, radioactive materials and biological agents provided a major concern for the PDMC in view of the potential destructive nature (life, property and environment) of these events, as well as the specialised resources required to manage them. Due to the potential complexity of these events and the wide range of substances and events that can be presented, the safe and successful management of these emergencies is, amongst others, highly dependent on access to task- and mission-specific guidance.

Currently no comprehensive Chemical Reference Centre exists in South Africa. Provision of such facilities on Emergency Services and Local Authority Disaster Management level is wanting to non-existent. A planned component of the centre is a comprehensive Chemical Reference Centre for the Province. An urgent need to create interim capacity in this regard exists. To this purpose the acquisition of two database sets was approved and is implemented into the PDMC.

Assuring that all agencies participating in an emergency can talk to each other utilising wireless measures is a major thrust of the planned centre. The need existed to create an interim solution until the centre's network could be rolled out. The following solutions were implemented:

- Acquisition of 80 dual-band portable radios. These sets are capable of operating on all current municipal VHF frequencies, tactical UHF bands as well as marine and air bands;
- The acquired sets were distributed to the three Metros and three District Emergency Services with 20 sets being retained in the Department for emergency deployment and utilisation during special events; and
- Once rollout of the Centre's interoperability infrastructure is achieved, the issued sets will be utilised for tactical purposes by first due response units throughout the Province.

No provision currently exists for "loss of total infrastructure" scenarios, i.e. events that impact Telkom, GSM and wireless infrastructure (repeater high-points, etc.). To this purpose the Department has the following satellite communications systems to serve as redundancy to existing infrastructure as well as provide communications solutions in the event that Gauteng is to provide assistance to remote areas:

- For portable (walk-and-talk) voice communications: The acquisition of four handsets operating on the Iridium satellite service;
- For mobile voice and high-speed data communications: The acquisition of three terminals operating on the Inmarsat BGAN satellite service.

Investigation into readiness of fire/rescue services

During the 2006/07 financial year the Directorate: Fire and Disaster Management included the completion of a full survey of the readiness of fire and rescue services as part of its operational plan.

The reasons for this survey were as follows:

- To ascertain the level of risk to which services in the province have to respond to;
- To ascertain the capacity of services to respond to these risks;
- To identify shortcomings within the services;
- To develop a plan of action to address the identified shortcomings; and
- To ascertain the readiness of services to address the challenges of the FIFA 2010 Soccer World Cup.

The survey took the form of a questionnaire that was sent to all heads of fire/rescue services for completion. Upon receipt of these questionnaires discussions were held with the respective managers whereby the information was interrogated and verified. A further questionnaire, which was designed to identify the capacities of emergency services, was also forwarded to heads of services. Results of the survey were presented to the MEC who engaged the various Executive Mayors on the findings thereof.

Amendment of the Fire Brigade Services Act

Following a careful assessment of the Fire Services Act, the MEC was requested to propose the amendment of the existing Fire Services Act. The department recommended a number of changes to be considered. This was forwarded to the **dplg** and is in the process of being redrafted.

Other Activities

Gautrain and 2010 World Cup

The Department of Local Government is the lead department in the above two projects and has coordinated all local authority building plans approvals for the Gautrain project and has also completed the business and strategic plans for the FIFA 2010 Soccer World Cup.

Annual Disaster Exercises

The Department annually conducts two major disaster response exercises which include disaster managers and emergency services from the entire province, as well as the South African Air Force, and is aimed at ensuring efficient response to identified disaster risks. Recent exercises included the following:

- 2006: Flood Disaster (Vaal River) and major Petrochemical Fire (Sedibeng)
- 2005: Multi Storey Fire (Tshwane) and Motor Vehicle Rescue Techniques (Tshwane)
- 2004: Abandoned Building Fire (Johannesburg)
- 2003: Helicopter Rescue Operations from still water (West Rand).

Mutual Aid Agreement

The Department has concluded a Mutual Aid

Agreement between all municipal emergency services in the province which is aimed at ensuring the assistance and support of the various services to each other in the event of a major incident or disaster. The agreement has been signed by the Head of the Department as well as the heads of municipal emergency services and is overseen and coordinated by the Provincial Disaster Management Centre.

Major Incidents

Although the Gauteng Province is not prone to disasters such as large veld and forest fires, it does experience a high rate of incidents which is reflected below.

Table 23: Annual Emergency Call Statistics: 2006

Municipality	Fires	Rescue Incidents	Hazardous materials Incidents
Johannesburg	2052	752	140
Tshwane	4792	436	116
Ekurhuleni	2976	560	108
West Rand	508	244	80
Sedibeng	630	232	36
Metsweding	656	65	0

6.1.4 KwaZulu-Natal

Rural Metro Emergency Management Services provided a management support service to the Provincial Disaster Management Centre (PDMC) till the end of June 2006. A number of projects were undertaken, including the development of a guideline document on the implementation of the Disaster Management Act at municipal level. This guideline document was distributed at the District Disaster Management Advisory Forums and workshops.

A wide range of incidents were reported to the Provincial Disaster Management Centre during the year, including the normal rain, wind and hail storms and fires. All the districts were affected in some way or another.

The Provincial departments of Health (Emergency Medical Rescue Services), Housing, Agriculture and Welfare assisted the communities adversely affected by the severe stormy weather and heavy rain.

The Gift of the Givers welfare organisation assisted communities affected by adverse weather conditions in the Amajuba District with blankets and food parcels. The SA Red Cross Society has also been actively involved in many of the districts.

The outbreak of classical swine fever in the Eastern Cape has effectively been kept out of KwaZulu-Natal by a campaign that has been a joint-venture led by the Department of Agriculture with support from the district municipalities, the South African National Defence Force, the South African Police Services and the Provincial Disaster Management Centre.

The following incidents can be highlighted:

Strong winds and heavy rain accompanied by large hailstones struck various areas within the KwaDukuza/Stanger Local Municipality on, 18 May 2006 and again in the early evening of 19 May 2006. Initial reports indicated the areas worst affected were Bulwer Farm, Gledhow Village South/North, Chris Hani, Charlotte Dale, Enkukwini, Thembeni and Groutville. Large scale damage was mainly caused to roofing of homes, schools and factories.

The Department of Education indicated that due to the extent of the damage and the resultant cost implications, tender procedures would have to be followed. A total amount of R11 million was allocated for repairs to the schools affected by the storms.

On, 26 September 2006, an intense cold front moved across KwaZulu-Natal bringing with it continuous and heavy rains. The storms were accompanied by very strong winds. This was followed by further heavy rains from, 1 October 2006 that only cleared partially late in the afternoon of 4 October 2006.

As a result of this continuous, heavy rain, isolated areas in the Ugu District Municipal area were adversely affected. Relief efforts were implemented by the district and local municipalities which were monitored by the Provincial Disaster Management Centre. There was a concerted effort by the local municipalities affected, together with the Ugu District Municipality, to handle the situation using their own resources.

On, 12 and 13 November 2006 another unseasonable and intense cold front swept across KwaZulu-Natal bringing with it continuous and heavy rains.

District municipal Disaster Management Centres and officials were advised by the Provincial Disaster Management Centre of the impending adverse weather conditions following a "heads up" warning issued by the South African Weather Services office at the Durban International Airport on, 9 November 2006.

The continuous heavy rain in isolated areas mainly affected the coastal regions. Officials from the various District Disaster Management Centres, together with their local municipalities, reported no significant damage and there were no requests for additional assistance.

On, 9 December 2006 an intense cold front moved across KwaZulu-Natal bringing with it severe wind, rain and hail storms. Worst hit was the Amajuba District Municipal area on precinct in the areas of, amongst others, Dannhauser, Osizweni and Blaauwbosch near Newcastle and Emadlangeni (Utrecht). It was initially estimated by the District Disaster Management Centre that approximately 1 000 households were affected, some more severely than others, in the categories of rural/traditional and formal houses.

The immediate response by the district municipality was the provision of emergency relief aid consisting of food parcels, tents, blankets and roles of plastic sheeting to cover broken roofs and windows. A total of eight water tanks, 750 food parcels, 311 tents, 3 200 blankets and 100 rolls of plastic sheeting were made available for distribution. A number of welfare organisations and local businesses contributed generously to relieve the plight of the people.

The Emondlo area near Vryheid was hit by a heavy rain, hail and wind on 9 December 2006. People affected by the storm were assisted by the Abaqulusi local and the Zululand district municipality overnight. 100 tents, 300 blankets and 250 roles of plastic sheeting were collected from the stores of the Provincial Disaster Management Centre in Pietermaritzburg for distribution to the people affected. Zululand District Disaster Management Centre indicated that they were able to adequately address the needs of the people.

Around 18 and 19 March 2007 a surface low was situated and remained almost stationary along the south-east coast of KwaZulu-Natal and resulted in a tight pressure gradient along the entire KwaZulu-Natal coastline. At the same time a rare eclipse phenomenon

of the alignment of the earth, moon and sun occurred. This alignment contributed to the greatest gravitational pull on the affected area in more than 18 years.

Together with the Atlantic Ocean high that ridged up the coast the pressure gradient rose sharply causing gale force south-westerly winds that gusted between 30 and 40 knots (60 – 80 km/h). The strong winds caused large swells along the whole coastline with 6m waves along the south coast, and 7-10 m waves measured at Richards Bay. The areas most affected included Margate, Scottsburgh, Isipingo Beach, Ethekewini Golden Mile and Ballito.

There was devastating damage to infrastructure in all affected municipalities with risk factors including: further damage and destruction to the coastal ribbon; pollution to beaches due to treatment plants and pipe lines being flooded and damaged; health concerns; negative impact to tourism; etc.

It has to be pointed out that initial investigations by the

Provincial Disaster Management Centre indicated that damaged public infrastructure and amenities were generally located within the high and low water marks along the coastline. Affected infrastructure included sewerage pipe lines, water mains, walkways, etc. Affected buildings, including residential flats and parking bays, were located near the high water marks and were consequently damaged. As indicated earlier on a similar phenomenon took place 18 years ago but damage to infrastructure and buildings was not as extreme as in this instance. This is definitely a challenge which will have to be addressed with the Municipalities, Provincial Department of Agriculture, Forestry and Environmental Affairs during the reconstruction and rehabilitation phase of the disaster.

It is estimated that the total cost of damage as a result of this abnormal phenomenon was in the region of R249 248 575.

Table 24: Equipment Issued by KwaZulu-Natal PDMC

Month	Tents	Blankets	Plastic	Value
April				
May	10		300	R70 000
June	2	25		R2 720
July				
August	134	440	300	R207 200
September	40	200		R46 000
October	50	200	100	R76 000
November	8		15	R11 000
December	291	2210	900	R537 300
January	70	533	180	R140 645
February	68	200	50	R91 000
March				
TOTAL	673	3808	1845	R1 181 865

Provincial Disaster Management Advisory Forum

The official launch of the Provincial Disaster Management Advisory Forum has not been realised due to a number of unforeseen circumstances which include the inadequate staffing structure, the moratorium on appointment of staff, including the appointment of the required Head of the Provincial Disaster Management Centre. An informal forum comprising representatives from all the institutions that would be represented on the provincial committee has been established and meets quarterly for very successful and enthusiastic meetings with active participation from all the participants. Sub-Committees also meet on specific issues relating to the nature of incidents that occur in the province.

Provincial Disaster Management Centre

The Provincial Disaster Management Centre has been established, although it is not yet able to function at optimal capacity due to severe personnel shortages and inadequate facilities. Once the extended departmental structure is approved, it will be imperative that the Provincial Disaster Management Centre relocates.

At present the limited information technology and radio communications facilities are not coping with the demands put on them and there are serious concerns that they will not be able to cope should the province experience a Demoina/Eline-type incident in the near future. It is essential that urgent consideration be given to the upgrade or replacement of the present Management Information System and the projected costs should be included in the forthcoming budget. Improvements to the communication facility technology (which includes satellite) is presently under investigation.

Additional funds (R12 million) have been transferred by the Department to assist district municipalities with the establishment of their centres and advisory forums, the preparation of their plans and the establishment of a disaster management “unit”.

Communications in respect of intergovernmental and NGO relations has been established and is working very well.

Additional resources and facilities required for the optimal functionality of the Provincial Disaster Management Centre have been identified and are being procured:

- 3 x light delivery vehicles for use by the provincial disaster management officers at regional offices;
- Satellite telephones/radio communications;
- A 24-hour control centre;
- Forward command vehicle; and
- Corporate uniforms and personal protective clothing.

6.1.5 Limpopo

Figure 18: The Limpopo Provincial Disaster Management Centre



Centre Profile

The Provincial Disaster Management Centre was officially opened by the then Honourable, MEC Mr J Maswanganyi, on 14 March 2003. The Centre currently consists of 28 staff members including the Head of the Centre. The Provincial Disaster Management Centre has three Divisions that work together to ensure effective service delivery, namely:

- Institutional Capacity and Information Management;
- Risk Assessment and Reduction; and
- Response and Recovery.

The Centre is equipped with a toll free number to be utilised by the public in case of any disastrous situations. It also has a radio network system linked to all district municipal Disaster Management Centres. The centre also supports and assists the district municipalities with funds for construction of Disaster Management Centres as well as the purchasing of equipment.

Activities

The Provincial Disaster Management Framework was aligned with the National Framework during the first quarter of this financial year and approved. It was also gazetted. The Provincial Disaster Management Advisory Forum held its second meeting at Magoebaskloof on 31 October 2006, with the first meeting falling in the previous financial year on the 15 March 2006. A Provincial Safety and Security Sub-Committee on the 2010 FIFA World Cup has been established and is chaired by the PDMC. Negotiations about the new site for the relocation of the Provincial Disaster Management Centre were held with the Department of Public Works and a commitment was made that site No 101 on Sterkloop farm could be donated for the purpose. The centre supported and assisted Mopani District with the construction of Mopani District Disaster Management Centre by transferring an amount of R4 million and Greater Sekhukhune District with R1,65 m towards construction of a fire station at Groblersdal. The PDMC purchased 133 skid units which will be distributed to all district municipalities to assist in veld and forest fire-fighting.

Districts were also assisted with the purchase of other fire-fighting equipment, of which the district municipalities identified their needs as follows:

- Mopani, Waterberg and Vhembe District Municipalities were each assisted with R1,25m for the purchasing of water tankers, whilst Capricorn District Municipality was assisted with R600 000 for the purchasing of breathing apparatus. Sekhukhune District Municipality put the funds towards the construction of a fire station (R1,65m)
- An integrated disaster risk management strategy for the province to guide all role-players was developed.

Incidents / Disasters

A number of incidents took place, including floods, storms, accidents and foot-and-mouth-disease. These disasters left many people homeless and most of them were poor and could not afford to repair their damaged RDP houses. The affected municipalities were activated to provide relief measures, wherein the PDMC assisted in cases of lack of capacity. Some of the damaged RDP houses were vulnerable due to poor workmanship despite being less than two years old. Old school buildings were also vulnerable to storms and many communities could not afford to repair the damaged school buildings. Another challenge in respect of disaster management at the local level is that assessments are not done properly and timeously due to the lack of disaster management practitioners in the local municipalities as well as the lack of trained volunteers in this respect. Coordination is also delayed as the reporting of such disasters to the PDMC is done after a day or two.

6.1.6 Mpumalanga

Due to financial constraints Mpumalanga does not have a Provincial Disaster Management Centre in place but a submission to Cabinet for funding was made. Cabinet approved this request and funds are available in the 2007/08 financial year. Although Mpumalanga does not have a Disaster Management Centre, they are committed to rendering the services as outlined in chapter 30 of the Disaster Management Act.

As part of the focus on prevention and mitigation a number of initiatives were implemented in the 2006/07 financial year. They implemented the first phase of a disaster response system. This is a communication system which will, when completed, be able to link all the relevant structures. This system will assist with communication in places and times where telephone lines or networks are nonexistent or not functional (particularly during disasters). They have acquired disaster relief material in the form of tents and tarpaulins (roof covers). They have also conducted a disaster risk

assessment for all the municipalities in the Province. As part of their International Strategy for Disaster Reduction (ISDR) activities they conducted disaster risk prevention awareness campaigns in vulnerable and risk prone areas in the province, and have started with the fire services capacity assessment by CAPs in the province. They have also conducted basic fire-fighting and first-aid training for volunteers in seven municipalities in the province.

The financial year 2006/07 was very quiet in terms of disasters except for storm damage in November/December 2006 at Thembisile, Emakhazeni, Pixley ka Seme and Mkhondo municipalities.

Mpumalanga is proud to mention that they were the first province to embark on a best practice Disaster Risk Assessment for the province based on the NOAA Model by performing stages 1 and 2 of the Risk Assessment Process as per the National Disaster Management Framework (NDMF). The final outcomes were:

- Dynamic risk assessment tool (aligned with the NDMF and international best practice);
- Capacitated and empowered Disaster Risk Management practitioners and representatives from municipalities and departments (UNISA accreditation);
- Involved and informed communities through collaboration (indigenous knowledge);
- Stake-holder buy-in and support for process and outcomes;
- Scientific applied methodology and software; and
- A dynamic system that can be used in future.

Although they had a best practice model for the risk assessment they did experience challenges with the exercise, to with a few which were:

- Not all role-players invited attended the workshops – efforts need to be made to strengthen buy-in and commitment by all role-players;
- Not all learners performed their role due to other commitments – line management need to understand their accountability in terms of disaster management; and
- Data collection and the use of data were done on an

ad hoc basis – an integrated system approach needs to be developed and implemented.

