

Waterberg District Municipality

Disaster Risk Management Plan



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Waterberg District Municipality

Prepared by



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FOREWORD

Purpose

The purpose of the Waterberg District Municipal Disaster Risk Management Plan is to implement policy and outline procedures for both the proactive (prevention, mitigation and preparedness) and the reactive (disaster response, recovery, rehabilitation and reconstruction) phases of disaster risk management. The preventative elements of this plan must be implemented and maintained on a continuous basis. The emergency or reactive elements of the plan will be implemented whenever a major incident or disaster occurs or is threatening to occur.

According to Section 53 of the Disaster Management Act (No. 57 of 2002), as amended, Waterberg District Municipality must -

- conduct a disaster risk assessment for its municipal area;
- identify and map risks, areas, ecosystems, communities and households that are exposed or vulnerable to physical and human-induced threats;
- prepare a disaster risk management plan setting out—
 - the way in which the concept and principles of disaster management are to be applied in its municipal area, including expected climate change impacts and risks for the municipality;
 - its role and responsibilities in terms of the national, provincial or municipal disaster management framework;
 - its role and responsibilities regarding emergency response and post-disaster recovery and rehabilitation;
 - its capacity to fulfil its role and responsibilities;
 - particulars of its disaster management strategies;
 - contingency strategies and emergency procedures in the event of a disaster, including measures to finance these strategies; and
 - specific measures taken to address the needs of women, children, the elderly and persons with disabilities during the disaster management process;
- co-ordinate and align the implementation of its plan with those of other organs of state and institutional role-players;
- provide measures and indicate how it will invest in disaster risk reduction and climate change adaptation, including ecosystem and community-based adaptation approaches;
- develop early warning mechanisms and procedures for risks identified in the municipal area;

- regularly review and update its plan; and
- through appropriate mechanisms, processes and procedures established in terms of Chapter 4 of the Local Government: Municipal Systems Act, 2000 (Act No. 32 of 2000), consult the local community on the preparation or amendment of its plan.

The plan should:

- form an integral part of the Waterberg District Municipality Integrated Development Plan enabling risk reduction activities to be incorporated into developmental initiatives;
- anticipate the likely types of disaster that might occur in the Waterberg District Municipal area and their possible effects;
- identify communities at risk;
- provide for appropriate disaster risk reduction strategies;
- identify and address weaknesses in capacity to deal with possible disasters;
- facilitate and ensure emergency preparedness;
- establish the operational concepts & procedures associated with day-to-day operational response to emergency incidents; and
- contain contingency plans and emergency procedures in the event of a disaster.

The Waterberg District Municipality must submit a copy of its District Municipal Disaster Risk Management Plan and any amendments to the Plan to the National Disaster Management Centre and to the Limpopo Provincial Disaster Management Centre.

Statement of Commitment by the Head of Department

Undoubtedly there remains a need for even more, better and smarter interventions necessary to meet the demands resulting from increased disaster risks within the Waterberg District Municipality, as a result of climate change, population growth, urbanisation and increased demand for development and service delivery.

Although the Waterberg District Disaster Risk Management Plan is an instrument that gives effect to legislative imperatives, its importance moves beyond legislative imperatives, as it also serves to provide preventative, mitigating and recovery plans aimed to manage priority disaster risks, while ensuring sustainable development and continuous service delivery in the district.

In this statement, as the Head of Department, I remain mindful of our commitment to being responsible to ensure the implementation of the Disaster Management Act, No 57 of 2002, as amended, within and across all Departments and other Municipal entities within the Waterberg District Municipality.

The Waterberg District Municipality values are community centred, ensuring that everything we do must benefit our people. As the Head of the department, I will strive to ensure that Waterberg District Municipality is accountable, efficient and effective in carrying out the vision and mission of the department to deliver the requirements as stated by both the Disaster Management Act and National Disaster Management Framework.

Finally, the department, under my leadership, will strive to uphold the disaster risk management function within the Waterberg District Municipality, to ensure necessary support to the District Development Model, acknowledging the critical importance of integrating disaster risk management in all developmental planning for a more resilient society within the district.

To this end, our staff should not, for a moment, believe that their hard work and sacrifice has gone unnoticed.



MR M.Z. NAMATE

24/02/2020
DATE

MANAGER: THE DEPARTMENT OF SOCIAL DEVELOPMENT
AND COMMUNITY SERVICES (DSDCS)

Executive Summary

The Waterberg District Municipal Disaster Risk Management Plan serves to confirm the organizational and institutional arrangements within the district to effectively prevent disasters from occurring and to lessen the impact of those hazards that cannot be avoided.

The District Disaster Risk Management Plan aims to capture the essence of disaster risk management, as described in the Disaster Management Act (No. 57 of 2002) as amended, which states that “Disaster Management is a continuous and integrated, multi-sectoral and multi-disciplinary process of planning and implementation of measures aimed at disaster prevention, mitigation, preparedness, response, recovery, and rehabilitation.”

The Plan is structured in compliance with the Waterberg District, Limpopo Province and National Disaster Risk Management Policy Frameworks, and in alignment with the National Guideline provided by the NDMC for the Development of a Disaster Risk Management Plan. As such, the District Disaster Risk Management Plan includes the following sections –

- Description of the Waterberg District Municipality, taking into consideration the geographical, demographic, environmental and socio-economic profiles of the district, while detailing the status of critical infrastructure for the district and describing the district’s disaster incident history.
- The approach and development of the District Disaster Risk Management Plan is described in relation to available guidelines, with a description of necessary stakeholder consultation required according to relevant disaster risk management legislation.
- The legislative mandate for the development of a District Disaster Risk Management Plan is described and explained, referencing all relevant legislation pertaining to disaster risk management.
- The chapter on institutional arrangements for disaster risk management provides particulars of the capacity established and required within the Waterberg District Municipality to enable the effective development and implementation of DRM policy and legislation.
- The chapter on disaster risk assessment provides a uniform approach to assessing and monitoring disaster risks that informs disaster risk management planning and disaster risk reduction undertaken by Waterberg District Municipality and other role-players. In addition, the chapter provides details of the district’s indicative disaster risk profile, as well as critical vulnerability indicators in relation to projected climate change in the district.

- The chapter on disaster risk reduction ensures that the Waterberg District Municipality develops and implements integrated disaster risk management plans and risk reduction programmes in accordance with approved frameworks. In addition, details for the integration of priority disaster risk reduction measures into the district Integrated Development Plan and Spatial Development Plan is provided.
- The chapter on disaster preparedness planning ensures that the district performs effective and appropriate preparedness planning by implementing a uniform approach to the dissemination of early warnings and averting or reducing the potential impact in respect of personal injury, health, loss of life, property, infrastructure, environments and government services through appropriate contingency plans.
- The chapter on response ensures effective and appropriate disaster response by implementing immediate integrated and appropriate response measures when significant events or disasters occur or are threatening to occur.
- The chapter on recovery ensures effective and appropriate disaster recovery by implementing all rehabilitation and reconstruction strategies following a disaster in an integrated and developmental manner.

In each of the chapters that describe the Key Performance Areas of the National Disaster Management Framework, the Performance Enablers, namely 'Information and Communication', 'Education, Training, Public Awareness and Research' and 'Funding', are included and their supportive functions described.

Finally, the District Disaster Risk Management Plan aims to ensure full compliance and effective implementation of disaster risk management legislation, in order to provide necessary support to the District Development Model, acknowledging the critical importance of integrating disaster risk management in all developmental planning for a more resilient district municipality.

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TERMINOLOGY

The following terminology is utilised in this document:

Term	Definition
Capacity	The combination of all strengths, attributes and resources available within a community, society or organisation that can be used to achieve agreed goals.
Contingency Planning	A management process that analyses specific potential events or emerging situations that may threaten society or the environment and establishes arrangements to enable timely, effective and appropriate responses to such events and situations.
Development planning	An integrated, multi-sectoral process through which governmental institutions streamline social, economic and spatial growth.
Disaster	A progressive or sudden, widespread or localised natural or human-caused occurrence which – (a) Causes or threatens to cause – i. Death, injury or disease; ii. Damage to property, infrastructure or the environment; or iii. Significant disruption of the life of the community; and (b) Is of a magnitude that exceeds the ability of those affected by the disaster to cope with its effects using only their resources.
Disaster Risk	The potential disaster losses, in lives, health, status, livelihoods, assets and services, which could occur to a particular community or society over some specified future time period.
Disaster Management	The systematic process of using administrative directives, organisations, and operational skills and capacities to implement strategies, policies and improved coping capacities in order to lessen the adverse impacts of hazards and the possibility of disaster. This term is an extension of the more general term ‘Risk Management’ to address the specific issue of disaster risks. Disaster Management aims to avoid, lessen or transfer the adverse effects of hazards through activities and measures for prevention, mitigation and preparedness.
Disaster Risk Reduction	Mean either a policy goal or objective, and the strategic and instrumental measures employed for anticipating future disaster risk, reducing existing exposure, hazard or vulnerability and improving resilience.
Disaster Risk Reduction Plan	A document prepared by an authority, sector, organisation or enterprise that sets out goals and specific objectives for reducing disaster risks together with related actions to accomplish these objectives.
Early Warning Systems	The set of capacities needed to generate and disseminate timely and meaningful warning information to enable individuals, communities and organizations threatened by a hazard to prepare and to act appropriately and in sufficient time to reduce the possibility of harm or loss by reducing or mitigating disaster risk. It incorporates a system of data collection and analysis that monitors people’s well-being (including security), in order to provide timely notice when an emergency threatens, and thus to elicit an appropriate response. An Early Warning System is the integration of four main elements: Risk Knowledge; Monitoring and Predicting; Disseminating Information; and Response. Failure of any part of the system will imply failure of the whole system.

Hazard	A dangerous phenomenon, substance, human activity or condition that may cause loss of life, injury or other health impacts, property damage, loss of livelihoods and services, social and economic disruption, or environmental damage. Hazards can include latent conditions that may represent future threats and can have different origins: natural (geological, hydro meteorological 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.
Impact	The terms Primary Impact and Secondary Impact are used to describe the different causes and scales of potential impacts from a hazard event: Primary Impacts are also called direct impacts. Secondary Impacts are often referred to as indirect or induced impacts. This does not imply that Secondary Impacts are of secondary importance – in many cases the effects on biodiversity and the environment from secondary impacts are much more significant than those of primary impacts.
Mitigation	In relation to disaster or disaster risk, means the lessening of the potential adverse impacts of physical hazards, including those that are human-induced, through actions that reduce hazard, exposure and vulnerability. In relation to climate change, means a human intervention to reduce the sources or enhance the sinks of greenhouse gases.
Preparedness	The knowledge and capacities developed by governments, professional response and recovery organisations, communities and individuals to effectively anticipate, respond to, and recover from, the impacts of likely, imminent or current hazard events or conditions. These activities and measures include the issuance of timely and effective early warnings and the temporary evacuation of people and property from threatened locations.
Prevention	The outright avoidance of adverse impacts of hazards and related disasters.
Recovery	The restoration, and improvement where appropriate, of facilities, livelihoods and living conditions of disaster-affected communities, including efforts to reduce disaster risk factors.
Residual Risk	The risk that remains in unmanaged form, even when effective disaster risk reduction measures are in place, and for which emergency response and recovery capacities must be maintained.
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	The provision of emergency services and public assistance during or immediately after a disaster in order to save lives, reduce health impacts, ensure public safety and meet the basic subsistence needs of the people affected. These measures can be of immediate, short-term or protracted duration.
Risk	The combination of the probability of an event and its negative consequences.

Risk Assessment	A methodology to determine the nature and extent of risk by analysing potential hazards and evaluating existing conditions of vulnerability that together could potentially harm exposed people, property, services, livelihoods and the environments on which they depend.
Risk Management	The systematic approach and practice of managing uncertainty to minimise potential harm and loss.
Threat	A physical event or process that contains the possibility of being damaging or causing harmful consequences or loss. A threat is less specific than a particular hazard or risk, but may be reclassified as a 'risk' if it shifts from presenting merely the possibility of loss to a more certain probability of harm or damage.
Vulnerability	The conditions determined by physical, social economic and environmental factors or processes, which increase the susceptibility of a community to the impact of hazards.

ACRONYMS

Acronym	Explanation
DART	Disaster Assistance Response Team
DMA	Disaster Management Act 57 of 2002 as Amended
DMC	Disaster Management Centre
DMS NPC	Disaster Risk Management Non-Profit Company
DMO	Disaster Management Officer
DMT	Disaster Management Team
DPP	Disaster Preparedness Plan
DRA	Disaster Risk Assessment
DRMAF	Disaster Risk Management Advisory Forum
DRMP	Disaster Risk Management Plan
DRMPF	Disaster Risk Management Policy Framework
DRRP	Disaster Risk Reduction Plan
DSDCS	Director Social Services and Community Services
ECN	Emergency Communication Network
EOF	Emergency Operations Facility
ESF	Emergency Support Function
FCC	Forward Command and Control
FOP	Field Operations Plan
GIS	Geographic Information System
HOC	Head of the Disaster Management Centre
HOD	Head of Department
ICS	Incident Command System
IDP	Integrated Development Plan
IMCS	Information Management and Communication System
IRT	Initial Response Team
JOC	Joint Operations Centre
KPA	Key Performance Area
KPI	Key Performance Indicator
MCU	Mobile Command Unit
MDMC	Municipal Disaster Management Centre
MIG	Municipal Infrastructure Grant
NDMC	National Disaster Management Centre
NDMF	National Policy Framework for Disaster Management in South Africa
NERT	National Emergency Response Team
NKP	National Key Point
NOAA	National Oceanic and Atmospheric Administration
PDMC	Provincial Disaster Management Centre
PE	Performance Enabler
RRG	Rehabilitation and Reconstruction Group
SANDF	South African National Defence Force
SAPS	South African Police Force

SDF	Spatial Development Framework
SOP	Standard Operating Procedure
TAC	Technical Advisory Committee
VOC	Venue Operations Centre
WDM	Waterberg District Municipality

1 INTRODUCTION

Section 26[g] of the Municipal Systems Act 32 of 2000 and sections 52 and 53 of the Disaster Management Act 57 of 2002 as amended (DMA) compels municipal government to develop a disaster risk management plan (DRMP).

The primary focus of the Waterberg District Municipal (WDM) DRMP is to confirm the organisational and institutional arrangements to effectively prevent disasters from occurring and to mitigate the impact of those hazards that cannot be avoided. It establishes the operational procedures for disaster risk reduction planning as well as emergency procedures to be implemented in the event of a disaster occurring or threatening to occur. The WDM DRMP essentially serves as a mechanism for coordination and cooperation between all the relevant disaster risk management (DRM) stakeholders and role-players.

The WDM DRMP must be read in conjunction with the DMA, the Limpopo Disaster Risk Management Policy Framework (DRMPF) and the WDM DRMPF. The WDM DRMP must remain a working document, continuously improved upon and updated throughout its implementation, and the WDM Disaster Management Centre's (DMC) development of strategies and response to incidents.

1.1 Description of Waterberg District Municipality

1.1.1 Geographical Profile

The WDM is a Category C municipality located in the western part of the Limpopo Province. It is strategically located in sharing its borders with Capricorn District Municipality in the north and Sekhukhune District Municipality in the east. The south-western boundary abuts the North West, while the Gauteng Province lies on the south-eastern side.

The municipality is the biggest district in the province, making up just more than a third of its geographical area (44 913 km²). It shares its five-border control points with Botswana, namely Groblersbrug, Stockpoort, Derdepoort, Zanzibar and Platjan, and is comprised of five local municipalities: Bela-Bela, Lephalale, Modimolle-Mookgophong, Mogalakwena and Thabazimbi.

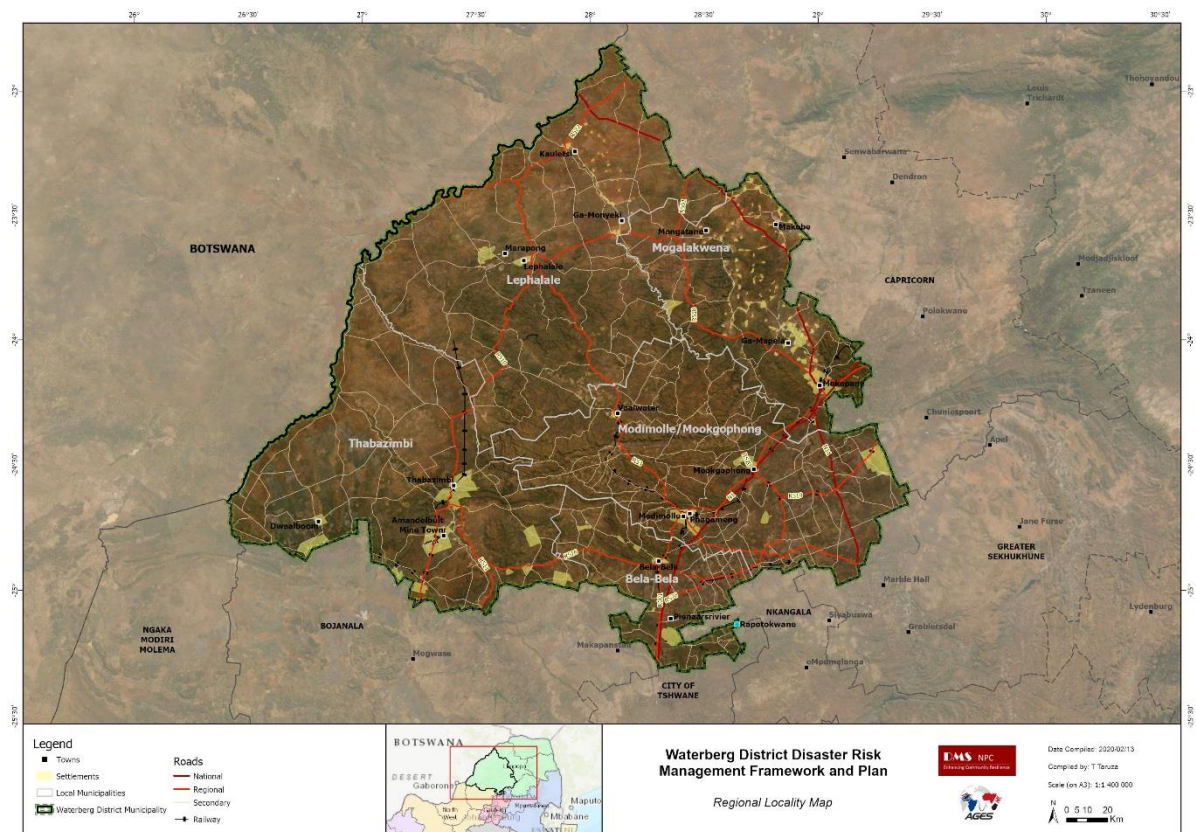


Figure 1: Regional Locality Map for the Waterberg District Municipality

WDM has a total of 80 wards. The distribution of the wards is illustrated in the figure below.

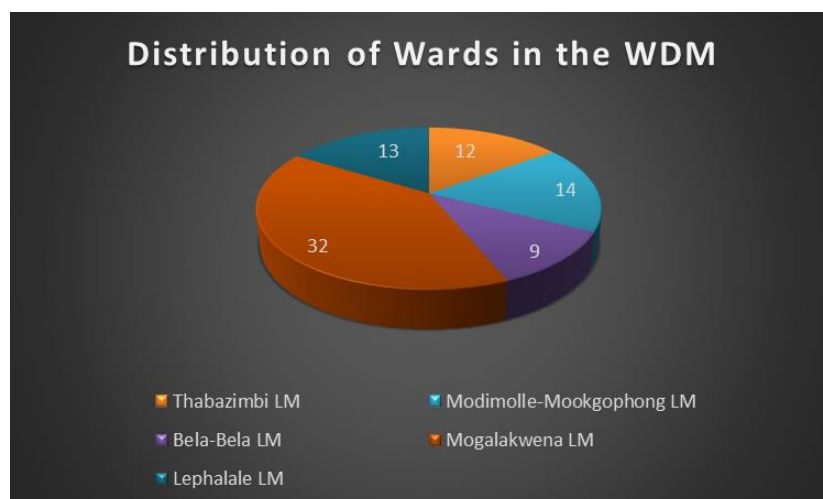


Figure 2: Distribution of wards in the Waterberg District Municipality

The main entry roads to WDM are N1 and R101 from Gauteng, N11 from Sekhukhune District Municipality, and R159 and R133 from North West Province.

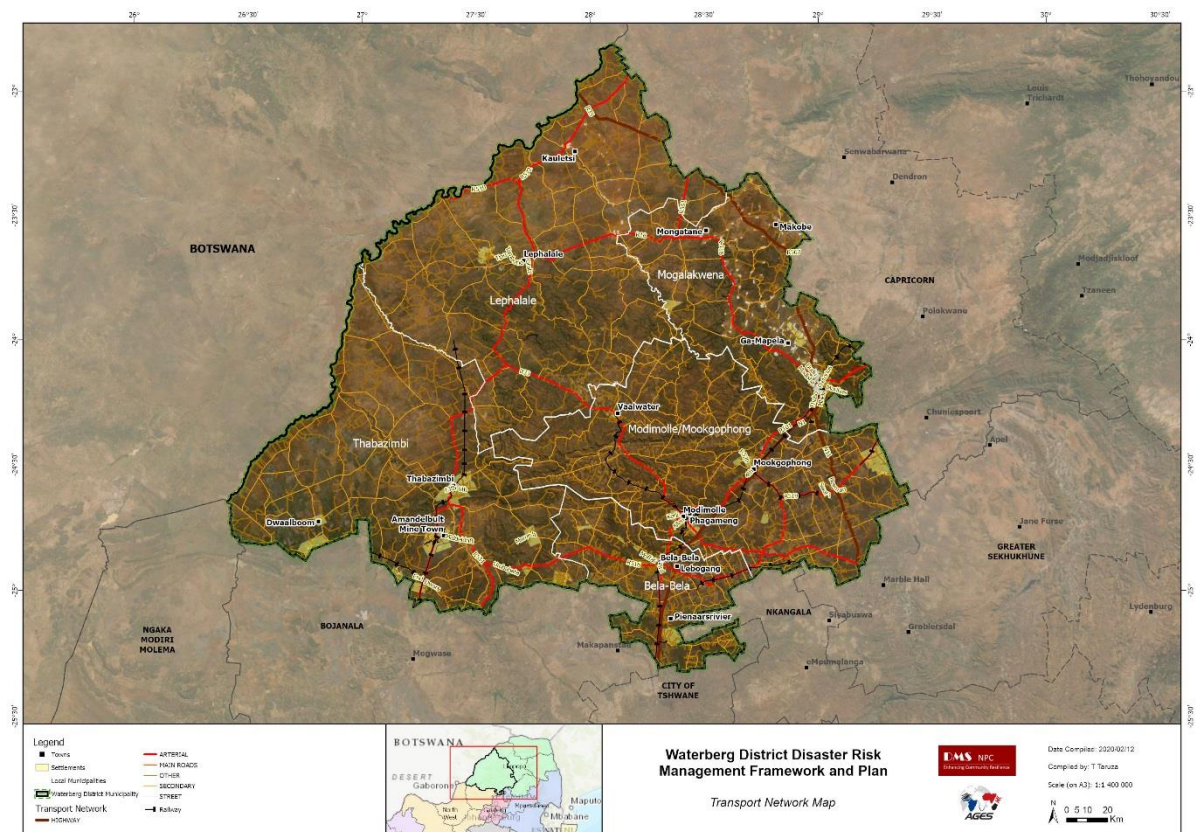


Figure 3: Transport Network Map for the Waterberg District Municipality

1.1.2 Demographic Profile

The predominant racial group within the WDM is African, with Sepedi the most widely spoken language.

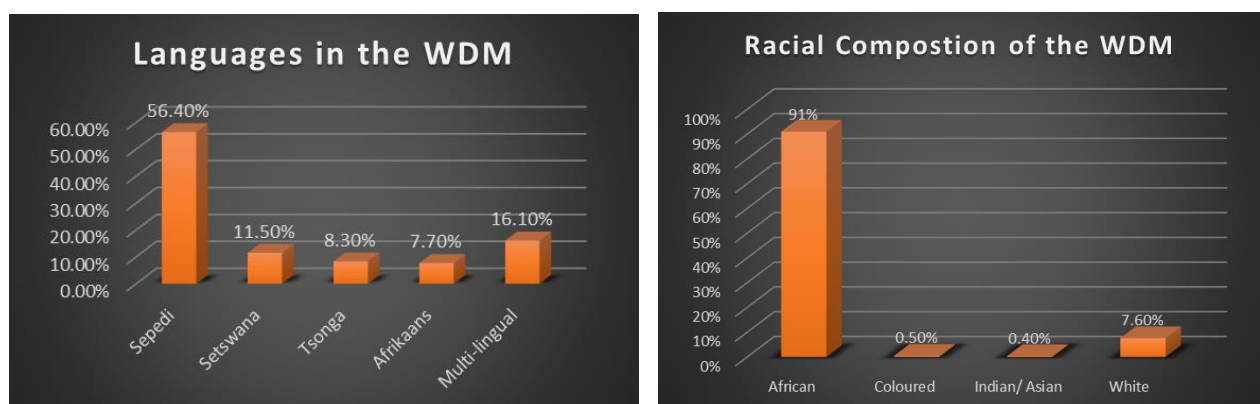


Figure 4: Languages spoken and the racial composition of the Waterberg District Municipality

The total population within the WDM in 2011 was 679 336, and 745 757 in 2016, representing a 9.8% population increase over a 5-year period. According to the South African Census 2016, the total

unemployment rate for WDM is approximately 28.1%, while the youth unemployment rate is approximately 45.5%. The unemployment rates per local municipality within the district are illustrated in the figure below.

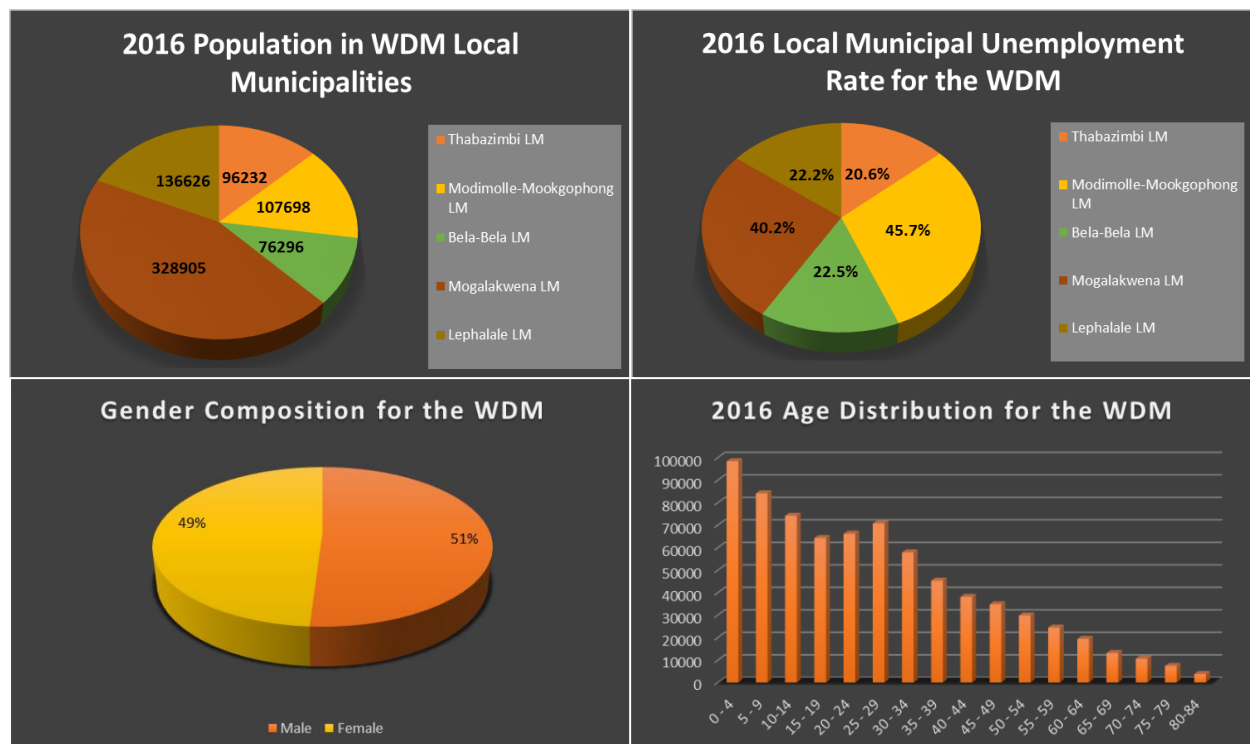


Figure 5: Details of the demographic profile of the Waterberg District Municipality

1.1.3 Environmental Profile

The WDM is biodiversity rich and is one of South Africa's prime ecotourism destinations. There are four main landscape features in the WDM, namely the Waterberg Plateau, the Transvaal Plateau Basin, the Pietersburg Plain and the Limpopo Depression. The WDM forms part of the Central Bushveld Region, under the Savanna Biome. Small patches of vegetation are classified as within the Mesic Highveld Grassland Bio-region, under the Grassland Biome. The District has a number of protected areas including Marakele National Park, Entabeni Nature Reserve, and Dnyala Nature Reserve. Some of the threats to the environment in the district include urbanisation, mining, farming, deforestation, over-grazing, and poor air quality. (WDM, 2015).