6.1.7 Northern Cape

Municipalities in the Northern Cape are still struggling to accept or face the fact that they are responsible for the management of disasters in their respective areas. As long as Municipalities and Departments do not consider disaster management as a priority, the inhabitants or communities will continue to be vulnerable or exposed to unhealthy conditions. Municipalities and Departments are slow/reluctant to integrate the disaster management function into their current establishments and to gradually implement the provisions of the Disaster Management Act. This has been of great concern to the PDMC. However, programmes to brief Councillors and Municipal Managers on the implementation of the Disaster Management Act and related activities have been developed.

Disaster Management Centre

The position of the Head of Centre was filled but is currently vacant. With regard to the centre itself, there was consultation with the Department of Public Works and other private institutions regarding office space, but limited progress has been made.

District Municipalities

Three out of the five District Municipalities (Frances Baard, Kgalagadi and Pixley ka Seme) have appointed Heads of Centres and support staff. Disaster Management Centres have already been established in five of the Districts and they are fully operational. The SANDF is currently negotiating the relocation of the NEAR system to District Municipalities within the Province. The cost of maintaining the system is estimated to be in the region of R3,4 million per district, which is definitely beyond the capabilities of the municipalities. All District Municipalities are currently receiving financial assistance in the form of conditional grants from Government for the implementation of Disaster Management Programmes.

Disaster Management Frameworks / Plans

Provincial Disaster Management is in the process of inviting proposals for the development of a Provincial Disaster Management Framework and Plan in the ensuing year. However, three out of the five Districts have already developed their Disaster Management Plans and Frameworks. They have already been adopted by their respective Municipal Councils.

Disaster Management Advisory Forums

The Provincial Disaster Management Advisory Forum has been dissolved to make way for a smaller forum that only included or comprised of the Disaster Managers from the Districts. Only the Siyanada and Namakwa District Municipalities have established Disaster Management Forums. Inconsistency in respect of attending meetings has been a challenge experienced.

Training and Capacity Building

The Directorate has conducted a number of capacity building workshops in the province for disaster management functionaries, councillors and volunteers. The following short courses were provided in the province

- Basic Disaster Management Training;
- Handling of Hazardous Material;
- IDP and Disaster Management Plans;
- Fire-fighting and First Aid; and
- Search and Rescue.

Disasters / Incidents

A number of veld fire and flood incidents were reported in the Northern Cape and contingency plans of various institutions were activated in order to mitigate the severity of these events. Though veld fires occurred in the Koopmansfontain area and flash floods in the Jankemp Bull area, none of these events warranted the areas being declared disaster areas.

6.1.8 North West

A wide range of incidents were reported to the Provincial Disaster Management Centre during the 2006/07 financial year, including the normal rain, wind and hail storms and fires. All the districts were affected

in some way or another. The Provincial Departments of Health (Emergency Medical Rescue Services), Housing, Agriculture and Welfare assisted the communities adversely affected by the severe stormy weather and heavy rain.

The Gift of the Givers welfare organisation assisted communities affected by adverse weather conditions in the Bophirima District Municipality with blankets and food parcels. The SA Red Cross Society has also been actively involved in many of the districts.

Matlosana Wind Storm

In March 2007, a major wind storm hit parts of Matlosana (Klerksdorp), causing serious damage to infrastructure as well as buildings (housing, business and other structures). The following areas were affected: Alabama, Mansil Park, Jouberton and Kanana. Roofs, power lines, water and sewerage pumps were damaged. 3 515 houses, 11 schools and eight churches were damaged. A quantity surveyor was appointed to do a professional estimate on the cost of the damages. 120 people were injured and eight people were hospitalised. One fatality occurred.

Emergency Response

- Emergency accommodation was arranged for displaced families;
- Relief was donated and distributed;
- Roads were cleared;
- Power was restored to water and sewage pumps;
- Repairs commenced on the electrical network; and
- Ward councillors carried out a door-to-door survey.

Lessons Learnt

One should involve the community from the initial stages because they are familiar with their area. Allow politicians to become actively involved but clearly define all roles at the first meeting of the Disaster Committee. One should also emphasise and outline each line function's responsibility. Meetings should take place frequently to monitor progress and situations that impede it. The duration of aid distribution should be limited to a reasonable degree. A media liaison desk should immediately be set up.

Figure 19: Damage caused by the Matlosana Wind Storm



Figure 20: Roof blown off during Matlosana Wind Storm



Provincial Disaster Management Centre

The Provincial Disaster Management Centre has been established, although it is not yet able to function at optimal capacity due to severe personnel shortages and inadequate facilities. The location of the centre is ideally suited to handling an influx of a multi-discipline, multi-sector incident management committee. Once the departmental head and auxiliary staff as recommended in the proposed structure is approved, it will be inevitable that the Provincial Disaster Management Centre gets up to full speed.

At present the limited information technology facilities are not coping with the demands put on them and there are serious concerns that they will not be able to cope should the province experience a major incident in the near future. It is imperative that urgent consideration be given to the upgrade or replacement of the present management information system and the projected costs should be included in the forthcoming budget.

Improvements to the communication facility technology, (which includes satellite), is presently under investigation by the National Centre to ensure conductivity between provinces and the National Centre.

Funds have been made available by this department to assist district municipalities with the establishment of their centres and advisory forums, and the preparation of their plans. Communications in respect of intergovernmental and NGO relations has been established and is working very well.

Obstacles

The lack of human resource capacity causes constraints. Of the 10 proposed posts within the disaster management component, only four are presently filled. The lack of understanding of the provisions of the Disaster Management Act by municipalities and some departmental officials, and lack of adequate coordination at political and official levels, are also a big concern.

Challenges

The establishment of the Provincial Disaster Management Advisory Forum and structures at

municipal levels pose a huge challenge. Standardisation and accuracy of information and reporting frequencies is also of vital importance. There should also be a common IT interface from national level through to local levels.

Mitigations

The activation and roll-out of the developed disaster management information system must be done, as well as continued capacity building in the district municipalities.

6.1.9 Western Cape

Disaster Management Centres

The Western Cape Disaster Management Centre was established in line with the National Disaster Management Act 57 of 2002. Their approach to the implementation was crafted in such a way that it met the needs and expectations of the various stake-holders in the Province.

The Provincial Disaster Management Centre is established as an integral part of other strategic role-players, namely health and community safety, provincial traffic services and private ambulance services.

The provincial set-up is currently duplicated at district level in order to ensure accessibility and effective rendering and delivering of service to the community. These district centres are, will be situated in the following areas:

- Cape Winelands – Worcester;
- Central Karoo – Beaufort West;
- Eden – George;
- West Coast – Moorreesburg; and
- Overberg – Bredasdorp.

The City of Cape Town's Disaster Management Centre is located at the Goodwood Fire Station.

These centres individually and collectively strive for the creation, implementation and maintenance of effective, efficient and economic disaster management systems and structures within the province of the Western Cape.

Earthquake Risk Assessment

In 2006, the Provincial Disaster Management Centre – Sub-directorate Mitigation, initiated the first phase of an Earthquake Risk Assessment for the Western Cape. The purpose of this assessment was to determine the possible earthquake impact areas and the probable magnitude and frequency of such an occurrence, using available earthquake data.

The objectives of the Earthquake Risk Assessment were to investigate risk reduction methods which focused on the following:

- Earthquake risk assessment and analysis;
- Development of awareness and risk and means of mitigation;
- Development of early warning systems; and
- Disaster management.

Recommendations were made regarding an earthquake impact model that is based on international best practices and is suitable for application in the South African context as is well as the implementation of an earthquake early warning, monitoring system based on the probability, magnitude and frequency of seismic events. Other recommendations made as part of the study included the type of early warning/monitoring systems that should be implemented and where they should be installed.

Disaster Management / IDP Training

The Disaster Management Act (No 57 of 2002) and the Municipal Systems Act (No 32 of 2000) stipulate the inclusion of a disaster management plan into the municipality's integrated development plan (IDP). With the above legal requirements in mind, the Provincial Disaster Management Centre (PDMC), through its Sub-Directorate Recovery, embarked on disaster management/IDP training targeted at municipal politicians and officials who are involved in the field of disaster management.

This capacity building programme formed part of a provincial wide strategy to ensure the implementation of the Disaster Management Act, as well as the National and draft Provincial Disaster Management Frameworks and the draft National Guidelines.

The training was conducted during February and March 2007 at district/metro level in order to make it accessible and convenient for the various stake-holders. The training/capacity building initiative was initiated as a means of capacitating role-players on local, provincial and national level to budget and plan for disaster-related contingencies through the IDPs. This programme trained a total of 694 participants across the Western Cape.

Provincial Disaster Management Framework

The Framework is almost completed. Enabler 3 funding arrangements were finalised in December 2006 and incorporated into the framework. The framework was advertised in the Provincial Gazette for public comment in August 2007.

Institutional arrangements for disaster management

The following achievements were realised:

- The completion of the Provincial Disaster Management Centre and offices at Tygerberg Hospital;
- Expansion of the City of Cape Town's Disaster Management Centre (which was due for completion in July 2007);
- The completion of the Overberg Emergency Management Centre in Bredasdorp;
- Transfer of R1,5 million by the PDMC to Central Karoo for the establishment of their Emergency Management Centre;
- Establishment of the Emergency Management Centre in the West Coast district at the estimated cost of R 4 million; and
- The building of the Cape Winelands Disaster Management Centre which was due for completion during July/August 2007.

Major Flooding Incident of 2004

Following the cut-off of low which occurred during December 2004, major flooding occurred. Emergency funding to the amount of R24 500 000 was approved and allocated to assist municipalities who suffered extensive losses during this flooding event. The Provincial Disaster Management Centre, through its Sub-Directorate Recovery, is still managing the expenditure of the R24.5 million emergency funding. All allocated emergency funds were spent except for claims which were still outstanding at the end of 2006 from

Swellendam Municipality, Hessequa Municipality and Knysna Municipality. During December 2006, the Western Cape Provincial Government, through its Department of Local Government and Housing, entered into memoranda of agreement with the mentioned municipalities where the remainder of their allocations were paid over during January 2007.

Disaster Debrief

The Provincial Disaster Management Centre's Sub-Directorate: Recovery, managed to host a very successful disaster debrief on 22 February 2006 following the compound flood disaster of 2006 which resulted in Eden being declared a local disaster. This debrief was well attended by 114 different role-players, representing privately owned organisations, state owned organisations, local, provincial and national representatives from various government departments. The aim of the debriefing was to evaluate and identify possible mistakes made before, during and after the event occurred. It was also its objective to evaluate lessons learnt in order to prevent making the same or similar mistakes, and provide recommendations and compile strategies accordingly.

Haarlem Hail Devastation

The Provincial Disaster Management Centre's Recovery Sub-directorate is currently assisting Eden District Municipality with the management and declaration of Haarlem as a disaster area. This follows the devastating economic, social and agricultural effects of the hail storm which occurred on 20 November 2006. This event resulted in seven farms being badly affected and 389 hectares and 350 000 fruit trees being severely damaged. Fruit on two of these farms was reasonably insured, while three farms had minimal insurance and two had no insurance. It became evident that no fruits could be insured against hail damage.

The farms affected provided employment to 194 permanent workers and 160 temporary workers (mainly women from Haarlem) and an additional 70 temporary workers from Uniondale. Farmers had to release farm workers as a result of the devastation. A potential estimated income of R32 million was lost to

the Eden District Municipal area of which Haarlem is also a part. Eden District Municipality then established a task team under the chairmanship of their district disaster managers to facilitate and coordinate the management of the situation and its impacts. Eden District Municipality managed to allocate an amount of R5,8 million to cater for relief and rehabilitation for the Haarlem community affected. These allocated funds were used on social relief in the form of distribution of food parcels and most importantly job-creation initiatives. A number of projects such as "river bank clean-up, stormwater drainage repairs, stormwater upgrading" were identified and these affected farm labourers were hired to render services in return for an income.

Disaster Recovery IT Programme

The Provincial Disaster Management Centre's Sub-Directorate: Recovery also acquired a Disaster Management Recovery software programme free of charge, whose applications still need to be explored during this financial year. This IT programme can in future be utilised as a management tool, allowing the PDMC to view spending patterns of allocated emergency funds without having to make any enquiries to municipalities/ departments.

Training, Education Awareness and Marketing Programme (TEAM)

One of the objectives identified within the national and draft provincial disaster management framework is to promote a culture of risk avoidance by capacitating role-players, including communities and households, through integrated education, training and public awareness initiatives. In order to address the above mentioned objective Provincial Disaster Management initiated a project which focuses on disaster management training, education, awareness and marketing (TEAM) activities in the ten most high-risk areas in the Province.

The Training Education Awareness Marketing Programme is a disaster management project, intended to "Enhance risk reduction and coping skills" of residents in the ten most vulnerable areas in the Western Cape through the provision of training, education and

marketing interventions. These interventions are tailored to specific disaster hazards and risk applicable to the various vulnerable communities. The following ten most vulnerable communities were identified in the Western Cape: Masiphumelele, Doornbach, Phola Park, Khayelitsha (TR Section), Witsand, Bloekombos, De Doorns, Khayamandi, Rooidakke and Waterworks (Grabouw).

The Development Bank of Southern Africa as a leading catalyst in capacity building within South Africa, has funded the TEAM Programme with an amount of R1 873 200 towards the TEAM Programme.

Relevant government departments will be responsible for the implementation of their line function activities namely:

- Fire Safety – Fire brigade services of municipalities;
- First Aid – Provincial Departments of Health in collaboration with Social Services and similar structures on municipal level;
- Home Care – Provincial Department of Health in collaboration with Social Services and similar structures on municipal level;
- Disaster Management – Provincial and municipal disaster management structures; and
- TEAM – A total of 755 volunteers trained in the TEAM programme.

International Strategy for Disaster Risk Reduction Awareness Week

The Provincial Disaster Management Centre marked the beginning of the ISDR Week with the launch of the Disaster Management Volunteer Programme which was identified by the Premier as one of the Siyabulela deliverables. The Minister for Local Government and Housing launched the programme on 7 October 2006, at the Oliver Tambo Hall in Khayelitsha. The focus of the launch was to promote volunteerism in the Western Cape. With this in mind, four first aid teams of the Training, Education, Awareness and Marketing pilot areas in the Western Cape were nominated to participate in a first aid competition.

As part of this launch, emphasis was also placed on the ISDR Week for Disaster Risk Reduction 2006, which focuses on “Risk Reduction begins at School”. In the Western Cape a number of stake-holders such as the Department of Education, City of Cape Town, Department of Local Government and Housing and the Child Accident Prevention Foundation investigated the contents of the Disaster Risk Reduction Schools Programme “Be Aware, Prepare and Share” which was implemented at Schools in Tshwane. The implementation of this pilot programme is to take place at three schools in the Western Cape during 2007.

Disaster Management Seminar – “Towards a Resilient Southern Africa: Strategic Leadership Issues in Disaster Management”

The Provincial Disaster Management Centre in collaboration with the Disaster Management Institute of Southern Africa: Western Cape region and the City of Cape Town hosted the above-mentioned Seminar in July 2006.

The objectives of the Seminar were:

- To enable disaster management practitioners to understand the role and function of international disaster management organisations that could be of assistance in the development and practice of disaster management in Southern Africa;
- To create future partnerships and agreements in disaster management, through networking and possible partnerships in future to seek funding sources; and
- To provide an overview of disaster management best practices already instituted in the Western Cape Province.

The first day of the seminar focused on strategic leadership issues within the disaster management arena, whilst the focus of the second day was on sharing the African Experience and achievements. Topics which were presented and discussed included the following:

- Southern Africa 2020: Future Disaster Risk Management Prospects and Leadership Challenges;
- Disaster Risk Reduction: Tapping International Sources to Reduce Local Risk;
- Disaster Recovery: Managing the Receiving End of International Aid;

- Training, Education and Research: Empowering Future Leaders in Disaster Risk Management;
- Disaster Management Integration and Co-Operation;
- Disaster Medicine;
- Resilient Communities;
- Resilient Economies: Disaster Risk Management, Agriculture and Business; and
- Early Warning.

The seminar was well attended by approximately 120 delegates representing a range of national and international organisations.

Disaster Management Resource Centre

During the Disaster Management Institute of Southern Africa's (DMISA) Western Cape Seminar of 27 and 28 July 2006, the United Nations International Strategy for Disaster Reduction (UN/ISDR) Unit for Africa donated an Inter-Agency Field Library for Disaster Reduction. This initiative was designed to support hazard-prone countries by providing literature and practical, technical and educational information on disaster risk reduction and related subjects. The library consisted of a metal trunk filled with material intended to stimulate the engagement of disaster reduction practitioners, researchers, national, provincial and local leaders, regional institutions, libraries, NGOs, UN and other international agencies. The library is a tool that encourages learning and developing skills in disaster reduction. It is targeted to support leaders, disaster management officers and key educational institutions. The library is designed according to the hazard, vulnerability and disaster history of each country.

The Provincial Disaster Management Centre's Sub-Directorate: Recovery was responsible for the establishment of the disaster management library/

resource centre. In order to keep the UN/ISDR and other donors (European Commission, Finland, Germany, Japan, Norway, Netherlands and Sweden, other international, regional organisations as well as experts and publishers) that provided information free of charge informed, the PDMC needed to develop the field library project further into a resource centre to enhance its impact.

The PDMC are obliged to execute certain powers and duties as prescribed by the Disaster Management Act, No 57 of 2002, which in this instance prescribes in section 30 (c) that the PDMC must act as a repository of, and conduit for, information concerning disasters, impending disasters and disaster management in the province.

It is in this regard that the PDMC established a resource centre in order to assist the field library to promote and encourage disaster management-related research. The intention is to utilise the facility as a resource centre where researchers can research literature/internet sites, but also for library purposes where disaster-related literature can be kept. The PDMC is in the process of obtaining office equipment as well as disaster management related books and manuals/journals for the resource centre in order to conform with the Disaster Management Act and its responsibility to its clients, namely the municipalities, other national and provincial departments, CBOs, NGOs, etc.

6.2 KPA 1: Integrated Institutional Capacity for Disaster Risk Management

6.2.1 Placement of Provincial Disaster Management Centres

Table 25: Placement of the PDMC in the Provinces

Eastern Cape	Department of Housing, Local Government and Traditional Affairs
Free State	Department of Local Government
Gauteng	Department of Local Government
KwaZulu-Natal	Department of Local Government, Housing and Traditional Affairs
Limpopo	Department of Local Government and Housing
Mpumalanga	Department of Local Government and Housing
North West	Department of Developmental Local Government and Housing
Northern Cape	Department of Local Government and Housing
Western Cape	Department of Local Government and Housing

6.2.2 Head of the Disaster Management Centres

The Heads of the Provincial Centres have been appointed in all provinces but Mpumalanga and KwaZulu-Natal, and although the appointed Heads of both the Limpopo and North West Provincial Disaster Management Centres have resigned, the recruitment process was in progress in both cases.

Due to a moratorium on the appointment of staff, the Head of the Disaster Management Centre in KwaZulu-Natal has not been appointed but the Centre is functioning under the direction of the General Manager: Municipal Infrastructure.

6.2.3 Establishment of Disaster Management Centres

In all nine provinces the physical Disaster Management Centres are either established or in the process of being established. The Free State Provincial Disaster Management Centre employees moved to the identified building in April 2005. Currently only offices are in use. The second phase renovation of the building will be done shortly. It is expected that this will include the provincial disaster management operational centre and information management and communication system. In Gauteng an interim facility for PDMC was established in 2004 while a new, permanent facility has been established and will be completed in September 2007. The Limpopo Disaster Management Centre was established in 2001 and officially launched on 14 March 2003. The Western Cape Provincial Disaster Management Centre was officially opened on 15 December 2005.

6.2.4 Details about the number of people employed

Table 26: Detail regarding gender and race of employees in the PDMCs

	Gender		Total	Race			
	Female	Male		Black	Coloured	Indian	Whites
Eastern Cape	10	8	18	16	1	0	1
Free State	10	6	16	15	0	0	1
Gauteng	10	6	16	12	1	0	3
KwaZulu-Natal	1	4	5	2			3
Limpopo	11	17	28	28	0	0	0
Mpumalanga	3	6	9	9			
North West							
Northern Cape	1	4	5	3	2	0	0
Western Cape	9	4	13	2	4	0	7
TOTAL	55	55	110	87	8	0	15

6.2.5 Existing coordination structures and frequency of meetings

Provincial Disaster Management Advisory Fora were established in all the provinces except for Mpumalanga, Northern Cape, North West Province and Western Cape, the latter indicating that they are in the process of establishing such fora.

6.2.6 Capacity development plans engaged

All provinces are engaged in capacity building or in the planning thereof.

In the Eastern Cape, three officials from the Provincial Disaster Management Centre are currently pursuing Masters Degrees in Disaster Risk Management with the University of Free State.

Gauteng has conducted the following capacity building and training programmes:

- Urban Search and Rescue Training
 - In partnership with USAID, training was presented to disaster response personnel from throughout South Africa. A total of 90 persons were trained in 3 separate courses.
- Disaster Response Exercise

– Two major disaster response exercises were completed during the period under review. The first exercise dealt with the management of petro-chemical fire incidents and was attended by 60 persons. The second exercise simulated a major flood disaster on the Vaal River and included emergency services and disaster management responders from all municipalities as well as the SANDF (Air Force) and SAPS.

- Pre-Winter Fire Awareness Programme in all high risk areas. More than 2000 persons attended.
- Flood and Drowning Awareness Programmes in all areas prone to seasonal flooding. More than 2000 persons attended.
- Unexploded Ordnance Awareness Programmes aimed at making persons in the Atteridgeville/ Brazzaville areas aware of unexploded artillery shells and mortars in their surroundings were conducted with the SAPS.
- Vehicle Rescue Training. Light motor vehicle rescue training presented to members of municipal emergency services in the province. 50 persons underwent training.
- Flood Rescue Training. 30 members of municipal emergency services trained in dealing with major incidents involving flooding.
- 2010 World Cup Planning. A 2010 business plan has been completed which focuses on three major interventions:
 - Improvement of routine emergency preparedness and response
 - Major incident response (which includes Nuclear/ Chemical/Biological and Urban Search and Rescue Response)
- Communications interoperability of all emergency service and Disaster Management Centres.

Mpumalanga started with plans to capacitate mayors, mayoral committee members, municipal managers, councillors and CDWs in the roles and responsibilities of municipalities as required by the Disaster Management Act since most of them are new appointees.

In the other provinces, capacity building is taking place on a smaller scale or is still being planned.

6.2.7 Volunteers' development plan and their operations

In the Eastern Cape, Nelson Mandela Bay Metropolitan Municipality and Buffalo City are utilising volunteers within their municipalities. Other district municipalities recruit and train volunteers informed by hazards common in the respective areas.

Gauteng engages with a number of volunteer organisations who assist in dealing with major incidents and disasters at various levels. These organisations are:

- Salvation Army (Disaster Relief – Food, Shelter, Clothing);
- SA Red Cross (Disaster Relief – Food, Shelter, Clothing);
- Islamic Relief (Disaster Relief – Food, Shelter, Clothing);
- Mountain Club of South Africa (Rescue operations and lost person search);
- Rescue South Africa (Catastrophic disaster and major incident support);
- Off Road Rescue Unit of South Africa (Flood response, lost person search, catastrophic disaster and major incident support);
- K9 Search and Rescue Association of SA (Flood response, lost person search, catastrophic disaster and major incident support); and
- Precinct Watch (Data collecting and intelligence).

A number of private associations and businesses also provide specific services on a voluntary basis to the PDMC. These include:

- Netcare (Provision of blankets for disaster recovery);
- GIS (Geographic Information Systems support during disasters); and
- Mines Rescue Services (Rescue operations during subterranean incidents).

The Free State and Limpopo are waiting for finalisation of the national regulations guidelines on volunteers. While Mpumalanga is waiting for these regulations, basic fire-fighting and first-aid training was conducted in seven local municipalities which have recruited volunteers.

In North West, Bophirima District Municipality has already started on an intensive training programme for volunteers from the informal sector as well as farm labourers in both fire-fighting and first aid.

Northern Cape plans to provide training to at least one volunteer in handling hazmat material. They also train volunteers in fire-fighting/first aid, as well as operation of AFT unit.

The Western Cape implemented "Training, Education, Awareness and Marketing" (TEAM) activities in the ten most high-risk areas in the province. The purpose is to "Enhance risk reduction and coping skills" of residents in these most vulnerable areas in the Western Cape through the provision of training, education and marketing interventions.

6.2.8 Arrangement for co-operation with neighbouring SADC countries

No such arrangements were in place. The only province that indicated some international involvement is Gauteng, providing the following information:

Gauteng does not share a common border with neighbouring SADC countries. The PDMC has, however, assisted the NDMC on 5 occasions by providing disaster response teams, made up of emergency responders from municipal emergency services, to assist in a number of major disasters which have taken place throughout the world. These include:

- India; Earthquake – 2001
- Algeria; Earthquake – 2003
- Iran; Earthquake – 2003
- Pakistan; Earthquake – 2005

6.3 KPA 2: Disaster Risk Assessment

6.3.1 Risks identified

A number of risks have been identified in the provinces. This ranges from the well-known natural events to transportation, hazardous materials and technological risks such as those created by industrial and other

developments. A special note should be made of the Gautrain and 2010 World Cup as defined by Gauteng, where the Department of Local Government is the lead department and has not only coordinated all local authority building plan approvals for the Gautrain project, but has also completed the business and strategic plans for the 2010 World Cup.

6.3.2 Measurement of vulnerability of people indicated

Where more detailed risk assessments were conducted, the vulnerability of people indicated was also assessed. This indicated mostly the vulnerability of the poor as experienced in both rural areas and urban informal settlements. There were also a number of areas identified as being vulnerable to flooding, agricultural risk, nuclear fallout and hazardous materials.

6.3.3 Level of risk reflected

The level of the identified risk varies from major/high to minor/low. Some risks were classified as follows:

- Wide-area events that, due to their scale and magnitude, are likely to affect more than one municipality. These include extreme weather events, such as severe droughts as well as riverine floods.
- Recurrent high- and medium-magnitude events that occur in most municipalities and may require national support and/or intervention. These include veld, urban fringe or large informal settlement fires. They can also include destructive windstorms, rainstorms and communicable disease outbreaks affecting people or livestock.
- Low-frequency/rare high-magnitude disaster risks with potential for severe loss and which require levels of specialist support possibly not available within a municipality. These include nuclear accidents, earthquakes, major transport disasters and hazardous materials accidents.

6.3.4 Priorities outlined

Priorities outlined varies greatly in the provinces, but can be summarised in the following groups:

Improve capacity:

- Facilitate establishment and functioning of Disaster Management Centres;
- Facilitate community awareness programmes;
- Facilitate training of councillors, officials and community volunteers;
- Facilitate integrated post disaster response, recovery and rehabilitation programme; and
- Facilitate establishment of fire and emergency services.

Study/research on the following:

- Seasonal flooding;
- Informal settlements;
- Inner city risks;
- Hazardous materials transportation and storage;
- Major industrial fire risks; and
- Major transportation risks (air, rail, road).

6.4 KPA 3: Disaster Risk Reduction**6.4.1 Current status of Disaster Management Plan and integration thereof with IDPs**

In the Eastern Cape, the Nelson Mandela Bay Metropolitan Municipality has an adopted plan. Other municipalities have conducted scientific disaster risk assessment studies. The Provincial Disaster Management Centre forms part of the IDP engagement process to ensure integration of disaster management plans in the IDP.

In the Free State, the Provincial Disaster Risk Management Plan is in place and includes roles and responsibilities of role-players and contingency plan.

In Gauteng, the Provincial Disaster Management Plan has been completed and was approved by the Premier's Executive Committee in June 2005. All three metropolitan municipalities and the three district municipalities have completed their respective disaster plans which were included in the 2007 IDPs.

In KwaZulu-Natal the 10 district municipalities and the Ethekwini Metropolitan Municipality are all in the process of completing at least a Level 1 plan that is aligned and integrated in their own IDPs.

Mpumalanga, North West Province and Northern Cape have indicated that they haven't yet developed plans to be integrated into IDPs.

In the Western Cape, 18 hazard specific contingency plans have been developed and implemented where necessary. The first phase of a generic disaster management plan will be finalised in the next year. Municipalities are being supported to incorporate Disaster Management Plans into their IDPs.

6.4.2 Priorities established where vulnerable communities are specified and efforts made to reduce impact of disasters

Reports from the provinces on this aspect vary greatly.

In the Eastern Cape community awareness programmes are facilitated for the communities at risk. Community volunteers from the areas are trained. Any disaster-related warning is communicated to the communities through community radio stations.

Gauteng has vulnerable communities identified and interventions implemented.

In the Northern Cape awareness programmes were held through community meetings where the communities were informed about the risks they faced in their respective areas.

In the Western Cape "Training, Education, Awareness and Marketing" (TEAM) activities are taking place in the 10 most high-risk areas in the Province. Province and municipalities are busy with devising a plan to relocate high risk communities to safer areas.

6.4.3 Plans with regard to risk reduction

Gauteng reported that they review all MIDPs on an annual basis in order to ensure the inclusion of risk reduction plans for all projects indicated. They also ensure inclusion of risk reduction plans in the Provincial Disaster Management Framework and Strategic Disaster Management Plans and have reduction measures for identified risks.

Mpumalanga conducts awareness campaigns in vulnerable communities.

Western Cape promotes Disaster Management (risk reduction) in schools and they are also incorporating disaster risk reduction plans in IDPs.

6.4.4 Mechanisms adapted to monitor disasters

Early warning messages from the SA Weather Services are forwarded to various district municipalities and affected local municipalities through the satellite centre officials. In some areas community radio stations are utilised to inform communities of the warning messages.

The following are also monitored in some provinces:

- High risk communities which inform pro-active disaster risk management, for example:
 - Higher incidence of fires in informal settlements
 - Increased incidence of drownings at specific areas.
 - Increased densification of informal settlements
- Industrial development;
- Prevailing disaster risks;
- Emergency services, hospitals and resource status;
- Early warning systems; and
- High-risk disaster areas.

Furthermore, environmental scanning is done by the Health and Environmental Authorities to prevent the outbreak of epidemics.

6.5 KPA 4: Response and Recovery

6.5.1 Type of early warnings in place and mechanisms applied

In the Eastern Cape early warning messages from the SA Weather Service in Port Elizabeth are forwarded to the various district municipalities and affected local municipalities through the satellite centre officials. In some areas community radio stations are utilised to inform the respective communities of the warning messages. In the Free State the South African Weather Services also communicate information on extreme

weather patterns and this information is dispatched to municipalities and community radio stations.

The following early warning systems have been identified in Gauteng and are in the process of being implemented:

- Hazard Prediction and Assessment Capability, Defence Threat Reduction Agency (DTRA): This provides the means to accurately predict the effects of hazardous material released into the atmosphere and its impact on civilian and military populations;
- Hazards U.S. Multi-Hazard Federal Emergency Management Agency (FEMA): Models for estimating potential losses from earthquakes, floods, and hurricane winds:
 - The Flood Information Tool (FIT): Processes locally available flood information to data that can be used by the HAZUS Flood Module;
 - Inventory Collection Survey Tool (InCAST): InCAST facilitates the collection of building-specific data for HAZUS (earthquake modelling); and
 - Consequence Assessment Tool (CATS): Provides a comprehensive package of hazard prediction models for natural and technological hazards as well as a casualty and damage assessment tool;
- Aerial Locations of Hazardous Atmospheres (ALOHA), Environmental Protection Agency (EPA): An atmospheric dispersion model used for evaluating releases of hazardous chemical vapours;
- Computer-aided Management of Emergency Operations (CAMEO) Environmental Protection Agency (EPA): A system of software applications used to plan for; and respond to, chemical emergencies including a chemical database;
- National Oceans and Atmospheric Administration (NOAA):
 - General NOAA Oil Modelling Environment (GNOME): An oil spill trajectory model used by HAZMAT responders during spills;
 - Chemical Reactivity Worksheet: Computes the reactivity of substances or mixtures of substances;
 - Spill Tools: A set of three programmes designed for oil spill planners and responders: the Mechanical Equipment Calculator; the In-situ Burn Calculator; and the Dispersant Mission Planner; and

- Mapping Application for Response, Planning, and Local Operational Tasks (MARPLOT): A general-purpose mapping utilised in the operation of CAMEO and ALOHA.

In KwaZulu-Natal there is a close working relationship between the SA Weather Services office at the Durban International Airport, the PDMC and the District Disaster Management Centres. Early warning of impending severe weather is disseminated to everyone who in turn ensure that the message is passed on to the local municipalities. Plans are afoot in many of the district centres to take this information even further, including to the Amakhosi and tribal leaders in the rural areas. This information is also sent to local radio stations in KwaZulu-Natal where it is broadcast at news times throughout the day. During the fire season the KwaZulu-Natal Fire Protection Association issues fire danger indexes twice every day – and once again this information is disseminated further from the district centres, especially when it is orange or red, i.e. high and dangerous.

Limpopo and Mpumalanga have, as yet no early warning systems in place.

Northern Cape uses the NEAR System to warn farmers and communities on impending incidents. They are also using the SA Weather Service site to check on predictions.

Western Cape uses the SMS system from the SA Weather Service to communicate weather warnings and also include electronic and print media. Siren systems will be used for nuclear radiation and extreme weather related incidents like a tsunami.

6.5.2 Method applied to assess, classify, declare and review disasters

The following descriptions of the process by Gauteng and the KwaZulu-Natal indicate their understanding of the requirements of the Disaster Management Act:

Gauteng

Initially, on-site assessments will be done at municipal

disaster management level and will include establishing resources that are necessary to ensure the delivery of immediate, effective and appropriate response and relief measures to affected areas and communities and to facilitate business continuity. The PDMC will then activate those agencies tasked with primary responsibility for coordinating specific activities associated with disaster response and relief efforts, such as emergency medical care, search and rescue, evacuation, shelter and humanitarian relief and prepare information on initial assessments of the immediate needs of those affected. The PDMC and the concerned Municipal Disaster Management Centre will then ensure that the information is also disseminated to the relevant role-players in communities and/or areas at risk.

The PDMC will determine whether the event should be regarded as a disaster in terms of the Act, and, if so, the PDMC will immediately;

- Initiate efforts to assess the magnitude and severity or potential magnitude and severity of the disaster;
- Inform the NDMC of the disaster and do an initial assessment of the magnitude and severity or potential magnitude and severity of the disaster;
- Alert disaster management role-players in the province that may be of assistance in the circumstances; and
- Initiate the implementation of any contingency plans and emergency procedures that may be applicable in the circumstances.

The Head of the PDMC will inform the MEC of the magnitude of the disaster and advise the MEC to request the Premier to declare a Provincial Disaster:

KwaZulu-Natal

District disaster managers together with their municipal staff do the first assessment of an incident. They decide on what responses are required and, should it be necessary, the assistance of the PDMC is called in to access the required responses. Together it is decided whether the incident warrants a declaration and also at what level. Should it be decided that it will be a "local" disaster, the district centre prepares the necessary reports to the district municipality, together with the

local municipality, which is supported by a Council Resolution and submitted via the PDMC to the Office of the Premier for declaration. Should the incident be of such a nature that it warrants a provincial declaration, the PDMC prepares the necessary Cabinet Memorandum (with recommendations to that effect) that is submitted to the Provincial Cabinet with supporting documentation from the district/local municipalities. After all major incidents that occur in KwaZulu-Natal, the PDMAF meets for a special meeting to discuss and evaluate the incident and to learn from the experiences.