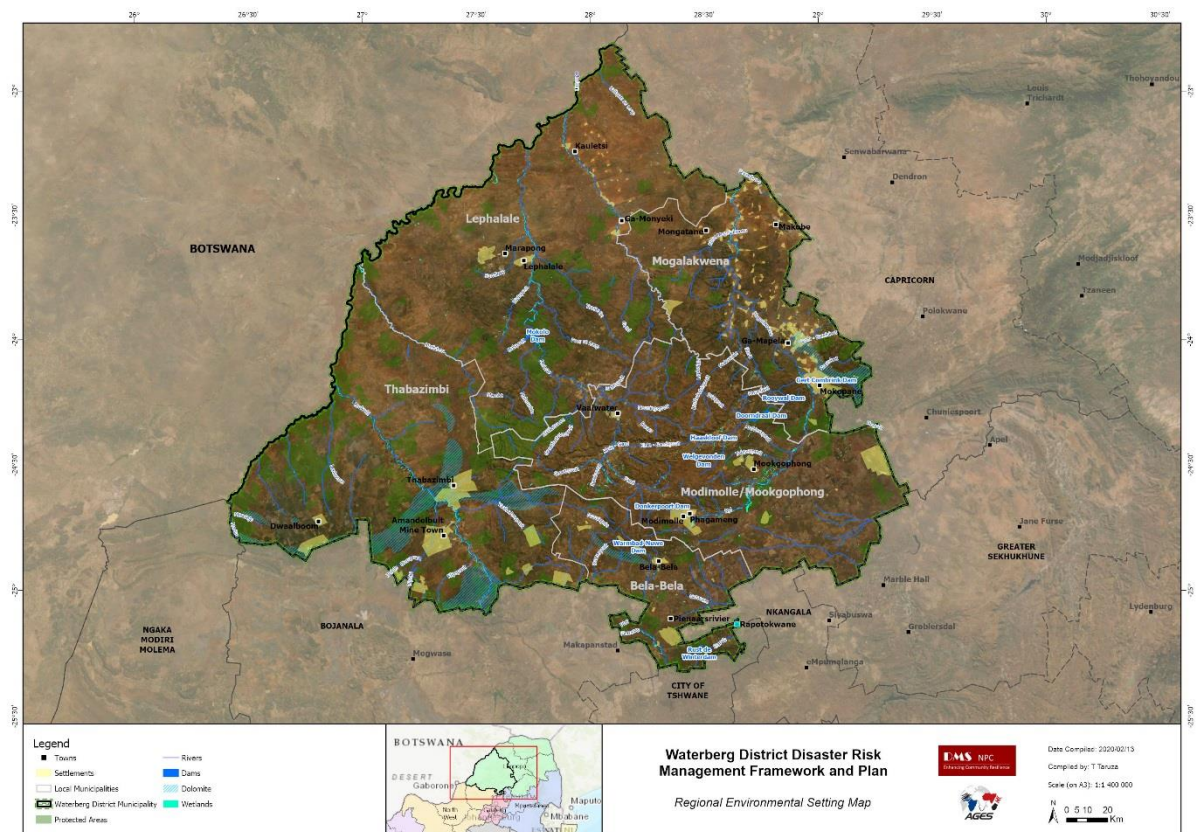


Figure 6: Regional Environmental Setting Map for Waterberg District Municipality

Current air quality has been described as fair, but future development, including the development of a coal power station in Lephalale, will result in an increase in air pollution and increased emissions. Current sources of air pollution include power generation, mining, industry, domestic fuel burning, vehicle emissions, waste treatment and disposal, and agricultural activities (WDM, 2015). The district has also been identified as being within the Waterberg Bojanala Priority Area, which is one of three priority areas identified nationally that have poor air quality standards and require specific air quality management action.

The WDM is covered by the Limpopo Water Management Area as well as the Crocodile (West) and Marico Water Management Area. The WDM has five catchments that fall within its boundaries namely:

- Lower Crocodile River Sub-catchment;
- Mokolo (or Mogol) River Catchment;
- Lephalala River Catchment;
- Mogalakwena River Catchment; and
- A small portion of the Olifants River Catchment.

Most of the rivers drain in a north-westerly direction to the Limpopo River. Major dams in the WDM area include the Mokolo Dam, the Doorndraai Dam, and the Glen Alpine Dam.

1.1.4 Socio-economic Profile

The economic profile of WDM is characterized by mining, agriculture and tourism. The abundant natural resources, including minerals, fertile soil, and biodiversity, have shown there is still potential for growth in these three sectors, thereby highlighting these areas as key to future economic development in the District (WDM, 2015).

WDM contributes almost 30 % of the Limpopo Province agricultural activity, with agriculture contributing over 4 % of the District GGP and employing approximately 21 % of the labour force of the district. The major crops grown in the district include cotton, sunflowers, tobacco, and soya beans. There is also a range of subsistence farming that takes place in the district. The map below shows the percentage of households involved in agricultural activities per local municipality.

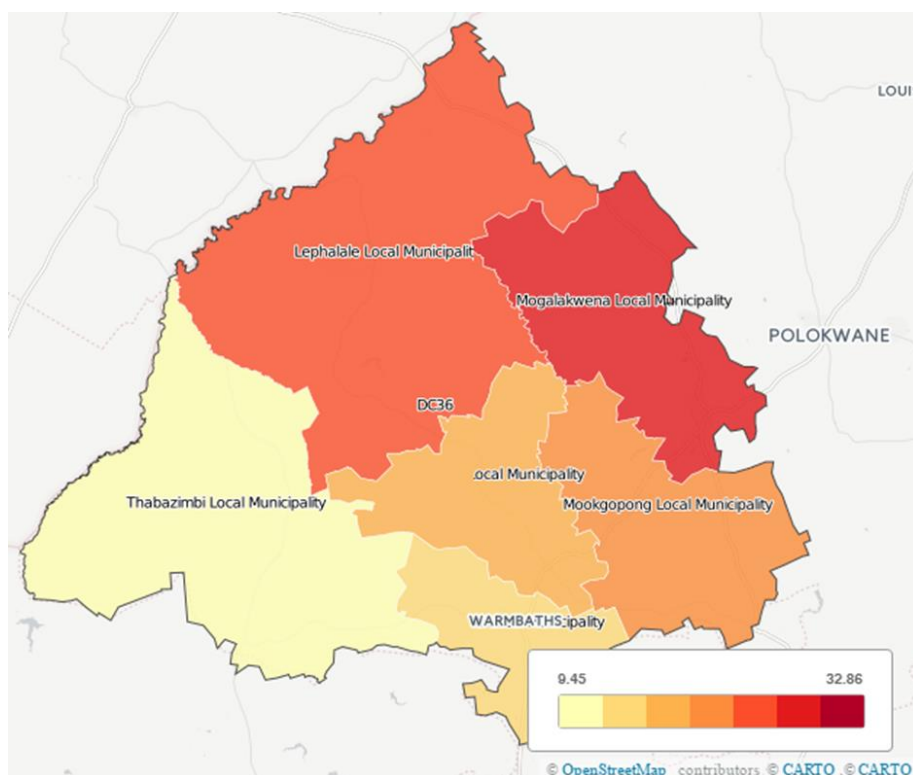


Figure 7: Waterberg District Municipality Percentage of Households Involved in Agricultural Activities

The WDM is classified as a semi-arid area with poor water resources. Lead by water constraints, areas previously under dry land and irrigation are being consolidated and converted for extensive livestock

production. Similarly, other former cultivated land and livestock grazing is being converted to game ranching and eco-tourism.

Households involved in agricultural make up 18.69 %, the lowest in the province, with the least contribution to livelihood. The population that relies on pit latrines (45.59 %) is significantly lower in this district compared to the other four districts, along with the average number of households (45.11 %) using their own refuse dumping systems. A significant percentage (34.49 %) also uses alternative energy for cooking.

The figure below illustrates the number of informal settlements recorded per local municipality within the WDM, according to the 2019/2020 WDM Integrated Development Plan (IDP). These informal settlements are largely found adjacent to nodes, such as mining activities.

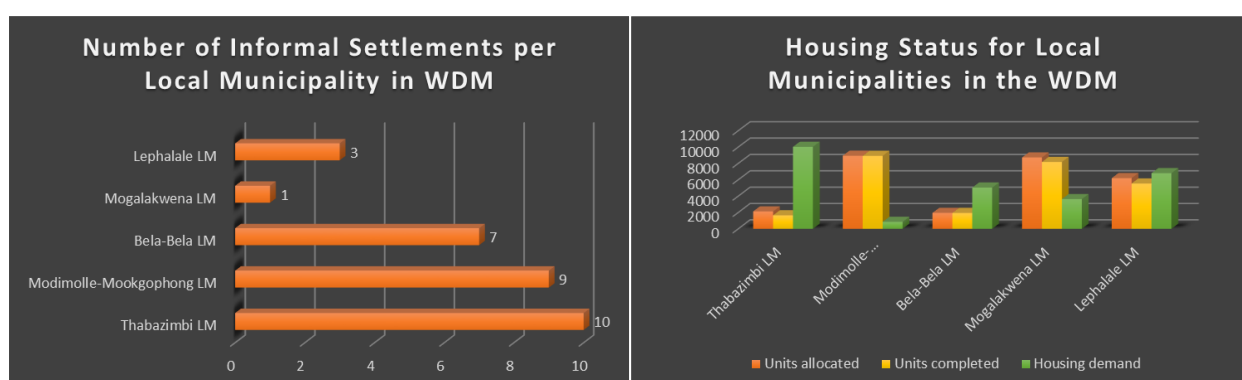


Figure 8: Housing Status for the Local Municipalities of the Waterberg District Municipality

The settlement pattern in the district is fairly dispersed, with a high concentration of towns and villages in the east and the south. Mining, topographical features, tribal land and major transport corridors contribute to the settlement pattern. Densification is taking place in some centres, including Lephalale, Mokopane, Thabazimbi and Bela-Bela.

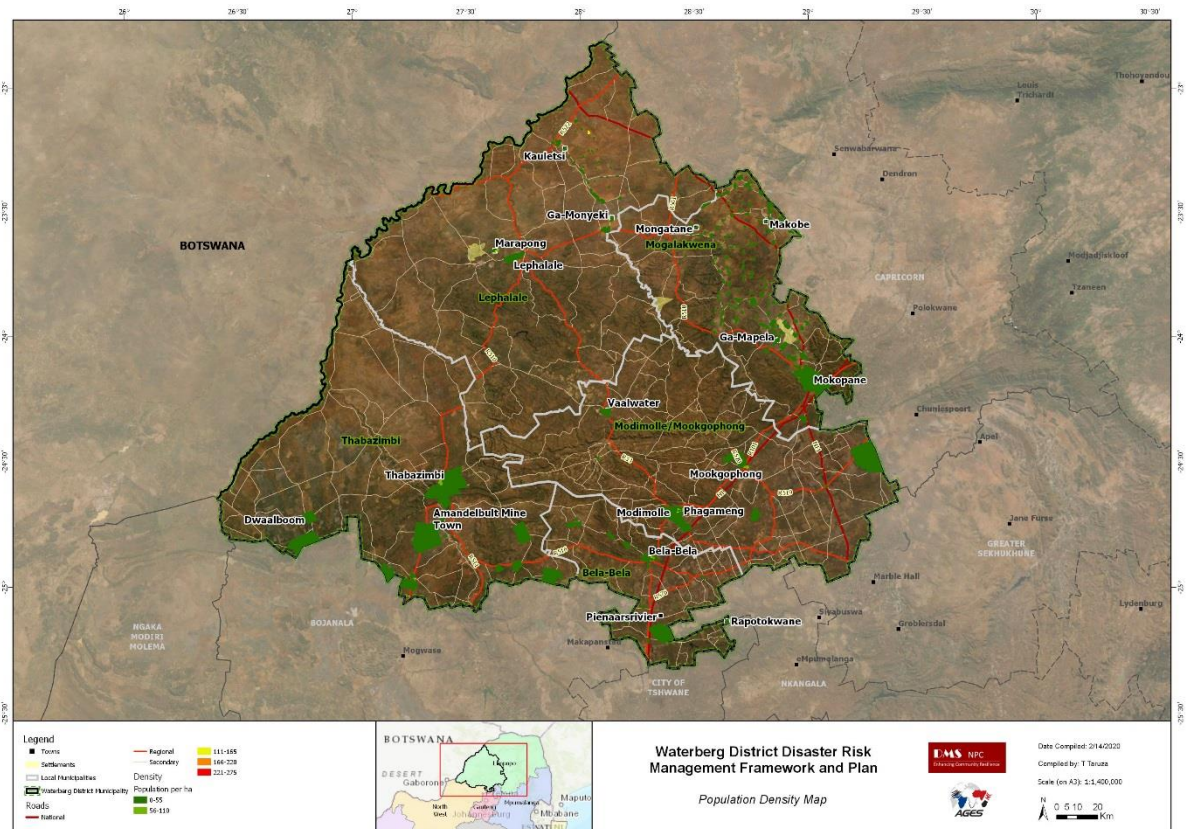


Figure 9: Population Density Map for the Waterberg District Municipality

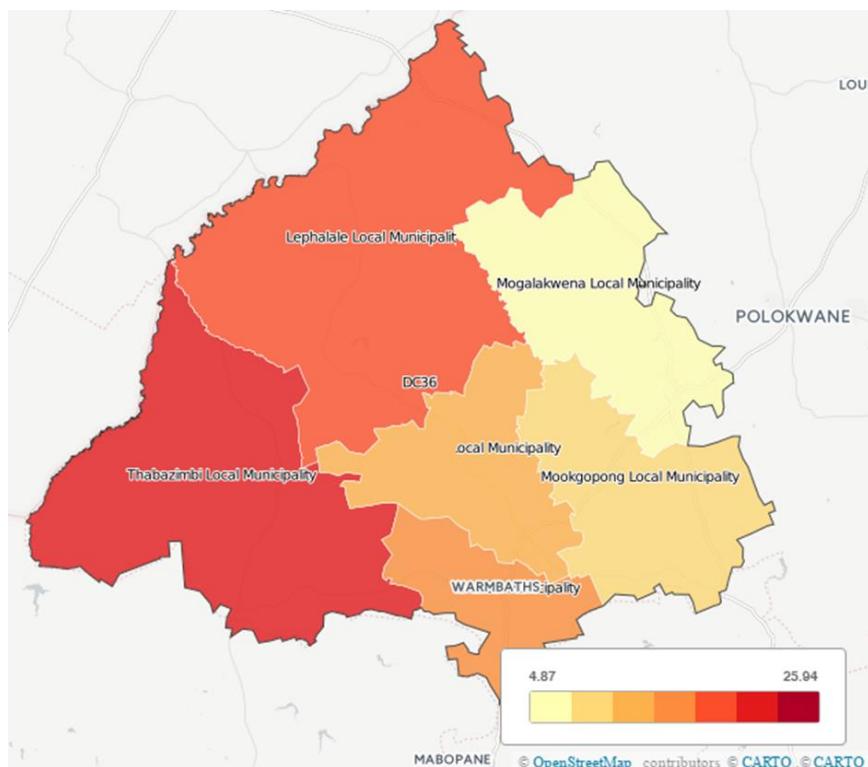


Figure 10: Waterberg District Municipality Percentage of Households in Informal Dwellings

The table below lists additional key indicators for the WDM measured in 2011 and 2016 respectively.

Table 1: WDM Socio-economic Indicators measured in 2011 and 2016

Indicator	2011	2016
Households	179 866	211 471
Female-headed households	42.7%	40.9%
Average household size	3.4	3.5
No schooling	12.4%	7.1%
Matric	23.2%	27.6%
Higher Education	9%	9%
Flush toilet connected to sewerage	43.6%	43.8%
Weekly refuse removal	44.2%	44.4%
Piped water inside dwelling	30.7%	24.4%
Electricity for lighting	86.7%	86.1%

1.2 Disaster Incident History

The disaster risk profile for the WDM was revised and updated in 2003, 2007, 2008 and 2014. The list of priority hazards identified during each of these revisions are listed in the table below.

2003	2007	2008	2014
Influx of Refugees	Fire	Air Pollution	Fire
Epidemics	Flooding	Veld fires	Road Accidents
Extreme weather incidents	Road Accidents	HIV/AIDS	HIV/AIDS
Hazardous material incidents	Hazardous material incidents	Water pollution	Flooding
Fire	Pollution	Drought	Crime
		Flooding	Pollution (air, water)
			Social (drugs, alcohol)
			Drought

The following major incidents for the WDM were reported for the period 2014 - 2019:

- **Fires:** In 2019, Working on Fire reported that 63 of 161 wildfires in Limpopo occurred during September, of which the majority of the wildfire incidents took place in the WDM. In addition, due to climate change, the WDM anticipates more wildfires in the area, particularly in mountainous areas;
- **Access to water:** Following President Ramaphosa's visit to the WDM in 2019, he reported on the concerns raised by those he engaged, particularly with regards to the serious issue relating to the access of water to sustain lives, support agriculture, drive business and support the world's fourth largest coal-fired power station. Factors exacerbating the situation include drought, poor water infrastructure and delays in obtaining water use licenses;
- **Flooding:** In 2014 all six local municipalities (at the time), namely Modimolle, Mookgophong, Mogalakwena, Lephalale, Thabazimbi and Bela-Bela were all declared flood disaster areas through a WDM Council Resolution and the Limpopo Provincial Gazette;
- **Drought:** During 2018/2019 financial year, drought disaster was declared through the Limpopo Provincial Gazette, whereby emerging farmers within Modimolle-Mookgophong Local Municipality benefited from relief provided by the Department of Agriculture and Rural Development, and Mogalakwena Local Municipality benefited from the National Drought Grant fund for drinking water capital projects for the benefit of both humans and livestock.

1.3 Critical Infrastructure

WDM is characterised by a lack of access to healthcare services with the majority of rural villages located far from healthcare facilities. A high percentage of rural residents do not have access to a hospital within 20 kilometres or a clinic within 5 kilometres. Some of the other health challenges include teenage pregnancies, HIV/AIDS and TB, and associated ineffective awareness campaigns, ineffective health inspectors, and a lack of funds. Furthermore, the impacts of increased rainfall intensities and flash floods as result of climate change have been identified as having an impact on human health through damage to infrastructure, especially for those living in inadequate housing and in environmentally risky locations. Damage to sewer pipes and wastewater treatment plants will also impact on the provision of safe water (WDM, 2015).

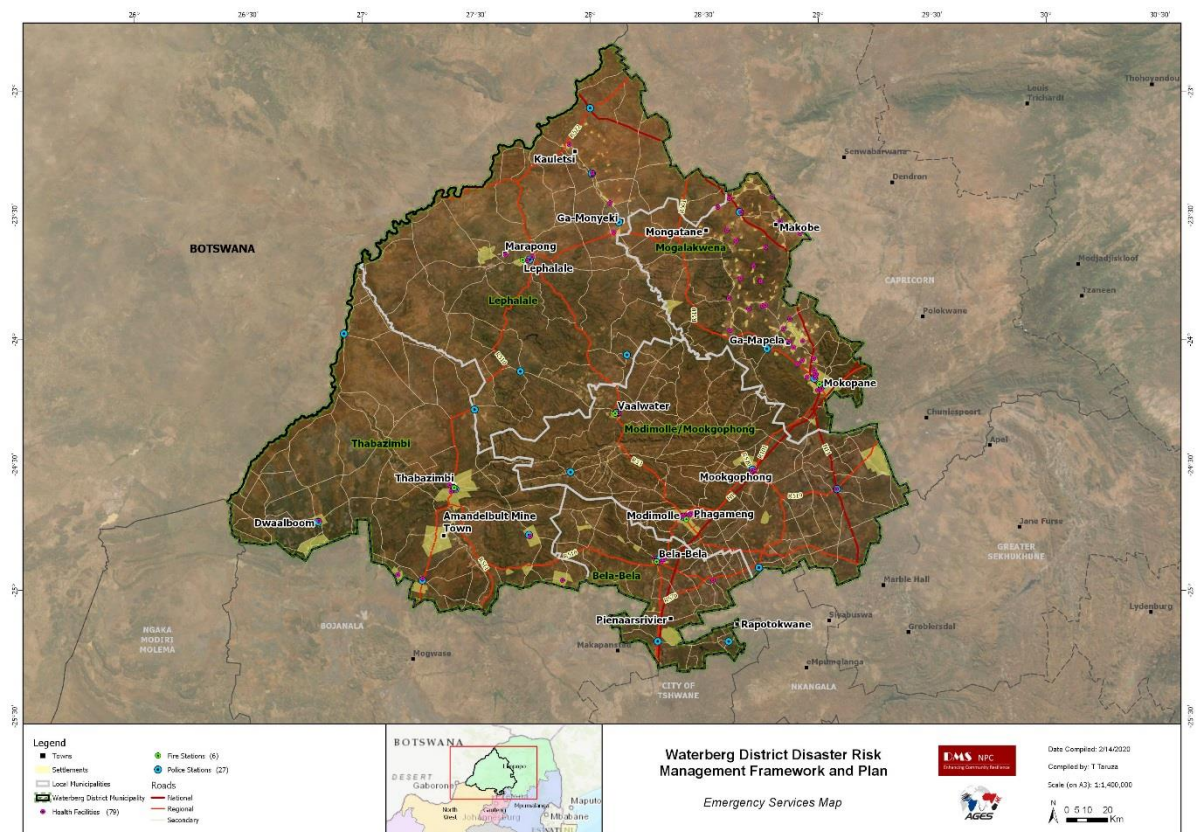


Figure 11: Distribution of Emergency Services for the Waterberg District Municipality

Although the majority of the population have access to electricity, households still rely on other sources of energy to supplement electricity provision with 34.49 % of households using alternatives to electricity for cooking, and 11.46 % using alternative energy sources for heating. With regards to waste disposal, 44.4 % of households have access to household refuse removed by a local authority or private company (WDM, 2015; Statistics South Africa, 2016).

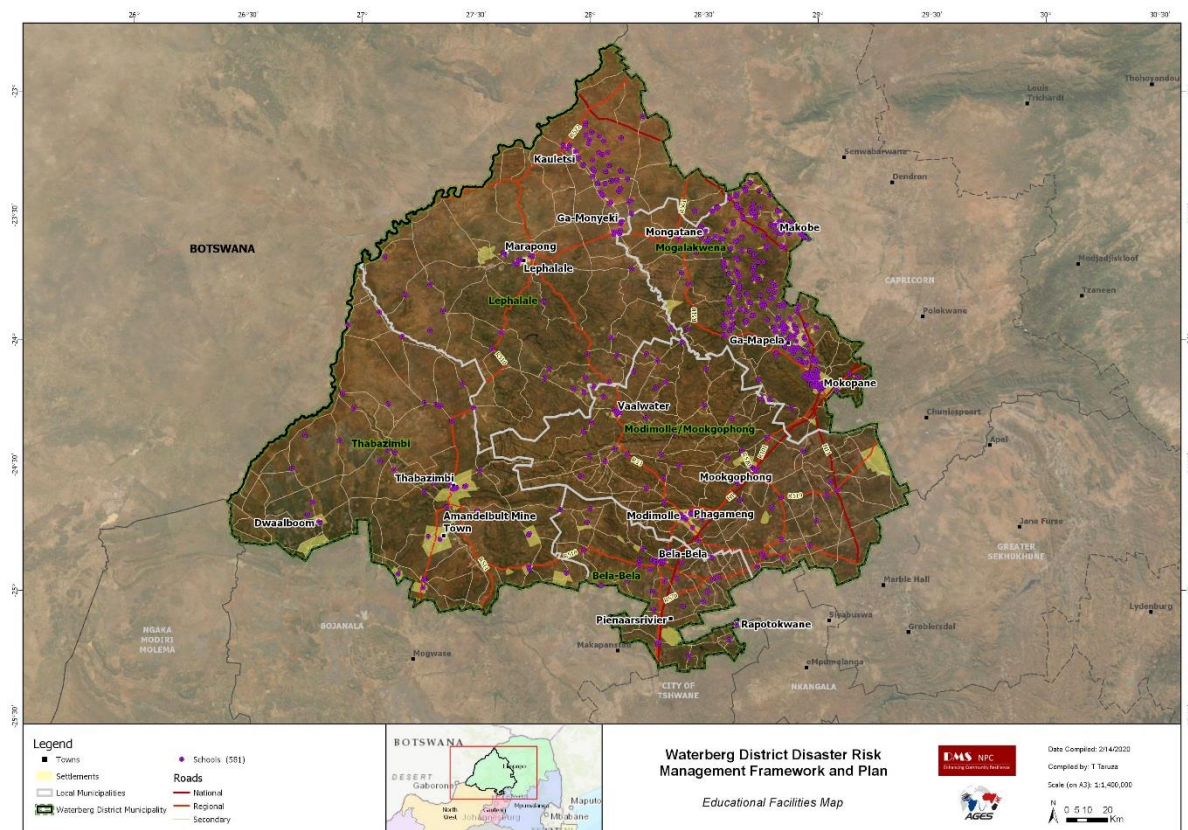


Figure 12: Map of Educational Facilities for the Waterberg District Municipality

The WDM is experiencing increased water scarcity with water availability in many areas decreasing significantly (WDM, 2015). According to the 2011 Census, 72.54 % of the population sourced water from service providers, and 1.35 % access water from boreholes. A large percentage of the population, 27.46 %, do not have access to piped water, and only 45.59 % of the population have access to flush toilets. A large percentage of the population relies on pit latrines for sanitation (47.15 %) (Statistics South Africa, 2012).

There are a number of challenges within the district regarding water supply and quality. These include inadequate bulk water supply, ageing infrastructure, poor quality drinking water, illegal connections and theft, and inadequate funds. Furthermore, future mining and industrial growth is predicted to impact negatively on underground water especially in Lephale and Mogalakwena (WDM, 2015).

Road links are fairly well established in the WDM, these links include the N1, N1 – R33, R510 and R516. With the exception of the N1, which is a toll road, the R-routes are not well maintained. Many of the roads have deteriorated, to the point of being a danger to travel on. A rail link does exist between Lephale and Thabazimbi, however it does need to be upgraded to increase its capacity. Major towns

such as Thabazimbi, Lephalale, Bela-Bela, Modimolle and Mokopane have airfields, which accommodate light aircraft. At present no commercial flights exist.

The development in Lephalale will place a higher demand on the water resources of the area. The Mokolo and lower Crocodile Water Augmentation Project were commissioned to help combat the lack of water.

There are several challenges involved in the management of waste in the WDM. The Green Drop Report highlights the poor state of wastewater treatment plants in the WDM.

1.4 Development of the District Disaster Risk Management Plan

1.4.1 Approach

To ensure uniformity in addressing the above, the Disaster Management Guidelines for municipalities as prepared by the NDMC must be incorporated into the DMPs, where applicable.

The DMA, the National Disaster Management Framework (NDMF), the PDRMPF, the DMP Guidelines from the NDMC must be used as guidelines by the WDM's departments and organs of state for purposes of identifying and assessing disaster risks and drafting their contingency plans and DRMPs.

As is evident from Chapter 5 of the DMA, NDMF and this document, DRM is a joint collaborative function, and a cross-cutting function between the different departments within the WDM. In essence, this implies that an integrated DRMP for the WDM should only be complete once the detailed DRMPs of each WDM department and the Local Municipal DRMPs have been drafted.

DRM planning must follow an approach of consultative and collaborative planning, involving all governmental and non-governmental stakeholders relevant to a specific hazard or function.

In accordance with the PDRMPF, hazard and vulnerability assessment findings must be consolidated according to uniform classifications. This facilitates integrated multi-sectoral planning across departments and with other partners. It also supports DRM co-operation between administrative areas (for example, two or more local municipalities) affected by the same disaster risk.

Integrated planning is crucial for DRM and other emergency planning in an organisation. Since DRM planning must be executed by all Municipal Organs of State and to facilitate time, cost and other resource saving, the WDM must thus ensure that its DRM planning, in terms of the Municipal Finance Management Act, its business continuity planning and its disaster risk planning are aligned to the IDP through the planning process.

1.4.2 Guidelines to Prepare a Disaster Risk Management Plan

This introduction provides an overview of the guidelines utilised to prepare the DRMP. It also provides an overview of the DRM Planning process and how the DRMP process integrates with the IDP process.

The first step in the process of preparing a DRMP for a Municipality is to identify the disaster risks to which the communities in the municipal area are exposed to (described in Sections 39 (2) and 53 (2) (a); (b) and (e) of the DMA as amended).

This process normally identifies many risks that must be addressed by the Municipality. By ranking the risks in an educated, scientific order of priority, Municipalities can develop Disaster Risk Reduction Plans (DRRPs) for those risks that are intolerably high, while the tolerable risks can be addressed with Disaster Preparedness Plans (DPPs).

The following steps are important:

1. Information Collection;
2. Hazard Assessment;
3. Disaster Risk Profiling;
4. Relative Disaster Risk Prioritisation; and
5. Upload to IDP and Spatial Development Framework (SDF).

Subsequent to the disaster risks being identified, the DRMP must focus on preparing DRRPs that will reduce the intolerably high disaster risks to which vulnerable communities are exposed to acceptable levels (described in Sections 39 (2) and 53 (2) (a); (b); (c); (e); (f); (h) and (i) of the DMA).

In preparing the DRRPs, the Municipality must develop cost-effective and innovative disaster risk reduction solutions. These plans should be linked to the IDP as projects and programmes.

Once the DRRPs are in place, the Disaster Preparedness Plans (DPPs) (described in Sections 39 (2) and 53 (2) (b); (e); (f); (h) (j) and (k) of the DMA) should be developed for the risks facing the various communities in the Municipal area.

The guidelines listed below have been developed by the NDMC to guide district and metropolitan municipalities and provinces in South Africa in the implementation of the DMA and the NDMF.

- South African DRM Handbook Series.
 - Consists of a series of guidelines aimed at assisting municipalities and provinces to implement the DMA and the NDMF and to mainstream disaster risk reduction into developmental plans and frameworks.

- Development and Structure of a Disaster Management Plan Guideline.
 - This guideline, developed in terms of Section 19(a) of the DMA and section 3.6 of the NDMF, provides a uniform structure and checklist to prepare a DRMP.

The DRM Handbook Series has been divided into ten critical outcomes for the development and implementation of DRMP.

The starting point of the guideline is the central requirement for DRM planning and implementation (section 3.1 of the NDMF). The NDMF introduced the concept of phasing in the planning and implementation of DRM in three progressive levels, ranging from a Level 1 DRM Plan to a Level 3 DRM Plan. The first two levels deal with establishing mechanisms to ensure that the legislative and policy requirements are implemented whereas the third level focuses on maintaining relevance and applying ongoing DRM best practice.

Each level has a series of critical outcomes that need to be achieved before the WDM can progress to the next level. The critical outcomes for each level of plan are listed below.

Table 2: Levels of Plans and Critical Outcomes

LEVEL OF PLAN	CRITICAL OUTCOMES	
I	1	Establish foundation institutional arrangements for disaster risk management
	2	Develop the capability to generate a Level Two Disaster Risk Management Plan
	3	Develop and implement contingency plans for known priority risks
II	1	Establish processes for comprehensive risk assessments
	2	Identify and establish consultative mechanisms for specific priority risk reduction projects
	3	Develop a supportive information management system
	4	Develop emergency communication capabilities
III	1	Establish specific institutional arrangements for coordinating and aligning plans
	2	Establish mechanisms to ensure informed and ongoing risk assessments
	3	Institute mechanisms to ensure ongoing relevancy of disaster risk management policy frameworks and plans

A DRMP must be structured on the one hand to show alignment with the concepts articulated by the NDMF, whilst on the other hand guarantee legislative compliance with Sections 25, 38, 39, 52 and 53 of the DMA.