6.5.3 Standard of communication mechanism

According to Gauteng PDMC, the province, as the rest of the country, faces massive challenges in relation to effective communications mechanisms. The following is implemented by the various provinces:

The Eastern Cape Provincial Centre is making use of e-mail, telephones, faxes and cell phones.

The Free State uses landlines, mobile and electronic media.

Gauteng says that interoperability within the same authorities/departments is frequently not possible and communications between mutual aid agencies, i.e. metro-to-metro and district-to-district is, where available, only possible through respective control centres or Disaster Management Centres. They experience the following constraints:

- Incompatible and aging communications equipment;
- Limited and fragmented budget cycles and funding;
- Limited and fragmented planning and coordination;
- Limited and fragmented radio spectrum;
- Limited equipment standards; and
- Lack of stake-holder conviction.

The Gauteng PDMC has investigated various methods of addressing the challenge and has proposed the following solution:

- Creation of a province-wide MESH Network based on existing fixed access-points;

- Utilisation of a comprehensive “gateway” facility allowing integration of 3rd party stake-holders, including SAPS, SANDF, IGO and NGO, private service providers and other resources, to access the system be it only on a voice-mode basis;
- Patching facilities with external networks including cellular, landline and satellite networks (Inmarsat, Iridium and Ku-Band networks); and
- Placing of portable command consoles in all primary response agency appliances to assure voice, data, visual media communications as well as conduct all “off-the-air” accountability of communications

Presently all communication in Kwazulu-Natal between the PDMC and district centres is by electronic mail, landlines or cellular telephone communication. Many of the district centres have purchased mobile satellite communication systems. The PDMAF has appointed a technical task team to investigate and suggest best practices of a comprehensive radio system that will be compatible with, and accessible to, all the role-players in the province.

In Limpopo and Mpumalanga communication is via the normal telephones (landlines, including toll-free numbers), mobile and electronic media. Northern Cape also makes use of NEAR for communication.

Western Cape utilises cell phones, computer (GEMC3 / Satellite Communication), fixed telephones, two-way radios, meetings and face-to-face communication.

6.5.4 Available resources

This is one area where the integrated way in which disaster management should be structured, is clearly highlighted. There are various primary and secondary role-players that form part of the resources available for disaster management. In most of the provinces this will be clarified in the near future. The description by Gauteng can serve as an example of how the process should work:

All resources available to the PDMC are classified

according to their core function (Emergency Support Function) and include a number of National, Provincial and Local Government Agencies. The Provincial Disaster Management Centre develops and issues operational orders to activate individual Emergency Support Functions (ESFs) based on the scope and magnitude of the threat or incident. ESF primary agencies are notified of the orders and time to report to the Provincial Disaster Management Centre by the Department Head of the Provincial Disaster Management Centre. ESF primary agencies notify and activate support agencies as required for the threat or incident, to include support to specialised teams. Each ESF is required to develop standard operating procedures (SOPs) and notification protocols and to maintain current rosters and contact information.

6.5.5 Mechanism applied with regard to use of volunteers in operations

The provinces reported that they are waiting for finalisation of national regulations and guidelines on volunteers. Volunteers are used in the various local municipalities for incidents in which they are trained.

6.5.6 Details of incident management by incident commanders

On occurrence of an incident in the Eastern Cape, the municipality informs the respective district and the Provincial Disaster Management Centre. On receipt of the incident report, the relevant line function department at provincial level is informed of the incident. The incident is tracked through the Municipal Disaster Management Centre.

The Gauteng PDMC has developed a Provincial Incident Management System which is included in the Strategic Disaster Management Plan and is used by all emergency services in the province. As part of the roll-out of the system the PDMC conducted training for incident commanders in the province at the end of the previous financial year. The Incident Management System (IMS) is a management system designed to enable effective and efficient domestic incident management by integrating a

combination of facilities, equipment, personnel, procedures, and communications operating within a common organisational structure, designed to enable effective and efficient domestic incident management. A basic premise of IMS is that it is widely applicable. It is used to organise both near-term and long-term field-level operations for a broad spectrum of emergencies, from small to complex incidents, both natural and manmade. ICS is used by all emergency services as well as by many private sector and non-governmental organisations. IMS is also applicable across disciplines. It is normally structured to facilitate activities in five major functional areas: command, operations, planning, logistics, and finance and administration.

KwaZulu-Natal has incident management committees established to coordinate incidents.

In Mpumalanga a Joint Operations Committee is set up when necessary.

In the Western Cape Line Departments, e.g. SAPS, EMS, Traffic, SANDF and FBS take responsibility for incident management.

6.5.7 Media management approach utilised

In Gauteng the media management of disasters is dealt with under Emergency Support Function #15 which has the following functions:

- Gathering information on the incident;
- Providing incident-related information through the media and other sources to individuals, families, businesses, and industries directly or indirectly affected by the incident;
- Using a broad range of resources to disseminate information;
- Monitoring news coverage to ensure that accurate information is disseminated;
- Handling appropriate special projects such as news conferences and press operations for incident area tours by government officials and other dignitaries;
- Providing basic services, such as communications and supplies, to assist the news media in disseminating information to the public; and
- Overseeing the key function of media relations.

The KwaZulu-Natal PDMC communicates with the media in the event of a major incident through the MEC's media spokesperson, but district centres/municipality spokespersons usually communicate directly with the media. All endeavours are made to ensure that only one person speaks to the media to ensure accuracy and uniformity of information.

In the Western Cape Disaster Management co-ordinates all major incidents and submits media statements to the Minister for publication.

The other provinces do not have a media management plan separate from the corporate media management plan of the relevant department/province.

6.5.8 In case of disaster incidents, brief details of relief and recovery applied

In the Eastern Cape the Department of Social Development, Red Cross, Adventist Disaster Relief Agency (ADRA) and Council of Churches are providing social relief to the affected victims. The Emergency Housing unit assists disaster victims with temporal shelter. The Provincial Disaster Management Centre, through the Municipal Disaster Management Centres, facilitates repairs of damaged houses.

The Gauteng PDMC has assisted in monitoring and providing relief to victims of seasonal flooding and fire in the informal settlements when requested. The PDMC also maintains an NGO: Disaster Relief Forum which consists of organisations providing food, blankets and shelter in the event of disasters or major incidents. The Gauteng Department of Social Development is also involved in the provision of aid to affected communities and forms part of the recovery forum.

Limpopo will activate affected municipalities to provide shelter (tents) and the Department of Health and Social Development to provide food parcels. The Provincial Disaster Management Centre will provide blankets.

In Mpumalanga damage assessment will be done by relevant stake-holders. They will also provide immediate

relief in the form of tents, food parcels, clothes and blankets. The Northern Cape Disaster Management Centre will normally provide temporary accommodation. SASSA will provide relief assistance in the form of food parcels and blankets. The SA Police Services will assist in search and rescue as well as law and order.

The Western Cape PDMC and MDMCs have committees responsible for social and recovery activities. These are activated according to needs – e.g. counselling, shelter, food, blankets etc.

6.5.9 Contingency plans with respect to response and recovery

In the Eastern Cape provincial organs of state respond to disaster-related incidents on an ad hoc basis. Contingency plans are not formally documented although all organs of state know what is expected of them during and after a disaster-related incident.

In Gauteng a number of contingency plans for a wide range of areas have been developed and are in the process of being formatted electronically. They include:

- Contact database;
- Central resource catalogue;
- Incident management plan;
- Master event plans;
- Special risks;
- Material safety data sheet (MSDS) repository; and
- Emergency support functions.

Free State, KwaZulu-Natal, Limpopo, Mpumalanga and Northern Cape have plans in place. Some of these will be incorporated in the provincial disaster management plans which are still in draft format.

The Western Cape has the following contingency plans in place:

- Aerial Fire-fighting Response;
- Communicable Diseases;
- Corporate Disaster Risk Management;
- Drought,
- Flood;
- Foot and Mouth;

- Hazardous Waste Management;
- Hex River Train Tunnel;
- Huguenot Road Tunnel;
- Influenza Pandemic Preparedness;
- Integrated Koeberg Nuclear Emergency Plan;
- Major Aircraft Accident;
- Mass Events;
- Oil Spill;
- Rock Lobster Emergency Plan;
- Social Relief; and
- Spoornet Contingency and Traffic Evacuation Plans.

6.6 ENABLER 1: Information Management and Communication

6.6.1 Current status of information management system

The necessary information management system is a very expensive item which cannot be implemented in all provinces at the moment. Due to the complexity and affordability of such a system, Free State, Northern Cape and North West have not yet started the process. According to North West, there have been problems with the functionality of the system that was proposed by national government and piloted in the Eastern Cape, and they are waiting for the NDMC to re-evaluate the system and advise provinces and districts on a suitable system.

In the Eastern Cape the piloted disaster management information system is in place at the Provincial Disaster Management Centre, Amathole District Municipality and Buffalo City Municipality.

The Gauteng PDMC has completed a scoping and tender process for the implementation of a disaster management information system which has been installed in the PDMC and will be rolled out to all Municipal Disaster Management Centres (MDMCs) in 2007/08. The identified system is known as the "E-Team" system and is used together with a system called "Virtual Agility". The system is used extensively internationally and has a proven record of being used during major incidents and events such as the 2001 New York World

Trade Centre bombing, Hurricane Katrina and the 2006 FIFA World Cup.

KwaZulu-Natal has developed a Management Information System (MIS) which is able to capture an incident as it occurs. Two district centres and the eThekweni Metro, together with the PDMC, are currently testing the system and after training, which should take place before the end of 2007, the remaining districts will be able to utilise the system.

Limpopo wishes to invite tenders to conduct a disaster risk assessment, develop a provincial disaster management plan, and develop and implement an integrated disaster information management system. This has not yet been approved.

Western Cape data is captured on the GEMC3 system.

6.6.2 Ability of the system to collect and capture data

The Eastern Cape reported that, even though the system had not been utilised to its full capabilities, it has the capacity to collect and capture data.

The Gauteng system has the following capabilities:

- Event/incident management;
- Planned events/activities management;
- Critical asset and resource tracking;
- Organisation and staffing charts;
- Directories: the system provides contact management capability that can be maintained for both system users and non-users;
- Recovery case management;
- Planning and action plans;
- Action planning templates;
- Situation reporting;
- Duty/call logs;
- Intelligence reports;
- Corporate situation report: the corporate situation report is designed to receive information from major private employers within an area impacted by a disaster;
- Public information report;
- Infrastructure reports; and
- Integrated modelling.

The KwaZulu-Natal system is able to capture the sequence of events, upload photographs, capture reconstruction and rehabilitation processes, monitor cash flow and generate reports applicable to each incident.

Western Cape can obtain reports from GEMC3 and National Situation Reporting Systems and communicate by satellite, mobile, fixed landlines and two-way radio communication.

6.6.3 Support systems in place

Gauteng has the following:

- Chemical data reference facility;
- Geographic information systems;
- Emergency vehicle and disaster asset tracking facility; and
- Linkages to high risk monitoring facilities (Weather Services, Council for Geoscience).

Western Cape has Service Level Agreements with its service providers and back-up for the MDMCs in the province.

6.7 ENABLER 2: Education, Training, Public Awareness and Research

6.7.1 Education and training activities of the unit or centre in respect of disaster management

Eastern Cape has conducted training on the following risks: Swine Fever, Tornados, Veld Fires and Floods.

In Gauteng, the following was presented:

1. Disaster Response Training:

In partnership with the United States Agency for International Development a capacity building programme for disaster responders was developed and successfully presented. The programme was aimed at capacitating emergency responders to respond to disasters involving catastrophic damage to, and collapse of, infrastructure. The programme was made available to all provinces and responders from Free State, Western

Cape, North West, Mpumalanga, Northern Cape and Limpopo. A total of 90 persons completed this programme which was supported by the United Nations Office for Foreign Disaster Assistance.

This programme is the only one of its kind in the country and has been extremely successful in recent years. The Department was also responsible for organising and leading the South African Disaster Response Team to the earthquake disaster which struck Pakistan at the end of 2005, and was placed on standby to respond to the flood disasters in Mozambique if required.

2. Flood Response

The Department has identified the challenges of seasonal flooding in informal settlements and has embarked on the following projects to address this:

• Swift Water Rescue Training

A programme aimed at capacitating emergency services officials in high risk flood areas commenced in November 2006. 30 responders were placed on an intensive programme whereby they were trained to enter floods under extreme conditions in order to rescue victims trapped in rapidly flowing water.

• Swimming Programmes

In order to increase the number of responders in the province able to respond to flood emergencies, the Department has commenced a programme of capacity building whereby members of emergency services from previously disadvantaged communities are provided with swimming lessons. Persons not able to swim at all are developed over a number of stages to the level where they are able to conduct complicated rescue operations in flood conditions.

3. Vehicle Accident Rescue Training

Due to the high incidence of motor vehicle accidents in the province, the Department has developed a vehicle rescue training programme which was presented to emergency services personnel from throughout South Africa in May 2007. The programme was attended by more than 200 emergency services officials and included other subjects such as rope rescue and emergency medical care.

4. Disaster Management Act Compliance

The Department has completed a process where all district municipalities were assisted in complying with the requirements of the Disaster Management Act. The areas that were covered included:

- Disaster Management Frameworks developed for all District Disaster Management Centres;
- Strategic Disaster Management Plans for all District Disaster Management Centres;
- Disaster risk assessments completed;
- Scoping process for the establishment of District Disaster Management Centres completed;
- Training for District Disaster Management Centres in incident management systems completed; and
- Inclusion of disaster management plans into Integrated Development Plans (IDPs)

Due to the capacity constraints that the KwaZulu-Natal PDMC has had during the last financial year, it has been impossible to embark on specialised training activities. A number of smaller training sessions have, however, been conducted at both district and local municipalities to educate them on the purpose and function of disaster management, the function of the advisory forum, and more.

Limpopo supported attendance of the annual DMISA Conference and some officials have been awarded bursaries by the Department to study Disaster Management, Project Management, etc.

In Mpumalanga, seven officials were trained in Disaster Risk Assessment.

The Northern Cape arranged some capacity building programmes. Three officials (province and district) have already attended risk assessment training.

The Western Cape presented the following:

- Training, Education, Awareness and Marketing;
- Integrated Development Plan Workshops;
- Training in the use of the software like GEMC3, PPO™, etc.

6.7.2 Types of training engaged for the centre and region or district in respect of all stake-holders including volunteers and community/learnerships/schools, etc

Eastern Cape has conducted training on the Disaster Management Act, the Policy Framework and PPO™.

The Free State has conducted training in the National Disaster Management Framework and Incorporation of Disaster Management programmes in the IDPs, as well as first aid, fire-fighting and fire prevention training.

Gauteng engaged in the following:

- Risk Awareness Training (Children under 14);
- Development of Disaster Risk Assessments (Municipal Disaster Management Centres);
- Development of Disaster Management Frameworks (Municipal Disaster Management Centres);
- Development of Disaster Management Strategic Plans (Municipal Disaster Management Centres);
- Integration of Disaster Plans into IDPs (Municipal Disaster Management Centres);
- Urban Search and Rescue Training (Emergency Services Responders, including responders from other provinces);
- Swift Water Rescue Training (Emergency Services Responders);
- Vehicle Rescue Training (Emergency Services Responders, including responders from other provinces);
- Rope Rescue Training (Emergency Services Responders, including responders from other provinces);
- Petrochemical Fire-fighting (Emergency Services Responders); and
- Disaster Recovery Training (Members of the PDMC).

In KwaZulu-Natal, Working on Fire has conducted basic training on fire prevention in some of the districts at schools and communities.

Limpopo has trained district and municipality officials in the use of PPO™.

Mpumalanga engaged in training on Disaster Risk Assessment for disaster management practitioners in all the municipalities, district municipalities and departments in the province. Volunteers as mentioned before received training on basic fire-fighting and first-aid.

The Northern Cape presented a Basic Disaster Management Training Course and Basic Fire-fighting/First Aid.

In the Western Cape EMS conducted training to call takers and dispatchers. Further training that took place included Integrated Development Plan Workshops, Koeberg Nuclear Power Plant and various drills and exercises e.g. aviation, hazmat, train, evacuation etc.

6.7.3 Public awareness campaigns convened and the level of participation

In the Eastern Cape, community awareness programmes have been facilitated in the various districts as well as local municipalities on the Disaster Management Act and Policy Framework. Participation in all the programmes had been excellent as target groups were divided into councillors, administration and community members.

The Free State conducted household fires awareness campaigns in secondary schools around Mangaung informal settlements.

Gauteng Province presented an ongoing Public Information, Education and Relations Programme (PIER). The Department coordinates and oversees the largest public information, education and relations programme in the country. All local authorities are members of the programme which meets bi-monthly and is responsible for two large awareness programmes (Pre-Winter Fire Awareness, Pre-Rainfall Season Flood Awareness). More than 4 000 children attend these programmes and a significant drop in the incidence of informal settlement fires has been the result of this process.

The Department also coordinates a programme known as "Risk Aware" which is aimed at preventing accidental deaths of children aged under 14. This includes risks such as suffocation, electrocution, burns etc. Each local

authority is given the responsibility of addressing a particular risk and receives financial support from the Department to do this.

A very successful Disaster Management Conference, initiated by the KwaZulu-Natal PDMC, was held in Durban during May 2006 where there was a wide spectrum of representation from all spheres and levels of government (politicians as well as officials), private sector, NGOs, CBOs, and many more. Speakers at the conference were, amongst others, the South African Ambassador to Taiwan, the Head of the Gauteng Provincial Disaster Management Centre, the SAPS, a representative from Lesotho and a representative from the American Disaster Organisation talking on the affects of Katrina in New Orleans.