Although a Level 1 DRMP applies to national organs of state, provinces and provincial organs of state, municipalities and municipal entities that have not previously developed a coherent DRMP, the 2019/2020 revision of the WDM DRMP will focus on the critical outcomes required for a Level 1 DRMP based on the outcomes of the assessment of the status of DRM in the district municipality undertaken. Here, compliance and implementation gaps were identified for DRM in the district. These gaps will be used to determine and detail strategic DRM priorities within this DRMP to ensure the district at least attains a Level 1 DRMP status.

1.5 Stakeholder Consultation

The diverse and complex nature of the DRM function involves wide consultation and co-operation – not only within the spheres of government, but also nationally, regionally and internationally – requiring good communication skills and diplomacy.

The WDM DMC is responsible for consultatively facilitating the development of both the DRMPF and DRMP in its area of jurisdiction, and subsequently amending it in consultation with key stakeholders.

As such, and according to the requirements of the terms of reference assigned to the 2019/2020 review of the DRMP, stakeholder consultation was ensured and facilitated during workshops arranged for –

- a Current Reality Assessment, where the status of DRM for the WDM was assessed using the KPIs of the NDMF as a means of measuring the compliance and implementation status of the Key Performance Areas (KPA) and Performance Enablers (PE);
- the review of the district disaster risk profile during local municipal disaster risk assessment workshops in each of the five local municipalities;
- the verification of the findings of the review of the district disaster risk profile and recommendations for priority disaster risk reduction and disaster response and recovery;
- the review of the district DRM funding arrangements model; and
- the participatory review of proposed amendments and inclusions to the WDM DRMP.

All agreed upon outcomes, comments and feedback elicited from the consultative sessions listed above were consolidated and used to update the district DRMP.

2 LEGISLATIVE MANDATE

2.1 The Constitution of South Africa

Globally there is consensus that for the effective implementation of integrated and coordinated disaster risk reduction (which includes emergency preparedness and disaster response and recovery activities), the administration of the DRM function must be focused in the local government sphere.

As such, the ultimate responsibility for DRM in South Africa rests with government. In terms of Section 41(1)(b) of the Constitution of the Republic of South Africa, 1996 (Act No.108 of 1996), all spheres of government are required to “secure the well-being of the people of the Republic”. According to Part A, Schedule 4, disaster management is a functional area of concurrent national and provincial legislative competence.

2.2 Disaster Management Act (No. 57 of 2002) as Amended (DMA)

South Africa took an essential step towards strengthening its disaster reduction capabilities on 15 January 2003, with the promulgation of the DMA, which provides for -

- an integrated and coordinated DRM 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 DMCs;
- powers of National, Provincial and Municipal undertakings in implementing DRM;
- funding of post disaster, recovery and rehabilitation;
- DRM volunteers; and
- matters relating to these issues.

The DMA thus provides the legal context for concerted action related to disasters and disaster risks in South Africa. It complements and adds value to existing related legislation in many sectors. It also recognises the multi-disciplinary and multi-sectoral character of efforts to improve management of disaster risks, as well as potential and actual disaster situations. In addition, it underlines the need for wide-ranging partnerships between government, the private sector, civil society, and particularly those communities most at-risk.

However, the implementation of the DMA has posed significant challenges, particularly at the level of local municipalities. As a result, the Disaster Management Amendment Act No. 16 of 2015 was

promulgated, with the purpose of tackling these challenges by maximising the effect of disaster management legislation to communities, especially those most at risk. The amendments include -

- clarification of policy focus on rehabilitation and functioning of DMCs;
- alignment of the functions of the National Disaster Management Advisory Forum (DMAF) to accommodate the South African National Platform for Disaster Risk Reduction;
- providing for the South African National Defence Force (SANDF) and South African Police Service (SAPS) to assist disaster management structures;
- providing for an extended reporting system by organs of state on information regarding events leading to declarations of disasters, expenditure on response and recovery, actions pertaining to risk reduction and particular problems experienced in dealing with disasters;
- strengthening of reporting on implementation of policy and legislation relating to disaster risk reduction and management of allocated funding to municipal and provincial intergovernmental forums established in terms of the Intergovernmental Relations Act of 2005;
- expanding the contents of DRMPs to include conducting disaster risk assessments for functional areas, mapping of risk, areas and communities vulnerable to disasters;
- to provide measures to reduce the risk of disaster through adaptation to climate change and developing of early warning mechanisms;
- providing for regulations on disaster management, education and training matters; and
- substitution and insertion of certain definitions.

The WDM is legally obliged to prepare a DRMP for its area according to the circumstances prevailing in the area, to co-ordinate and align the implementation of its plan with those of other organs of state and institutional role players and to regularly review and update its plan. The municipality must also consult the Limpopo PDMC on the preparation or amendment of its plan. According to Section 53 of the DMA, each municipality must –

- conduct a disaster risk assessment for its municipal area;
- identify and map risks, areas, ecosystems, communities and households that are exposed or vulnerable to physical and human-induced threats;
- prepare a disaster management plan setting out –
 - the way in which the concept and principles of disaster management are to be applied in its municipal area, including expected climate change impacts and risks for the municipality;
 - its role and responsibilities in terms of the national, provincial or municipal disaster management framework;

- its role and responsibilities regarding emergency response and post-disaster recovery and rehabilitation;
- its capacity to fulfil its role and responsibilities;
- particulars of its disaster management strategies;
- contingency strategies and emergency procedures in the event of a disaster, including measures to finance these strategies; and
- (vii) specific measures taken to address the needs of women, children, the elderly and persons with disabilities during the disaster management process;
- co-ordinate and align the implementation of its plan with those of other organs of state and institutional role-players;
- provide measures and indicate how it will invest in disaster risk reduction and climate change adaptation, including ecosystem and community-based adaptation approaches;
- develop early warning mechanisms and procedures for risks identified in the municipal area;
- regularly review and update its plan; and
- through appropriate mechanisms, processes and procedures established in terms of Chapter 4 of the Local Government: Municipal Systems Act, 2000 (Act No. 32 of 2000), consult the local community on the preparation or amendment of its plan.

2.3 National Disaster Management Framework of 2005 (NDMF)

Recognising the need for uniformity of approach, the DMA calls for the development of a NDMF to provide a coherent, transparent and inclusive policy on disaster management appropriate for South Africa.

The NDMF was published in the Government Gazette, No 27534 of 2005. The NDMF is the legal instrument specified by the DMA to address the needs for consistency across multiple interest groups, by providing ‘a coherent, transparent and inclusive policy on DRM appropriate for the Republic as a whole’.

The NDMF comprises four KPAs and three PEs required to achieve the objectives set out in the KPAs. The KPAs and PEs are informed by specified objectives and, as required by the DMA, key performance indicators (KPIs) to guide and monitor progress. In addition, each KPA and PE concludes with a list of guidelines that will be disseminated by the NDMC to support the implementation of the framework in all three spheres of government.

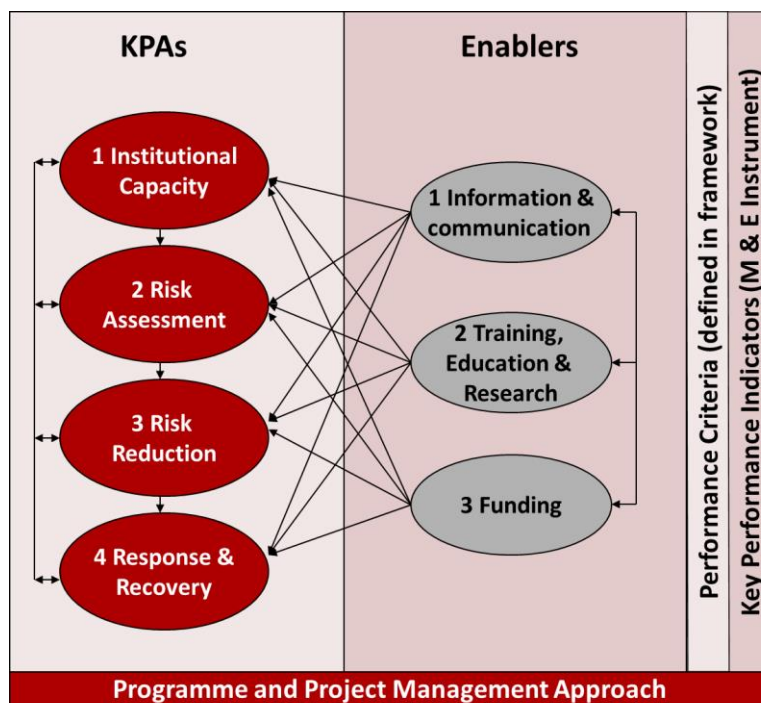


Figure 13: Structure of the NDMF

2.4 Waterberg Disaster Management Framework

In pursuance of the national objective, each district and metropolitan municipality is, in terms of section 42 of the DMA, mandated to establish and implement a policy framework for DRM aimed at ensuring an integrated and uniform approach to DRM in its jurisdiction.

The purpose of this policy framework is to provide those with statutory DRM responsibilities (in terms of the DMA, the NDMF, the Limpopo Province DRMPF and other applicable legislation) within the WDM with a written mandate which -

- is coherent, transparent and inclusive;
- provides the criteria for the systematic management of administrative decisions, stakeholder participation and operational skills; and
- capacities and achieves uniformity in the development, implementation, maintenance, monitoring and assessing of all policies, plans, strategies, programmes and projects which are aimed at achieving the vision and mission statement, goals, strategic objectives, and KPIs for DRM in the municipality.

This policy framework also serves to guide the development and implementation of uniform and integrated DRM policy and plans in the Bela-Bela, Lephalale, Mogalakwena, Modimolle-Mookgophong and Thabazimbi local municipalities in the WDM.

2.5 Linkage with the Integrated Development Plan (IDP)

In accordance with Section 53(2) of the DMA, the DRMP for a municipality must form an integral part of the WDM IDP.

Both the Municipal Systems Act and the DMA requires the inclusion of this plan in the IDP of the WDM. It is however impractical to include the complete DRMP with all its annexures and disaster risk assessment within the IDP. Therefore, the complete plan can be considered as an annexure to the IDP, while the core document without annexures will be submitted for inclusion within the IDP document.

The DMA is the legislative backbone, the DRMPF (National, Provincial and District Frameworks) is the approach and vision, the DRMP and Chapter is how to get there (strategies/projects/objectives).

In order to ensure continuous linkages with the IDP, all departments and role-players submitting input to the content of the current and future IDP of the Municipality are required to ensure the inclusion and integration of DRM into their strategies, operational planning and project implementation.

This will ensure the integration of DRM into the IDP and will ensure that all plans and projects are focused on contributing to disaster risk reduction and disaster preparedness – thus reducing the impacts of disasters on lives, property, community activities, the economy and the environment.

2.6 WDM Approach to Disaster Risk Management

With the shifting of paradigms from reactive emergency management to disaster risk reduction, there is more emphasis on proactive pre-disaster interventions, which are usually categorised as prevention, mitigation, and preparedness. While natural hazards may not be prevented, human-induced hazards such as those associated with industries, technological failures, pollution and civil strife can be prevented.

The diagram provides a clear view of two interlinking cycles namely the developmental planning and the operational planning cycles. The three common components are: “understanding risk”; “risk reduction planning” and “early warning system”.

Disaster Risk Management Approach

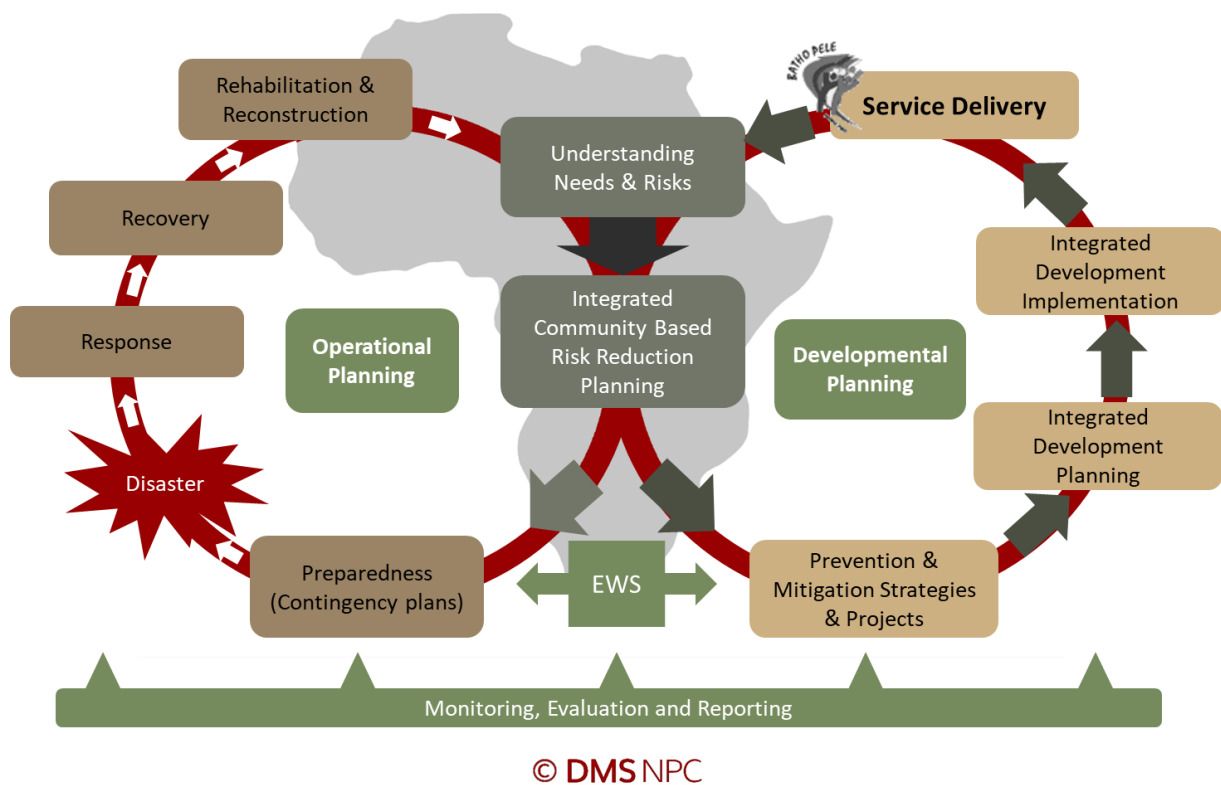


Figure 14: Disaster Risk Management Approach in the WDM

Prevention covers measures to provide permanent protection from disasters or reduce the intensity/frequency of a hazardous event so that it does not become a disaster. These include safety standards in industries, poverty alleviation and assets redistribution schemes, and provision of basic needs and services such as preventive health care and education.

Mitigation reduces and limits the destructive and disruptive effects of hazards on the elements at risk. Measures range from the physical such as engineering works like bridges, protective dikes, embankments, and safe building design, to the non-structural interventions such as community risk assessment, community risk reduction planning, public awareness, food security programs, group savings, cooperatives, crop insurance, strengthening community DRM organisations and advocacy on disasters and development issues, legislation and land use zoning. Mitigation and prevention interventions are directly linked to development planning. **Disaster mitigation is intrinsic to sustainable development.**

Preparedness involves measures taken in anticipation of a disaster to ensure that appropriate and effective actions are taken during the emergency such as setting up the systems for early warning,

coordinative and institutional arrangements, evacuation and emergency operations management, public awareness, disaster and evacuation drills, and stockpiling. Emergency **responses** are measures undertaken to ensure survival and prevent further deterioration of the situation. These include search and rescue, conduct of damage and capacity assessment, food and non-food relief assistance, medical assistance, evacuation centre management, and networking. **Recovery** covers immediate repair and restoration of critical facilities and utilities, rehabilitation and reconstruction and can be undertaken within the framework of mitigation and vulnerability reduction, and not just bringing back the situation to pre-disaster levels.

Early warning represents a cornerstone of disaster reduction. Effective early warning depends upon a multi-sectoral and interdisciplinary collaboration and should contribute towards developing capacities that are relevant, and responsive to the needs of local communities.

Monitoring, evaluation and reporting is a continuous process that is aimed at producing factual management information to all parties concerned and to measure real performance. All the components of the programme need to be included in the simple yet integrated monitoring, evaluation and reporting system.

3 INTEGRATED INSTITUTIONAL CAPACITY

This chapter provides particulars of the capacity established and required within the WDM to enable the effective development and implementation of DRM policy and legislation.

3.1 WDM Disaster Management Organisation

In terms of a management structure for DRM, the principle of functioning within the established structure of the WDM as far as possible will be adhered to.

Until such time as the District Council resolves to place the DRM function where the necessary delegated authority, powers and functionality achieve the objectives of DRM legislation, and enable successful implementation of the Municipal DRMPF and DRMP, the Social Development & Community Services Department is assigned with the DRM function, responsible for directing and facilitating the DRM process.

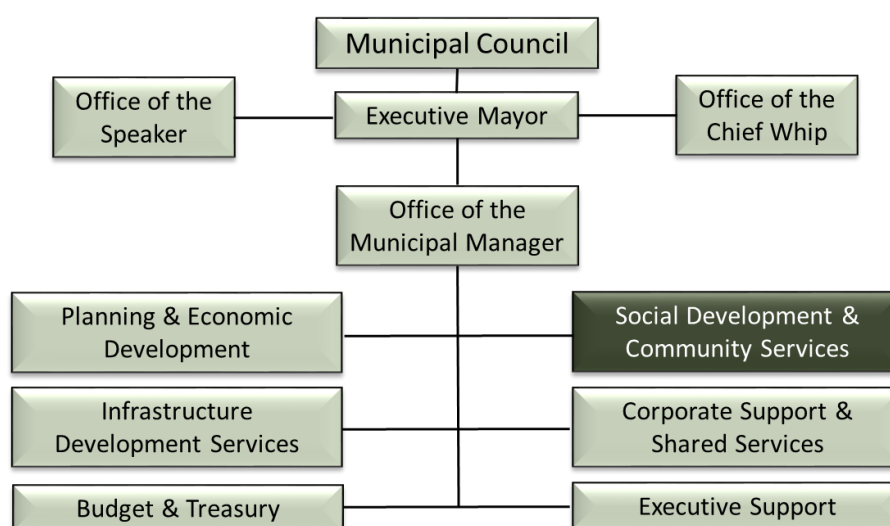


Figure 15: Diagram illustrating the assignment of the DRM function to the Social Development & Community Services Department

The proposed organisation, according to the WDM DRMPF, for the effective implementation of DRM in the WDM is illustrated in the figure below. The structure is aligned to the KPAs and PEs of the NDMF, making provision for dedicated officials responsible for the effective execution, monitoring and compliance of each of the KPAs and PEs. Arrangements for the staffing of the WDM DMC, according to the organogram illustrated below, will be dependent on the resolution undertaken by the District Council to develop a phased implementation plan to allow for the necessary staffing requirements of the WDM DMC to be achieved (according to the WDM DRMPF).

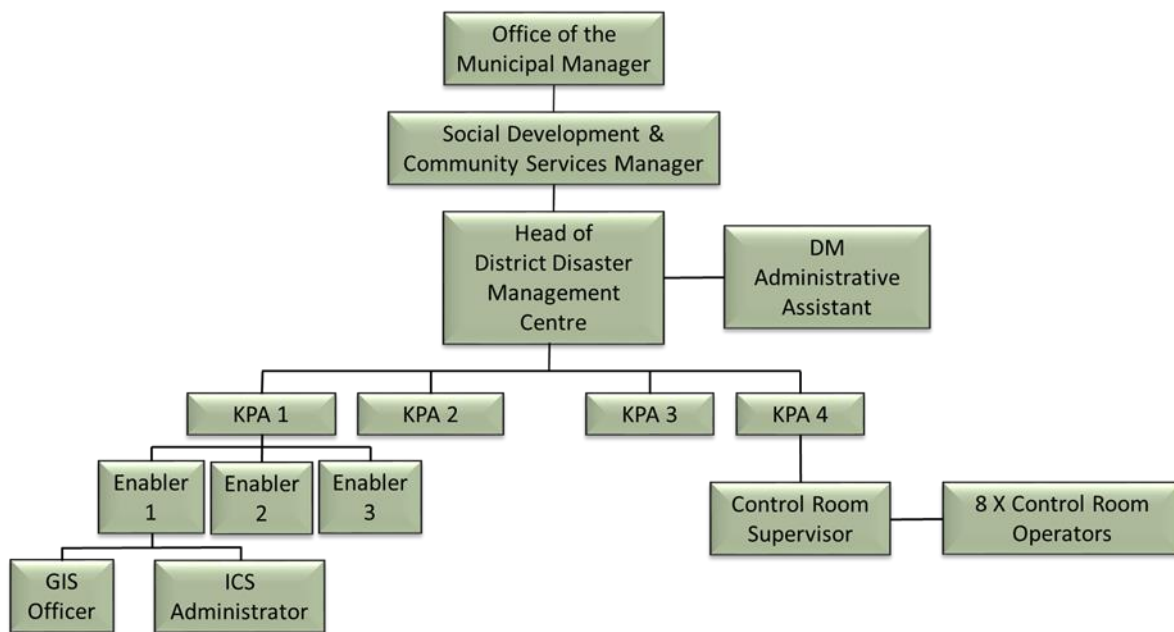


Figure 16: Organogram detailing the Staffing Requirements of the WDM DMC, as per the Requirements of the WDM DRMPF

Currently, however, the only two DRM positions filled in the WDM DMC are the Head: Disaster Management Centre and District DRM Officer. In addition, three Control Room Operators are located at the WDM DMC.

The WDM DMC cannot perform the entire spectrum of DRM activities on its own. DRM is everybody's business. The DRM activities to be performed within departments include participation in disaster risk reduction as well as preparedness and response.

It is advised where a department has primary responsibility for a specific hazard, the department's role in DRM for that specific hazard will be more than mere participation. It will have to lead disaster risk reduction as well as preparedness activities due to its expertise in the field.

Departments that are responsible for specific services in normal conditions will remain responsible for such services during disasters. The declaration of a state of disaster and the tighter coordination instituted during disasters does not absolve any agency of its assigned responsibilities. Coordination will take place by the nodal point.

Legislation assigns responsibility for most disaster risks to specific departments or functions. There are disaster risks that require more than one stakeholder therefore, it is required that each stakeholder involved is aware of their roles and responsibilities.

ACTIONS REQUIRED

- District Council must resolve to adopt the staffing structure illustrated in Figure 16; and develop a phased implementation plan to allow for the necessary staffing requirements of the WDM DMC to be achieved.

3.2 Arrangements for the Development and Adoption of Integrated Disaster Risk Management Policy

The District Council is responsible for establishing and officially adopting the Municipal DRMPF that makes provision for an integrated, coordinated and uniform approach to DRM in the WDM.

In order to maintain consistency with section 4 of the DMA the District Council serves as the forum for DRM in the municipality and is responsible for:

- making decisions on issues relating to DRM in the municipality;
- ensuring the development and adoption of an integrated DRMPF for the district municipality and for any amendments to the policy framework;
- ensuring that there is uniformity in the application of the DRMPF amongst municipal departments and other municipal entities in the district municipality;
- ensuring that there is uniformity in the application of the DRMPF in the district municipality and the local municipalities in the district;
- ensuring the application of joint standards of practice; and
- making decisions on the declaration of a local state of disaster.

In addition, according to the WDM DRMPF, the Executive Mayor must establish a District Inter-departmental Committee on DRM (DICDRM) in the WDM, chaired by the Municipal Manager. The DICDRM will be accountable to Council and function in accordance with documented terms of reference approved and adopted by Council. The DICDRM is responsible for:

- advising and making recommendations to the municipal council on issues relating to DRM in the municipality;
- ensuring that there is uniformity in the application of the DRMPF amongst municipal departments and other municipal entities in the district municipality;
- ensuring that there is uniformity in the application of the DRMPF in the district municipality and the local municipalities in the district;

- reporting to the municipal council on the coordination of DRM in the district municipality, including the application of joint standards of practice; and
- making recommendations to the municipal council on the declaration of a local state of disaster.

ACTIONS REQUIRED

District Council must adopt DRM as a standing agenda item during council meetings.

The Executive Mayor must establish a DICDRM in the WDM, chaired by the Municipal Manager and attended by Municipal HODs.

3.3 Arrangements for Integrated Direction and Implementation of Disaster Risk Management Policy

The WDM has established a Municipal DMC, responsible for the integrated direction and implementation of DRM policy. The staff in the organisation should have properly equipped office accommodation, which must facilitate the day-to-day operational activities that staff performs. The DMA envisages that the DMC will provide the required office accommodation.

3.3.1 Envisaged Disaster Management Activities in the DMC

The DMC will provide the facility from where emergency and DRM staff from a variety of role-players can conduct the following activities:

- **Disaster risk reduction** activities, including:
 - (i) Information collection (information on hazards, vulnerabilities and capacities);
 - (ii) hazard assessment, considering the frequency, magnitude, predictability and probability of the hazards identified;
 - (iii) disaster risk profiling assessment, identifying communities or societies vulnerable to identified hazards, considering existing levels of capacity;
 - (iv) disaster risk prioritisation to ensure that serious disaster risks be addressed as a matter of priority;
 - (v) integration of the disaster risk profile into the SDF; and
 - (vi) alignment to the IDP.

- **Programme and project management activities:** Once the disaster risk profiles have been integrated with the SDF, staff members will have to be involved in the identification, budgeting and execution of appropriate DRRPs, in conjunction with a variety of other role-players;
- **Monitoring and evaluation activities:** Staff members will be involved in the monitoring of projects and evaluating of the effectiveness of DRRPs;
- **Incident, event and disaster response activities:** It is envisaged that staff will be involved in the following incident, major incident and disaster response activities -
 - (i) **Response planning:** Staff members of various line functions in the DMC should plan their incident, major incident and disaster response activities;
 - (ii) **Operational incident management:** The WDM DMC will also function as the day-to-day operational incident management facility of the region. It is envisaged that the following role-players will be involved in the DMC -
 - (a) Fire and emergency rescue services;
 - (b) Provincial ambulance services; and
 - (c) Police services, such as, the municipal police and the SAPS.
 Here, the various line functions involved will go about their daily incident, major incident and event management activities as per normal.
- **Early warning:** Implementing and monitoring a variety of early warning systems that will give adequate warning of impending major incidents or disasters;
- **Tactical incident and disaster management:** When more than one line function is required to respond to an incident, it is envisaged that the DMC will have a facility that will allow these line functionaries to collaborate with one another, to ensure that incident and major incident response activities are well co-ordinated;
- **Organisational management:** It is envisaged that the DMC will have a conference facility that can be used during large event, major incident and disaster responses, from where the various organisations involved in the response can co-ordinate their activities;
- **Media and public relations facility:** The DMC should also have a facility where the media can be briefed on the current status of a disaster, what response activities have been launched to address the situation, and the like. Media and public relations facility to be fully equipped e.g. with furniture, PCs, monitors, flat screens, telecom conference facilities, etc;
- **Post disaster activities:** The DMC should allow staff to plan and co-ordinate the post disaster relief, reconstruction and rehabilitation activities, such as -

- (i) **Disaster impact assessment:** The impact of the disaster will have to be assessed. This will involve the collection and collation of detailed loss information from a wide variety of sources. A standardised disaster impact assessment form should be used;
 - (ii) **Programme and project management activities:** Once the impact of a disaster have been determined, staff members will have to be involved in the identification, budgeting and execution of appropriate disaster relief, reconstruction and rehabilitation projects, in conjunction with a variety of other role players; and
 - (iii) **Monitoring and evaluation activities:** Lastly, staff members will be involved in the monitoring of the projects and evaluating of the effectiveness of the projects.
- **General management activities:** The DMC should also allow the centre management to conduct their day-to-day management activities.

ACTIONS REQUIRED

- Develop job descriptions of all proposed staffing positions for the WDM DMC illustrated in Figure 16, taking into consideration activities detailed under Section 3.3.1.

3.3.2 DMC Layout and Resources

From the above description of the envisaged activities to be conducted from the DMC, it is clear that the layout of the DMC should address -

- disaster risk reduction activities:
 - (i) offices for staff;
 - (ii) small conference room(s);
 - (iii) ablution facilities;
 - (iv) kitchen;
 - (v) dining area (optional); and
 - (vi) sleeping quarters (optional).
- incident, event and disaster response activities:
 - (i) operational incident management (call taking and dispatch) area; and
 - (ii) tactical disaster management area: This area will comprise of:
 - organisational management;
 - line function management; and

- media and public relations area.
- disaster relief activities: Storage space for disaster relief equipment and materials should be catered for; and
- operational incident management area.

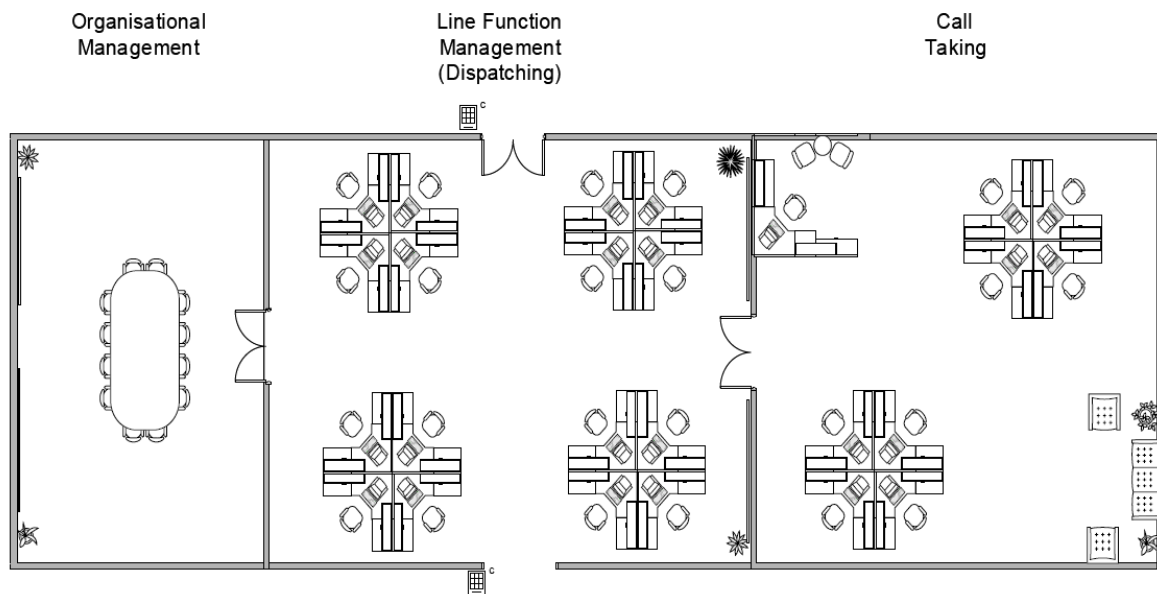


Figure 17: Conceptual Layout of Regional DMC (excluding office and conference space)

A variety of line functionaries can be accommodated in the Operational Incident Management Area of the DMC, such as, fire services, ambulance services, traffic policing, engineering services, etc., depending on the needs of the Municipality. From this area the line functionaries will conduct their day-to-day operational and incident management activities. The Operational Incident Management Area normally comprises of -

- **Call-taking:** In this area, Call-takers will answer emergency and service-related calls originating in the district on a 24/7 basis. The call-takers will typically record details of the emergency or problem and disseminate the information on to the line functionary that has to address the emergency or problem;
- **Line Function Management (Dispatching):** In this area, Dispatchers from a variety of line functionaries will mobilise the required resources to address an emergency or problem; and
- **Tactical Disaster Management Area:** In the event of a major incident or a disaster, the Tactical Disaster Management Area is occupied, from where a multi-disciplinary response to the major incident or disaster can be co-ordinated:

- **Organisational Management Area:** The line functionary managers that are involved in the response will occupy the Organisational Management Area. This environment is often termed the “war-room”. Inside the “war room”, a range of multi-media facilities, amongst which, a video wallboard, will be supplied. On this video wallboard information from a range of information sources can be supplied to the decision makers present in the “war room”.
- **Line Function Management (Dispatching):** The line functionary managers in the Organisational Management Area will communicate with their line functionary Dispatchers in the Operational Incident Management Area, from the required resources to address the major incident or a disaster will be deployed.
- Media Room

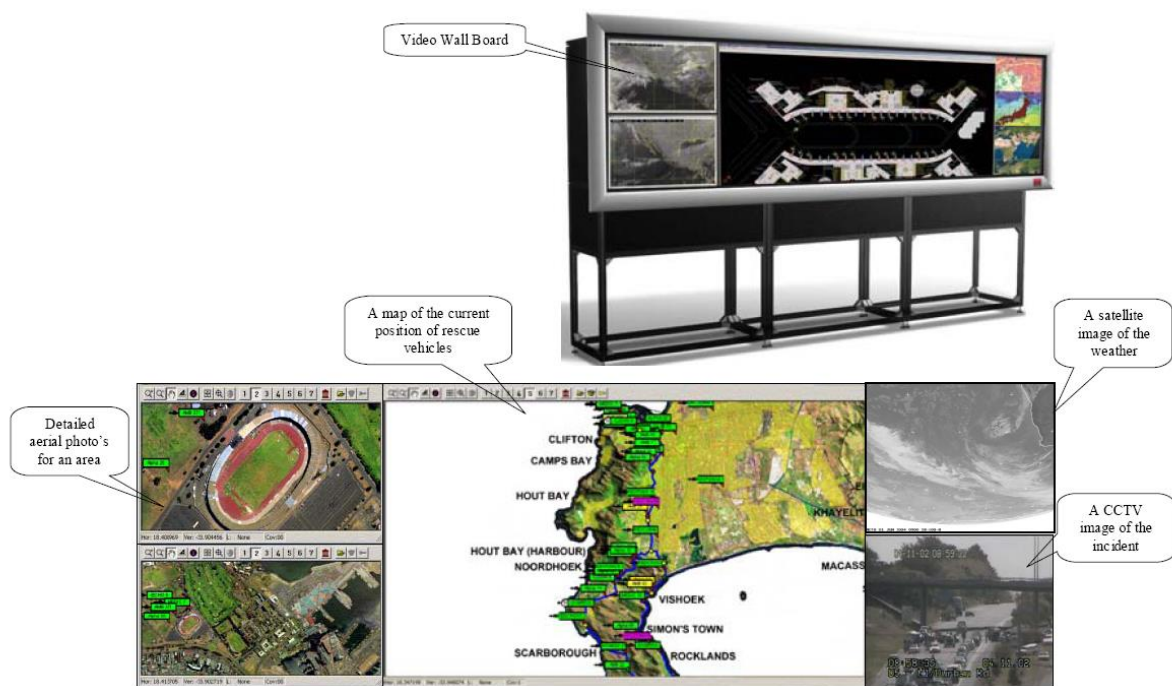


Figure 18: Example of a Video Wallboard

An area where officers can communicate with the media and press are required. This area should be out of the way of the other activities.

Communications equipment may be necessary.

ACTIONS REQUIRED

- Undertake a review of the WDM DMC layout and resources to determine compliance with requirements listed under Sections 3.3.2 and 3.3.3; and develop an implementation plan for any shortcomings or gaps identified.

3.3.3 Practical Requirements

Over and above the functional requirements mentioned above, DRM officers have a host of practical accommodation requirements, such as a facility that is -

- **Central:** The site should be placed at such a locality that it will be able to serve the entire region;
- **Accessible:** The site should be readily accessible -
 - (i) close to major routes;
 - (ii) close to an airport;
 - (iii) near a heliport; and
 - (iv) have adequate parking.
- **Safe:** The site should not be exposed to undue disaster risks and should be placed outside high-risk areas, such as –
 - (i) rivers or flood plains;
 - (ii) industrial areas;
 - (iii) high-rise buildings;
 - (iv) seismic active areas; and
 - (v) crime hot spots.
- **Business Continuity:**
 - (i) the site should be placed in a location where business continuity can be ensured including –
 - (a) physical security of the site, ensuring it is completely fenced in, with access control, surveillance CCTV cameras, etc; and
 - (b) electricity supply to the site by installing a diesel-powered backup generator on the site, with a diesel storage facility to ensure that the back-up generator can be operated for a period of at least week.

- (ii) it is absolutely essential to ensure that the communication infrastructure of the site is readily available, including -
 - (a) landlines to the site that are installed through two telephone exchanges, to ensure redundancy;
 - (b) cell phone communications that can be used as a backup; and
 - (c) satellite communications that are available as a further redundancy layer.
- (iii) sufficient potable water for a week stored on-site e.g. borehole and tanks;
- (iv) the site must accommodate its sanitation effluent for a week e.g. chemical toilets;
- (v) waste generated on the site should be stored on-site for a week;
- (vi) the Information Technology infrastructure in the facility should be highly available and a security and disaster recovery plan should be developed for the facility; and
- (vii) the facility should have sufficient food stored on site to ensure that meals can be prepared for the staff for a period of at least a week.

3.3.4 Equipment Required

The DMC also requires a host of equipment requirements for the facility to function effectively, such as –

- communications equipment that will ensure that role players can communicate with their organisations;
- communications equipment to allow the DMC to communicate with the Mobile Command Unit (MCU); and
- information equipment, such as, high-availability file servers, personal computers, printers; and
- screens, projectors and the like.

ACTIONS REQUIRED

- Undertake a review of the WDM DMC equipment to determine compliance with requirements listed under Sections 3.3.4; and develop an implementation plan for any shortcomings or gaps identified, where feasible and necessary.

3.3.5 Operational Aspects

The above facility, once established, should be properly operated and maintained. Operational and maintenance aspects include -

- **Ensure Business Continuity:** The business continuity measures to be implemented for the facility must be on standby at all times. This will, among others, require the diesel-powered standby generator to be started on a regular basis to ensure that the generator will start within minutes of a power disruption;
- **Appearance:** The appearance of the facility should be neat and tidy at all times. Consequently, the grass must be mowed regularly, the ablution facilities should be kept clean, the building should be painted on a five-yearly basis, etc.; and
- **Replacement:** The information and communications technology equipment in the facility will have to be replaced on a three-yearly cycle, to ensure that the equipment will be in proper working order at all times.

3.3.6 Daily Operations of the DMC

The WDM DMC must take occupation of the DMC and create an awareness and presence as required by the DMA and fulfil the roles and undertake the activities as described above.

The centre should be operated according to the guidelines below.

3.3.6.1 Routine Functions of the DMC

The WDM DMC should be fulfilling the following functions on a daily basis:

- **Information collection:** Information required for disaster risk reduction planning, such as, the seasonal climate forecasts, must be collected;
- **Hazard assessment:** Considering the frequency, magnitude, predictability and probability of the hazards identified;
- **Disaster risk profiling assessment:** Identifying communities or societies vulnerable to identified hazards, considering existing levels of capacity;
- **Risk prioritisation:** Ensure that serious disaster risks be addressed as a matter of priority;
- **Upload to Spatial Development Framework:** Once the mapping of the disaster risk profiles for communities have been completed, it is necessary to upload the disaster risk profiles to the SDF;
- Gathering of **daily statistics** from all other emergency services within the district in order to analyse the risks, and understand the requirements of the district:
 - (i) This will allow for improved planning, optimal resource utilisation and decreased response times;
 - (ii) It will also allow for the DRMP and DMC to adapt according to real information; and
 - (iii) It will also allow for improved preparation in the event of an incident escalating further.

- Ensuring **Early Warning Systems** are in place to receive messages, and then convey messages to vulnerable communities before the event;
- Building a **database of resources** to be utilised in an emergency or disaster scenario;
- Negotiating and entering into **Mutual Aid Agreements** to be assisted by and to assist neighbouring authorities; and
- **Education and awareness programmes** amongst schools, companies and communities to stimulate awareness of the identified risks.

3.3.7 Phased Escalation Response Plan

The phased nature of the escalation procedures within the 'WDM DMC – SOP' allows for the centre to be staffed at a very low level during 'Routine Operations', and then to scale up as required by the nature of the incident. The phased nature of the procedures also allows for the centre to be run on a 24/7/365 basis, but also allows for the other daily functions to be fulfilled by the Disaster Management Officers allocated to the department.

The nature and extent of the response to any given incident by the DMC will vary with the size and complexity of the incident. The functions carried out in a response phase will follow the Incident Command System (ICS) concept. This should be aligned to the Provincial and National Response, and to the Disaster Management Framework. This will ensure that an integrated and common doctrine on disaster management is followed by all role players during provincial or national disasters. The WDM DMC is responsible for the activation and co-ordination of the response and should be able to escalate to enhanced, full or catastrophic operational level on a 365/24/7 basis.

Below is a description of the processes for escalation of operations from 'Routine Ops' through to 'Catastrophic Ops'.

Phase I: Routine Operations – This is the level of operation that the centre exists at on a daily basis. It allows for the daily routine operations of the DMC to be fulfilled, and only involves the monitoring of reported incidents by the Duty Officer in the DMC or the call-taker designated as the contact person.

Phase II: Enhanced Operations (Alert Stage) – Escalation of Operations to this stage occurs if an incident is or could potentially grow beyond the capability of the designated call-taker and current resources to cope. In this instance the call-taker will notify the Duty Officer, who will report to the WDM DMC.

Phase III: Full Operation – This phase represents the escalation where the incident's size and complexity requires representation for the appropriate Municipal, Provincial and other agencies and

organisations to support the operations. The number of staff and the agencies represented will vary depending on the incident.

Phase IV: Catastrophic Operations – In this phase a major catastrophic emergency or disaster has occurred that exceeds the capability of provincial and local government to provide timely and effective response to meet the needs of the situation.

3.3.8 Routine Staffing Levels

During 'Routine Operations' the DMC should be staffed by experienced qualified Disaster Management Officers.

1. The number of staff must be sufficient and ensure that there is at least an officer on duty 24/7/365 (on duty, but not necessarily present).
2. In addition, a standby option is required as in the event of the DMC escalating the operations level to Enhanced Operations, a Disaster Management Officer will be required to prepare to go to the scene, and a Duty Manager will be required to assume control of the DMC.

If operations are escalated to Full or Catastrophic level, the DMC will require the following DMC staff to be deployed -

1. Disaster Management Officer on scene; and
2. Disaster Management Officer to man and run the MCU.

There are a number of other functions which should be filled in the DMC, these include -

3. Incident Commander / Head of the DMC;
4. Head of Operations;
5. Head of Logistics;
6. Head of Administration and Finance;
7. Head of Information, Analysis and Plans section; and
8. Head of Public Information.

These positions may be filled with staff from other agencies, provided the staff have received appropriate training in the functioning of the DMC.

3.3.9 Shift System

3.3.9.1 Routine Operations Shifts

1. During normal working hours the DMC should ideally be staffed by one of the full-time positions.

2. After hours the DMC should be staffed with a call-taker. Due to logistical and operational constraints, this position may be combined with the call centre of another emergency service such as fire or EMS.
3. The DMC number should be manned on a 24 hour basis, but if this is not possible the dedicated DMC land line telephone number must be routed to a mobile number for the WDM DMC Duty Manager on call.
4. The shift system and 'on call' system will need to be managed by the Head of DMC.

3.3.9.2 Enhanced, Full or Catastrophic Operations Shifts

1. The shift patterns will vary based on the intensity, type of incident, and anticipated duration of the incident.
2. With each shift change overlapping need to be established with proper handing and taking over procedures.
3. The DMC will operate as above and as managed by the Head of the Department decided upon by the situation and the level of operation of the DMC.

3.3.10 Mobile Command Unit and Tactical Head Quarters

A MCU should be procured to function as a forward command and control unit.

1. It will fulfil the requirements of a communications unit, and should also have the ability to operate as the Joint Operational Centre (JOC) or Venue Operational Centre (VOC);
2. It should be dispatched to any incident once the DMC goes into 'Full Operations' mode;
3. It could also function as an education and awareness facility;
4. It also serves as the Tactical Head Quarters of the Response Team; and
5. It will be able to function as the 'Alternative site for the DMC' as the redundancy plan required for the instance in which the DMC is not able to continue functioning.

ACTIONS REQUIRED

- Develop specifications and costing for a MCU for use by the WDM DMC and develop a plan for the procurement of the MCU.

3.4 Arrangement for Stakeholder Participation and the Engagement of Technical Advice in Disaster Risk Management Planning and Operations

3.4.1 WDM Disaster Management Advisory Forum (DMAF)

Though the DMA refers to the fact that a district municipality *may* establish a Municipal DMAF, it is clearly indicated in the NDMF (1.3.1.3) that “it is difficult to envisage how a municipality would apply the principles of co-operative governance, integrated and co-ordinated disaster risk management and stakeholder participation at the local level in the absence of appropriate structures and without the participation of key personnel from various departments within a municipality” In this regard, an advisory forum is seen as a necessity for WDM.

The Municipal DRMAF comprises representatives of all key DRM stakeholders, including –

- WDM HOC;
- senior representative of each department or component of the administration of the WDM designated by the Executive Mayor (DRM Nodal points);
- representatives of the local municipalities within the area of the jurisdiction of the WDM;
- representatives of other DRM role-players in the municipality designated by the Executive Mayor, including –
 - organised business;
 - organised labour;
 - community-based organisations;
 - a traditional leader elected from the traditional council or traditional councils in the WDM recognised by the Premier of the Limpopo Province in terms of Section 212 of the Constitution of the Republic of South Africa, 1996;
 - the insurance industry;
 - representatives of the agricultural sector;
 - religious and welfare organisations;
 - medical, paramedical and hospital organisations;
 - institutions of higher education;
 - institutions that can provide scientific and technological advice or support to DRM;
 - non-governmental and relief organisations;
 - representatives of local umbrella organisations for women, children, the elderly and people with disabilities;

- experts in DRM designated by the Executive Mayor; and
- persons co-opted by the forum in question for a specific period or specific discussion.

It is the responsibility of the WDM DMAF to approve the compilation and maintenance of a Municipal DRMP, which will be compiled and maintained by the WDM DMC, as well as the incorporation of the relevant supportive entity DRM Plans.

The DMAF shall review of the Municipal DRMP on an annual basis. It must make recommendations for changes that are considered appropriate and that the required support documents, organisation, resources, training and facilities are in place at all of the participating entities to ensure a viable DRM response structure for the WDM.

The Municipal DMAF will oversee the assigning of technical task teams to address specific disaster risks and in the development hazard-specific DRMPs.

The Municipal DMAF must ensure that the following actions, which are in line with DRM legislative requirements, take place during the following disaster phases:

Disaster Risk Assessment, Risk Reduction and Preparedness Phases:

- regular Disaster Risk Assessments are undertaken in the WDM;
- capacity of the WDM to implement emergency/disaster response actions are assessed; and
- oversee the formulation of plans and projects to reduce disaster risk, including the integration with the WDM IDP development projects and initiatives.

During any major Emergency or Disaster Response and Relief Phases:

- respond to any incident, emergency or disaster occurrence which falls within the an organ of state's mandate, as a primary or supporting agent;
- assess the impact of any disaster which has occurred in the WDM and examine any further consequences and subsequent disaster risk to the emergency area(s);
- assess the consequences and disaster risk, when applicable, to the remainder of the WDM;
- assess all response actions by the role-payers participating in this DRMP; and
- advise and formulate strategic recommendations on the response and recovery actions after any major hazard occurrence, including the mitigation of any further disaster risk, as required.

During the Recovery and Rehabilitation phases:

- ensuring a return to normal functioning of affected communities as soon as possible; and
- provide input on the lessons learned on any adjustments that may be required for continuing disaster prevention/mitigation and preparedness through disaster risk reduction.

ACTIONS REQUIRED

- Head of the WDM DMC must identify all DRM stakeholders according to the list provided under Section 3.4.1 to participate in the district DMAF.
- Head of the WDM DMC must ensure formal appointments of departmental nodal points by district departmental HODs, and that their DRM responsibilities are written into their job descriptions.
- Head of the WDM DMC must ensure formal appointments of all relevant DRM stakeholders, including departmental nodal points, of the WDM DMAF by the District Executive Mayor.

3.4.2 Disaster Risk Management Technical Task Teams

As established and delegated by the Municipal DMAF, DRM Technical Task Teams will be tasked to plan, manage and complete multi-disciplinary projects for pre-disaster risk reduction and preparedness and to draft the necessary integrated hazard-specific DRMPs, i.e. for hazards such as structural fires, wildfires, flooding and storms, climate change, transport incidents, hazardous materials incidents, etc. policies, plans and procedures that address efficient incident management and inter-disciplinary co-operation during incidents are to be included in these DRMPs. The input of specialist advisers in the various fields must be obtained on an on-going basis.

In addition, Technical Task Teams may also be convened to address specific disaster risk-mitigation issues during the post-disaster recovery and rehabilitation phases, where recovery and rehabilitation takes place over an extended and protracted period.

Technical Task Teams will receive a brief from, and report back to, the Municipal DMAF and to senior management. They will work in close co-operation with the WDM DMC. Their recommendations must then be incorporated into the respective Hazard-specific and Departmental DRMPs and, if necessary, be incorporated into the WDM Municipal DRMP.

Technical Task Teams will determine their respective terms of reference and deliverables under the direction of the Municipal DMAF and the DICDRM, as may be required by the nature and extent of the needs requirement.

ACTIONS REQUIRED

- The WDM DMAF must establish Technical Task Teams responsible for planning, managing and completing multi-disciplinary projects for pre-disaster risk reduction and preparedness and to draft the necessary integrated hazard-specific DRMPs, including policies, plans and procedures that address efficient incident management and inter-disciplinary co-operation during incidents.

3.4.3 Technical Advisory Committee

A Technical Advisory Committee (TAC) must be appointed by the Municipal DMC prior to commissioning any disaster risk assessments for the district municipality. The purpose of the TAC is to provide scientific and technical advice, to monitor the progress of disaster risk assessment projects and to assist with the validation and/or interpretation of the findings.

The TAC must take direction from the DRA guideline, which has been adopted by the District Council, for the process of undertaking and reviewing of the DRA for the municipal area.

ACTIONS REQUIRED

- The WDM DMC must develop a guideline for undertaking a comprehensive community-based disaster risk assessment for the district, and ensure it is approved and adopted by District Council.

3.4.4 Disaster Risk Management Roles and Responsibilities

The DRMP requires assistance from multiple role-players in all the phases of DRM Planning.

Possible representatives are listed in Annexure 2 with a checklist of all the functions that may need to be performed. These functions are not limited to Emergency Response Functions, but also have both mitigation and preparation responsibilities as well as Recovery functions. The list is extensive, but not exhaustive nor complete, and should be used as a checklist to prompt representatives from Local, Provincial, and National Government, NGOs, other Emergency Services, SAPS, SANDF and any others as to their levels of required involvement in the phases of DRM Planning.

3.5 Arrangements for National, Regional and International Cooperation for Disaster Risk Management

The WDM DMC must establish mechanisms to ensure the application of the principles of co-operative governance and to forge links with all neighbouring municipalities for the purposes of integrating and coordinating DRM initiatives, planning and operations, establishing joint standards of practice and fostering co-operation with international role-players in the field of DRM.

3.5.1 Co-operative Governance

The WDM DMC must develop and maintain mechanisms to ensure that effect is given to the principle of co-operative governance. These mechanisms must include but need not be confined to -

- strengthening capacity by facilitating and fostering partnerships between relevant existing structures, organisations and institutions and engaging skills and expertise within the district municipality, other municipalities, institutions of higher learning, the private sector, NGOs and communities;
- developing and adopting minimum criteria for inter-governmental implementation protocols, mutual assistance agreements and memoranda of understanding¹; and
- concluding inter-governmental implementation protocols, mutual assistance agreements and memoranda of understanding with alliance partners.

ACTIONS REQUIRED

- The WDM DMC must undertake a gap analysis of existing DRM capacity in relation to the district disaster risk profile, and where weaknesses or gaps are identified, initiate processes to develop mutual assistance agreements and memoranda of understanding with relevant partners.

3.5.2 Co-Operation with the Provincial DMC and with Neighbouring Municipal DMCs (and with Disaster Risk Management Authorities in Neighbouring States)

Mechanisms to facilitate co-operation with the Limpopo PDMC, neighbouring DMCs and with DRM authorities in neighbouring countries include and are not confined to -

¹ SP 5: Standards and Templates for MAAs and MOUs

- participation of the Executive Mayor in discussions and consultations on DRM at the Limpopo inter-governmental forum (section 18 of the Inter-governmental Relations Framework Act No. 13 of 2005);
- participation of the WDM HOC in the Limpopo Province DRMAF;
- participation by the WDM HOC in meetings convened by the head of the Limpopo PDMC with the heads of all the Municipal DMCs in the province;
- participation in any Limpopo Disaster Assistance Response Teams (DART);
- participation by the WDM HOC in the Municipal DRMAFs of neighbouring municipalities as well as in planning and technical task teams for specific identified priority cross-boundary risks;
- inviting the heads of neighbouring DMCs to participate in the WDM DRMAF as well as in planning processes by technical task teams for specific identified priority cross-boundary risks;
- participation by the WDM HOC in the IDP and other developmental planning structures; and
- development and implementation of mechanisms for:
 - information sharing;
 - joint standards for information management systems and for strategic communication links;
 - compilation of directories of institutional role-players and resource databases;
 - submission of DRMPs, reports and reviews to other spheres and to neighbouring centres; and
 - reciprocal co-operation with DRM authorities in neighbouring states and participation in relevant DRM planning structures for specific, identified cross-boundary risks as well as for any other DRM matters such as the dissemination of early warnings (if applicable).

3.5.3 International Co-operation

The WDM DMC must identify and establish mechanisms to enable the municipality to participate internationally in DRM activities. Mechanisms must include procedures for engaging with expertise and accessing resources available from international relief and humanitarian organisations, seeking membership of international bodies and professional institutes and establishing links with DMCs, entities and professionals performing similar functions in other countries.

3.6 Information Management and Communication Systems to Support Integrated Institutional Capacity

According to the NDMF, DRM is a collaborative process that involves all spheres of government, as well as NGOs, the private sector, a wide range of capacity-building partners and communities. It requires capabilities to manage risks on an ongoing basis, and to effectively anticipate, prepare for, respond to and monitor a range of natural and other hazards.

Integrated DRM depends on access to reliable hazard and disaster risk information as well as effective information management and communication systems (IMCS) to enable the receipt, dissemination and exchange of information.

The system must have the capabilities to acquire, sort, store and analyse data for the purposes of targeting information for primary interest groups. In addition, it must include GIS (geographical information systems) mapping and information display applications, as well as standardised multimedia communication capabilities.

In addition, the IMCS must include the establishment of communication links, which will enable the receipt, transmission and dissemination of information between DMCs and those likely to be affected by disaster risks as well as other role-players and stakeholders involved in DRM. In this regard, the design of the system must take into account the implementation requirements of the WDM DRMPs.

The WDM DMC serves as an information clearing house for DRM in the district, and the municipal system must be compatible with the national system and must conform to the requirements of the NDMC.

3.6.1 Functions to be Performed by the IMCS in Support of KPA 1

- Develop and maintain a directory of the names, contact details and roles and responsibilities of all key role-players in municipal organs of state involved in;
- Record and regularly update a directory of the names, contact details and roles and responsibilities of all key role-players in the DICDRM;
- Record and regularly update the names, contact details and roles and responsibilities of all members of the WDM DRMAF and similar forums established at municipal levels, as well as mechanisms for accessing emergency resources under their control;
- Record and disseminate decisions and recommendations made by the WDM District Council, DICDRM and the DMAF to all role-players affected by the decisions;

- Establish and maintain a directory of the names and contact details of all members of Technical Task Teams initiated by the various DRMAFs (or similar forums at municipal level). Minutes of meetings must also be recorded and kept;
- Establish a central communications centre, with a central 24-hour communications facility for reporting purposes as well as for managing the dissemination of early warnings. A reflexive facility for confirming or acknowledging receipt of early warnings should be part of the system. The centre must also allow for the co-ordination of response measures in the case of significant events and disasters;
- Record and update memoranda of understanding, mutual assistance agreements and bilateral and multilateral agreements;
- Establish and maintain an accurate record-keeping system, incorporating DRM, disaster risk reduction and contingency plans, plans for specific projects, minutes, reports, memoranda and correspondence;
- Maintain comprehensive records of units of volunteers, including skill levels and capabilities;
- Establish and maintain a directory of the names of community participation structures and the contact details of the participants; and
- Keep a record of performance measurement and monitoring of DRM primary entities.

ACTIONS REQUIRED

- The WDM DMC must develop specifications, determine costing and develop an implementation plan for an integrated DRM IMCS that supports all the requirements listed

3.7 Education, Training, Public Awareness and Research to Support Integrated Institutional Capacity

Sections 15 and 20(2) of the DMA specify the encouragement of a broad-based culture of risk avoidance, the promotion of education and training throughout the Republic, and the promotion of research into all aspects of DRM.

It is the responsibility of the WDM DMC to undertake a district education, training and research needs and resources analysis and facilitate the process.

3.7.1 Education and Training

In order to ensure that education and training needs are addressed in a uniform manner and in accordance with the District Disaster Risk Profile, a district education and training framework must be developed, focusing on the areas outlined below.

- Communication of relevant DRM legislation by –
 - communicating and integrating policy objectives of DRM legislation across all municipal organs of state;
 - defining a comprehensive education, training, research and human resource capacity building guide containing the requirements for successfully delivering the outputs called for by relevant DRM legislation;
 - integration of DRM training, education and research into strategic areas, including education and training programmes of other relevant disciplines;
 - determining criteria for prioritising DRM research agendas for the district; and
 - mainstreaming DRM research into development planning and practice.

ACTIONS REQUIRED

The WDM DMC must –

- conduct an education and training needs analysis for DRM in the WDM;
- establish a register of all DRM programmes and institutions offering education in DRM and related fields;
- establish a register of all accredited facilitators, presenters, instructors, educators and institutions offering formal DRM programmes and a register of formal DRM course

3.7.2 Public Awareness

An integrated district public awareness strategy, based on the district disaster risk profile and focused on disaster risk reduction, must be developed.

In addition, disaster risk reduction must be included as a standard agenda item for consideration at executive meetings of all role-players and stakeholders.

ACTIONS REQUIRED

- The WDM DMC must carefully review the district disaster risk profile to determine and develop an integrated district public awareness strategy.

3.7.3 Research

- A strategic disaster risk research agenda for WDM must be established; and
- A comprehensive research database, accessible by all stakeholders, must be established and maintained.

ACTIONS REQUIRED

- The WDM DMC must carefully review the district disaster risk profile to determine and develop strategic disaster risk research agenda and engage with institutions of higher learning to assist in meeting its objectives.

3.8 Funding Arrangements to Support Integrated Institutional Capacity

KPA 1 focuses on creating the institutional capacity to give effect to the principle of co-operation for the purposes of DRM. It describes the various structures that facilitate consultation on issues relating to DRM, key responsibilities of the Municipal DMCs and the minimum infrastructural requirements for the establishment of the WDM DMC.

PE 1 focuses on the establishment of a comprehensive integrated IMCS to ensure that all role-players have access to reliable disaster risk information for the purposes of effective DRM and risk reduction planning. As such, the cost of developing an integrated IMCS must be incorporated into the start-up costs for the WDM DMC.

3.8.1 Funding Options

To establish integrated institutional capacity to enable the effective implementation of DRM policy and legislation, funding will be required for the following programmes, projects and activities:

- start-up costs for the WDM DMC have been costed and funded through –
 - conditional grants; and
 - municipal budgets
 - ongoing operations of the WDM DMC
- regional co-operation and humanitarian assistance –
 - establishment of structures for regional cooperation and provision of ongoing technical assistances must be funded from the WDM DMC's budget;
 - the WDM DMC has rapid access to emergency funds for assistance in disasters; and
 - departments that deal with relief efforts must budget for humanitarian relief.

ACTIONS REQUIRED

- The WDM DMC must undertake a gap analysis to determine any gaps between the current operational capability and that required by the DMA and WDM DRMPF, and develop an action plan for complying with the requirements of the legislation.

4 DISASTER RISK ASSESSMENT

This chapter provides a uniform approach to assessing and monitoring disaster risks that will inform DRM planning and disaster risk reduction undertaken by WDM and other role-players.

A Level 1 DRMP requires that an initial disaster risk assessment (DRA) be commissioned (stages 1 and 2) for the district municipality. This was undertaken in 2006 as part of an initiative by the Limpopo Province. Unfortunately due to lack of systems and resources in place, this DRA did not generate a dynamic disaster risk profile. The findings of this DRA were used to develop the WDM DRMP in 2007.

The WDM disaster risk profile was further reviewed and updated in 2009 and 2014 during the commissioning of the review of the WDM DRMP. However, due to the fact that no provisions have been made for the utilisation of GIS in the WDM DMC, maps representing high risk areas and priority disaster risks were not generated, and the resultant disaster risk profile is largely based on perception of participants consulted during local municipal workshops.

Annexure 1 provides a suggested standard DRA methodology. Once Stage 1 and 2 of the DRA has been undertaken and the capabilities and resources to develop and maintain a dynamic disaster risk profile have been made available, it will be possible to conduct a comprehensive district-wide DRA as envisaged by the National, Provincial and District DRMPFs.

ACTIONS REQUIRED

- The WDM DMC must conduct a district-wide comprehensive community based disaster risk assessment in order to generate a robust foundation from which to develop a dynamic disaster risk profile.