Limpopo took part in exhibitions during events such as International Day for the Elderly, Heritage Day, Children's Day, World AIDS Day, International Disability Day, Batho Pele Day, Mapungubwe Arts Festival, Premier Service Excellence Awards, etc.

Mpumalanga conducted public awareness in 19 communities and although attendance in all the campaigns was not satisfactory, the level of participation from those that attended was very high.

Programmes in the Northern Cape were suspended due to cost containment measures.

The Western Cape forms part of the TEAM programme in communities and schools (as previously mentioned) and also did presentations to politicians and senior managers.

6.7.4 Details of research conducted, if any

The only provinces involved in research are Gauteng and Western Cape, who reported as follow:

Gauteng

- Seasonal Flooding – Due to the high incidence of seasonal flooding in the informal settlements a research study was done regarding the causes thereof and possible interventions.

- Dolomite Risk – The province is situated on high risk dolomite sediments. Research done and Provincial Dolomite Framework completed.
- Seismic Risks – Research conducted on the seismic risks throughout the province and the possibility of catastrophic incidents that may occur due to this phenomenon.

Western Cape

Research was done on:

- Human migration into the Western Cape and the increased risk of disasters, and the development of a mitigation framework.
- Investigation of the effectiveness of current Disaster Risk Reduction methods in the Western Cape (in progress).
- Incorporation of the risk of flood disasters in the social cost benefit analysis of public infrastructure (in progress).

Chapter 07

Declared Disasters



During the reporting period a number of incidents and/or disasters were recorded. In this section details of reports on such events as received from the various authorities, are included.

7.1 North West Province: Taung Disaster – January-April 2006⁵

The average yearly rainfall for the Taung area is 418 mm. The western part of the Greater Taung Local Municipality experienced severe flooding from 20 February 2006. The Greater Taung Local Municipality received 1 380 mm of rain for the period January to June 2006. The extent of the flooding was equal to a 1 in 50 year flood and seriously affected 12 villages in Greater Taung Local Municipality. Due to the serious affect the floods had on the population of these villages, the Greater Taung Local Municipality regarded it as its duty to intervene in the affected area. To mitigate the effect of the flooding on the population of the villages, the Municipality, by means of its Disaster Management Structures, started to distribute disaster relief to affected households in the form of tents, blankets and emergency food supplies.

The Tamasikwa Bridge was seriously damaged and had to be rebuilt. The Moretele Bridge, Matlapaneng Bridge and Choseng Bridge, and approximately 60 km of rural roads, needed rehabilitation. The Reivilo-Lykso road was also seriously damaged and needed reconstruction. The cost to repair the road infrastructure was estimated at R41 000 000.

A total of 1 032 houses have, since February 2006, collapsed or had serious structural damage and have had to be rebuilt. Approximately 700 households were provided with tents from the Disaster Management Unit. To replace these houses using the Peoples Housing Process was estimated at approximately R35 000 000. The North West Department of Housing subsequently approved 2 000 houses to replace the damaged and destroyed houses.

The 12 affected villages were cut off from clinics with clinic personnel being airlifted into the villages. Seriously ill and near term pregnant women were evacuated to hospitals. Accessibility of villages by mobile clinic staff remained problematic in the Dry Harts area. The bad conditions of rural roads had serious consequences for rural households.

Water supply in the affected villages had been polluted – increasing the cases of diarrhoea. Measures were taken to educate the local population on how to decontaminate their drinking water using "Jik" and boiling water. All bore holes in the affected areas have been tested. Water supplies in the Vaaltyn, Tamasikwa and Letlhapong areas were polluted by E-coli and other coli forms. Sedibeng Water introduced measures to provide safe water including putting up water tanks in the affected areas.

The Department of Social Services faced challenges in delivering to social service payments in the affected areas due to continuous heavy flooding. Even when social grants were paid, communities had problems reaching shops to buy supplies due to the condition of the roads.

The rural farming areas were severely affected. Animal diseases were widespread and foot rot amongst sheep was a problem. Irrigation pivots along the Harts River had been flooded causing millions of rands worth of damage. Schools were severely disrupted by the floods and teachers and scholars were cut off from their schools causing serious disruptions.

Medium Term Intervention Proposals included the following:

- Emergency repairs done on roads and bridges to connect communities to service centres
- Sedibeng Water implemented immediate measures to provide safe water
- The Department of Agriculture destroyed dead animal carcasses and assisted in preventing animal diseases
- The Heath Department continued to provide immediate mobile health services
- The Department of Social Services implemented measures to continue providing social services in the affected area
- Disaster relief continued into affected areas until the situation normalised
- An immediate assessment of housing damage was conducted to start an emergency housing project before winter

- Sewer problems were attended to and an assessment was conducted of the damages done to public infrastructure
- The Greater Taung Local Municipality received approximately 150 tonnes of food that was distributed to approximately 5 200 households. 373 bags of clothing was also distributed to different communities. The final distribution of food and clothing was completed on 27 July 2006. Late donations of food and clothing were still being received.

Long Term Intervention Proposals included the following:

- Relocation of communities away from flood prone areas as identified in the Spatial framework of the Greater Taung Local Municipality
- Proper planning for relocation of houses and reconstruction of roads and bridges and other damaged infrastructure
- Housing scheme to replace damaged housing and an alternative site for relocation of communities in flood plains be identified.

The Department of Local Government and Housing in North West had approved an emergency housing project of 2 000 houses to replace damaged and destroyed houses to the value of R82 000 000. The need for proper planning of infrastructure for the new housing had delayed the start of the emergency housing project. A contractor was appointed by the Department to construct the 2 000 houses.

To repair municipal access roads, National Government approved R11 400 000 for repairs to municipal road infrastructure. This money was disbursed through the MIG grant and had to be spent by March 2007. Project managers were appointed and tenders were allocated. Another R14 000 000 was to be spent on provincial roads by the Department of Public Works.

The Development Bank of Southern Africa (DBSA) donated R500 000 to help victims of the flood disaster to rebuild their houses. A total of R1 300 000 received for the Greater Taung Disaster Fund was used to benefit the seriously affected areas with Local Economic

Development Projects run from the office of the Mayor to address the high unemployment in the affected areas.

7.2 Eastern Cape Province: Nelson Mandela Bay – 2 & 3 August 2006⁶

On 2 and 3 August 2006, the extreme weather conditions that had been affecting the Western and Southern Cape coastal areas reached Nelson Mandela Bay. The total rainfall recorded over the 48-hour peak storm period was just over 200 mm, causing extensive flooding. Electricity outages were experienced in large parts of the area, and a number of roads were destroyed or flooded, particularly along riversides, leaving commuters stranded. Sadly, six residents were confirmed dead, while many thousands of residents were affected, particularly the 25 000 families residing in shacks in the low-lying floodplain areas.

When the Disaster Management Unit of the Nelson Mandela Bay Municipality received a weather warning of the possibility of heavy rainfalls from the Weather Office on 2 August 2006, all Disaster Management staff were immediately alerted. Urgent arrangements were immediately made to move more than 7 000 residents from 1 500 homes deep in floodplain areas to safety, mostly to community halls. These actions undoubtedly saved many lives.

The rainstorm and the driving winds had a devastating effect on housing, infrastructure and businesses in Nelson Mandela Bay. The winds uprooted trees, which obstructed transport routes and caused damage to boundary structures of private residents. Gail-force winds exceeded 135 km/h at Blue Horizon Bay and Lovemore Heights.

The water in streams and rivers flowed at fierce speeds, collecting vegetation and debris along its course. The continuing rainfall caused a substantial rise in river levels, so much so that low-level roads and bridges were flooded. The fast-flowing water caused severe damage to road infrastructure, and this resulted in loss of life.

Many communities living below the 1:50 year flood line experienced the rise in river levels to a point where rescue efforts were hampered by the flow of rivers and debris. Many people lost their belongings.

Other areas that were affected by the flooding were generally where drainage of storm water was blocked, insufficient or non-existent. Stagnant water reached levels where residents were unable to remain at their homes.

This event, with simultaneous events throughout the province, resulted in a Provincial Disaster being declared. The response was overwhelming with the private sector making massive donations and the National Government, making more than R100 million available for reparations.

7.3 Western Cape Province: Floods in Southern Cape – 31 July 2006⁷

Declared Compound Flood Disaster of 2006

Following the compound flood disaster on 31 July to 03 August 2006, and again on 24 to 28 August 2006, emergency funding was allocated to cater for rehabilitation and reconstruction within the Cape Winelands, Overberg, Eden and Central Karoo Districts. The Provincial Disaster Management Centre (PDMC), instituted an intervention plan to guide the recovery process after which the provincial cabinet mandated an ad hoc flood recovery committee, established under the chairmanship of the PDMC, to facilitate and coordinate the recovery processes in the Western Cape. This event and the management thereof is regarded as historical, as apart from Taung in the Northwest, Eden was the first area/Municipality to be declared a local disaster in the Western Cape, in terms of the Disaster Management Act.

The Provincial Disaster Management Centre's played a vital role in the assessment and verification process as well as the declaration of Eden as a local disaster. Damage and losses incurred in the Eden and Central Karoo Districts were more extensive than that suffered by the Overberg and Cape Winelands Districts. The losses incurred during the two flooding episodes severely and negatively disrupted the local economies,

infrastructure, property, the environment as well as the livelihoods of the affected communities within the affected Districts. Infrastructure damage included damage to roads, informal and formal housing, bridges, commercial and subsistence farms, storm water drains, municipal sewerage works, holiday resorts and dams. Seven fatalities were reported as a result of both flooding events in the Eden District.

The cost estimates derived from the assessments taking into account all four District Municipal areas indicate that most of the losses incurred were municipal infrastructure, environmental and agricultural damage. Total verified losses taking into account both flooding events, as reported by the various Municipalities as well as Provincial and National Departments including parastatals, amounted to R602 162 897.50 of which a budgetary shortfall of R274 million was illustrated. It should be noted that an amount of R274 million was approved within a period of 6 weeks after the event occurred.

Problems causing delays with the spending of the allocated emergency funds include: completion of lengthy business plans, lengthy tender procedures, lengthy processes with the approval of Environmental Impact Assessments, lack of technical skills/engineering capacity at local level, and the need for additional funding. Lessons learnt include: the value of credible and reliable information to be nurtured in emergency and disaster situations, that roles and responsibilities of disaster management across the three spheres of government be communicated and understood by all stake-holders, the establishment of a focused institutional mechanism to assist in emergency situations, to enhance communication of early warnings to community level and to nurture correct and valid media liaison. The Sub-Directorate is still facilitating and co-ordinating the recovery process.

7.4 Ilembe District Municipality: Kwadukuza Hailstorm Disaster – 18 & 19 May 2006⁸

Given the nature of climatic conditions along the Ilembe

District Municipality coastline and hinterland, adverse weather conditions are regularly experienced with the result that communities are faced with the effects of heavy rain or hailstorms, strong winds or veld fires, which in many instances cause considerable damage to homes/dwellings and personal belongings.

Heavy rainfalls along the KwaZulu Natal coastline during the early winter months are not normally a threat. However this reporting period has proved otherwise.

Reports of flooding were received as early as April 2006. Then in the early evening of 18 May 2006 and again late afternoon on 19 May 2006 strong winds and heavy rain accompanied by hail, varying from golf and tennis ball sizes struck, parts of KwaDukuza

The KwaDukuza Local Municipality immediately responded by dispatching personnel to the affected areas to assess the magnitude of the damage. After initial assessments of the damage the District Municipality was approached to render assistance in terms of blankets and plastic sheeting to cover damaged roofs.

The Ilembe Mayor and Councillors visited the affected areas over the weekend and on 22 May 2006 the Honourable MEC for Local Government Housing and Traditional Affairs, Mr Mike Mabusyakhulu, visited a few of the affected areas to gain first hand knowledge of the extent of the destruction.

A Sub-Committee of the Ilembe District disaster management advisory forum was immediately established and following protocol in terms of the Act the affected areas were subsequently declared a disaster by the Provincial Cabinet.

Effects

The hailstones caused extensive damage, primarily to homes with asbestos roofing and once again the communities affected were those who could least afford to effect immediate repairs.

Problems

The Department of Housing was the lead agency in this case. The assessment of damage was done in tandem with the KwaDukuza housing department and was finalised within a short period of time. However, the processing of claims and issuing of vouchers to beneficiaries took almost six months to complete.

The illegal dumping of asbestos posed a huge problem as both contractors and residents were dumping asbestos at random.

7.5 Ilembe District Municipality: Kwadukuza Coastal Tidal Disaster – 18 March 2007

Scientists were closely monitoring KwaZulu-Natal's tides in anticipation of the moon, the sun and the earth's alignment on 18 March 2007, which saw the greatest gravitational pull on the earth in about 18 years. But while this alignment could result in dramatic high tides and had people living along the coast bracing themselves for tsunami-like sea conditions, experts indicated that unless these tides coincided with a storm at sea, the effect of the gravitational pull could be minimal.

But, together with the alignment, cyclonic conditions off the Madagascar coast created adverse weather conditions and the KwaDukuza coastline, and in particular the Ballito area, were pounded by massive surf in the early hours of 19 March 2007, leaving the coastline littered with debris, and in some places complete destruction of the Ballito promenade. Additional damage included excessive erosion and damage to primary sand dunes and vegetation, beachfront retaining wall, properties, home fixtures and furniture, lifeguard buildings and equipment, restaurants and ablution blocks. Of great concern was the loss of almost 1.5 km of sewerage lines and pumps along the beachfront which resulted in sewerage effluent being discharged into the sea damage causing extensive environmental pollution.

A JOC was immediately formed and procedures were carried out and adhered to in terms of the Act. By 22 March 2007 the area was declared a local disaster by the KwaDukuza Municipality.

A technical task team was subsequently formed to determine the way forward in terms of reconstruction and rehabilitation.

Effects

Major damage to municipal infrastructure, private property and the coastline in general, which created economic and tourism challenges.

Problems

KwaDukuza Municipality is under tremendous pressure from its ratepayers in terms of rehabilitation to ensure economic viability, as the area is primarily reliant on tourism for survival,

General

Rural communities are regularly faced with incidents in respect of severe rain, wind storms and veld fires which often cause damage to homes.

In terms of the Districts reporting procedures, the local municipalities are required to investigate the incidents for assessment purposes. Should the municipality not be in a position to render any assistance, the District is usually contacted to provide emergency relief aid. This is done once the District is satisfied with the assessments.

Effects

Those people who can least afford it, are normally hardest hit by these events and in many instances lose their homes and personal belongings.

Problems

- The misconception of the term “Disaster”;
- These incidents are not covered by the Act, and assistance is merely given on the grounds of humanitarian and social responsibility; and
- Budgetary constraints.

7.6 Ugu District Municipality: Kwadukuza Coastal Tidal Disaster – 18 March 2007⁹

The area along the coast from Scottsburgh in the north to Port Edward in the south was severely affected by storm surge and heavy wave action on 19 and 20 March 2007 which resulted in loss of beach sediment and destruction of both private and public property within Ugu District Municipality. This storm coincided with a saros spring high tide which resulted in swells of between 8.8 to 14 metres. Erosion by the storm return flow deflated the beach and subtidal shore face and has destabilised the KwaZulu-Natal coast.

The area was declared a disaster following a visit by the National and Provincial Ministers to evaluate the damage along the entire KwaZulu-Natal coastline.

The project team led by the Ugu Disaster Management Manager, and comprising up of staff members from Hibiscus Coast and Umdoni Municipalities, are working closely with a team of experts led by Bohlweki Environmental on the restoration of the affected areas. Every effort has been made to restore things as quickly as possible but finances are restricting progress, as is the nature of the damage.

In terms of the Environmental Act only emergency work can take place to ensure public safety and the steps taken have to be approved by the Department of Environmental Affairs and Tourism. This has entailed engaging environmental and coastal ecological specialists to assist with the work. There are several areas which require detailed business plans and environmental studies to be undertaken before any work can be done. In these cases all options require careful consideration prior to approval to ensure that every precaution is taken to prevent a similar incident occurring.

A claim of R113 million has been lodged through the Provincial Disaster Office, which has been supported by the Provincial Cabinet and submitted to National Treasury to consider. There are no guarantees that

these claims will be met. The estimated costs to repair the damage are not available in the current council budgets and great reliance is being placed on receiving assistance from the National Government:

- Hibiscus Coast – R75m
- Umdoni – R32m
- Ugu – R6m

These costs are only for damage to Municipal infrastructure and exclude work done by Spoornet, the Sharks Board, any private individuals or other businesses that are required to deal directly with the Department of Environmental Affairs and Tourism before restoring any infrastructure.

Remedial work has been undertaken in a number of areas to prevent further damage but there are areas that need approval of the Department of Environmental Affairs before proceeding.

Disaster Management Act Section 55: Declaration of local state of disaster

(1) In the event of a local disaster the council of a municipality having primary responsibility for the co-ordination and management of the disaster may, by notice in the provincial gazette, declare a local state of disaster if-

- (a) existing legislation and contingency arrangements do not adequately provide for that municipality to deal effectively with the disaster; or
- (b) other special circumstances warrant the declaration of a local state of disaster.

(2) If a local state of disaster has been declared in terms of subsection (1), the municipal council concerned may, subject to subsection (3), make by-laws or issue directions, or authorise the issue of directions, concerning-

- (a) the release of any available resources of the municipality, including stores, equipment, vehicles and facilities;

- (b) the release of personnel of the municipality for the rendering of emergency services;
- (c) the implementation of all or any of the provisions of a municipal disaster management plan that are applicable in the circumstances;
- (d) the evacuation to temporary shelters of all or part of the population from the disaster-stricken or threatened area if such action is necessary for the preservation of life;
- (e) the regulation of traffic to, from or within the disaster-stricken or threatened area;
- (f) the regulation of the movement of persons and goods to, from or within the disaster-stricken or threatened area;
- (g) the control and occupancy of premises in the disaster-stricken or threatened area;
- (h) the provision, control or use of temporary emergency accommodation;
- (i) the suspension or limiting of the sale, dispensing or transportation of alcoholic beverages in the disaster-stricken or threatened area;
- (j) the maintenance or installation of temporary lines of communication to, from or within the disaster area;
- (k) the dissemination of information required for dealing with the disaster;
- (l) emergency procurement procedures;
- (m) the facilitation of response and post-disaster recovery and rehabilitation; or
- (n) other steps that may be necessary to prevent an escalation of the disaster, or to alleviate, contain and minimise the effects of the disaster.