4.1 Legal Background

According to Section 53 of the DMA as amended, each municipality must –

- conduct a disaster risk assessment for its municipal area; and
- identify and map risks, areas, ecosystems, communities and households that are exposed or vulnerable to physical and human-induced threats.

In addition, KPA 2 of the NDMF addresses the need for DRA and monitoring to set out priorities, guide risk reduction action and monitor the effectiveness of DRM efforts. The DRA, supported with good monitoring systems, is essential for:

- effective DRM and risk reduction planning;

- sustainable development planning;
- identifying potential threats that can undermine a development's success and sustainability, making it possible for appropriate disaster risk reduction measures to be incorporated into the project design prior to implementation;
- shaping focused disaster risk reduction programmes for specific threats;
- identifying high-risk periods and conditions; and
- activating preparedness and response actions.

4.2 Disaster Risk Assessment Process

The first step in the process of preparing a DRMP is to conduct a DRA that identifies risks to which the communities in the area are exposed to. By ranking the disaster risks, authorities can develop DRRPs for those disaster risks that are intolerably high, while the tolerable risks can be addressed with DPPs.

The DRA process should consist of the following steps:

- Phase 1 – Establish Task Advisory Committee (TAC): The TAC must be appointed by the WDM DMC prior to commissioning any DRA and should form part of the DMAF. The purpose of the TAC is to provide scientific and technical advice, to monitor the progress of DRA projects and to assist with the validation and/or interpretation of the findings.
- Phase 2 – Information Collection: The first step is to collect all the relevant data and information for the region. The foregoing should include all information on the natural and built environment. In addition, all other relevant data and information on the area such as demographic, socio-economic and critical infrastructure profiles should be collected for consideration.
- Phase 3 – Hazard Assessment: Once the forecast for an area has been established, the potential hazards for the area must be assessed. The various hazards should be grouped according to the prescribed Hazard Classification in the NDMF and analysed according to their frequency, probability, predictability and magnitude.
- Phase 4 – Vulnerability and Capacity Assessment: The Vulnerability Assessment will take this a step further, to identify the conditions of vulnerability that render areas, groups, households, individuals and communities or societies susceptible to the impact of identified hazards. The Capacity Assessment measures the capacity in the district, particularly within at-risk communities, and determines how well they can cope and are able to manage disaster risk.
- Phase 5 – Disaster Risk Prioritisation: The Vulnerability and Capacity Assessment may produce a high number of risks to be addressed. Therefore, the risks to be addressed should be prioritised

through quantification of the hazard index, vulnerability index and capacity index, as well by determining the importance, growth potential and urgency of the disaster risk in question.

- **Phase 6 - Upload to Sectoral Plans:** Once the mapping of the risk profiles for communities in the region have been completed, it is necessary to upload the risk profiles to all sectoral plans. Reference to water service development plans, integrated environmental programs, poverty alleviation strategies, SDFs, local economic development plans, land reform area based plans, land care policies, etc.

The methodology makes provision for an integrated approach between the DRA process, GIS and a participative approach among all relevant stakeholders.

The methodology outlined in Annexure 2 will discuss in detail how each of these steps is followed.

4.3 Waterberg District Municipality Indicative Disaster Risk Profile

DRA workshops were held in five different locations (one workshop per local municipality) in the WDM to ensure stakeholder participation and consultation from all DRM stakeholders. The purpose of this was to ensure a participatory process was followed to review the district indicative disaster risk profile, while encouraging buy-in from the local municipalities and community.



Figure 19: Stakeholders partaking in the Risk Assessment Workshops

During these workshops the findings from desktop and other scientific research was used for participants to work through and verify whether or not the information was accurate. They were also provided the opportunity through a systematic DRA approach to identify changes in order to update the district indicative disaster risk profile. Annexure 3 provides maps showing the spatial distribution of hazards within the WDM according to the outcomes of the local municipal DRA workshops.

4.3.1 Local Municipal Indicative Disaster Risk Profiles

The table below lists the priority hazards identified during the local municipal DRA workshops undertaken to review the district indicative disaster risk profile. It must be noted that this is a representation of the perception of hazards according to the attendees of the workshop. Unfortunately, due to lack of attendance at the workshop arranged in Modimolle-Mookgophong, the hazards listed here are those identified during the 2009 review, as well as the outcome of document study and background research.

Table 3: 2019/2020 Indicative Priority Hazards for each Local Municipality within the WDM

Lephalale	Thabazimbi	Bela-Bela	Modimolle-Mookgophong	Mogalakwena
Road accidents	Crime	Road accidents	Veld fire	Drought
HIV/AIDS	Road accidents	Drought	Road accidents	Road accidents
Crime	Drought	HIV/AIDS	Drought	HAZMAT spillage
Drought	Veld fire	Crime	HIV/AIDS	Structural fire
Illegal dumping	Severe thunderstorms	Sink holes	Crime	Strong winds
Structural fire (shacks)	Water pollution	Veld fires	River floods	Veld fire
Flash floods	Extreme heat	River floods	Water pollution	River floods
River floods	Sewage spillage	Flash floods		
Veld fire	Structural fire (shacks)	Sewage spillage		
Severe thunderstorms	Illegal dumping			
Hail	Crime			
	Illegal electrical connections			
	River flood			
	Structural failure			

4.3.2 District Indicative Disaster Risk Profile

The table below lists the combined priority hazards for the WDM identified in both 2014 and 2019/2020.

Table 4: Combined Priority Hazards for the WDM identified in 2014 and 2019/2020

2014 Priority Hazards	2019/2020 Priority Hazards
Fires	Road Accidents
Road Accidents	Drought
Epidemics (HIV/AIDS)	Crime
Floods	Veld Fire
Crime	HIV/AIDS
Pollution (air, water)	Structural fire
Social (drugs, alcohol)	River floods
Drought	Severe thunderstorms

A critical review of the 2019/2020 hazards listed in Table 4 above yields the following:

- Although road accidents are identified as a priority hazard for the WDM, it would be difficult to envision a road accident scenario resulting in a disaster as defined in the DMA, and as such would not necessarily be considered a disaster risk for the WDM. It must, however, remain a priority risk to ensure adequate priority DRRPs are developed to further prevent or mitigate the risk of road accidents within the district.
- Although crime is identified as a priority hazard for the WDM, it would once again be difficult to envision a crime scenario resulting in a disaster as defined in the DMA, in addition to the fact that crime, as a social hazard, does not fall within the Classification of Hazards as provided for by the NDMF. Therefore, although will not be categorised as a disaster risk, crime must remain a priority risk to ensure adequate priority DRRPs are developed to further prevent or mitigate the risk of crime within the district.

Therefore, the final list of priority **disaster** risks for the WDM are listed below:

- Drought;
- Veld fire;
- HIV/AIDS;
- Structural fire;
- River flood; and
- Severe thunderstorms.

The list above must be read in conjunction with the priority hazards and conditions of vulnerability detailed in sections 4.3.3 and 4.3.4 below.

Due to the lack of an integrated district DRM IMCS, data and information required for a comprehensive and dynamic disaster risk profile is not readily available.

Information regarding the level of vulnerability of each of the local municipalities was sourced from the 'The Green Book' (www.greenbook.co.za). The Green Book project was designed to look at the components that increase risk, and provide scientific evidence and information that can be used by local government and other role-players, to better understand local risks and vulnerabilities and to respond to these challenges through climate change adaptation actions.

Figure # below illustrates the state of socio-economic, economic, physical and environmental vulnerability of each of the local municipalities within the WDM, according to the Green Book. The criteria used to determine levels of each vulnerability category are provided below.

- Socio-economic vulnerability: Household composition, education and health, access to basic services, and safety and security.
- Economic vulnerability: Economic diversity, size of the economy, labour force, GDP growth rate and the inequality present in the municipality.
- Physical vulnerability: Considers areas of remoteness and / or areas with structural vulnerabilities.
- Environmental vulnerability: Considers conflict between preserving the natural environment and accommodating the growth pressures associated with population growth, urbanisation and economic development. Indicators include air quality, environmental governance, and the competition between the ecology and urban encroachment.

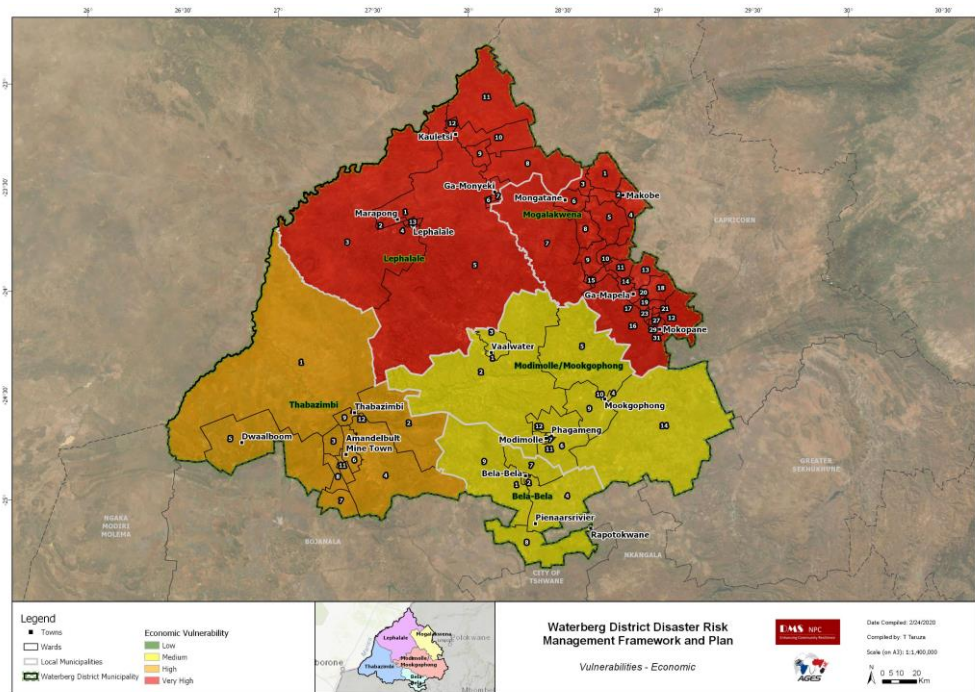


Figure 20: Economic Vulnerability of Local Municipalities within the WDM

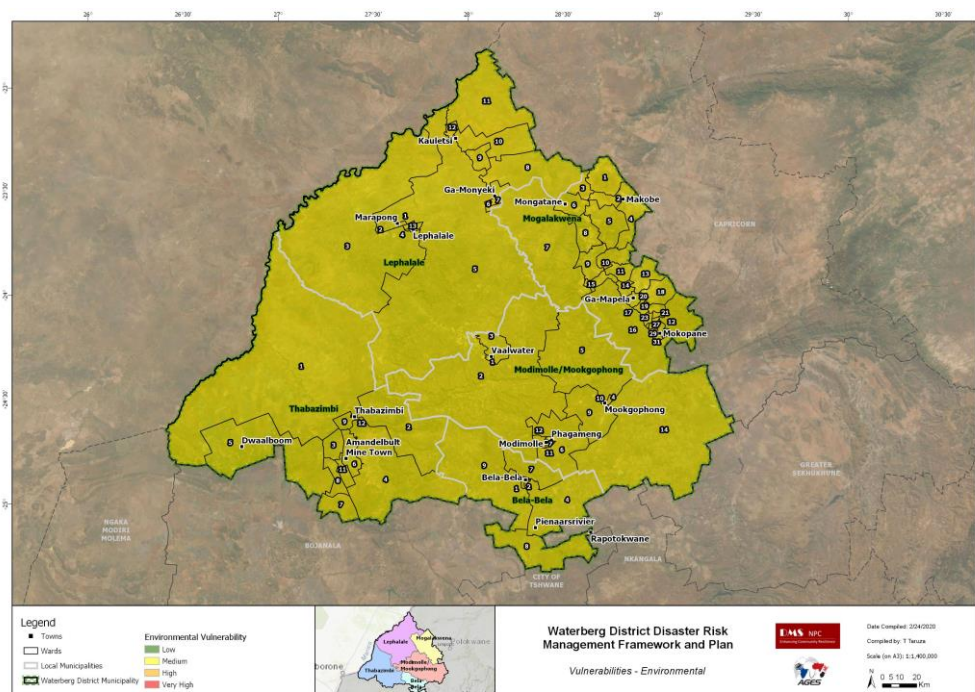


Figure 21: Environmental Vulnerability of Local Municipalities within the WDM

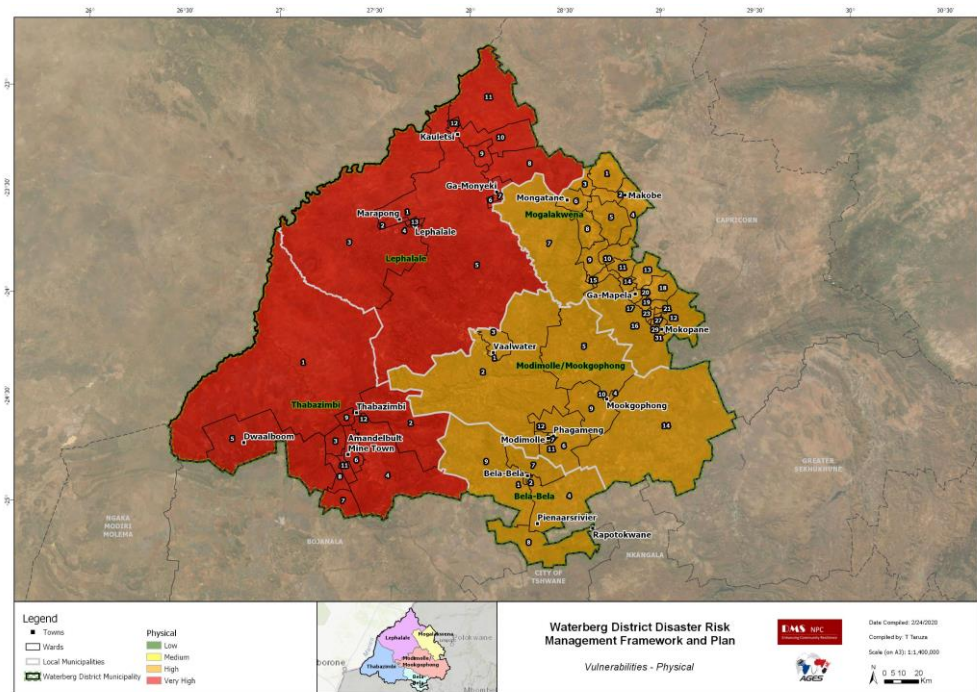


Figure 22: Physical Vulnerability of Local Municipalities within the WDM

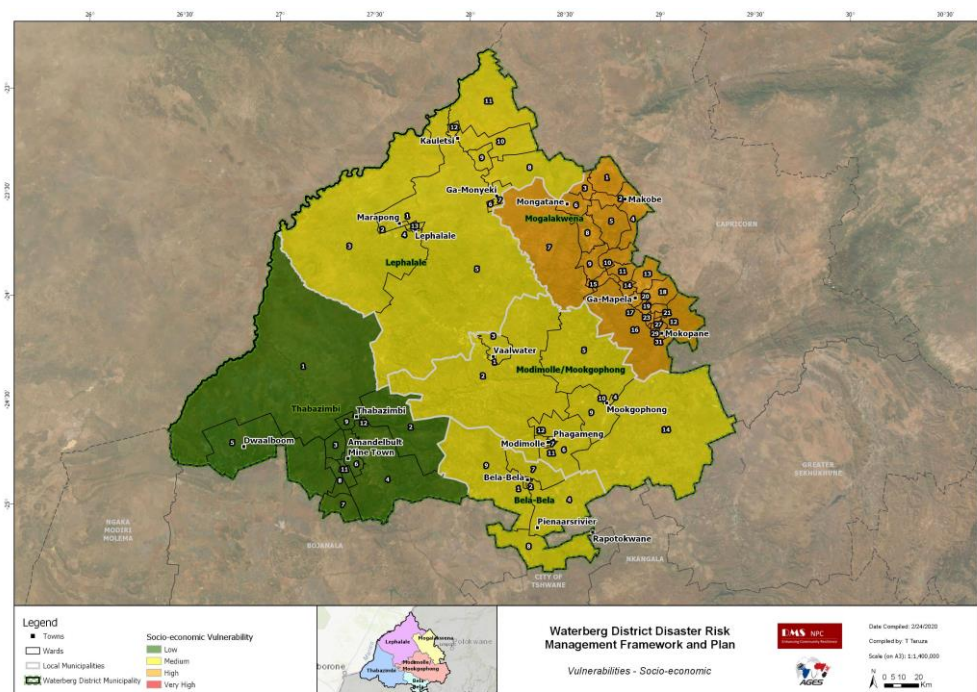


Figure 23: Socio-economic Vulnerability of Local Municipalities within the WDM

According to the Green Book and the figures above, Mogalakwena Local Municipality has the highest socio-economic and economic vulnerability, while Thabazimbi Local Municipality has the highest physical vulnerability, and Modimolle-Mookgophong has the highest environmental vulnerability.

4.3.3 Climate Change

Climate change is a significant and lasting change in the statistical distribution of weather patterns over periods ranging from decades to millions of years. It may be a change in average weather conditions, or in the distribution of weather around the average conditions (i.e. more or fewer extreme weather events).

According to the Department of Environmental Affairs (2019), the main implication for climate change in the Limpopo Province is drought, resulting in water shortage, acid contaminated water resources, barren dry land, reduced crop production, loss of livestock and other animals and desertification due to heat stress. Additional impacts include those on the natural eco-system affecting natural growth of plants, animals and insects (fauna and flora).

4.3.3.1 Current Climate

The northern and western regions of the area experience a hot and semi-arid climate. The southern and eastern regions are more humid and slightly cooler. The mean circulation of the atmosphere over southern Africa is anti-cyclonic throughout the year.

The table below indicates the average temperature and rainfall for each of the local municipalities in the WDM according to the Green Book.

Table 5: Average Temperature and Rainfall for each of the Local Municipalities in the WDM

Local Municipality	Average Temperature (°C)	Average Rainfall (mm)
Thabazimbi	20 – 22	800 – 1600
Lephalale	20 – 24	400 – 800
Mogalakwena	20 – 24	400 – 800
Modimolle-Mookgophong	20 – 22	800 -1200
Bela-Bela	20 - 22	800 -1200

4.3.3.2 Projected Climate Change

Global climate predictions have found consensus on a warmer climate. The degree of warming in WDM is dependent on the future emission scenarios. Currently, the most likely scenario will lead to ambient CO₂ concentrations exceeding 800 ppb. This scenario will lead to general increases of around 2° C in the next 30 years and likely up to 4° C over the next 50 years. This reflects the warming observed over the last 100 years.

The WDM Climate Change Vulnerability Assessment and Response Plan, developed through the Local Government Climate Change Support (LGCCS) program, summarises the indicators of potential climate change impacts below.

Human Health

- Projected increases in storm events may result in increased risk of drowning, injuries and population displacement impacts;
- A changing climate will also result in increased water-borne and communicable diseases as increasing air and water temperatures may create favourable conditions for the incubation and transmission of waterborne diseases;
- Projected temperature increases will also impact negatively on the young and elderly; and
- People working outdoors will be particularly vulnerable to increases in temperature.

Human Settlements

- Increases in the severity of storm events and increase in flooding will damage strategic infrastructure which may result in a loss of industrial productivity and service delivery disruptions;
- The impacts of storm events will particularly affect communities located in informal settlements, on flood plains and where there is poor drainage infrastructure;
- Rural communities may also become more physically isolated due to extreme events impacting on key infrastructure leading to increase patterns of migration to urban and peri-urban areas; and
- Income in the tourism industry may decrease as biodiversity and tourism related infrastructure may be negatively impacted by climate change.

Water

- Drought, reduced runoff, increased evaporation, and an increase in flood events will impact on both water quality and quantity.

Table 6: A Summary of the Key Climate Change Vulnerability Indicators for the WDM

No	Theme	Indicator Title	Exposure Answer	Sensitivity Answer	Adaptive Capacity Answer
21	Human Health	Health impacts from increased storm events	Yes	High	Low
24	Human Health	Increased water borne and communicable diseases (typhoid fever, cholera & hepatitis)	Yes	High	Low

No	Theme	Indicator Title	Exposure Answer	Sensitivity Answer	Adaptive Capacity Answer
28	Human Settlements	Loss of industrial productivity	Yes	High	Low
29	Human Settlements	Increased impacts on strategic infrastructure	Yes	High	Low
31	Human Settlements	Increased isolation of rural communities	Yes	High	Low
32	Human Settlements	Increased migration to urban and peri-urban areas	Yes	High	Low
33	Human Settlements	Decreased income from tourism	Yes	High	Low
37	Water	Increased impacts of flooding from litter blocking sewer system	Yes	High	Low

4.3.4 Preliminary Indicative Disaster Risk Profile of National Key Points (NKP)

Four declared NKPs are located within the WDM namely, Eskom Matimba, Eskom Medupi, Mokolo Dam Pump Station and Tom Burke Solar Plant.

A preliminary indicative disaster risk profile for each of these NKPs is provided in brief below.

4.3.4.1 Mokolo Dam and Pump Station

Due to its strategic importance, the Mokolo Dam and Pump Station has been declared as NKP. The pump station includes pumps and equipment for pumping water from the Mokolo Dam into two smaller dams, which is then distributed to Exxaro mine, Medupi- and Matimba power stations and the local municipality of Lephalale.

Causal factors identified that may result in extreme hazardous events include:

- Overheating of the pumps;
- Malfunction of the valves;
- Load shedding resulting in power failure; and
- Lack of a disaster management plan.

The consequence of the loss of operations to the NKP, as a result of a potential extreme hazardous event includes:

- Loss of drinking water supply to communities of Marapong and Lephalale;
- Loss of power supply to the country due operations affected at Exxaro, Matimba and Medupi;

- Loss of water supply to farmers down river during dry periods when water is released from the dam; and
- Loss of water supply to the conservation area in which the dam is located.

4.3.4.2 Medupi Power Station

Medupi is a greenfield coal-fired power plant project located west of Lephalale, Limpopo Province, South Africa. Medupi is the fourth dry-cooled, baseload station built in 20 years by Eskom after Kendal, Majuba and Matimba power stations. The name “Medupi” is a Sepedi word which means “rain that soaks parched lands, giving economic relief”. The planned operational life of the station is 50 years.

Hazards identified that may impact on the power plant and surrounding area include:

- potential Hydrogen (H₂) explosion at the power plant;
- hazmat spillage;
- smoke pollution; and
- dust pollution from the ash.

4.3.4.3 Matimba Power Station

Matimba – the Tsonga word for “power” is an appropriate name for the dry cooled power station near Lephalale in the Limpopo Province. Designed to generate 3 990 MW, Matimba has the world’s largest turbo generators using the direct dry cooled steam condensing system. The adjacent Grootegeluk Colliery has sufficient coal reserves to guarantee Matimba a minimum lifespan of 35 years, extending to a possible 50 years, at 3 580 tons of coal per hour.

Hazards identified that may impact on the power plant and surrounding area include:

- pollution of water supply, impacting on potable water supplied to Marapong village;
- potential explosion of H₂ at the plant that could impact on the community of Marapong;
- hazmat spillage;
- smoke pollution; and
- dust pollution from the ash.

4.3.4.4 Tom Burke Solar Power Plant

Italian energy group Enel's Tom Burke plant, near Lephalale, has been classified as a national key point due to its importance to Limpopo's national grid. The plant, situated on 202 hectares of land, received the status due to the important strategic role it plays by delivering energy to the national grid and supplying electricity to nine villages in the Lephalale region of Limpopo.

Hazards identified that may impact on the plant and surrounding area include:

- veld fire;
- lightning strikes;
- hail;
- strong winds;
- electrical arcs during fires;
- civil unrest;
- snakes in the veld; and
- warthogs digging under the fences.

Conditions of vulnerability identified include:

- wetland on the premises that has been maintained in its natural state;
- personnel (about 60);
- game farms neighbouring the solar plant area on all sides – emergency gates have been erected on all sides as a risk reduction measure; and
- villages that are 6 kilometres away.

4.4 Disaster Risk Assessment Plan

Until such time as the NDMC has developed a national standard for conducting comprehensive DRAs, the DRA methodology detailed in Annexure 2 is utilised for the WDM. The DRA process must be conducted using a staged approach as detailed in Section 2.1.3 of the NDMF. Following the undertaking of the DRA, the findings of the DRA must be progressively integrated into the development plans of organs of state and other role-players, with evidence of this seen in IDPs and annual reports submitted to the District and Provincial DMCs.

According to the NDMF, municipal organs of state with responsibilities for reducing and managing specific risks must review the District Indicative Disaster Risk Profile for their functional areas annually to determine if risk conditions have changed detrimentally.

In addition to the above, the WDM DMC must ensure that DRAs are at least undertaken or reviewed, as the case may be, -

- as an integral component of the planning phase of all developments of municipal significance;
- as an integral component of any significant initiatives that affect the natural environment in the municipal area;

- prior to the implementation of any disaster risk reduction, preparedness or recovery programme;
- when social, economic, infrastructural, environmental, climatic and other indicators suggest changing patterns of disaster risk that could increase the risk of significant disaster impacts in the municipal area;
- prior to change of seasons; and
- following a disaster or major incident that may have occurred in the municipality.

ACTIONS REQUIRED

- The WDM DMC must establish mechanisms to consolidate, document, map and make accessible information on the district's priority disaster risks.
- The WDM DMC must establish procedures to consolidate, map, update and make accessible information on the district's priority disaster risks.

4.5 Disaster Risk Assessment Monitoring and Evaluation

Disaster risks are not static as they change seasonally and over time. To recognise such changes, and to strategically adjust programmes accordingly, all municipal organs of state must have monitoring systems in place that are relevant to their specific functional responsibilities.

These systems form the basis for sounding timely warnings of, or alerts for, impending significant events or disasters. They are also essential for monitoring the effectiveness of ongoing disaster risk reduction efforts. Risk monitoring systems involve:

- hazard tracking
- vulnerability monitoring
- disaster event tracking.

ACTIONS REQUIRED

WDM DMC must establish a multi-purpose monitoring and evaluation tool for the purposes of -

- Quantification of risk data to prioritise disaster risks in high risk areas;
- Making high level recommendations of the strategy to be employed to manage the priority disaster risks (i.e. treat, tolerate, transfer or terminate); and
- Measuring the success of any risk reduction measure implemented to manage the priority disaster risks identified.

The WDM DMC is responsible to –

- establish clear mechanisms for accessing, consolidating and updating relevant information on hazards, vulnerability and disaster occurrence from specialist government and non-governmental partners responsible for monitoring specific disaster risks, including fire, drought and epidemics;
- develop and implement clear mechanisms for disseminating DRA and monitoring information for ongoing planning, as well as for managing conditions of heightened risk;
- establish clear procedures for accessing, interpreting and disseminating timely weather information, particularly when this is associated with potentially endangering rapid-onset storm or cyclone processes, hot, dry temperatures, strong winds, or heavy rainfall conditions; and
- ensure that the DRM IMCS is managed by skilled individuals with both information technology capabilities and disaster risk analytic skills.

ACTIONS REQUIRED

- The WDM DMC as well as municipal organs of state must establish and document clear mechanisms for accessing, consolidating and updating relevant information on hazards, vulnerability and disaster occurrence from partners responsible for monitoring specific risks;
- The WDM DMC as well as municipal organs of state must establish and document clear mechanisms for disseminating DRA and monitoring information for ongoing planning, as well as for managing conditions of heightened risk.

4.6 Disaster Risk Assessment Technical Advisory Committee

A Technical Advisory Committee (TAC) must be appointed by the Municipal DMC prior to commissioning any DRAs for the district municipality. The purpose of the TAC is to provide scientific and technical advice, to monitor the progress of DRA projects and to assist with the validation and/or interpretation of the findings.

All proposed DRAs planned by departments and municipal entities in the district municipality and in local municipalities in the district must be submitted to the WDM DMC. These proposed assessments must also be sent to the Limpopo PDMC and the NDMC for technical review and approval before being commissioned.

ACTIONS REQUIRED

- The WDM DMC must appoint a TAC prior to commissioning any DRAs for the district municipality. The TAC must be linked to the WDM DMAF.

4.7 Information Management and Communication Systems to Support Disaster Risk Assessment

The assessment of the implications of natural or human-induced hazards on existing conditions of vulnerability depend on both spatial and non-spatial information. Such information assists in -

- identifying hazards and their potential impacts;
- mapping of hazards and disaster risks;
- planning appropriate disaster risk reduction measures;
- monitoring and tracking hazards for the purposes of early warnings and updating this information;
- facilitating response management when significant events or events classified as disasters occur, assessing and tracking the damage caused by hazards, and planning appropriate response and recovery measures; and
- evaluating the appropriateness and effectiveness of disaster risk reduction measures as well as response and recovery plans.

The DRA component of the integrated DRM IMCS must therefore be able to produce electronic GIS-based risk profiles generated from standardised data inputs. Such inputs may be drawn from a range of sources, including hazard and disaster event tracking, vulnerability monitoring, historical reviews of significant events and disasters, scientific and specialist research, and field consultations in areas and communities most at risk. To develop comprehensive profiles, the information management system is required to reflect changes in status through the use of predefined and customisable parameters.

The hazard and vulnerability functionality must allow for DRA information to be represented as GIS-based risk maps, with different layers holding data about particular features of the map. Maps must be produced for different types of hazard, political boundaries, transport networks, settlements and natural resources. These maps must make provision for layers of data containing basic location information about hazards with thematic support maps displaying data about specific feature such as population distribution, infrastructure, geological information, landforms, drainage, land use/land cover and soils.

The vulnerability of communities, businesses and infrastructure must be determined by overlaying different risk maps on base maps to evaluate and analyse the potential impacts of identified hazards and risks. These hazard and vulnerability maps must also be disseminated or displayed for orientation or training purposes.

ACTIONS REQUIRED

- The WDM DMC must establish an integrated DRM IMCS that supports a DRA component for the WDM;
- The WDM DMC must establish GIS capabilities for the district to allow for DRA information to be represented as GIS-based risk maps.

4.8 Education, Training, Public Awareness and Research to Support Disaster Risk Assessment

The section below briefly describes the education, training, public awareness and research priorities to support DRA in the WDM.

Training Programmes

Government officials and policy makers must be trained in subjects relating DRA, which embrace the multi-disciplinary, interdisciplinary and dynamic dimension of DRM, and should also be informed by the relevant district indicative disaster risk profile.

DRM Volunteers must be trained to support the DRA process and public awareness programmes to address priority disaster risks for the district.

Research

The WDM DMC must develop a research agenda to create additional applied knowledge and information on the priority disaster risks identified for the district. In addition, the WDM DMC must engage with research institutions willing to participate in disaster risk research programmes on an organised basis.