Chapter 08

Best Practices



There are various best practices taking place throughout South Africa. The aim of this section is to give recognition to those authorities that have implemented such practices.

8.1 City of Tshwane: Disaster Management Primary School Guide Pack¹⁰

The project complies with section 44 (1)(h) of the Disaster Management Act and falls within the disaster risk reduction key performance area of the National Disaster Management Framework as well as the Education, training, public awareness and research enabler; no 2.

Background to the Project

The Disaster Management Guide Pack for primary schools is a proud initiative of the Disaster Management Centre of the City of Tshwane Metropolitan Municipality (CTMM) and is meant to comply with the legislative requirements of the Disaster Management Act. In terms of section 44(1)(h) of the Act, disaster management capacity building in schools must be promoted.

The development of the guide pack has been a combined effort of the African Centre for Disaster Studies and the Tshwane Disaster Management Centre. Teachers will be able to use the guide pack as a tool to introduce learners to disaster management principles in an interesting and fun-filled way.

Trendsetters in South-Africa

The Tshwane Disaster Management Centre is the first of its kind in South Africa to introduce such a project in primary schools as part of the National Curriculum Statements. The content forms part of the social sciences and environmental management sciences learning areas for grade five, six and seven learners. This project will be a very important aspect of disaster management capacity building in Tshwane.

Teacher training

Teachers will be given a complete outcomes-based

package on disaster management, which can be used to introduce the learning content to the learners in an interesting and fun-filled way and so reduce the lesson-plan preparation time. Teachers will serve as extensions of the disaster management personnel in spreading the message about disaster risks and prevention and teachers will attend a short training session beforehand. Learners will be able to apply what they have learnt at home and in their communities quite easily, because only the principles of disaster management will be taught.

The Department of Education and the City of Tshwane will make a continuous and valuable contribution to building a sustainable, disaster-resilient community through this joint initiative.

Guide Pack contents

Each guide pack consists of the following materials:

- A 23-page, full-colour text book;
- Separate full-colour work books for grades 5,6 and 7;
- An A2 wall poster;
- A disaster management song for learners to sing;
- A video/DVD that learners can watch; and
- A board game that learners can play.

Implementation strategy

As part of a pilot study, the guide packs have been introduced free of charge at two schools, namely Walter Sisulu Primary School in Olievenhoutbosch and Mokonyama Primary School in Hammanskraal. The inputs of the GDE, the Disaster Management Centre and the MMC responsible for the Community Safety Portfolio contributed to the selection of the pilot schools through the application of a set of criteria.

We envision implementing the guide pack free of charge in all English-medium primary schools in Tshwane. However, due to budget limitations, external funding is being investigated to assist with printing and implementation costs.

8.2 Nelson Mandela Bay Metropolitan Municipality: Flash Flood Warning System¹¹

The proposed flash flood guidance system for South Africa (SAFFG) is envisaged being based on the CAFFG system for Central America. Since flooding and flash flooding is a regional problem wider than South Africa, it is important eventually to roll this system out to other countries in the region. The SAWS is a Regional Specialised Meteorological Centre (RSMC) of WMO and can thus play a fundamental role in a regional flash flood guidance system. It is essential that local scientists (meteorologists, hydrologists and disaster managers) of the different countries are involved in the development of the guidance system to utilise local knowledge and build capacity. The Hydrological Research Centre in the USA (custodian of the CAFFG system) will play a pivotal role in the implementation process.

The proposed implementation in South Africa will be a phased process over two years. In the first phase the main threat areas will be dealt with to establish the implementation plan. In the follow-up phases the main system will be established and the guidance will be rolled out to other areas in the country under flash flood risk.

The involvement of NMBMM Disaster Management and the PE Weather Service has ensured that the NMBMM area will be included in the implementation of this system.

8.3 Department of Agriculture and Environmental Affairs: KwaZulu-Natal¹²

Consideration should be given towards "piggy backing" disaster management activities on existing, similar activities, which ensure viability (available expertise), prevent duplication and do not burden staff with additional meetings. In KwaZulu-Natal drought "Piggy Backs" on the Water and Sanitation programme.

8.4 Mopani District Municipality – Awareness campaigns¹³



To raise awareness after the outbreak of rabies, 30 000 pamphlets were printed. The A4 page was printed with two pamphlets on it, thus an effective 60 000 pamphlets were printed and distributed. These pamphlets gave information regarding what signs to look for, what to do in case of being bitten, etc., and were printed in four languages. These were distributed to all areas, particularly where problems were being experienced with the disease. Feedback from the disaster managers, veterinary services and Department of Health regarding these pamphlets was extremely positive. Posters were also designed and printed by Disaster Management and placed in areas which were badly affected by the disease. During a vaccination campaign held at Bolobedu South and another at Maruleng, the public address system on the Command Vehicle was used to inform people about the disease and where to take their cats and dogs for vaccination. The response from the communities to this was incredible, particularly from children, and thousands of cats and dogs were vaccinated against the disease as a result.

During the Arrive Alive campaigns held over the Festive Season of 2006 and the Easter weekend of 2007, information pamphlets were designed and printed by Disaster Management for distribution to motorists. These pamphlets contained information such as what to do in the case of an accident, emergency contact details for the SAPS, Fire and Rescue services and Ambulance services, etc., as well as safety tips for tourists. These were distributed at the Joint Operational Centres set up at the roadside at Mica, Mooketsi and Haenertsburg. Around 3 000 pamphlets were distributed to motorists.

Figure 21: Child with dog – rabies awareness campaign



Figure 22: The front and back of the rabies pamphlet

Rabies	Rabies
<ul style="list-style-type: none"> - Rabies is a deadly disease which can be spread to man. It is usually carried by dogs and jackals, but can affect other animals like cats, goats, cattle and donkeys. - Symptoms of the disease include aggression and the animal will typically attack and bite anything. A large amount of saliva running out of the mouth is also a classic sign of rabies. - People usually become infected when they are bitten by an animal that is infected with rabies. - If you are bitten by an animal, you must go to a hospital or clinic immediately for treatment. If you get treatment very soon after you have been bitten by an animal with rabies, you will not get sick. - There have already been cases of rabies reported from the Mopani District. - Tell the nurses at the hospital / clinic where you last saw the animal that bit you. This is important that the animal can be found again before it hurts anyone else. - Do not try to kill the animal yourself or let anyone else try to kill it. Rather let someone report the matter to the police while you go to the hospital / clinic for treatment. - Make sure that all your animals are vaccinated against rabies. The vaccine will not harm the animal and will only make it stronger: <div style="text-align: right; margin-top: 10px;">  </div> <p style="font-size: small; margin-top: 10px;">Compiled by: Mopani District Municipality Disaster Management in the interest of a safer community. Photo: Rabies Guideline</p>	<ul style="list-style-type: none"> - Mavabyi lawaya khoma ngopfu timbyana, kambe ya nga khoma na swimanga, timbuti na tidonki. - Ku huma ka rihlakahla ro ka ri nga lawuleki enon'wini wa xiharhi l xin'wana xa swikombiso xa swikombiso xa leswaku xi khomilwe hi mavabyi - Vanhu va khomiwa hi mavabyi endzhaku ko lumiwa hi xaharhi lexi nga ni mavabyi. - Hatlisela edinic kumbe exibedhele loko u lumilwe hi xaharhi lexi vabyaka, loko ukuma vutshunguri hi ku hatlisa u nga ka u nga ha vabyi. - Ku na swiviko swot ala hi mavabyi lawa lwesi nga vikiwa eka District ya Mopani. - Hlamusela vaongori leswaku xiharhi lexi nga ku luma u xi vone kwihi ro hetelela, leswaku xi ta kumiwa xi nga ku luma van'wana. - U nga ringeti wena kumbe un'wana ku tidlayela xiharhi lexi nga ku luma, wena yisa mhaka leyi emaphoriseni. - Endla leswaku swiharhi hinkwaswo swa wena swi tlhaveriwa ku sivela mavabyi, murhi wo sivela wu ta endla leswaku swihari swa wena swi nga vaviseki kambe swi tiya. <div style="text-align: right; margin-top: 10px;">  </div> <p style="font-size: small; margin-top: 10px;">Compiled by: Mopani District Municipality Disaster Management in the interest of a safer community. Photo: Rabies Guideline</p>




Hondsdolheid	Rabies
<ul style="list-style-type: none"> - Hondsdolheid is 'n dodelike siekte wat oordraagbaar is van diere na mense. Honde en jakkelse is meestal die draers heirvan, maar ander diere soos katte, bokke, beeste en donkies ka ook geafekteer word. - Simptome van die siekte sluit in, 'n radikale gedragsverandering in diere, aggressie wat kan veroorsaak dat die dier enige iets in die nabyheid aanval en oormatig salivasie uit die mond. - Die meeste gavage van oordraging geskied wanneer 'n persoon deur 'n dier wat aan hondsdolheid ly gebyt word. - Gaan onmiddellik na u naaste hospital of kliniek as u deur 'n dier gebyt word, hoe beter is u kans om volkome te herstel. - Daar is reeds gevalle van hondsdolheid aangemeld in die Mopani distrik. - Lig mediese personeel in van waar die siek dier laaste gesien is sodat opgeleide persone hom kan vind voordat hy ander mense beseer of die siekte oordra. - Moenie probeer om self die dier dood te maak nie, laat ooggetuies eerder die polisie kontak tervyl u na die naaste hospital of kliniek gaan. - Verseker dat al u diere ingeënt word teen hondsdolheid, dit sal nie die dier negatief beïnvloed nie, en is belangrik vir u eie veiligheid. <div style="text-align: right; margin-top: 10px;">  </div> <p style="font-size: small; margin-top: 10px;">Compiled by: Mopani District Municipality Disaster Management in the interest of a safer community. Photo: Rabies Guideline</p>	<ul style="list-style-type: none"> - Bolwetši bja rabies boka fetela le go batho mme bo a bolaya. Bolwetši bjo bo hwetšwa kudu go dimpša le ditshukudu ebile bo ka fetela le go diphoofolo tša go swana le dikatse, dipudi, dikgomo le dipokolo. - Dika tša bolwetši bjo diphoofolong di akaretša pefelo mme phoofolo ya bonala e hlasela e loma sengwe le sengwe. Seka se sengwe sa bolwetši bjo ke go ela ga mare gotšwa molomong wa phoofolo e nang le bolwetši bjo. - Batho ba fetelwa ke bolwetši bja rabies ge ba lomilwe ke phoofolo e nago le bolwetši bjo. - Ge motho a lomilwe ke phoofolo e nago le bolwetši bjo o swanetsi a hwetše kalafo sepetlele goba kliniking ka pela. Ge motho a ka hwetše kalafo ka pela a ka se lwale bolwetši bjo. - Go šetše go begilwe ka bolwetši bjo mo tikologong ya Mopani. - Botša baoki sepetlele goba kliniking ka lefelo la mafelelo moo phoofolo ya go loma o e boning gona. Se se bohlokwa gore phoofolo eo e hwetše e sešo ya hlakofatša motho o mongwe gape. - O seka wa leka go bolaya phoofolo e go lomileng ka bowena goba gore emongwe a e bolaye. Go kaone gore e mongwe a bebele maphodisa mola wena o leba sepetlele goba kliniking go hwatša kalafo. - Ela hlako gore diphoofolo tša gago ka moka di hlabetšwe kgahlanong le bolwetši bja rabies. Sehlare sa go thibela rabies se ka se kweše phoofolo ya gago bohloko empa se tla e tiisa. <div style="text-align: right; margin-top: 10px;">  </div>

Figure 23: The inner portion of the pamphlets distributed during the Arrive Alive campaign

<p style="text-align: center;">MOPANI DISTRICT EMERGENCY NUMBERS:</p> <p>Tzaneen/Modjadjiskloof: Fire Department – (015) 307-5555/700 Ambulance – (015) 307-7313 Modjadjiskloof SAPS – 082 532 4102 Tzaneen SAPS – (015) 306-2000/2129 Private ambulance service – (015) 306 0666</p> <p>Phalaborwa/Hoedspruit: Fire Department – (015) 0780-1333 Ambulance – (015) 769-4011 Phalaborwa SAPS – (015) 780-3314 Hoedspruit SAPS – (015) 799-4063 SAAF Fire & Rescue – (015) 799-2197</p> <p>Giyani: Fire Department – (015) 812-0225/5030 Ambulance – (015) 812-1629 Giyani SAPS – (015) 811-5106</p> <p>Other numbers: Bolobedu SAPS – (015) 328-7500 Maahe SAPS – (015) 355-8300 Ritavi SAPS – (015) 302-1000 Haenertsburg SAPS – (015) 276-4771 Letsitele SAPS – (015) 345-8000 Gravelotte SAPS – (015) 318-4313 Lulekani SAPS (015) 783-0175 Namagale SAPS – (015) 769-1530 Sekgose SAPS – (015) 874-0020 Hlanganani SAPS – (015) 873-1529 Traffic CCC – 0800 00 66 94 Tzaneen SPCA – 083062809257 Phalaborwa SPCA – 082 494 2147</p> <p>Letaba Fire Protection Association – (015) 309-9504 All emergencies - 112</p>	<p>Emergency situation? Call us!</p> <p>At one time or another, it's bound to happen to all of us – you find yourself in an emergency situation. Knowing what to do and who to call is of the utmost importance if valuable lives are to be saved.</p> <p>The most likely emergency situation you are likely to find yourself in, or to encounter on the road, is a motor vehicle accident. In this case, the first rule is not to move any of the injured or to remove them from the vehicle they were travelling in unless their lives are in immediate danger (i.e. if their vehicle is on fire). The reason for this is because you can exacerbate injuries or even kill an injured person by moving them. Take note of what you see at the scene, the emergency call-taker who takes your call is going to require a lot of information from you.</p> <p>When making an emergency call, be ready to provide the emergency care-taker with your name and phone number. This is one of the first questions they may ask, should you get cut-off, the emergency centre can call you back to obtain all the information they need. The emergency centre will need to know what has happened, where the incident has taken place and how many vehicles are involved. In the case of a large accident, such as a bus or taxi accident, the emergency centre may ask you to estimate how many people are injured. This gives them an indication of how large a response to send i.e. whether they need five ambulances or just one. You will also be asked if anyone is trapped in or under any of the vehicles. All this information will be required for an appropriate response by the emergency services. Provide as much necessary details as possible to equip them with all the information they need. In the case of a heavy motor vehicle accident, the emergency call-taker is also likely to ask what cargo the truck is carrying. This is necessary to determine if the truck is carrying hazardous materials which may pose a significant risk to human lives and the environment. If a truck carrying hazardous materials has been involved in an accident, it is important that you not attempt to go near the truck as often the gasses which are formed as a result of chemicals mixing forms an odourless, colourless gas which can cause significant harm. Do not walk through or touch any of the spoiled product and refrain from smoking anywhere near the scene.</p> <p>And lastly, do not stop at an accident scene just to have a look. Not only are you placing your life in danger, but the lives of the emergency workers as well. On countless occasions, secondary accidents have taken place simply because people were curious to have a closer look at the accident scene. Remember, buckle up and don't drink and drive!</p> <p style="text-align: center;">BROUGHT TO YOU BY MOPANI DISTRICT MUNICIPALITY AND:</p>
<p style="text-align: center;">BROUGHT TO YOU BY MOPANI DISTRICT MUNICIPALITY AND:</p>	
	

8.5 eThekweni Metropolitan Municipality – Disaster Management Centre Activation Measurement System¹⁴

Given the seriously skewed but generally accepted view that a MDMC's main response role is "welfare" related, coupled to the widely differing perceptions of what constitutes an emergency, major incident or disaster, it is often difficult to determine (and convince individuals/agencies) when the MDMC should be activated.

One cannot use the number of persons injured or killed in an incident as the measure. It is a tragic fact that vehicle collisions generally, but those involving taxis specifically, may account for numerous injuries/deaths. In a "Metropolitan" environment, disturbingly such incidents occur regularly and it would be impractical to activate the MDMC for each such occurrence when these events are well within the capabilities of the existing Emergency Services.

It would also be impractical to (individually) use damage to assets/infrastructure, environmental impact, or economic implications as a yardstick for measuring the severity of incidents because any or all of these elements may be absent when trying to determine consequences. Furthermore, it may take several days or even months after an incident before these elements can be quantified.

To overcome this problem, the Ethekewini MDMC has developed a MDMC activation measurement system based on the nature of co-ordination needed to provide response agencies (primary or secondary) with the appropriate structure within which to operate.

All incidents can be categorised as being dealt with at "Operations, Tactical or Strategic" level. The activation of services/actions at one level translates into a "notification" for other services at the next level. Accordingly, the MDMC is notified of an incident when a "Tactical" level of co-ordination is implemented, and "activated" when a "Strategic" level of co-ordination is required.

This emphasises the importance of the co-ordination/facilitation/information management role that the MDMC should carry and eliminates the ill-advised tendency for Disaster Management functionaries to perform "hands-on" tasks best carried out by line-function (professional or volunteer) organisations.

It is pleasing to note that this terminology/system is finding acceptance in the Disaster Management fraternity.