ACTIONS REQUIRED

- The WDM DMC must conduct a training needs analysis for all municipal DRM officials involved with the DRA process and develop a training programme in response to gaps identified;
- The WDM DMC must establish a research agenda based on the priority disaster risks identified for the WDM in order to form a more robust and comprehensive disaster risk profile for the district.

4.9 Funding Arrangements to Support Disaster Risk Assessment

The DMA requires all municipal organs of state to determine levels of risk and assess their vulnerability to these risks in order to implement disaster risk reduction strategies. According to the NDMF, the initial expenditure on DRAs can be offset by long-term benefits accruing from well-designed risk reduction measures.

4.9.1 Funding Options

Costs involved in updating DRAs must be budgeted for on a regular basis, and any expenditure incurred in monitoring district disaster risk should be part of the routine operation of the WDM DMC, and should be budgeted for accordingly.

For the WDM, there are two options with regard to funding DRAs –

1. The initial DRA is to be include in the start-up costs of the Municipal DMC, and thereafter DRAs can be funded through the local government conditional grant; and
2. Districts to fund the initial DRAs and any subsequent assessments and updates themselves, however the disadvantage of this is that it can compromise disaster risk reduction planning if a comprehensive DRA is not adequately completed.

ACTIONS REQUIRED

- The WDM DMC must estimate the cost of a comprehensive district-wide community based DRA and ensure it is included in the budget of the Municipal DMC.

5 DISASTER RISK REDUCTION

This chapter ensures that the WDM develop and implement integrated DRM plans and risk reduction programmes in accordance with approved frameworks.

5.1 Disaster Risk Management Planning for the WDM

Based on the updated DRA, six priority **disaster** risks have been identified, which include -

1. Drought;
2. Veld fires;
3. HIV/AIDS;
4. Structural fires;
5. River floods; and
6. Severe thunderstorms.

In addition to these, and also considered priority risks for the WDM, are –

- Crime; and
- Road Accidents.

Although the above two risks do not necessarily qualify as **disaster** risks, they must be given adequate consideration and priority in terms of disaster risk reduction planning, as they heavily influence the disaster risk profile of the district. If neglected, they may undermine and erode the capabilities of the municipality and the communities exposed to them over the long term if not addressed.

Through the identification and ranking of priority disaster risks, municipalities can develop DRRPs for those risks that are intolerably high, while the tolerable risks can be addressed with DPPs.

5.1.1 Disaster Risk Reduction Plans

This guideline focus on preparing DRRPs that will reduce the intolerably high and high risks to which vulnerable communities are exposed to acceptable or tolerable levels (described in Sections 39 (2) and 53 (2) (a); (b); (c); (e); (f); (h) and (i) of the DMA).

The intolerably high risks and high risks must be addressed by preparing DRRPs that will reduce, or mitigate the risks.

DRRPs assists municipal officials in linking the intolerably high risks and the high risks to the IDP process and to identify cost-effective and innovative multi-sectoral plans by completing the following phases:

1. Phase 1: Analysis Phase;
2. Phase 2: Strategies Phase;
3. Phase 3: Project Planning Phase;
4. Phase 4: Integration Phase;
5. Phase 5: Approval Phase; and
6. Phase 6: Implementation Phase.

5.1.2 Phase 1: Analysis Phase

A simple mathematical model was used to calculate the relative priorities of the disaster risk to which communities in the WDM are exposed. This simple mathematical model categorised the disaster risks to which communities are exposed into three categories:

- **Intolerably High Risks:** The community faces a potentially destructive risk with a high probability of occurrence, for which they are unprepared. This combination equates to an intolerably high risk and is a disaster in the making. Risk reduction interventions must be prepared for these intolerably high risks and preparedness plans must be developed.
- **High Risks:** The risks to which these communities are exposed are potentially destructive, but the community is modestly prepared for the hazard event occurrence. This combination equates to a high risk for which a combination of risk reduction interventions and preparedness plans must be developed.
- **Tolerable Risks:** Minimal risk for a largely prepared community. This combination equates to a tolerable risk however, preparedness plans should still be developed for these risks.

5.1.3 Phase 2: Strategies Phase

In the Strategies Phase of the DRRP process, the municipality will have to make crucial decisions on its destination and on the most appropriate ways to arrive there. It is the phase in which the basic decisions on the disaster risk reduction direction of the municipality have to be made.

The purpose of Phase 2 is to ensure there will be a broad inter-sectoral debate on the most appropriate ways and means of tackling priority issues under consideration of policy guidelines and principles, available resources, inter-linkages, competing requirements and an agreed vision. The strategy debate will aid in avoiding a common shortcut from identified needs to sectoral projects. This process stimulates discussion resulting in identifying more appropriate, innovative and cost-effective solutions under due consideration of various options. It is the phase of making choices.

ACTIONS REQUIRED

- The WDM DMAF must identify primary and support agents responsible for managing the priority district disaster risks identified. In so doing, the DMAF must establish appropriate Technical Task Teams in order to facilitate the discussion around the identification of appropriate, innovative and cost-effective solutions to manage the disaster risks in

5.1.4 Phase 3: Project Planning Phase

The Project Planning Phase is the “nuts and bolts” phase, during which the municipality is required to ensure concrete and sufficiently specified project proposals are designed and can be used for implementation. It is the phase involving technical and financial experts, as well as affected groups of residents to adjust project designs to ensure they meet their needs and match the local conditions.

The purpose of Phase 3 is to ensure a smooth planning-delivery link by providing an opportunity for a detailed and concrete project planning process completed by a project task team of professionals and relevant stakeholders who provide proposals with tentative target figures, technical standards, locations, time horizons and cost estimates. This phase will provide the sector specialists their appropriate role in the planning process, thereby contributing to a smooth planning-delivery link.

ACTIONS REQUIRED

- Technical Task Teams identified by the WDM DMAF must identify and scope DRRPs for identified priority district disaster risks, to be adopted and approved by the WDM DMAF, DICDRM and the District Council.

5.1.5 Phase 4: Integration Phase

In the Integration Phase, the municipality has to make sure the project proposals are in line with the objectives and the agreed strategies, the resource frames (financial and institutional) and with legal requirements. Moreover, specific project proposals may have to be harmonised in terms of content, location and timing in order to arrive at consolidated and integrated programmes for the municipality, sector agencies or corporate service providers involved in provision of services within a municipality. The purpose of Phase 4 is to ensure that the results of project planning are checked for their compliance with vision, objectives, strategies and resources. The harmonisation process will result in a consolidated spatial, financial and institutional framework as a sound basis for smooth implementation.

5.1.6 Phase 5: Approval Phase

The Approval Phase is about the feedback process on the Draft IDP and will result in a final approval/adoption of the plan by the municipal council. During this phase, the municipality should do everything in its power to get the buy-in for the coordinated implementation of the IDP by all stakeholders. This means providing access to everybody to the draft document and to articulate concerns. To avoid this process becoming an endless exercise, strict time limits must be set and adhered to.

The purpose of the Approval Phase is to ensure that, before being adopted by the Municipal Council, all relevant stakeholders and interested parties, including other spheres of government, have been given an opportunity to comment on the draft plan, thus giving the approved plan a sound basis of legitimacy, support and relevance.

The final outcome is an IDP document that has the support of the municipal administration, the municipal residents, the district council and all relevant agencies in charge of implementation of programmes and projects within the municipal area of jurisdiction and which is approved by the Municipal Council.

ACTIONS REQUIRED

- The WDM DMC must establish mechanisms for linking DRMPs and DRRPs with IDPs and SDF;
- The WDM DMAF must establish mechanisms for the monitoring of the inclusion of DRMPs and DRRPs in IDP and SDF processes;

5.1.7 Phase 6: Implementation Phase

The “IDP Guidelines” from the previous National Department of Provincial and Local Government does not specifically mention the Implementation Phase. However, it is logical that once the Council has approved the IDP (with the budget) that the municipal officials can commence with the implementation of their DRRPs.

5.2 Priorities for Disaster Risk Management Planning

Although the WDM faces a broad range of disaster risks, it is not possible, given resource constraints, to address all potential threats at once. Effective DRM planning by all municipal organs of state as well as other role-players requires careful identification of priority disaster risks and the most vulnerable

areas, communities and households to these risks. The process of identifying priority disaster risks is critically informed by the district DRA findings.

While a wide range of different disaster events can occur at district municipality and municipal levels, they are relevant as a district DRM planning priority only when a DRA and/or ongoing risk monitoring processes indicate that:

- a specific disaster risk affects more than one local municipality or exceeds the capabilities of a single local municipality to manage it effectively;
- a disaster risk results in the same type of disaster event occurring repeatedly and at different times in more than one municipality with significant cumulative impacts on lives, property and the natural environment, but that are not necessarily classified as provincial disasters.

The assessed disaster risks must be prioritised, and the intolerably high disaster risks must have DRRPs designed for each one. Once the disaster risks have been mitigated to a tolerable level then DPPs can be designed for each of the risks.

In order to update the 2019/2020 DRMP, the district disaster risk profile has been reviewed and updated to include:

1. Drought;
2. Veld fires;
3. HIV/AIDS;
4. Structural fires;
5. River floods; and
6. Severe thunderstorms.

In DRRPs, priority must be given to the following -

- strategic infrastructure or lifeline services whose damage or disruption in disaster events would result in serious and widespread consequences;
- critical economic, commercial, agricultural and industrial zones or sites whose damage or disruption would have serious and widespread consequences;
- fragile natural ecosystems and environmental assets that offer protective environmental services and which, if damaged or destroyed in a disaster event, would result in serious natural and economic losses;

- communities in areas exposed to extreme weather and/or other natural and technological hazards and which are therefore likely to sustain serious human and property losses in the event of a disaster;
- poor and underserved rural and urban communities, including informal settlements, especially those located in fragile ecological areas, that sustain repeated losses from recurrent small, medium, and large disaster events, and that lack insurance coverage to facilitate recovery;
- highly vulnerable households in at-risk areas with limited capacity to resist or recover from external shocks, particularly child-headed households or those headed by the elderly or households affected by chronic illness.

5.3 Scoping and Development of Disaster Risk Reduction Plans, Projects and Programmes

The essential first step in any risk reduction strategy is to understand the nature of the hazards to be faced. Understanding each hazard requires insight into:

1. Its causes;
2. Its geographical distribution, magnitude or severity, and probability;
3. The frequency of occurrence;
4. The physical mechanisms of destruction;
5. The elements and activities most vulnerable to destruction; and
6. The possible economic and social consequences of the disaster.

Risk reduction involves implementing measures that will save lives, lessen personal injury, reduce property losses, as well as, reduce the adverse consequences of hazards to economic activities and social institutions.

5.3.1 Reducing Hazards versus Reducing Vulnerability

Protection against threats can be achieved by removing the causes of the threat, (reducing the hazard) or by reducing the effects of the threat if it occurs (reducing the vulnerability of elements at risk).

For most types of natural hazards, it is impossible to prevent the actual geological or meteorological process from occurring. The focus of risk reduction measures against these hazards is primarily on reducing the vulnerability of elements that are likely to be affected.

Note: Some natural hazards can be reduced in certain circumstances, for example, the construction of levees along the banks of certain rivers reduces the chance of them flooding the surrounding areas. The destructive agents of some natural hazards can be contained by engineering works or diverted

away from important elements in channels and excavations. In some cases tree planting can be an effective way of either reducing the potential for floods and mudslides or to slow desertification.

Obviously, preventing industrial accidents from occurring in the first place is the best method of reducing future industrial disasters. Fire prevention, chemical spillage, technological and transportation accidents are all hazards that are essentially preventable. With technological hazards the focus of risk reduction should be in preventing the hazards from occurring.

5.3.2 Potential Risk Reduction Measures

The techniques or measures that you might consider in assembling an appropriate package for disaster risk reduction can be classified as:

1. Physical planning measures;
2. Engineering and construction measures;
3. Economic measures;
4. Management and institutional measures;
5. Societal measures.

These measures are discussed in more detail in the following paragraphs:

5.3.2.1 Physical Planning Measures

Many hazards are localised and their likely effects are confined to specific known areas. The negative impact of hazard events can be greatly reduced if it is possible to avoid the impact areas being used for settlements or as sites for important structures.

Most urban master plans involving land use zoning probably already attempt to separate hazardous industrial activities from major population centres. Urban planning needs to integrate awareness of natural hazards and risk reduction into the normal processes of planning the development of a city.

The careful location of public sector facilities can itself play an important role in reducing the vulnerability of a settlement: schools, hospitals, emergency facilities and major infrastructural elements like water pumping stations, electrical power transformers and telephone exchanges represent a significant proportion of the functioning of a town. An important principle is to disperse elements at risk (i.e. services provided by one central facility are always more at risk than those provided by several smaller facilities).

The principle of dispersion applies equally to hospitals and schools, as it does to power stations and water treatment plants. The same principle also applies to population densities in a city (i.e. a denser

concentration of people will always have more disaster potential than if they are more dispersed). Where building densities can be controlled, the urban master plan should reflect the spatial distribution of hazard severity levels in its zoning for permitted densities of development.

Indirect control of densities is sometimes possible through simpler methods, such as, using wide roads, height limitations and road layouts that limit the size of plots available for development. Creating parks can further reduce urban densities, provides space in the city, greenery, allows drainage to decrease flood risk, provides refuge areas for the population in the event of urban fires and may provide space for emergency facilities in the event of a disaster.

At a regional level, the concentration of population growth and industrial development in a centralised city is generally less desirable than a decentralised pattern of secondary towns, satellite centres and development spread over a broader region.

The design of service networks-roads, pipelines, and cables also needs careful planning to reduce risk of failure. Long lengths of supply line are at risk if they are cut at any point. Networks that interconnect and allow more than one route to any point are less vulnerable to local failures provided that individual sections can be isolated when necessary. Vehicle access to a specific point is less likely to be cut by a road blockage in a circular road system than in a radial one.

Urban planners may also be able to reduce risks by changing the use of a vulnerable building being used for an important function: a school in a weak building could be moved to a stronger building and the weak building used for a less important function, like storage.

In many rapidly developing cities, the control of private sector land use through urban master planning and development permissions is almost impossible. It is often private sector land use, the informal sectors and shantytowns that pose the highest risks of disaster. Flood plains and steep slopes are often the marginal lands that are available to the lower-income communities and the most vulnerable social groups.

The economic pressures that drive these groups, first to the city for jobs and opportunity, and second to the marginal lands to live need to be fully understood as the context for reducing their risk. Prohibition or measures to clear settlers from hazardous areas are unlikely to be successful for long if the background pressures are not addressed. Some indirect measures may be effective, such as making safer land available or making alternative locations more attractive. This may be through better provision of income sources, access to public transport and better service provision.

Deterring further development in unoccupied areas by declaring areas clearly as hazard zones, denying services, reducing accessibility and limiting availability of building materials may also be effective.

Ultimately, however, it is only when the local community recognises the true extent of the hazard and accepts that the risk outweighs the benefit to them of being in that location that they will locate elsewhere or protect themselves in other ways.

5.3.2.2 Engineering and Construction Measures

Engineering measures are of two types, those that result in stronger individual structures that are more resistant to hazards, and those that create structures whose function is primarily disaster protection – e.g. flood control structures, levees, infiltration dams, etc.

Actions of the first type are mainly actions on individual buildings and structures and are sometimes referred to as “hardening” facilities against hazard forces. Improving the design and construction of buildings, agricultural structures, infrastructure and other facilities can be achieved in a number of ways. Design standards, building codes and performance specifications are important for facilities designed by engineers. Engineering design against the various hazards may include design for vibration, lateral loads, load surcharges, wind loads, impact, combustibility, flood resistance and other safety factors. Building codes are the critical front line defence for achieving stronger engineered structures, including large private buildings, public sector buildings, infrastructure, transportation networks and industrial facilities.

Part of the measures necessary to achieve the “engineering” risk reduction measures may include explanatory manuals to interpret the code requirements and the establishment of an effective administration to check code compliance in practice.

A large number of the buildings likely to be affected in a disaster, and those most vulnerable to hazards are not designed by engineers and will be unaffected by safety standards established in the building codes. These are houses, workshops, storerooms and agricultural buildings built by the owners themselves or by craftsmen or building contractors to their own designs. In many regions these non-engineered buildings make up a large percentage of the total building stock. The “engineering” measures that are needed to improve the disaster-resistance of non-engineered structures involve the education of builders in practical construction techniques. The resistance of houses to cyclone winds is ultimately dependent on how well the roofing sheets are nailed down and the quality of the joints in the building frame and its attachment to the ground. Training techniques to teach builders

the practicalities of disaster resistant construction are now well understood and form part of the menu of risk reduction actions available to the disaster manager.

Persuading owners and communities to build safer, more disaster resistant structures and to pay the additional costs involved is required to make builder training effective. The building contractor may play a role in persuading the client to build to higher specifications, but unless this is carried out within a general public awareness of the disaster risk and acceptance of the need for protection, the contractor is unlikely to find many customers. Grant systems, preferential loans and supply of building materials have also been used as incentives to help improve the hazard resistance of non-engineered buildings. Legalising land ownership and giving tenants protective rights also encourages people to upgrade building stock with security of tenure and a stake in their own future.

Apart from new buildings, the existing building stock may need to be “hardened” against future hazard impacts. The vulnerability of existing buildings can be reduced to some degree by regular maintenance and retrofitting the buildings for specific hazard events.

The cost of adding strength to an existing building tends to be more expensive (and disruptive) than making new building design stronger, so strengthening is unlikely to be an economic option for the large majority of the building stock. For buildings with relatively short life expectancies (10 to 50 years), it may be better to take a long-term view of building stock upgrading, waiting until buildings come naturally to the end of their useful lives, demolishing them and building new structures in their place that conform to building code safety requirements.

For special structures, critical facilities or historic buildings with long expected life spans, retrofit strengthening techniques are now well established and a considerable amount of expertise has been developed in this field, though these are generally too costly to be useful in development projects.

The engineering of large-scale flood control and water-supply measures is complex, lengthy and capital-intensive; and their construction frequently has adverse consequences for those they are intended to protect, for example some people may be forced off their land, land-use patterns may be changed and other adverse effects felt. Experience has shown that small-scale flood control measures, which can be managed by community-based organisations, can be effective in risk reduction while simultaneously achieving other development goals. They tend to make use of local materials; labour and management resources to build on traditional risk reduction knowledge rather than replacing it, and to enhance the community’s own self-reliance rather than undermining it. Such measures can play an important role in risk reduction within integrated agricultural or rural development projects.

5.3.2.3 Economic Measures

Equitable economic development is the key to risk reduction. A strong economy in which the benefits are shared throughout the society is the best protection against future disasters. A strong economy means more money to spend on stronger buildings and larger financial reserves to cope with future losses.

Risk reduction measures that help the community reduce future economic losses help members withstand losses and improve their ability to recover after loss and measures that make it possible for communities to afford higher levels of safety are important elements of an overall risk reduction program.

Inevitably it is those who have least that, proportionally, lose most in a disaster. The weakest members of the economy have few economic reserves. If they lose their house or their animals they have no means of recovering them. They are unlikely to have insurance or access to credit and can quickly become destitute. Large-scale drought or flood disasters in rural areas can result in an acceleration of urbanisation in the region and possibly increased risks as families with their livelihoods destroyed migrate to the towns in search of better opportunities. The destruction of industries and loss of jobs and incomes may well make recovery of the region a long and slow process or make it more vulnerable to a future disaster. Reconstruction plans often extend generous loans to victims to aid their recovery but a family without an income has little prospect of making repayments and is therefore unable to benefit.

Economic development is likely to be the main objective of any regional planner or national government agency, regardless of risk reduction objectives. The processes of economic development are complex and beyond the direct focus of this guideline. However, risk reduction should be seen as a part of the process of economic development.

Some aspects of economic planning are directly relevant to reducing risk. Diversification of economic activity is as important an economic principle as dispersion is in physical planning. A single industry (or single-crop) economy is always more vulnerable than an economy made up of many different activities. The linkages between different sectors of an economy: the transportation of goods, the flow of information, and the labour market: may be more vulnerable to disruption from a disaster than the physical infrastructure that is the means of production.

Tourism as an economic sector is extremely vulnerable to disaster, or even the rumour of a potential disaster. The reliance of industry and the economy on infrastructure (the roads, transportation

networks, power, telephone services etc.) means that a high priority should be placed on protecting these facilities.

Economic incentives and penalties are an important part of the powers of any authority. Grants, loans, taxes, tax concessions and fines can be used to influence the decisions people make to reduce disaster-related risks. Industrial location is commonly influenced by government incentives, which can be used to attract industry to safer locations and loans can be offered to assist owners to upgrade their property and make buildings more disaster resistant.

In industrialised countries, insurance is one of the major economic protection devices. Commercial insurance is expensive and its viability is determined by accurate calculation of risk. If the risk of economic loss is spread widely over a large number of premium payers, the loss is safely dissipated. The more widespread policy holding becomes, the lower the premiums are and the more widespread insurance use is likely to be. Encouragement of people to protect themselves through insurance ensures that a level of protection is built up.

Disaster insurance is high-risk finance and only multi-national insurance companies can gather the resources to cover the losses of any sizeable disaster. It is unlikely to be available to protect poorer or rural communities and their disaster-protection investments, unless backed by a large development agency.

5.3.2.4 Management and Institutional Measures

Risk reduction also requires certain organisational and procedural measures. The time span over which a significant reduction can be achieved in the potential for disaster is long. Changes in physical planning, upgrading structures and changes in the characteristics of building stock are processes that take decades. The objectives and policies that guide the risk reduction processes have to be sustained over a number of years, and have to survive the changes in political administration that are likely to happen within that time, the changes in budgetary priorities and policies on other matters. The institutionalisation of risk reduction requires a consensus of opinion that efforts to reduce disaster risk are of continual importance.

Education, training, professional competence, and political will are necessary aspects of institutionalising risk reduction. The professional training of engineers, planners, economists, social scientist, disaster managers and other managers to include hazards and risk reduction within their normal area of competence should become common. Increasing the exposure of these groups to international expertise and transfer of technology in risk reduction is an important part of building capability in a region.

Administrative and organisational powers for risk reduction include the checking procedures and planning powers to realise risk reduction plans, consultation procedures and representation of the community in risk reduction decisions and management of the implementation of risk reduction activities.

Additional staff resources and organisational structure may be needed to implement risk reduction plans. The DMA requires that Municipalities establish a Disaster Management grouping whose responsibilities will include the development of risk reduction measures. It may not be necessary to establish an autonomous unit for risk reduction, and it is often argued that risk reduction is better integrated within existing activities than carried out as a separate exercise. An administration that carries policy through to implementation is essential.

At the local level, community-based risk reduction requires the strengthening of the capability of the local institutions to carry out local protection measures: such training and support can often be carried out most effectively by NGOs and CBOs.

5.3.2.5 Societal Measures

The risk reduction of disasters will only come about when there is a consensus that it is desirable, feasible and affordable. In many places, the individual hazards that threaten are not recognised, the steps that people can take to protect themselves are not known and the demand of the community to have themselves protected is not forthcoming. Risk reduction planning should aim to develop a disaster “safety culture” in which the people are fully aware of the hazards they face, protect themselves as fully as they can and fully support efforts made on their behalf to protect them.

Public awareness can be raised in a number of ways, from short-term, high-profile campaigns using broadcasts, literature and posters, to more long-term, low profile campaigns that are carried out through general education. Education should attempt to familiarise and de-sensationalise.

Everyone who lives in a hazard-prone area should understand hazards as a fact of life. Information about hazards should be part of the standard curriculum of children at school and be part of everyday information sources, with occasional mentions of them in stories, TV soap operas, newspapers and other common media. The objective is to develop an everyday acknowledgment of hazard safety where people take conscious, automatic precautions through being aware of, but not terrified of, the possibility of hazard occurrence. Their understanding should include being aware of what to do in the event, and a sense that their placement of a stove and the garden wall around their children’s area all affect their own safety.

Awareness of risk locally is aided by reminders of past events: a bollard erected with marking to show the high water mark of past floods; the ruins of a building preserved as a monument to a past earthquake.

It is also important to de-sensationalise hazards. Most occurrences of hazards are not disastrous. Reporting only catastrophic hazards causes fear and fatalism: "If an earthquake lays waste a town, what difference does it make where I put my bookcase?" The treatment of fictional hazards in the media should be aimed at showing how a household copes or doesn't cope with a disruptive occurrence of the hazard, not the annihilation of the soap opera family through cataclysm.

Involvement of the community in risk reduction planning processes may involve public meetings and consultations, public inquiries and full discussion of decisions in the normal political forum.

Further awareness is developed through drills, practice emergencies and anniversary remembrances. In hospitals, schools and large buildings it is often common to have evacuation practices to rehearse what the occupants should do in the event of fire, earthquake or other hazard. In schools children may practice earthquake drills by getting under desks. This reinforces awareness and develops behavioural responses.

The United Nations General Assembly in its adoption of the International Decade for Natural Disaster Reduction (Resolution 44/236, 22 December 1989) designated the second Wednesday of October as an International Day for Natural Disaster Reduction, which may be an opportunity for many other countries to carry out disaster awareness activities.

5.3.3 Risk Reduction Tools

From the hazard profiles and the descriptions of actions that may be possible to reduce their effects, it is evident that protection is complex and needs to be built up through a range of activities undertaken at the same time. Protection cannot be simply provided by any single authority or agency. Authorities cannot provide housing that is wind-resistant for every citizen in cyclone-prone areas. Authorities can and do, however, influence individuals towards protecting themselves and the rest of the community. Authorities can employ a wide range of tools and use their powers in many ways to influence the safety of the community. Legislative powers, administrative functions, spending and project initiation are all tools they can employ to bring about change.

5.3.4 Powers of persuasion are sometimes classified into two types

5.3.4.1 Passive Risk Reduction Measures

Authorities prevent undesired actions through controls and penalties by:

1. Requirement to conform with design codes;
2. Checking compliance of controls on-site;
3. Imposing court proceedings, fines, closure orders on offenders;
4. Control of land use;
5. Denial of utilities and infrastructure to areas where development is undesired;
6. Compulsory insurance.
7. Requirements of passive control systems:
 - (a) An existing and enforceable system of control;
 - (b) Acceptance by the affected community of the objectives and the authority imposing the controls;
 - (c) The economic capability of the affected community to comply with the regulations.

5.3.4.2 Active Risk Reduction Measures

Authorities promote desired actions through incentives like:

1. Planning control dispensations;
2. Training and education;
3. Economic assistance (grants and preferential loans);
4. Subsidies on safety equipment, safer building materials, etc.;
5. Provision of facilities: safer buildings, refuge points, storage;
6. Public information dissemination and awareness raising;
7. Promotion of voluntary insurance; and
8. Creation of community organisations.

5.3.4.3 Active Programs

1. Aim to create a self-perpetuating safety culture in areas of weak authority or poor ability to comply with existing controls;
2. Require large budgets, skilled manpower and extensive administration; and
3. Are useful in areas of low income, rural areas or elsewhere where there is no external jurisdiction over land use or building activity.

5.4 Integration of Disaster Risk Reduction Efforts

5.4.1 Integration of disaster risk reduction with spatial development planning

Disaster risk is driven by both hazard and vulnerability factors reflected in spatial development frameworks. In addition, DRA findings, along with ongoing monitoring information on disaster occurrence, are directly applicable to spatial development planning. For this reason, the WDM DMC must establish mechanisms in association with spatial planners in the district to ensure that relevant spatial information informs disaster risk reduction planning. They must also ensure that verified risk information is incorporated into SDPs and maps.

5.4.2 Incorporation of disaster risk reduction planning into integrated development planning

As disaster risk reduction efforts are medium- to long-term multisectoral efforts focused on vulnerability reduction, they must be incorporated into ongoing IDP projects, processes, programmes and structures. Effective and adaptive disaster risk reduction interventions in the municipal sphere are best planned and implemented as development initiatives through IDP mechanisms and phases.

In addition, municipal organs of state must also test and evaluate specific disaster risk reduction initiatives before these are undertaken and implemented. This is to foster innovation and cross-sectoral linkages at a small or local scale. It also provides for assessment of the vulnerability reduction potential, appropriateness, cost effectiveness and sustainability of previously untested disaster risk reduction strategies prior to a more widespread programme roll-out or ‘scaling-up’.

5.5 Implementation and Monitoring of Disaster Risk Reduction Programmes and Initiatives

As part of the annual reporting requirements specified in the DMA, the WDM DMC must include documented accounts of the DRRPs, programmes and initiatives planned and implemented, including those aimed at reducing vulnerability and loss for defined priority disaster risks. This information must be further consolidated by the PDMC in its annual report to the NDMC.

ACTIONS REQUIRED

- The WDM DMC must establish mechanisms monitoring and communicating the effectiveness of disaster risk reduction initiatives implemented within the district municipal area.

5.6 Information Management and Communication Systems to Support Disaster Risk Reduction

Once district indicative disaster risk profile has been developed, an integrated planning functionality will be required to assist role-players in all spheres of government with the development and updating of DRMPs. Such a component would need to draw on the district disaster risk profile and a detailed resource database and would have to facilitate both risk reduction planning and contingency planning.

This component must facilitate the inclusion of disaster risk reduction strategies in IDPs and other development initiatives and programmes. It must enable tracking of the status of these initiatives, programmes and plans and storage of related documentation and correspondence.

Planning templates must facilitate standardised planning and recording of programmes and plans and must be linked to GIS for easy retrieval and updating.

ACTIONS REQUIRED

- The WDM DMC must establish an integrated DRM IMCS that supports an integrated planning functionality to assist role-players in all spheres of government with the development and updating of DRMPs.

5.7 Education, Training, Public Awareness and Research to Support Disaster Risk Reduction

Disaster risk reduction in the WDM can be supported in the following ways –

- Training Programmes –
 - Aimed at government officials and policy makers, covering disaster risk reduction and including development planning. The programme must embrace the multi-disciplinary and inter-disciplinary dimensions of disaster risk reduction and should be informed by the WDM indicative disaster risk profile;
 - Designed for communities, focusing on disaster risk awareness, disaster risk reduction, volunteerism and preparedness. Local indigenous knowledge needs to be incorporated into community training programmes;
 - Aimed at volunteers, focussing on addressing disaster risk reduction, greater awareness of disaster risks and general preparedness and response.
- Public awareness –

- An integrated district public awareness strategy must be developed and implemented to encourage risk-avoidance behaviour by all role-players, including all departments, schools and communities known to be at risk.
- Research –
 - Ongoing research is required into all aspects of disaster risk reduction and management within the WDM. As such a strategic disaster risk reduction research agenda to effectively inform DRM planning and implementation in the district must be developed. Research is the responsibility of each and every role-player in the DRM arena.

ACTIONS REQUIRED

- The WDM DMC must develop and implement a training programme based on a district-wide needs analysis conducted among DRM stakeholders and role-players; and
- The WDM DMC must develop and implement an integrated district public awareness strategy based on the district indicative disaster risk profile that focusses on disaster risk reduction.

5.8 Funding Arrangements to Support Disaster Risk Reduction

In terms of funding arrangements, funding for disaster risk reduction can be separated into DRM planning and DRM implementation. The DMA requires all spheres of government to DRMPFs that guide DRM activities, including planning and implementing DRRPs and programmes.

5.8.1 Funding options

DRM planning must be incorporated into the strategic plans of national and provincial departments and the IDPs of municipalities. Sectoral plans must also include specific DRM plans for the relevant departments within all municipalities. These planning processes must be funded through the budgets of the relevant organs of state. If DRM planning is integrated into general IDP processes, then little or no additional budgetary allocation for DRM will be required.

Municipal organs of state must include risk reduction as part of a broader strategy to reduce the overall risk and fiscal exposure of their organisations. In addition, risk reduction activities, including preparedness, must be part of the operational activities of the various municipal organs of state and must be reflected in their plans and budgets.

When additional expenditure is required to develop structural mitigation infrastructure, municipal organs of state must establish whether they could fund such projects from their own resources. If they

lack funds to implement these projects, they must include the costs of structural mitigation infrastructure in their three-year capital plans. Municipalities must prioritise these projects in their IDPs.

Section 19 of the MFMA requires that a municipality conduct a feasibility study before it can budget for a capital project. The feasibility study must include DRA findings and recommendations for disaster risk reduction. If the project goes ahead, the cost estimate of mitigation infrastructure or measures should be included in the total cost of the project. Funds can be accessed either through the B component grant for basic services infrastructure, or through the P component grant for any additional funds required to reduce risks associated with existing infrastructure. The benefit of this option is that the conditionality of the grant can help to ensure that disaster risk reduction is integrated into infrastructure development, thus reducing the risk of disasters in the long term.

In the case of activities or projects aimed at preventing or reducing a national priority disaster risk, municipal organs of state may apply for additional funding from the NDMC.

ACTIONS REQUIRED

- The WDM DMC must ensure a policy is developed and implemented for the use and management of private funds for public sector projects and initiatives;
- The WDM DMC Must determine a percentage of municipal organs of state and sector department's budget to be set aside for DRM based on their existing operating revenue.

6 RESPONSE

This chapter ensures effective and appropriate disaster response by implementing immediate integrated and appropriate response measures when significant events or disasters occur or are threatening to occur.

6.1 Assessment, Classification, Declaration and Review of a Disaster by the WDM

6.1.1 Legal requirement

Disaster Management Act, 2002 as amended

Chapter 5: Municipal Disaster Management

Part 3: Powers and duties of municipalities and municipal entities

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.
- (3) The powers referred to in subsection (2) may be exercised only to the extent that this is necessary for the purpose of-
- (a) assisting and protecting the public;
 - (b) providing relief to the public;
 - (c) protecting property;
 - (d) preventing or combating disruption; or
 - (e) dealing with the destructive and other effects of the disaster.
- (4) By-laws made in terms of subsection (2) may include by-laws prescribing penalties for any contravention of the by-laws.
- (5) A municipal state of disaster that has been declared in terms of subsection (1)-
- (a) lapses three months after it has so been declared;
 - (b) may be terminated by the council by notice in the provincial gazette before it lapses in terms of paragraph (a); and
 - (c) may be extended by the council by notice in the provincial gazette for one month at a time before it lapses in terms of paragraph (a) or the existing extension is due to expire.

6.1.2 Rationale for Disaster Declaration

The reasons for the declaration of a disaster include the following -

1. Facilitating quick response to emergencies;
2. Facilitating the speedy release of funds;
3. Ensuring the rapid mobilisation and deployment of resources;
4. Granting special powers to the Municipal Manager, the Premier or the President and other relevant officials so that they can take appropriate action; and
5. Expediting of waiving tender procedures.

However, it must be noted that a number of responses to disaster situations must be put into action prior to the actual disaster declaration. Section 54 (1) states that ***'Irrespective of whether a local state of disaster has been declared according to S55, (b) the council of a District Municipality, acting after consultation with the relevant Local Municipality, is primarily responsible for co-ordination and management of the local disaster that occur in its area'***.

Therefore, the escalation of operations for the WDM DMC should not be restricted to 'declare disasters' and operations should be escalated whenever there is a clearly defined need for the co-ordination role and services which the DMC can provide to the community.

6.1.3 Assessment of a Disaster

Uniform methods and guidelines for conducting initial on-site assessments of both damage and needs when significant events or disasters occur or are threatening to occur are critical tools for informed decision making by the WDM. Typically, on-site assessments would include establishing what resources 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.

Agencies within the WDM tasked with primary responsibility for co-ordinating specific activities associated with disaster response and relief efforts, such as emergency medical care, search and rescue, evacuation, shelter and humanitarian relief, must prepare operational guidelines for initial assessments of the immediate needs of those affected.

ACTIONS REQUIRED

- The WDM DMC must ensure access to guidelines for initial assessments of the immediate needs of those affected by relevant role-players, and ensure relevant training and capacity building is made available for their correct application.

6.1.4 Classification and Declaration

The declaration of a local disaster must be in accordance to Section 55 of the Disaster Management Act of 2002 no 57.

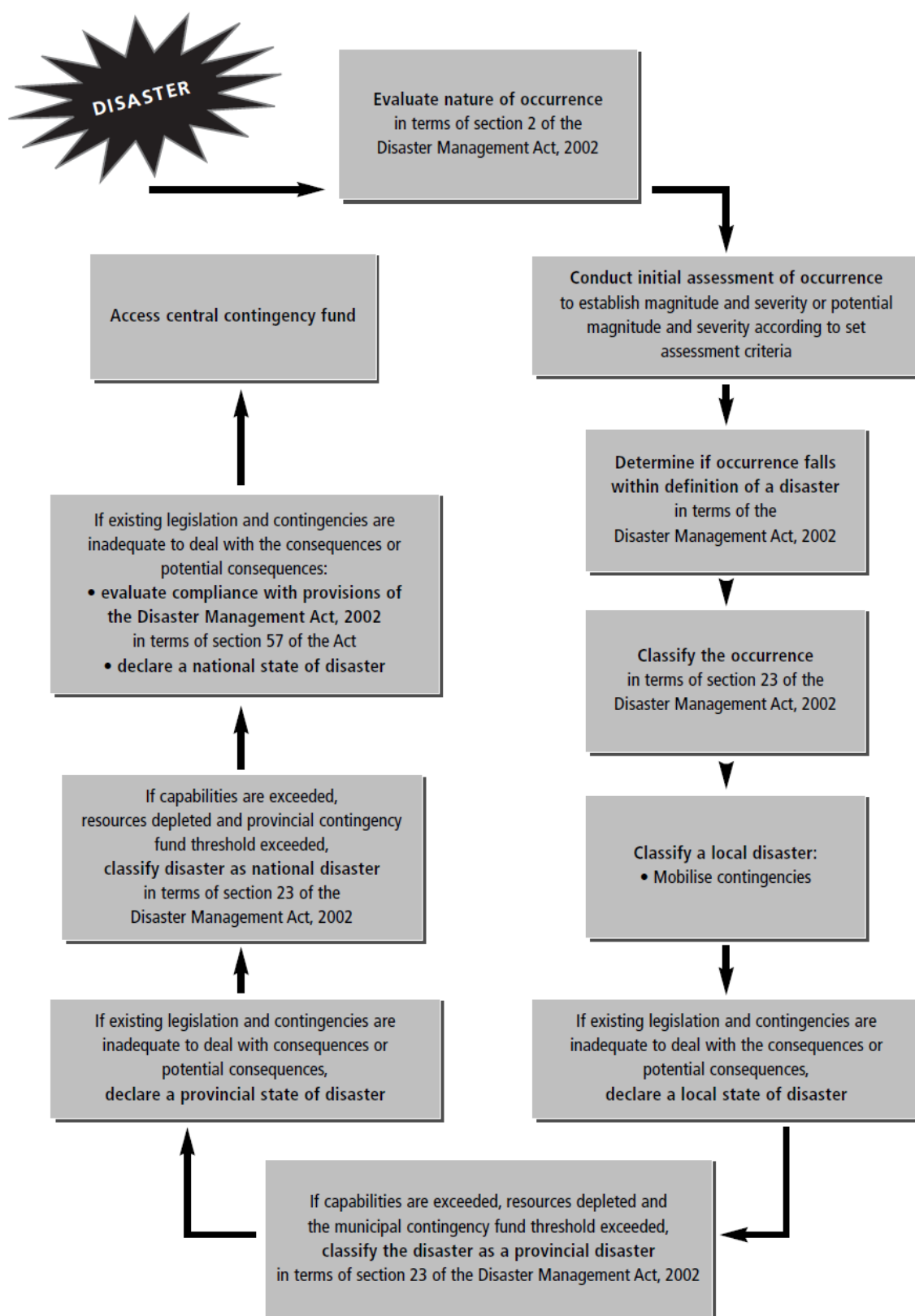


Figure 24: Process for the Classification and Declaration of a State of Disaster

6.1.5 Determining the Magnitude of the Disaster

Local and District Municipalities should declare a disaster when the current resources cannot adequately provide for the municipality to deal effectively with the disaster. This is difficult to quantify, as each Local Municipality has different preparedness, capacity, skills and resource levels, which means that they will have differing manageability index ratings, and some will cope better than others when presented with the same disaster scenario.

6.1.6 Review of Disasters

Comprehensive reviews must be conducted routinely after all significant events and events classified as disasters within the WDM. The reviews will provide the information against which to assess the application of the principles of sections 56 and 57 of the DMA. The findings will directly influence the review and updating of DRMPs and the district disaster risk profile, as well as serve as valuable training aids.

6.2 The Role of WDM in Integrated Response

This procedure focuses on the response and recovery phases of disaster management. It is applicable to operations for the disaster risks outlined in the district indicative disaster risk profile.

In the following section the strategy on how the WDM plans and prepares itself to respond to disasters and emergencies will be addressed.

6.2.1 General Concept of Operations

It is envisaged that the WDM DMC will operate on a daily basis at the 'Routine Operations' level and will fulfil the daily functions outlined in Chapter 3.

The DMC will be staffed, as far as possible, during office hours by at least one Disaster Management Officer (DMO), whilst the others are available to run the education, awareness, and assessment roles amongst others as required by the DMA (see Section 44 (1) (a),(h)).

After hours or when a DMO is unavailable to be present in the office, a contingency as described in 'Chapter 3 – Routine Operations' will be implemented.

In the event of an incident requiring escalation of DMC operations in the WDM the 'WDM DMC – Standard Operating Procedure' will be implemented. During this process a stage will be reached where notification of Provincial and National DMCs will be required. The PDMC and NDMC undertake to support the WDM DMC as necessary. Representatives from the PDMC and NDMC will endeavour to be present in the WDM DMC to co-ordinate their own agency's response and resources and assist

with overall operations, if required by the situation. The DMC operation is based on the use of the Incident Command System (ICS) and is designed to function at a level consistent with the size and complexity of an emergency or disaster.

6.2.2 Phased Escalation Response Plan

The phased nature of the escalation procedures within the 'WDM DMC – SOP' allows for the centre to be staffed at a minimal level during 'Routine Operations', and then to scale up as required by the nature of the incident. The phased nature also allows for the centre to be run on a 24/7/365 basis, but also allows for the other daily functions to be fulfilled by the DMOs allocated to the department.

The nature and extent of the response to any given incident by the DMC will vary with the magnitude and complexity of the incident. The functions carried out in a response phase will follow the ICS concept. This should be aligned to the Provincial and National Response and to the DRMPF. This will ensure that an integrated and common doctrine on disaster management is followed by all role players during provincial or national disasters. The WDM DMC is responsible for the activation and co-ordination of the response and should be able to escalate to enhanced, full or catastrophic operational levels as required by the situation on a 365/24/7 basis.

Below is a detailed description of the processes for escalation of operations from 'Routine Ops' through to 'Catastrophic Ops'. This must be read in conjunction with 'WDM DMC – SOP'

6.2.2.1 Phase I: Routine Operations

This is the level of operation occurring on a daily basis and allows for the daily routine operations of the DMC to be fulfilled. Routine Ops involves the monitoring of reported incidents by the DMO or the call taker designated as the contact person. The monitoring can be done in co-operation with other local, provincial and national agencies. Any incidents will be handled in accordance to the SOPs and DPPs.

6.2.2.2 Phase II: Enhanced Operations (Alert Stage)

1. Escalation to 'Enhanced Operations' will occur if an incident is, or could potentially grow, beyond the coping capability of the designated call taker and current resources. In this instance and in the absence of the DMO being present in the DMC, the designated call-taker will notify the DMO, who will report to the WDM DMC.
2. The DMO, along with selected staff will support and monitor the incident from the WDM DMC. Other staff may be involved as advisors if needed for specific expertise.

3. The decision to escalate operations from Phase I: Routine Operations to Phase II: Enhanced Operations can be made by any one or a combination of the following individuals:
 - (a) The Duty Officer (DMO);
 - (b) The Head of the DMC; and
 - (c) The Director Social Services and Community Services (DSDCS).
4. During this phase the call-taker will continue to monitor other requests for assistance, separate from the incident that has caused activation of the DMC.
5. As a general rule, transition from Phase I to II will automatically occur when:
6. Any of the previous persons has activated the DMC; and
7. Intelligence data indicates the potential for an emergency that is beyond the capability of the WDM.
8. Actions taken during this time may include:
 - (a) Response agencies access the situation, gather intelligence from the field and prepare to respond to the area of emergency;
 - (b) Notification of the potential escalation of Operations in response to the emergency or disaster and the alert actions are made to the following:
 - (i) The Provincial DMC;
 - (ii) Key representatives from Provincial DMC and National DMC are requested to standby;
 - (iii) All potentially relevant provincial departments and agencies – See Annexure 2 for an extensive list of possible role players;
 - (iv) Key representatives of local role players are requested to standby – See Chapter 6 for the relevant DPP; and
 - (v) Local Government in area of responsibility and area of influence.
 - (c) The WDM DMC is staffed in preparation for full activation.

Note: The method of communication needs to be determined as part of the communication plan and infrastructure required.

1. The Mayor / Municipal Manager's functionary designated to deal with the Press is responsible for disseminating public information regarding the municipality's alert actions. The information is supplied by the staff in the DMC.
2. An assessment must be made of the potential emergency by the DMO, and a report provided to the Head of DMC. The report must be forwarded to the Mayor / Municipal Manager for his / her decision.

3. The Duty Officer will have the authority to escalate operations from Phase II – Enhanced Operations to Phase III – Full Operations based on the available information. This transition will always occur when the DMC begins to conduct a response operation in the field.

ACTIONS REQUIRED

- A Communications SOP must be developed and maintained by the DMC.

6.2.2.3 Phase III: Full Operations

1. The transition from ‘Enhanced Operations’ to ‘Full Operations’ occurs when the magnitude and complexity of the incident requires representation from the appropriate Municipal, Provincial and other agencies and organisations to support the operations. The number of staff and the agencies represented will vary depending on the incident. In this phase the level of activity dictates that normal routine DMC staff functions cease, and all personnel respond in support of the incident, performing functions in accordance with their appointed position and previous DMC training. As the emergency or disaster becomes more defined the activity and staffing maybe scaled up or down.
2. At this stage it is necessary to establish a Disaster Management Team (DMT). One or more persons may be tasked to one or more of the following functions:
 - (a) DMC Supervisor / Executive Team;
 - (b) Operations;
 - (c) Logistics;
 - (d) Finance and Administration;
 - (e) Information, analysis and planning;
 - (f) Public Information;
 - (g) Telecommunications;
 - (h) Recovery; and
 - (i) Selected other functions.
3. Possible actions to be taken at this time include:
 - (a) The WDM Head of DMC must report to the DMC to assume executive control of operations;
 - (b) The MCU may be dispatched to the scene of the incident if it is localised or to the area of the highest priority if it is area wide. This vehicle will function as the MCU and will become the communications centre and the JOC from where Forward Command and Control (FCC) will be exercised;

- (c) Liaison personnel will be forwarded to the scene to assist with the coordination between other agencies and the emergency agencies of the WDM, and to staff the MCU;
- (d) The WDM DMC is considered fully activated, with representatives from other agencies as required. Requests from all affected areas and agencies will be prioritised and fulfilled with available Local, Provincial and National resources;
- (e) The DMT will continue to assess the emergency, oversee the emergency actions and advise the Head of DMC and the WDM Municipal Manager. In most cases, the Head of DMC will direct the activities of the DMT during an emergency;
- (f) If a formal proclamation of emergency is recommended, it will be advised by the Head of DMC whether a Local or District disaster is recommended;
- (g) Notification of the potential escalation of operations in response to the emergency or disaster and the alert actions are made to the following:
 - (i) The PDMC;
 - (ii) Local Government in area of responsibility and area of influence;
 - (iii) All potential provincial departments and agencies;
 - (iv) The NDMC;
 - (v) Neighbouring provinces; and
 - (vi) The required national agencies when the incident is located on our borders.
- (h) The DSDCS' formal activities can include the request for the proclamation of emergency, activation of the Provincial and National Disaster Management effort.
- (i) The DSDCS, DMT and emergency agencies continue to oversee and assess the emergency response. Actions may include an aerial reconnaissance.
- (j) Continued flow of information on a horizontal and vertical level is made to inform the DSDCS and DMT of the emergency actions and to co-ordinate the response.
- (k) The WDM functionary responsible for communication must activate the Public Information Team to handle all public information activities.
- (l) The DMC and DMT provide information, manage the situation and maintain contact with the PDMC and NDMC, the Premier of Limpopo and the Minister of Provincial Department of Co-operative Governance.
- (m) The Head of DMC, DSDCS or Municipal Manager will have the authority to escalate operations from Phase III – Full Operations to Phase IV – Catastrophic Operations. This transition automatically occurs when the WDM DMC requests assistance from and conducts response operations in conjunction with Provincial and National DMC resources.

6.2.2.4 Phase IV: Catastrophic Operations

1. The transition from Enhanced Operations to Full Operations occurs when a major catastrophic emergency or disaster has occurred that exceeds the capability of provincial and local government to provide timely and effective response to meet the needs of the situation. This type of emergency may cause numerous casualties, property loss and disruption of normal life support systems and significantly impacts the region's economic, physical and social infrastructures.
2. Actions to be taken at this time may include:
 - (a) The DMC and representatives from other municipalities are fully activated with representation from provincial and national agencies, volunteer organisations. Requests from local government for provincial and national assistance will be prioritised and fulfilled with available resources and proclamations;
 - (b) All required emergency services have been activated to respond to the situation;
 - (c) The DMC establishes links with the PDMC until the National Emergency Response Team (NERT) is established in the field;
 - (d) A proclamation of disaster should be considered to allow for the use of national assets.
3. The DSDCS, DMT and emergency agencies continue to oversee and assess the emergency response and advise the PDMC and NDMC. Actions may include aerial reconnaissance, ground visits and briefings.
4. Continued notification to local government, neighbouring provincial and national agencies are made, informing them of emergency actions and co-ordinating response.
5. The WDM DMC and DMT provide management of line functions and maintain contact with the PDMC and NDMC, the Premier's Office and the Minister of Local Government and Provincial Affairs.

6.2.3 Management Notification for Emergencies

This section deals with the notifications that have to be implemented in the case of an emergency or disaster by the different levels and phases of response to emergencies and disasters. The notifications are divided into:

1. Notification of the WDM DMC Duty Officer (DMO);
2. Notification of the WDM DMC Manager;
3. Notification of the DSDCS;
4. Notification of the Limpopo PDMC;
5. Notification of the Premier's office and the NDMC.

6.2.3.1 Notification of the WDM DMC Duty Manager

1. The current full time staff complement of the WDM DMC comprises two DMOs. This requires the creation of a notification system whereby the function of call taking for the DMC is either fulfilled by another agency's call centre or calls are diverted to a 'DMO Mobile phone'. If an alternative agency fulfils this role they will be required to notify the WDM DMC DMO of any potential escalation from a 'Routine Operations' level, to an 'Enhanced Operations' level.
2. Criteria for Escalation to Enhanced Operations and therefore WDM DMC DMO notification are:
 - (a) Incidents or accidents involving any hazardous materials;
 - (b) Incidents or accidents involving severe weather situations;
 - (c) The incident is unusual and does not happen frequently (e.g. train derailment, and explosions);
 - (d) Incidents where sabotage or terrorism is suspected; and
 - (e) Updates of significance on the status of an incident already in progress.
3. The above notification would require the DMO to report to the DMC immediately to assume control of the DMC.

6.2.3.2 Notification of the Head of Disaster Management Centre

1. The Duty Officer will notify the WDM DMC Manager when:
 - (a) The above mentioned criteria deteriorate further, or the threat to life or property increases.
2. Upon receiving the notification the DMC Manager will report to the DMC to assume control of the DMC.

6.2.3.3 Notification of the DSDCS

1. The DMC Manager will notify the DSDCS when:
 - (a) The severity of the situation warrants;
 - (b) It is politically prudent;
2. Policy decisions need to be taken;
3. The declaration of a Disaster is required;
4. The emergency or disaster meets the criteria for notification of the Premier's Office.

Note: It is the responsibility of the DSDCS to notify the Municipal Manager, the Executive Mayor and the Premier's Office.

6.2.3.4 Notification of the Provincial Disaster Management Centre

1. The DSDCS will notify the Limpopo PDMC as above, regarding any situation that requires notification of the Premier's Office.
2. The primary point of contact is the Director responsible for the DMC and if not available the Head of PDMC.
3. If none of the functionaries are available in the WDM it is the responsibility of the WDM DMC DMO to contact the PDMC.

6.2.3.5 Notification of the Premier's Office and the National Disaster Management Centre

Whenever notification of the Premier's Office is required the Director for Co-operative Governance and the responsible person in the Premier's Office will be notified. They will be contacted regarding emergencies that meet the following criteria:

1. Activation of the SANDF is required;
2. The emergency affects multiple jurisdictions and is anticipated to continue for more than a few hours;
3. Evacuation of citizens is occurring or anticipated;
4. Emergency or disaster require the activation of the Provincial Response System or PDMC or other local DMCs;
5. Any severe weather warning that is likely to cause widespread damage or injury or loss;
6. Significant hazardous material spills;
7. Emergency or disasters occurring at NKPs; and
8. Known or suspected terrorist use of weapons of mass destruction.

The Limpopo DMC will be the primary contact with the Premier's Office, however if none of the functionaries are available at the Provincial level the WDM DMC Manager will contact the PDMC or even NDMC if necessary.

Note: Whenever a grey area for notification is encountered, the DMO is strongly encouraged rather to make the notification than NOT MAKING THE NOTIFICATION.

When notification of the emergency or disaster is made to the Premier's Office the following information will be required:

1. Nature of the emergency or disaster;
2. Prognosis, if known;
3. Actions being taken;

4. Actions recommended;
5. Emergency proclamation;
6. Recommended level of public information response; and
7. Anticipated or recommended schedule for briefing or update.

6.2.4 Staff and Agency Call out Procedures

The DMO must utilise the appropriate medium to notify the selected agency staff:

1. Rosters of DMC staff must be created for the DMO function;
2. Rosters and current communications registers must be kept for the other staff who may be called in to the DMC during escalated ops:
 - (a) DMC Staff;
 - (b) Volunteers;
 - (c) Employees of agencies who are trained to operate in the DMC; and
 - (d) Agencies which are required to send representatives during escalated operations.

A communications SOP must be created and maintained as one of the monthly functions of the DMOs.

The Head of DMC, or designated DMO, will act as the DMC Supervisor and upon arrival at the Centre will:

1. Review the most recent situation update related to the immediate event;
2. Ensure that effective communication and co-ordination with other agencies is taking place;
3. Communicate with the on-scene DMO for an update and recommendations from the field JOC;
4. Assess pertinent messages and information from the field, ensure all warning information has been disseminated;
5. Be prepared to make essential operational decisions, to include preliminary staff assignments and deployment of manpower and resources;
6. Be prepared to discuss and determine the need for public information support and or activation of the Information Centre with the DSDCS and Communication;
7. Assume control of incident operations and remain in control until properly relieved.

The first DMO to arrive at the DMC will:

1. Receive a briefing from the DMO or Head of DMC whoever is present and then undertake an assistance role to the DMO or Head of DMC as required;
2. Follow the instructions of the DMO or Head of DMC as the situation dictates.

All subsequent staff reporting to the DMC as part of the Initial Response Team (IRT) will follow the initial activation priorities:

1. Report to the DMC Supervisor to receive functional assignment;
2. Bring facility equipment into operation and conduct duties as per the checklist, SOPs and protocols;
3. These checklists, SOPs and protocols must be developed and maintained by the DMOs;
4. Assume control of functional operations and remain in control until properly relieved, or the incident is brought under control and recovery is underway.

6.2.5 Responsibilities during DMC Escalated Operations

6.2.5.1 Proposed organisational structure and roles for response phase

Below is an example of a broad Organogram for the possible structure of operations in the case of an escalation to Catastrophic Operations.

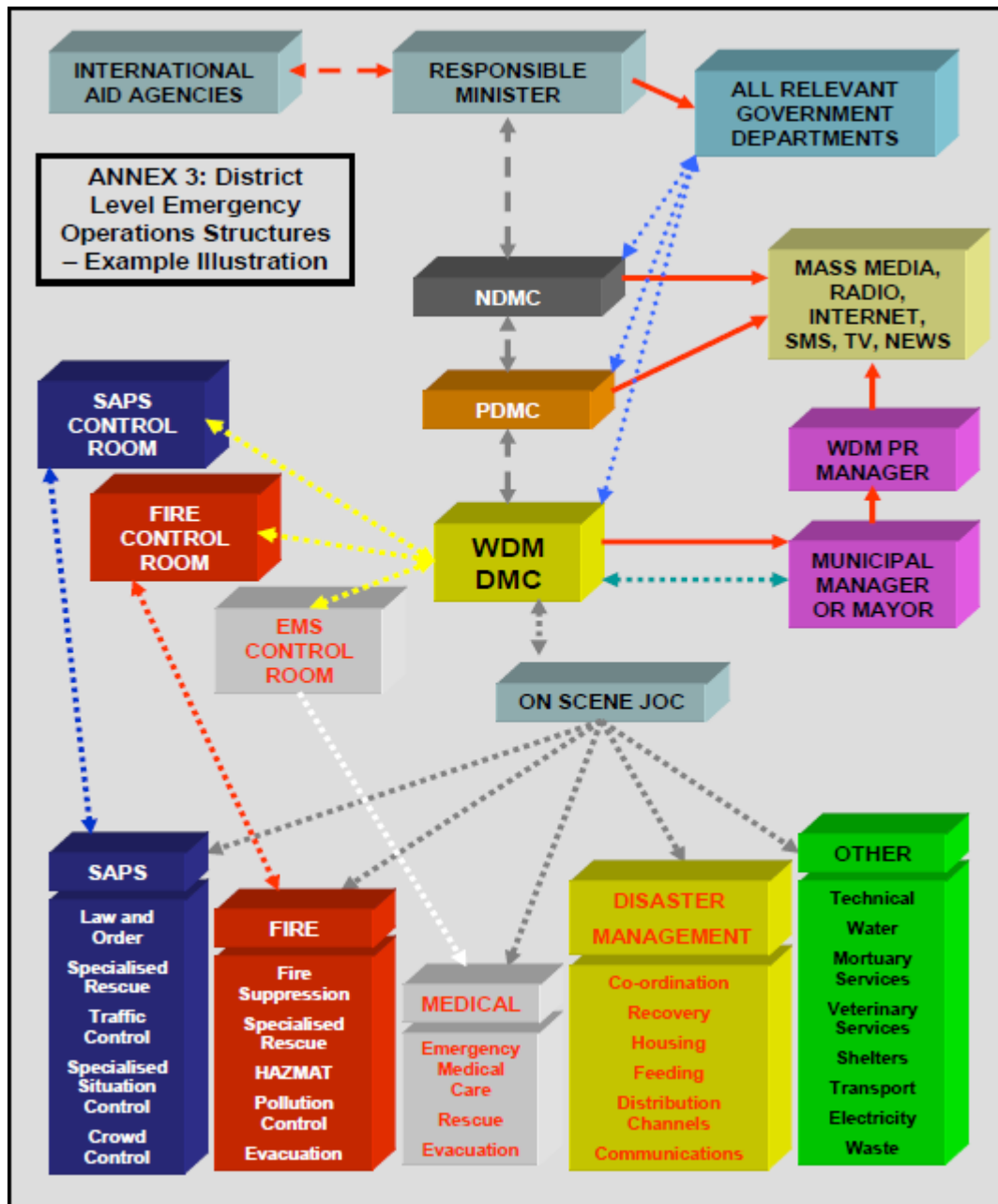


Figure 25: Example of a Broad Organogram for the Possible Structure of Operations in the Case of an Escalation to Catastrophic Operations

6.2.5.2 Responsibilities of the DMC during Escalated Operations

Responsibilities of the DMC in times of a disaster are governed by the DMA Section 55 (2) as quoted above.

6.2.5.3 Proposed structure of responsibility in the WDM's DMC

The DMC is organised in accordance with the basic concepts of the ICS and incorporates municipal level Emergency Support Functions (ESFs). In addition, staff may be assigned to Local DMCs as Liaison

Officers, Field Command Posts or local Emergency Operations Facilities (EOFs). This concept should be applicable to the PDMC ICS. The ICS model includes the following five functional areas:

1. Executive Team – assume Incident Command;
2. Information, Analysis and Plans Section;
3. Logistics Section;
4. Operations Section; and
5. Finance and Administration.

This does not say that every incident will require a minimum of five officers. The ICS allows for the system to be scaled up or down depending on the nature and severity of the incident. Two or more of the abovementioned ICS functions can be filled by one person depending on the nature of the incident and the ability of the individual. As the incident progresses the functions can be scaled up or down by the Incident Commander as deemed necessary.

6.2.6 Staffing the Emergency Functions

The DMC staff will be used to staff the IRT as far as possible, however with only two full time DMOs, the provision of staff in Full Operations, or Catastrophic Operations will be limited to:

Disaster Management Officer	Functional Position	Location
DMC Manager	DMC Manager	DMC
Disaster Management Officer 1	Disaster Management Officer	On-Scene in MCU

Therefore, a volunteer programme as allowed for in the NDMF and the DMA must be implemented. The DMA allows for the establishment of a Unit of volunteers (S 58 (1) of the DMA) and stipulates that a Local Municipality that does implement the unit must submit the volunteers' particulars to the NDMC within 21 days.