8.6 Uthungulu District Municipality – Shared Fire-fighting Services: Project Consolidate¹⁵

With the advent of the Project Consolidate Grant Funding in 2004/05 financial year, the district and its family of municipalities applied for grant funding to implement fire-fighting services on a shared basis.

Subsequently, the application was approved by the Project Consolidate Project Management Unit for an amount of R3.2 million for capital infrastructure. On

20 December 2005, a contract with Rural Metro Emergency Services (Pty) Ltd was signed to implement a shared fire-fighting services contract in the district. Rural Metro was to establish two satellite fire stations at Nseleni and Kwa Dlangezwa areas at its own cost.

In June 2006, a property situated on Lot 54, Khuleka in Empangeni (9 Bronze Street) was purchased by Uthungulu District Municipality for an amount of R2 million plus VAT to establish a shared services centre to house the following services:

- Disaster Management Centre;
- Fire-Fighting Services;
- Training centre for fire-fighting personnel;
- Municipal Health Services; and
- Bulk Stores.

The phase I renovations of the building are completed and the centre was equipped to make it ready for operation on 1 June 2007.

In terms of capital funding of R3,2 million by Project Consolidate, four satellite stations were established in 2006.

A total number of 25 personnel (six per each local municipality as learner firemen, plus the District Fire Chief) were appointed by Rural Metro in consultation with the district municipality and the participating local municipalities.

In order to effectively implement shared fire-fighting service, it was agreed between the district and the participating local municipalities that the district municipality will contribute R2 850 000 escalated at ten percent per annum and each participating local municipality will contribute R200 000, also escalated at ten percent per annum, for operational budget purposes.

- The firemen are undergoing learnership training and completed their first year training in June 2007. But due to lack of funding to retain them they may be lost from the district and local municipalities concerned
- LDVs for each local municipality plus one for the

District Fire Chief, all equipped with basic equipment, were purchased

- In respect of Mthonjaneni Municipality, and due to the high rate of road accidents resulting in fatalities most of the time, a set of jaws of life has recently been purchased to assist the crew in extricating road accident victims
- A consideration is being given to do the same for Mbonambi Municipality due to the relatively high prevalence of road accidents along the N2

The support given by the DLGTA in furthering its legal and constitutional obligation in terms of sections 154 and 155 of the Constitution in this regard cannot be over emphasised. Without this support, and taken with the scrapping of regional levies by National Treasury in July 2005, there was no way that the district and its municipalities would have been able to implement a fire-fighting services function in the district.

The district municipality is looking at different strategies to improve the service, including approaching the Department for further assistance in terms of equipment i.e. fire engines suitable for the district's terrain.

8.7 Thabo Mofutsanyana District Municipality – Snow Incident Management¹⁶

The 'Snow Protocol' forum is a cross-border initiative between KwaZulu Natal and Free State responsible for planning of operations in the event of heavy snowfall along the N3 corridor at Van Reenen's Pass and surrounding areas. This forum meets each year prior to the onset of winter. At this meeting contingency plans of all stake-holders are reviewed and updated. Also the contact details of all role-players are updated. The following institutions play a role:

Category A:

- uMgungundlovu District Municipality – KwaZulu-Natal
- Uthukela District Municipality – KwaZulu-Natal
- Thabo Mofutsanyana District Municipality – Free State

- Mafube Local Municipality – Free State

Category B: South African Weather Services

Category C: N3TC

Category D:

- Eskom
- MTN
- VODACOM
- Telkom
- Automobile Association (AA)
- Road Freight Association

8.8 Disaster Management Graduate Training: A Contribution towards Risk Reduction in SADC¹⁷

Disaster management as a formal academic subject is still in its infant phase within South Africa, with only a few tertiary institutions offering it as a graduate course. Professional practitioners and academic institutions realized the importance of disaster management as an educational and research topic. The Masters in Disaster Management offered by the University of the Free State is currently Africa's largest graduate training programme in disaster management, with 91 students enrolled from different African countries. The growth in new student numbers (from 11 students in 2002 to 45 new students in 2006) exceeds all expectations and is proof of the need for disaster management education in Africa. The dramatic growth in numbers during 2006 can partly be attributed to a learnership support programme by the Department of Science and Technology, which supports 15 students with more than R2.3 million for the duration of their course. The importance of graduate training in disaster management with an African perspective is demonstrated by the demographic breakdown of students enrolled on the course, with 26% being from countries other than South Africa, including Zimbabwe, Swaziland, Zambia, Sudan, Kenya and Angola.

Chapter 09

Climate Change and Disaster Risk Reduction: opportunities and challenges in South Africa¹⁸



Observational evidence from all continents and most oceans shows that many natural systems are being affected by regional climate changes, particularly temperature increases⁵.

⁵ Contribution of Working Group II to the Fourth Assessment Report of the Intergovernmental Panel on Climate Change

The recent report of the Fourth Assessment of the Inter Governmental Panel on Climate Change (IPCC) states that the warming of the climate system is unequivocal (Summary for Policy Makers, IPCC, 2007). The African continent is identified as being likely to be one of the regions to be most affected by climate change. Reasons for this include the low adaptive capacity in Africa and projected climate changes. Some of the projected impacts associated with climate change for Africa, derived from various models and other assessments, include those linked to water, food and biodiversity (See Summary for Policy Makers, IPCC Fourth Assessment Report, 2007 and other IPCC reports).

Africa is, however, already vulnerable to a range of stresses, including climate variability, situations that are compounded by a range of other issues and stresses including complex health issues, land use changes, water constraints, inadequate services, infrastructure etc.

How can one possibly live with and prepare for such challenges?

Approaches and measures to address such complex realities include mitigation and adaptation of climate change. In a recent document released by the ISDR (International Strategy for Disaster Reduction) some recommendations for action now and in post-2012 – (post-Kyoto arrangements) include a focus on reducing the risk of extreme climate events that will require action now (for further details see ISDR, www.unisdr.org, Climate Change and Disaster Risks, recommendations for Action Now and Post-2012).

South Africa and the wider region, are also prone to disasters and disaster risks associated with climate and weather. The recent flooding events in the Eastern Cape

and previous flood and drought events as well as fires elsewhere in the country, are constant reminders that we cannot be complacent about the vagaries of weather and climate. The costs of 'cleaning up and repair' after such events are high e.g. estimated R600 million for the most recent flooding events. While we cannot yet be absolutely certain of the possible linkages of such recent events to climate change, we do nonetheless, have an urgency to begin to think very seriously about how we manage and reduce risks to such events.

How can we better live with climate related risks?

We have an excellent and world class disaster risk management policy, namely the Disaster Management Act as well as a strategy on Climate Change. The former indeed calls for finding effective ways and means for state, private sector, NGOs, communities and individuals to determine levels of risks, assess the vulnerability of communities and households to disasters that may occur; increasing the capacity of communities and households to minimise the risk and impact of disasters etc (see Disaster Management Act, section 20). Such a focus and call for action will require, however, that we seriously consider finding effective and implementable ways of enhancing our ability to reduce the risks associated with climate variability and change. This means that we do not adopt a wait and see attitude, looking outwards only to 2012 but that we start **NOW** by seriously beginning to think around the links and implications between effective, integrated and systematic ways to assess development, planning and climate risk reduction and adaptation measures. This is not only the responsibility of government and will require creative thinking by all!

Chapter 10

South African Tsunami Warning System¹⁹



The occurrence of the Tsunami on 26 December 2004 in the Indian Ocean caused widespread alarm across the world and in South Africa, resulting in the coming together of key players to establish an Indian Ocean Tsunami Warning System (IOTWS).

The response from the people of South Africa was phenomenal and indicative of their sympathies to the victims of a disaster when countries in South Asia and Africa were hit by killer tidal waves set off by a massive earthquake measuring 9,0 on the Richter scale west of the Indonesian island of Sumatra on 24 December 2004. The Inter-Ministerial Committee on Disaster Management (IMC) chaired by the Minister of Provincial and Local Government, convened soon after the disaster to coordinate South Africa's relief and assistance effort to countries affected by the tsunami. South Africa received a number of requests for relief assistance, mainly from Indonesia, Maldives and Sri Lanka. An Emergency Operations Committee comprised of a team of senior government officials from various national departments and other stake-holders coordinated South Africa's response to the disaster. The IMC established a relief-assistance coordinating centre based at the National Disaster Management Centre and provided a SA Red Cross dedicated bank account number for donations. More than R30 million was paid into this account by the public. Several private institutions also organised relief actions.

As a further result of the tsunami the ICDM resolved that South Africa must participate in the development of an Indian Ocean Tsunami Warning System (IOTWS). The Council for Geoscience indicated that as far as the contribution towards the development of an IOTWS was concerned, it would be necessary for the communication infrastructure as well as the seismic facilities to be upgraded. The cost estimate for upgrading of remote seismographs and National Data Centre facilities of the CGS to accommodate seismic data management and the purchase of spare equipment for quick turn-around during instrument failure was estimated at R1,95 m. Subsequent to consultation with the Cabinet, the necessary funds (R1,95 m) were transferred from the **dplg** to the account of the CGS.

Although the probability of tsunamis off the coast of Southern Africa is low, the potential risk cannot be neglected. Following the concern of future threats of a tsunami and its disastrous effects to the economy and its people, the South Africa Government approved funding

for the establishment of a South African Tsunami Early Warning System (SATEWS).

SATEWS work in close cooperation with their regional partners to deliver the relevant information to the IOTWS. This is achieved by:

- contributing seismological observation to the IOTWS
- facilitating exchange of data in the region and the establishment of procedures for exchange of tsunami warnings
- sharing of relevant knowledge and technology in the region
- efforts to raise tsunami hazard awareness in the relevant communities.

10.1 South African Tsunami Early Warning System

The SATEWS has been developed and implemented by the following agencies:

- Council for Geoscience (CGS)
- NDMC, **dplg**
- South African Weather Service (SAWS).

The Council for Geosciences is responsible for operation of the South African National Seismograph Network (SANSN). Furthermore, the CGS has some expertise in developing hazard and risk models.

The NDMC has considerable experience in dealing with natural disasters and in facilitating community awareness and preparedness programs.

The South African Weather Service (SAWS) facilitates a regional telecommunications hub on the network and is responsible for connecting all SADC countries to the network. The network is used for issuing/distributing tropical cyclone and natural disaster advisory information. The tsunami warnings have now been included for distribution on this network. Currently the SAWS is the official 24-hour contact information point for receiving tsunami advisory information from the Pacific Tsunami Warning Centre (PTWC) and the Japan Meteorological Agency (JMA) and distributing such information.

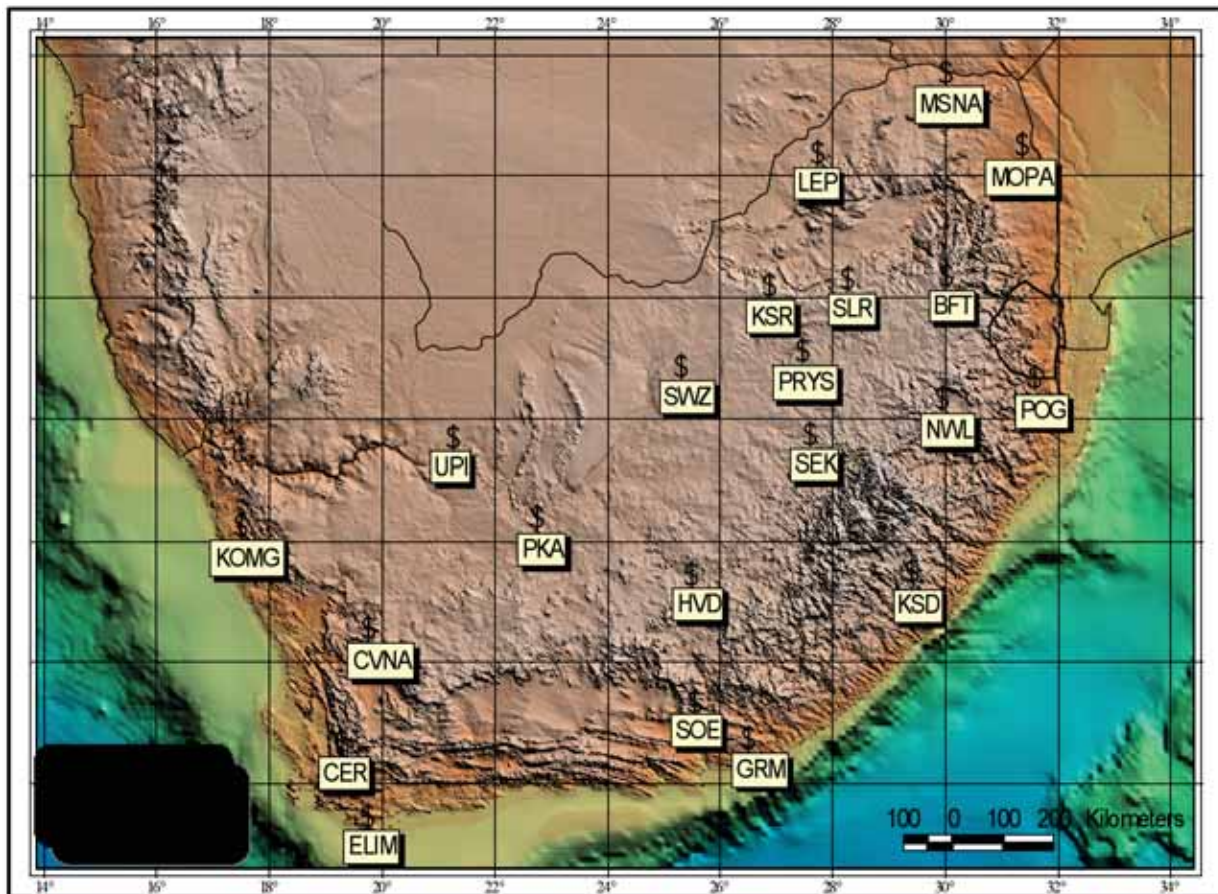
10.2 SA contribution to Indian Ocean Tsunami Warning System (IOTWS)

The South African National Seismograph Network (SANSN), operated by the Council for Geoscience (CGS), consists of 23 seismograph stations distributed widely throughout South Africa, and is capable of recording any earthquake that may cause a tsunami. The CGS has dedicated data from five of its broadband stations in the SANSN for the Indian Ocean Tsunami Warning System. The data from the upgraded SANSN, coupled with the data from the seismograph networks of other countries, allow the monitoring of tsunamigenic earthquakes occurring throughout the entire Indian and Atlantic Oceans. Table 27 provides names of the SANSN seismograph stations whose records contribute to the IOTWS.

Table 27: List of seismographic stations of SANSN whose records are used by the IOTWS

Station Name
Ceres
Grahamstown
Pongola
Musina
Calvinia

Figure 24: South African National Seismograph Network operated by CGS



10.3 Development of Tsunami Data Base and Tsunami Risk Assessment

Scientific and technical support for the South African Tsunami Early Warning System would:

- (1) Initiate the research on evidence of historic tsunamis in SA. The project would result in the compilation of a national database of historic tsunami events.
- (2) Stimulate development of the SA tsunami hazard and risk models resulting in scientific assessment of South Africa's vulnerability to tsunamis.

Chapter 11

Indigenous knowledge



Traditional knowledge or indigenous knowledge generally refers to the matured long-standing traditions and practices of certain regional, indigenous, or local communities. Traditional knowledge also encompasses the wisdom, knowledge and teachings of these communities.

In many cases, traditional knowledge has been orally passed for generations from person to person. Some forms of traditional knowledge are expressed through stories, legends, folklore, rituals, songs, and even laws.

The African Centre for Disaster Studies at North West University (Potchefstroom Campus) was contracted by Help the Aged UK (an international charity, fighting to free disadvantaged older people from poverty, isolation and neglect) in early 2007 to investigate the impact of drought and its aftermath on older people within selected South African communities. Three communities and stake-holders within the Bophirima District Municipality, were identified as the target groups. The geographical area in question has experienced acute periods of drought since 2002. The research revealed a considerable amount of indigenous coping mechanisms which ranges from early warning to drought management and disaster preparedness.

Indigenous knowledge may be defined as knowledge that has been created and developed over a period of time. Indigenous knowledge represents generations of creative thoughts and actions within a particular community in an eco-system generated to keep abreast of an ever-changing agro-ecological and socio-economic environment. Many writers on indigenous knowledge agree that it also encompasses non-technical insights, wisdom, ideas, perceptions and innovative capabilities usually passed from generation to generation.

The research showed that indigenous knowledge is reflected in stories about beliefs, knowledge and rituals which the older community perform in trying to cope with the situation. Indigenous knowledge in this particular community regarding drought include that they have consulted seasons, the lunar cycle and stars in order to determine certain seasonal patterns. The shape and the location of the moon was mentioned as an early warning signal for drought. They furthermore explained that they consult different weather patterns in order to determine the possibility of drought. One respondent referred to a constellation called "the seven stars" as a guide for drought warning. Besides weather patterns the group also indicated that they consult their natural environment and animal behaviour in order to determine possible weather patterns. The following quotes are an indication of the application of traditional knowledge for drought management:

- "If the wind blows from the south we know that we will be receiving rain because the rain comes from the south, but if the wind is blowing from the west then it will be a drought year";
- "If the moon is upside down we know that we will have a drought year";
- "The old people (ancestors) told us how to look at the different clouds and stars in order to determine whether we will be facing drought";
- "We have to look at the stars and if they are not going the way they should be then we know it will be a wrong year";
- "We look at our animals and if they mate then we know it will be a good year"; and
- "There is a specific bird called the water bird. If we see this bird in a specific area then we know we will receive rain".

Mostly indigenous farmers do not make use of pesticides and rely on traditional methods. The burning of fields helps to kill worms and larvae that could infect livestock, while modern agricultural practices include the use of pesticides. Through eradication of alien bushes, plants and trees, water is conserved. Some communities also believe in the supernatural abilities of a certain tree. Cutting a tree called "mukala" is not allowed according to their tradition, as they believe it causes drought. This reduction of cutting trees contributes significantly towards ensuring long term sustainability of resources, limiting environmental degradation which translates into vegetation conservation.

Although a rural community, technology has not passed them by. The communal farmers indicated that they make use of the weather predictions of the South African Weather Service, and information on television as well as radio in order to determine prevailing weather conditions. The further resource utilised in determining conditions of drought is the information supplied to the communal farmers by the agricultural cooperative or the Department of Agriculture.

Other coping other coping mechanisms included the sharing of communal areas which were not affected by the drought. The traditional leaders indicated that they

would go to neighbouring tribes and request permission from the captain/chief for their livestock to graze on their pastures. It seems that these communal grazing pastures are under strict grazing management by the traditional leaders. Affected tribes would continually move their herds around in order to limit over grazing on the already limited grazing pastures. Neighbouring tribes obliged in all circumstances due to fact that their lands were not exempted from possible drought and that they might need future assistance as well.

Food preservation and stockpiling were also mentioned as coping mechanisms in dealing with drought. The communal farmers indicated that they learned from their fathers that they needed to stockpile for future eventualities (i.e. drought). Bartering of foodstuffs for livestock also occurs. The focus group indicated that as

soon as conditions of drought are unbearable they need to reduce the size of their herds by getting rid of the older and sick animals first. These animals were used for exchange purposes.

Moulding clay utensils such as pots for cooking and storing of water is another indigenous knowledge shown by the women in the communities. This proves they still value what they have been taught and wish to instill that creativity in the younger generation. With the knowledge of making clay pots the community can form a club and make these clay utensils for selling. Through this they can earn a living. Indigenous knowledge is constantly being adapted to the changing environment of each community and will remain current as long as people use it. Thus indigenous knowledge is dynamic, as new knowledge is continuously added to it.

The Disaster Management Act emphasises the use of indigenous knowledge, by referring to “take(ing) into account indigenous knowledge relating to disaster management” in various instances. It makes sense as the occurrence of disasters is often the result of natural phenomena. The traditional knowledge of indigenous people has been built up by living off the land in a certain environment and has been transferred through various generations – thus giving an insight into nature that is not always scientific based, but very often correct.

Chapter 12

The Disaster Management Institute of Southern Africa (DMISA)²⁰



The Disaster Management Institute of Southern Africa (DMISA) is a non-profit association for disaster management professionals in Southern Africa. Although the majority of the approximately 715 members of the Institute are South African citizens, the focus of the Institute remains the wider Southern African region.

12.1 The Role and Purpose of DMISA within the Context of Disaster Management in South Africa

DMISA is a non-profit association for disaster management professionals in Southern Africa. DMISA aims to create learning and networking opportunities for its members – furthering the interests of the disaster management profession in Southern Africa and ultimately reducing Southern African vulnerability to disasters.

In the South African context, DMISA has endeavoured to form a close partnership with the NDMC in order to play a constructive role in the further development of Disaster Management theory and practice in South Africa. DMISA attends National Disaster Management Advisory Forum meetings, and also communicates the concerns and suggestions of members of the profession directly to senior management in the NDMC.

12.2 The Objectives of the Institute

1. To be recognised as an established professional body that will:

- exercise and maintain control over the standards within the field of practice of Disaster Management;
- promote the image of the profession;
- establish and maintain the Disaster Management profession as a profession in its own right;

2. To serve as a central point for the collecting of information in connection with Disaster Management and at its discretion to distribute the information, after scrutinising, collating or summarising, for the promotion of Disaster Management;

3. To collect, collate, coordinate and distribute data, ideas, knowledge, methods and techniques by any means suitable for the purpose of improving the efficiency of, and promoting uniformity within Disaster Management and to develop and promote matters of mutual interest to members and communities;

4. To publish and distribute books, pamphlets, periodicals,

treatises and articles in support of the activities and objectives of the Institute;

5. To endeavour to actively promote awareness amongst all communities of vulnerability assessment and to promote community participation in prevention, mitigation, preparedness, response, recovery, rehabilitation, as well as the integration of disaster management into sustainable development;

6. To capacitate members through training and development;

7. To serve as the officially recognised spokesperson of the organised Disaster Management and Associated professions in Southern Africa and to state its case in negotiations with the authorities and other organisations, where the interest of Disaster Management within the various community structures which the profession serves, are, or could be affected;

8. To determine a code of ethics and professional standards of work and conduct for its members, to promote, monitor, stimulate and encourage observance thereof and to create an esprit de corps for members of the Institute;

9. To conduct research, convene conferences, symposia, seminars and forums; arrange for the presentation of lectures and papers to the members, of the Institute or the community and relevant structures in order to stimulate, promote, encourage and facilitate discussion, study and research relating to Disaster Management issues;

10. To actively participate in the formulation of disaster management legislation and policy and to support, or oppose any other legislation which has a bearing on the Institute, the profession and its members;

11. To strive for closer co-operation with national and international organisations and institutions involved in, and who have similar objectives to, or could positively contribute to the field of disaster management;

12. To actively promote the need for and concept of disaster management being an integral and indispensable part of development and development principles.

12.3 Highlights of Activities during the Reporting Period

The following major activities were conducted during the reporting period:

Table 28: Activities of DMISA

8-9 March 2006	National workshop on the legislative requirements and deadlines for disaster management plans, held in Port Elizabeth (well attended by delegates from across South Africa – follow-up workshops were held in regions)
10 March 2006	DMISA Council Meeting
26 April 2006	Celebrated founding day of DMISA 21 years ago
27-28 July 2006	Seminar in the Western Cape: Strategic Leadership Issues in Disaster Risk Management, held in Cape Town.

The Institute's website address (www.disaster.co.za) remains an important communication tool which is regularly updated with the latest information regarding the Institute and its activities.

The institute as a body can and does liaise with Government agencies and non-Governmental Organisations, at the request of its members, to resolve issues and to help ensure sound implementation strategies of the function.

Chapter 13

Conclusion



This report is an indication of the steady progress of the implementation of the Disaster Management Act No. 57 of 2002 by all spheres of government.

The NDMC has made good progress in establishing national disaster management structures such as the Intergovernmental Committee on Disaster Management (ICDM) and the National Disaster Management Advisory Forum (NDMAF) and providing advice to disaster management stake-holders on the implementation of the Disaster Management Act. It has also commenced with its overall monitoring and evaluation role in terms of the Act by developing the necessary monitoring and evaluation and project management mechanisms.

The NDMC is aptly supported in doing so by the Portfolio Committee on Provincial and Local Government.

Notwithstanding the above, constraints in relation to the implementation of the Disaster Management Act are funding, capacity and other resource constraints. In this regard, the NDMC has identified the following high priority activities to address said constraints in the 2007/08 financial year:

1. Establishment of the National Disaster Risk Management Technical Advisory Committee;
2. Development of Priority Guidelines as requested by the relevant structures;
3. Continuation with the process of the review of the Fire Services legislation;

4. Finalisation of Disaster Management Regulations;
5. Implementing public awareness programmes;
6. Continued provision of helicopter services in relation to the Working on Fire Programme;
7. Coordination of disaster relief operations as and when required;
8. Continued development of the Disaster Management Information System as well as Early Warning Systems;
9. Coordination of 2010 disaster management focused activities;
10. Continuation of the Disaster Management Internship Programme;
11. Entering into a Memorandum of Understanding with the South African Weather Services in respect of a Flash-flood forecasting system;
12. Continuation of interaction with SAQA and the Local Government SETA in pursuing the development of applicable Unit Standards necessary for the registration of disaster management qualifications on Levels 4, 5 and 6; and
13. The review of the funding chapter of the National Disaster Management Framework.

Chapter 14

Glossary²¹



Accreditation

The certification, usually for a particular period of time, of a person, a body or an institution, as having met specific requirements to fulfil a particular function in the quality assurance system set up by the South African Qualifications Authority (SAQA).

Capacity

A combination of all the strengths and resources available within a community, society or organisation that can reduce the level of risk or the effects of a disaster. Capacity may include physical, institutional, social or economic means as well as skilled personnel or collective attributes such as leadership and management.

Capacity building

Efforts aimed at developing human skills or infrastructures within a community or organisation needed to reduce the level of risk. It may also include the development of institutional, financial, political and other resources, such as technology, at different levels and sectors of the society.

Contingency planning

The forward planning process for an event that may or may not occur, in which scenarios and objectives are agreed, managerial and technical actions defined, and potential response systems put in place to prevent or respond effectively to an emergency situation.

Criteria

Standards, rules, guides or tests against which a judgement or decision is based.

Development

A process for improving human well-being through reallocation of resources that may involve some modification to the environment. It addresses basic needs, equity and the redistribution of wealth.

Disaster

A natural or human-caused event, occurring with or without warning, causing widespread human, material, economic or environmental losses which exceed the ability of the affected community or society to cope with its effects using only their own resources. A disaster is a function of the risk process. It results from the combination of hazards, conditions of vulnerability and insufficient capacity or measures to reduce the potential negative consequences of the disaster risk.

Disaster Operations Centre

A fully equipped dedicated facility within the disaster management centre of a particular sphere. Such a facility must be capable of accommodating any combination of emergency and essential services representatives, including all relevant role players and stake-holders identified in response and recovery plans for the purpose of multidisciplinary strategic management of response and recovery operations, when a local, provincial or national disaster occurs or is threatening to occur.

Disaster risk management

The systematic process of using administrative decisions, organisation, operational skills and capacities to implement policies, strategies and coping capacities of the society and communities to lessen the impacts of natural hazards and related environmental and technological disasters. This comprises all forms of activities, including structural and non-structural measures to prevent or to limit (mitigation and preparedness) adverse effects of hazards.

Disaster risk reduction

The conceptual framework of elements considered with the possibilities to minimise vulnerabilities and disaster risks throughout a society, to avoid (prevention) or to limit (mitigation and preparedness) the adverse impacts of hazards, within the broad context of sustainable development.

Early warning

Timely and effective information, through identified institutions, that allows individuals, households, areas and communities exposed to a hazard to take action to avoid or reduce the risk and prepare for effective response.

Early warning system

A system that allows for detecting and forecasting impending extreme events to formulate warnings on the basis of scientific knowledge, monitoring and consideration of the factors that affect disaster severity and frequency. Early warning systems include a chain of concerns, namely: understanding and mapping the hazard; monitoring and forecasting impending events; processing and disseminating understandable warnings to political authorities and the population; and undertaking appropriate and timely actions in response to warnings.

Education and training quality assurer

The body responsible for monitoring the quality of education and training and ensuring that learners are assessed to an agreed standard. Service providers of education and training have to be approved by an education and training quality assurer.

Elements-at-risk

Environmental, human, infrastructural, agricultural, economic and other elements that are exposed to a hazard, and are at risk of loss.

Focal / nodal point for disaster risk management

An individual responsible for co-ordinating the disaster risk management responsibilities and arrangements of a national, provincial or municipal organ of state or a municipal entity. The term is also used to refer to an individual with similar responsibilities in an NGO or the private sector.

Geographic information system (GIS)

Analyses that combine relational databases with spatial interpretation and outputs, often in the form of maps. A more elaborate definition is that of computer programmes for capturing, storing, checking, integrating, manipulating, analysing and displaying data related to positions on the earth's surface. Typically, GIS is used for handling maps. These might be represented as several different layers where each layer holds data about a particular kind of feature. Each feature is linked to a position on the graphical image of a map. Geographic information systems are increasingly being utilised for hazard and vulnerability mapping and analysis, as well as for the application of disaster risk management measures.

Hazard

A potentially damaging physical event, phenomenon and/or human activity that may cause the loss of life or injury, property damage, social and economic disruption or environmental degradation. Hazards can include latent conditions that may represent future threats and can have different origins: natural (geological, hydrometeorological and biological) or induced by human processes (environmental degradation and technological hazards). Hazards can be single, sequential or combined in their origin and effects. Each hazard is characterised by its location, intensity, frequency and probability

Hazard analysis

Identification, studies and monitoring of any hazard to determine its potential, origin, characteristics and behaviour.

Human-made hazards

Disasters or emergency situations that are caused directly or indirectly by identifiable human actions, deliberate or otherwise.

Imperative

An obligation or a duty.

Joint Operations Centre

The sphere within a response management system where the combined or joint tactical co-ordination and management of a significant event or disaster involving multi-agency operations takes place.

Learnership

A work-based learning programme, with the learner doing both practical work and theory. Learnerships relate to an occupation. A learnership leads to a qualification registered on the NQF.

Mitigation

Structural and non-structural measures undertaken to limit the adverse impact of natural hazards, environmental degradation and technological hazards on vulnerable areas, communities and households.

Monitoring

A system of checking and observing to ensure that the correct procedures and practices are being followed.

National Qualifications Framework (NQF)

An integrated national approach to education and training in South Africa. It specifies how different education and training standards and/or qualifications must be set and how courses will be accredited. It emphasises lifelong learning and facilitates access to, as well as mobility and progression within, education and training through the accumulation of credits in the learning process and, where appropriate, for work experience. It was established in accordance with the South African Qualifications Authority Act, 1995 (Act No. 58 of 1995).

Natural hazards

Natural processes or phenomena, such as extreme climatological, hydrological or geological processes, that may constitute a damaging event. Hazardous events can vary in magnitude or intensity, frequency, duration, area of extent, speed of onset, spatial dispersion and temporal spacing.

Preparedness

Activities and measures taken in advance to ensure effective response to the impact of hazards, including the issuance of timely and effective early warnings and the temporary evacuation of people and property from threatened locations.

Prevention

Actions to provide outright avoidance of the adverse impact of hazards and means to minimise related environmental, technological and biological disasters.

Priority disaster risk

A risk identified as a priority through a scientific evaluative process in which different disaster risks are evaluated and ranked according to criteria determined by the broader socio-economic and environmental context in which the risk is located. The process of determining these criteria should be consultative, and involve scientific, civil society and government stake-holders.

Public awareness

The processes of informing the general population, increasing levels of consciousness about risks and how people can act to reduce their exposure to hazards. Public awareness activities foster changes in behaviour, leading towards a culture of risk reduction.

Rapid-onset disasters

A disaster caused by natural events, such as earthquakes, floods, storms, fires and volcanic eruptions. Although such events are more sudden, the impact can also be heightened by underlying problems associated with poverty.

Recovery

Decisions and actions taken immediately after a disaster with a view to restoring or improving the pre-disaster living conditions of the stricken community, while encouraging and facilitating necessary adjustments to reduce disaster risk. Recovery (rehabilitation and reconstruction) affords an opportunity to develop and apply disaster risk reduction measures.

Relief

The provision of assistance or intervention during or immediately after a disaster to meet the life preservation and basic subsistence needs of those people affected. It can include the provision of shelter; food, medicine, clothing, water, etc.

Resilience

The capacity of a system, community or society potentially exposed to hazards to adapt by resisting or changing in order to reach and maintain an acceptable level of functioning and structure. This is determined by the degree to which the social system is capable of organising itself to increase this capacity for learning from past disasters for better future protection and to improve disaster risk reduction measures.

Response

Measures taken during or immediately after a disaster in order to provide assistance and meet the life preservation and basic subsistence needs of those people and communities affected by the disaster. These measures can be of immediate, short-term or protracted duration.

Response management system

A system designed to provide a systematic approach to ensure the effective co-ordination and management of operational, tactical and strategic response efforts. It involves the combination of resources and procedures in a common organisational structure for the purpose of achieving rapid and effective response.

Risk assessment (disaster risk assessment)

A process to determine the nature and extent of risk by analysing potential hazards and evaluating existing conditions of vulnerability that could pose a potential threat or harm to people, property, livelihoods and the environment on which they depend.

Risk (disaster risk)

The probability of harmful consequences or expected losses (deaths, injuries, property, livelihoods, disrupted economic activity or environmental damage) resulting from interactions between natural or human-induced hazards and vulnerable conditions. Conventionally risk is expressed as follows: Risk = Hazards × Vulnerability. Some disciplines also include the concept of exposure to refer particularly to the physical aspects of vulnerability

Significant event

An event which does not necessarily justify the classification of a disaster but is of such a magnitude or importance that extraordinary measures are required to deal with it effectively. The term can also be applied to a situation where multiple single emergencies are occurring simultaneously within a given jurisdiction, placing undue demands on scarce resources. Together, these events may constitute a disaster. A significant event can also represent a new or unexpected shift in hazard, vulnerability or risk patterns, calling for closer investigation in order to better anticipate future changes in disaster risk.

Slow-onset disasters

Disasters which result when the ability of people to support themselves and sustain their livelihoods slowly diminishes over time. Slow-onset disasters usually take several months or years to reach a critical phase.

South African Qualifications Authority (SAQA)

The body that oversees the development and implementation of the NQF. The South African Qualifications Authority establishes national standards bodies, standards generating bodies, and education and training quality assurers.

Technological hazards

Danger originating from technological or industrial accidents, dangerous procedures, infrastructure failures or certain human activities, which may cause the loss of life or injury, property damage, social and economic disruption or environmental degradation.

Unit standard

A nationally recognised and registered set of education and training outcomes and their associated assessment criteria, as well as other information, including technical information, required by SAQA.

Vulnerability

The degree to which an individual, a household, a community, an area or a development may be adversely affected by the impact of a hazard. Conditions of vulnerability and susceptibility to the impact of hazards are determined by physical, social, economic and environmental factors or processes.

Chapter 15

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- f. National Disaster Management Centre – Informal Settlement Fire Awareness
- g. National Disaster Management Centre – Extreme Cold Awareness
- h. National Disaster Management Centre – Drought Awareness
- i. National Disaster Management Centre – Veld Fire Awareness

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