Cross training and multi-skilling of staff from other Emergency Service Departments will also allow for surge capacity to be created. The cross training and mutual assistance from the PDMC may also be an opportunity to create additional surge resources. Personnel from other departments, volunteers and reservists must be used to augment the DMC as and when required. Liaison officers from public and media information departments must be used in the operations room to ensure the effective flow of information.

Other National and Provincial departments and agencies may be asked to provide staff for a number of functions on a 24-hour basis. They will receive the necessary training for their specific assignments and will be used in those positions during exercises and actual emergency and disaster situations.

The ideal situation is that individuals need to be cross trained to shadow a number of positions within the DMC. This will ensure flexibility and increase the effectiveness.

This will allow other staff to focus on the specific line function in their line departments until they are requested in the DMC. Other staff from corporate services may be required to fill positions in the staffing pattern.

Ideally each functional department is responsible for providing their own trained staff for the area of responsibility as well as relief staff for ongoing protracted incidents, but mutual assistance and cross training will be required in the event of the DMC escalating operations to Full or Catastrophic Operational Levels:

Functional Area	Staffing Responsibility
Executive Team	DMSS, Heads of District Departments and other role players
Operations Section	Disaster Management Centre
Logistics Section	Disaster Management Centre
Administration Section	Disaster Management Centre
Information Analysis and Planning Section	Disaster Management Centre
Public Information Section	Disaster Management Centre
Communications Section	Disaster Management Centre
Recovery Section	Applicable Engineering Departments
Additional support as required	All other WDM Departments

ACTIONS REQUIRED

- The WDM DMC must develop an implementation plan for the establishment of a unit of volunteers to participate in DRM in the municipality (S 58 (1) of the DMA).

6.2.6.1 Executive Team

The Executive Team is made up of the DSDCS, Head of DMC, and other co-opted members.

The Mayor/Municipal Manager together with the DMT provides the overall direction and control for dealing with emergencies and disasters. In the event of an emergency or disaster which requires the activation of the WDM Response Teams, the Executive Team may convene to assess the situation and to oversee the execution. They will receive recommendations from the Municipal Manager who will be advised by the DMT. This team comprises:

1. The DSDCS;
2. The DMC Manager;
3. Other co-opted department heads and agencies. These co-opted members will be selected based on the specific emergency or disaster.

The DSDCS is responsible for –

1. Making executive and policy decisions;
2. Notifying the Mayor/Municipal Manager, Premier and NDMC as appropriate and keep them informed;
3. Co-ordinating with other municipal agencies and provincial members;
4. Co-ordinating with the Director Limpopo DMC;
5. Co-ordinating with Local Municipalities;
6. Recommending emergency proclamation to the Premier; and
7. Co-ordinating with the Director responsible for public and media information.

The Head of DMC is responsible for –

1. Recommending executive and policy decisions to the DMT;
2. Implementing decisions taken by the DMT;
3. Directing and controlling DMC operations; and
4. Performing the disaster management activities of the DSDCS in his/her absence.

6.2.6.2 Public Information

The Mayor/Municipal Managers responsible person for press matters oversees the public and media information. The public information procedures and information should be outlined in a SOP Manual for the DMC. This SOP must be developed by the DMOs in conjunction with the WDM Press Liaison Department.

6.2.6.3 Disaster Management Centre Supervisory Staff

The DMC Supervisory Staff act on behalf of the DSDCS and the Head of the DMC. The Head of DMC is responsible for all the phases of the strategy and plan.

6.2.6.4 Finance and Administration Section

The section is responsible for all the internal services within the centre. This includes but is not limited to –

1. Accessing disaster funding;
2. Fund allocation to resources and projects;
3. Recording costs related to the disaster;
4. Staff records;
5. Scheduling of shifts;
6. Feeding of staff;
7. Clerical work; and
8. Filing.

6.2.6.5 Logistics Section

This section is responsible for locating, procurement, identifying and packing and prioritising the redistribution of resources. In co-ordination with the DMT, it should track availability, distribution and redistribution of available resources during the response phase and maintain the resources during this phase and recover and demobilize afterwards.

6.2.6.6 Information, Analysis and Planning

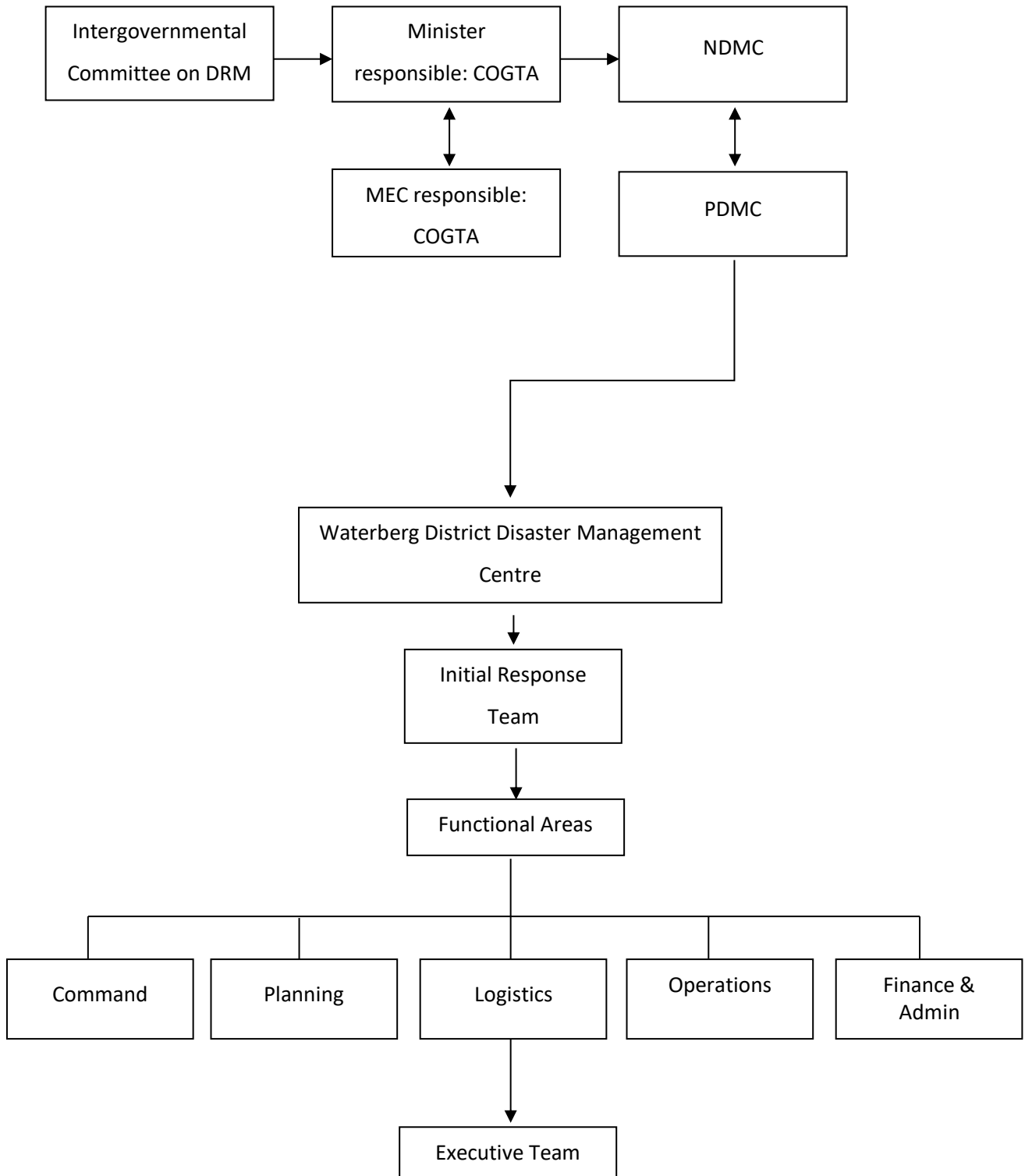
This section is responsible for the collection, compilation, and evaluation and displaying of the information of the assessed impact, risk and vulnerability of the different communities to the emergency or disaster. During a disaster, they are also responsible for conducting damage assessments and use such assessments to plan an appropriate response to limit injury, loss of life and damage to property and to ensure speedy reconstruction and recovery.

6.2.6.7 Operations Section

The operational section is responsible for the co-ordination of the activities between department and agencies at a Local, Provincial and National level. They are responsible for processing the different requests and the tasking of the resources based on the priorities. They are dependent on the good co-operation from the Logistics and Information, Analysis and Planning Sections.

6.2.7 WDM DMC Diagrammatic Representation of Emergency Response

National → Provincial → District



6.3 WDM Relief Regulation and Management

The aim of relief measures is to provide immediate access to basic necessities for those severely affected by disasters. Given the importance of this function, the WDM DMC does make provision for the annual procurement and distribution of humanitarian relief materials, in the form of army tents, blankets and mattresses.

Within the WDM and the country as a whole though, there are a large number of relief donor agencies and groups that work toward assisting victims affected by disasters. The WDM must work towards strengthening its engagement with these organisations in order to effectively collect and channel resources optimally. To this end, the WDM must establish a Relief Management Technical Task Team.

The Relief Management Task Team must be responsible for –

- Establishing a database of –
 - relief agencies;
 - categories of relief items per disaster or beneficiary type; and
 - SOPs of each relief agency for the distribution, management and monitoring of relief.
- Establishing procedures for the request and release of relief items during a major incident or disaster;
- Establishing roles and responsibilities of all role-players involved with the procurement and distribution of relief;
- Establishing and maintaining standards of relief according to national and international regulations;
- Coordinating relief efforts to ensure the equitable distribution of relief items;
- Monitoring and annual review of relief operations.

Documenting of lessons learnt following monitoring and reviews of the management of relief operations is critical to ensure that ownership of disaster risk is not discouraged among at-risk communities. It is imperative that relief operations within the WDM do not reinforce the expectation of external support and transferring individual/household/community risk on to the municipality and other humanitarian relief agencies.

Given the above, the WDM DMC, through the Relief Management Technical Task Team, must take an account of the number of households receiving humanitarian relief, differentiated by location, date, disaster type and amount provided. This will provide for an important benchmark for the monitoring

of the effectiveness of disaster risk reduction initiatives in the district in the most vulnerable communities, as demands change for humanitarian relief assistance.

ACTIONS REQUIRED

- The WDM DMAF must establish a Relief Management Technical Task Team for the effective coordination and equitable distribution of humanitarian relief in the WDM.

6.4 Information Management and Communication Systems to Support Response

The WDM IMCS must facilitate the management of response operations and the recording, retrieval and updating of specific real-time information during single and multiple significant events and/or disasters. It must also allow for direct links with the communication system to provide the information required for mobilisation.

The response component of the IMCS must include the following:

- the area affected (indicating the specific and surrounding affected areas and links to all the spatial and other relevant data associated with the area);
- the type of event (classification by type, magnitude and severity);
- analysis of status of critical lifeline infrastructure;
- analysis of reported impacts;
- situation reporting, tracking and analysis of status of critical disaster operations, such as search and rescue, emergency medical care, access routes and fire suppression; and
- response resource database, including:
 - primary agency (contact details of the primary agency, response and recovery plans and SOPs applicable to the specific area and event);
 - resources and support agencies (contact details of the support agencies, response and recovery plans and SOPs applicable to the specific activity); and
 - relevant service providers (listing of all other related services that may be required to assist with response and recovery operations in a specific area).

The response features should be designed as templates and drop-down menus to make the information easily accessible for use during a disaster or significant event. Provision must be made for real-time manipulation of data related to the event or disaster gathered during the planning phase. The component must also be linked to the resource database to assist in identifying the location of

resources locally and to facilitate and record the management and allocation of resources during a significant event or disaster. The DOC must be able to access this information in order to track the deployment of resources and the progress of response activities.

Specialist GIS-based applications, linked to the information management system, must facilitate computer-aided management of response operations by allowing for simulated or real-time modelling, tracking and situational reporting in an affected area.

The primary system requirements for mobilisation and communication are an on-site automated dialling and/or message delivery system and two-way radio communication facilities that call designated small or large groups of people, community members, volunteers and response agencies where required. The method of communication should be determined consultatively with various role players.

The system must be able to use standard landline (Telkom) telephones, cellular telephones connected to all available networks, and telephony-enabled radio systems. It must relay digitally recorded voice messages to and request responses from recipients, who must be able to use the telephone keypad to send signals in reply. All details of all calls must be logged and reports generated from this information. The system must also be capable of sending messages to pagers (alpha and digital) and sending e-mails.

The system must allow for the recording and logging of all messages received and sent, all decisions made, and instructions or directives communicated during a significant event or disaster. Recording devices must allow for the recording and storage of voice, pictures and documents as well as their retrieval 'on the fly' for management and evaluation purposes.

ACTIONS REQUIRED

- The WDM DMC must design and implement an integrated IMCS with a comprehensive response component that meets the requirements of the details described above.

6.5 Education, Training, Public Awareness and Research to Support Response

Response operations in the WDM can be supported in the following ways –

- Training programmes –
 - Aimed at government officials, policy-makers and other role-players involved with response operations within the WDM. The training must embrace the multi-disciplinary and interdisciplinary dimensions of response, and should be informed by the district indicative disaster risk profile
 - Developed for persons interested in volunteering their services, addressing the issue of response.
- Public awareness –
 - Communication about response activities is important to ensure that information is passed on to communities and those involved with response efforts. The role of the media during disasters must be defined and managed through a consultative process involving the media, role-players involved in response, and communities routinely affected by disasters or impending disasters.

6.6 Funding Arrangements to Support Response

Disaster response operations should be funded through the budgets of municipal organs of state up to the prescribed threshold. Once the threshold is reached, additional funding should be accessed through the central contingency fund unconditionally for municipalities.

The main activities within the broad scope of disaster response include:

- disaster response; and
- relief measures.

6.6.1 Funding for Disaster Response

It is important that a rapid response in the event of a disaster is supported through the quick access to and flow of funds.

All organs of state must budget for costs involved in disaster response. This principle places the onus for funding the initial costs associated with a disaster on the organs of state involved in response operations. Once budgets for response activities have been exhausted, the relevant organ of state

may request financial assistance from national government. Financial assistance will only be provided after taking into account the disaster risk reduction measures taken prior to the onset of the disaster.

The WDM and municipal organs of state must prescribe threshold percentages, based on their own operating revenue, and according to the requirements of the WDM DRMPF. Once the WDM and its organs of state have exhausted their thresholds, they should then be able to request financial assistance from their provincial governments.

6.6.2 Funding for Relief Measures

The WDM has a mayoral discretionary fund aimed at providing relief to local communities. The challenge is to co-ordinate the inputs of this fund with all other agencies responsible for the provision of relief, to ensure that relief measures flow rapidly and equitably to communities.

ACTIONS REQUIRED

- The WDM Council must prescribe percentage thresholds for disaster management for municipal organs of state based on their existing operating revenue

7 RECOVERY

This chapter ensures effective and appropriate disaster recovery by implementing all rehabilitation and reconstruction strategies following a disaster in an integrated and developmental manner.

7.1 WDM Coordination of Disaster Recovery Measures

According to the Sendai Framework for Disaster Reduction (2015 – 2030), disasters have demonstrated that the recovery, rehabilitation and reconstruction phase, which needs to be prepared ahead of a disaster, is a critical opportunity to “Build Back Better”, including through integrating disaster risk reduction into development measures, making nations and communities resilient to disasters.

Recovery is a vital aspect of DRM as the effects of disaster continue long after the immediate threat to life and property has diminished. Provincial and national government does not generally make financial provision for the recovery phase. The view of government is that government resources should only be used if the community cannot cope with its own resources, and hence the Disaster Declaration Criteria and processes that are in place.

Recovery measures are designed not only to help restore the environment, the government infrastructure and communities to their pre-emergency conditions, but to ensure the principle of ‘building back better’ is applied in all rehabilitation and reconstruction efforts. This includes measures such as –

1. Re-establishment of a facility for the executive level of government;
2. Activation of business continuity plans;
3. Establishing of emergency operations centres;
4. Restoration of government services;
5. Reconstruction of facilities and other infrastructure;
6. Debris removal;
7. Dealing with deceased;
8. Counselling;
9. Financial assistance programs;
10. Provision of interim housing and safety;
11. Provision of food and water; and

12. Public consultation process.

7.1.1 Responsibilities for Recovery Measures

7.1.1.1 Local Authorities

Local authorities are responsible for management of recovery within their municipal or district boundaries. They may request assistance from the provincial government, neighbouring municipalities and regional districts, private sector agencies, or the offices of the national government. The anticipated role of the provincial government is to provide coordination; material support, advice, expertise or such other assistance as may be required.

7.1.1.2 Provincial Government

The provincial government will only assume the leadership of recovery operations in an organised area of the province if:

1. A catastrophic event occurs which has rendered the local government incapable of adequately managing the recovery process;
2. Due to the catastrophic event, the local government has requested support and the provincial government has agreed that the request is reasonable;
3. Management of recovery falls under provincial jurisdiction.

When required, the province will request assistance from local government and private sector agencies.

Province will provide assistance to the national government in the same way as it would to a local government.

7.1.1.3 National Government

The national government is responsible for recovery operations during national disasters. On the request of the province they may declare a National State of Disaster. National Emergency Arrangements (NEA) to be written to mobilise resources.

7.1.2 Principles of Recovery Management

7.1.2.1 Sharing the responsibility

All governmental entities have an obligation to recover services and restore facilities as soon as possible following a catastrophic event. Each municipal organ of state and sector department in the

WDM must contribute the required resources to assist in the rehabilitation and reconstruction of its department and the overall rehabilitation and reconstruction of the District.

The responsibility will remain at the lowest tier of government unless the situation is of such a nature that it requires escalation to the next tier of government.

7.1.2.2 Maximum use of existing systems and procedures

The organisations responsible for the day-to-day operations are responsible for rehabilitation and reconstruction. Newly formed mechanisms and structures will be developed only to meet clearly identified shortcomings.

7.1.2.3 A single set of management arrangements

To enhance communication and understanding, provincial and local government recovery and reconstruction plans, procedures and terminology should ideally be standardised as far as possible.

7.1.2.4 Integrated departmental prevention, mitigation and continuation planning

Relevant WDM sector departments and municipal organs of state must prepare Business Continuity Plans in consultation with the DMC to address prevention, mitigation, recovery and reconstruction issues within its area of responsibility based upon the catastrophic event scenario. These plans must indicate the nature of support required from the supporting departments and organs of state and from the other line departments.

7.1.2.5 The recovery and reconstruction management structure

This structure should be flexible to ensure it caters for the scale and nature of the emergency, which will vary in magnitude. The structure will need to be scaled-up in the initial stages and then systematically down-scaled as the situation gradually normalises. Due to the variable nature of this structure, it is imperative this key component should be exercised and evaluated during contingency planning.

7.1.2.6 Active and co-operative partnership between all levels of government

The provincial government will assist the local governments during the recovery phase upon receiving a request to do so. The tasks, roles and responsibilities will be established through joint planning meetings. The province has the powers in terms of the DMA to direct and re-direct resources and activities anywhere in the Province.

7.1.2.7 Lessons learnt taken into recovery and reconstruction strategy

The lessons learnt must be analysed and extracted from the reports and studies conducted post disaster occurrence. All loss and damage to life, property and environment during a disaster will happen again if the reconstruction is not improved, or changed or protected depending on the causes of the initial problem.

7.1.3 Co-ordination of Recovery Operations

In a situation where the impact of a disaster spans multiple districts, local government organisations will compete for limited resources from provincial and other agencies. It is therefore essential that the actions of various government departments, agencies and other stakeholders be co-ordinated to achieve priorities and common goals for the affected area as a whole and not in the context of one specific area.

The co-ordination function will be executed by the Rehabilitation and Reconstruction Group (RRG) that consists of the relevant government departments.

Allocation of resources by the RRG must be carried out on a priority basis in liaison with the DMC and as determined by field impact assessments.

Field Impact Assessments should include the following information -

1. Victims / Displaced Population Profile –
 - (a) General characteristics;
 - (b) Capacities;
 - (c) Displaced populations; and
 - (d) Physical assets.
2. Food –
 - (a) Baseline Data;
 - (b) Effect of the event on food;
 - (c) Food availability; and
 - (d) Distribution systems.
3. Nutrition –
 - (a) Nutritional Status;
 - (b) Risk of malnutrition; and
 - (c) Nutrition interventions.
4. Health –

- (a) Health and demographic information;
 - (b) HIV/AIDS;
 - (c) Health system capabilities;
 - (d) Local Health programmes;
 - (e) Health information / surveillance systems;
 - (f) Cultural and social health factors; and
 - (g) Environmental health factors.
5. Water –
- (a) Displaced population situation; and
 - (b) Water system disruption.
6. Sanitation –
- (a) Displaced population situation; and
 - (b) Non-displaced population situation.
7. Shelter and Settlements –
- (a) Establishing context; and
 - (b) Identifying impacts, resources and opportunities.
8. Agriculture and livestock –
- (a) Baseline data;
 - (b) Effects of the event on agriculture;
 - (c) Effects of the event on livestock; and
 - (d) Agricultural production capabilities.
9. Logistics –
- (a) Airports;
 - (b) Civil aviation;
 - (c) Transfer points;
 - (d) Trucking;
 - (e) Railroads; and
 - (f) Storage facilities.
10. Infrastructure –
- (a) Communications;
 - (b) Electric power;
 - (c) Community water supply and wastewater treatment / disposal;
 - (d) Dams, levees, irrigation, canals, hydropower facilities; and
 - (e) Roads and bridges.

The RRG will be convened once this phase of the operation commences.

A field impact assessment must be conducted as soon as possible after an event which can be compared to the baseline measurements assessed above.

ACTIONS REQUIRED

- The WDM DMC through the mechanism of the WDM DMAF must establish a Rehabilitation and Reconstruction Group for effective co-ordination of recovery operations in the WDM.

7.2 WDM Development and Implementation of Rehabilitation and Reconstruction

In order to ensure a holistic approach to rehabilitation and reconstruction in the aftermath of a significant event or disaster, the organ of state tasked with primary responsibility for a known hazard must facilitate the establishment of project teams for this purpose.

Checks and balances must be affected to ensure that projects and programmes maintain a developmental focus. Project teams established for this purpose must determine their own terms of reference and key performance indicators and must report on progress to the WDM DMC.

7.3 Information Management and Communication Systems to Support Recovery

The IMCS implemented by the WDM DMC must support and facilitate effective recovery operations.

It must also allow for direct links with the communication system to provide the information required for mobilisation of resources necessary for effective rehabilitation and reconstruction efforts.

The recovery component must include the following:

- the area affected (indicating the specific and surrounding affected areas and links to all the spatial and other relevant data associated with the area);
- the type of event (classification by type, magnitude and severity);
- analysis of status of critical lifeline infrastructure;
- analysis of reported impacts and monitoring of progress with recovery operations in accordance with standard assessment and situation report formats;
- response and recovery resource database, including:

- primary agency (contact details of the primary agency, recovery plans and SOPs applicable to the specific area and event);
- resources and support agencies (contact details of the support agencies, recovery plans and SOPs applicable to the specific activity); and
- relevant service providers (listing of all other related services that may be required to assist with recovery operations in a specific area).

The recovery features should be designed as templates and drop-down menus to make the information easily accessible for use during a disaster or significant event.

Provision must be made for real-time manipulation of data related to the event or disaster gathered during the planning phase. The component must also be linked to the resource database to assist in identifying the location of resources locally and to facilitate and record the management and allocation of resources during and following a significant event or disaster. The DMC must be able to access this information in order to track the deployment of resources and the progress of recovery activities.

Specialist GIS-based applications, linked to the information management system, must facilitate computer-aided management of recovery operations by allowing for simulated or real-time modelling, tracking and situational reporting in an affected area.

7.4 Education, Training, Public Awareness and Research to Support Recovery

Recovery operations in the WDM can be supported in the following ways –

- Training programmes –
 - Aimed at government officials, policy-makers and other role-players involved with recovery operations within the WDM. The training must embrace the multi-disciplinary and interdisciplinary dimensions of disaster recovery, and should be informed by the district indicative disaster risk profile; and
 - Developed for persons interested in volunteering their services, addressing the issue of recovery.
- Public awareness –
 - Communication about recovery activities is important to ensure that information is passed on to communities and those involved with recovery efforts;

- In the post-disaster recovery phase, it is critical to prevent the creation of and to reduce disaster risk increasing public awareness on reducing disaster risk by 'building back better'.

7.5 Funding Arrangements to Support Recovery

Section 56(3) of the DMA requires that organs of state set aside a percentage of their budgets for post-disaster recovery efforts.

The DMA places the onus for rehabilitation and reconstruction of infrastructure on the organ of state responsible for maintaining such infrastructure. However, rehabilitation is not only limited to infrastructure repair, it also includes rehabilitation of the environment and communities. Rehabilitation and reconstruction projects can be funded through -

- own budgets;
- conditional grants;
- reprioritisation within existing capital budgets; and
- access to the central contingency fund.

The methods of funding rehabilitation and reconstruction are complementary rather than competing. Municipal organs of state should fund their expenditure on rehabilitation and reconstruction from their budgets up to the threshold. The next alternative should be to reprioritise within their capital budgets. The use of funds from the contingency reserve should be considered only as a last resort.

7.5.1 Own budgets

Depending on the extent of infrastructural damage, organs of state may be able to fund rehabilitation and reconstruction costs from their own budgets up to the threshold. Rehabilitation and reconstruction costs are generally high, so organs of state may need to fund these costs from a combination of sources, including own budgets, reprioritisation and the central contingency fund.

7.5.2 Conditional grants

The WDM and local municipalities can access funding through the Municipal Infrastructure Grant (MIG). The MIG formula differentiates between new and rehabilitated infrastructure in a ratio of 80:20. Since the MIG augments the capital budget as a whole and is not a project-by-project grant, it is possible for municipalities to use part of the allocation for post-disaster rehabilitation purposes.

7.5.3 Reprioritisation within existing capital budgets

Municipal organs of state are required to develop three-year capital plans setting out their capital expenditure over the medium term. The WDM, with approval from the municipal council, can

reprioritise capital budgets in order to carry out the necessary rehabilitation and reconstruction projects. In effect, existing commitments can move to the outer years of the Medium-term Expenditure Framework, and use the subsequently released resources to fund rehabilitation and reconstruction. The shifting of funds between years and programmes must comply with the legislative provisions governing such transactions in the Municipal Finance Management Act.

7.5.4 Access to the central contingency fund

Municipalities may gain access to the central contingency fund for the rehabilitation and reconstruction of assets required to provide the minimum level of basic services. Motivations for such projects must be done on a case-by-case basis and requests for funding submitted to the NDMC.

Upon receipt of requests for funding, the NDMC must analyse the requests, compile a list of projects and associated costs, and motivate a Section 16 release of funds under the PFMA to National Treasury.

8 DISASTER RISK MANAGEMENT IMPLEMENTATION

This chapter contains a summary of elements from the plan to be implemented. A complete implementation plan should be developed for each item listed below by the WDM HOC, approved by the WDM DMAF, DICDRM, the District Council and all role-players must partake in the implementation of the DRMP.

8.1 Summary of DRMP Chapters

8.1.1 Chapter 3: Integrated Institutional Capacity

- District Council must resolve to adopt the staffing structure illustrated in Figure 16 and develop a phased implementation plan to allow for the necessary staffing requirements of the WDM DMC to be achieved.
- District Council must adopt DRM as a standing agenda item during council meetings.
- The Executive Mayor must establish a DICDRM in the WDM, chaired by the Municipal Manager and attended by Municipal HODs.
- Develop job descriptions of all proposed staffing positions for the WDM DMC illustrated in Figure 16, taking into consideration activities detailed under Section 3.3.1.
- Undertake a review of the WDM DMC layout and resources to determine compliance with requirements listed under Sections 3.3.2 and 3.3.3, and develop an implementation plan for any shortcomings or gaps identified.
- Undertake a review of the WDM DMC equipment to determine compliance with requirements listed under Sections 3.3.4, and develop an implementation plan for any shortcomings or gaps identified, where feasible and necessary.
- Develop specifications and costing for a MCU for use by the WDM DMC and develop a plan for the procurement of the MCU.
- Head of the WDM DMC must identify all DRM stakeholders according to the list provided under Section 3.4.1 to participate in the district DMAF.
- Head of the WDM DMC must ensure formal appointments of departmental nodal points by district departmental HODs, and that their DRM responsibilities are written into their job descriptions.
- Head of the WDM DMC must ensure formal appointments of all relevant DRM stakeholders, including departmental nodal points, of the WDM DMAF by the District Executive Mayor.
- The WDM DMAF must establish Technical Task Teams responsible for planning, managing and completing multi-disciplinary projects for pre-disaster risk reduction and preparedness and to

draft the necessary integrated hazard-specific DRMPs, including policies, plans and procedures that address efficient incident management and inter-disciplinary co-operation during incidents.

- The WDM DMC must develop a guideline for undertaking a comprehensive community-based disaster risk assessment for the district, and ensure it is approved and adopted by District Council.
- The WDM DMC must undertake a gap analysis of existing DRM capacity in relation to the district disaster risk profile, and where weaknesses or gaps are identified, initiative processes to develop mutual assistance agreements and memoranda of understanding with relevant partners.
- The WDM DMC must develop specifications, determine costing and develop an implementation plan for an integrated DRM IMCS that supports all the requirements listed under Section 3.6.1.
- The WDM DMC must –
 - conduct an education and training needs analysis for DRM in the WDM;
 - establish a register of all DRM programmes and institutions offering education in DRM and related fields;
 - establish a register of all accredited facilitators, presenters, instructors, educators and institutions offering formal DRM programmes and a register of formal DRM course materials.
- The WDM DMC must carefully review the district disaster risk profile to determine and develop an integrated district public awareness strategy.
- The WDM DMC must carefully review the district disaster risk profile to determine and develop strategic disaster risk research agenda, and engage with institutions of higher learning to assist in meeting its objectives.
- The WDM DMC must undertake a gap analysis to determine any gaps between the current operational capability and that required by the DMA and WDM DRMPF, and develop an action plan for complying with the requirements of the legislation.

8.1.2 Chapter 4: Disaster Risk Assessment

- The WDM DMC must conduct a district-wide comprehensive community based disaster risk assessment in order to generate a robust foundation from which to develop a dynamic disaster risk profile.
- The WDM DMC must establish mechanisms to consolidate, document, map and make accessible information on the district's priority disaster risks.
- The WDM DMC must establish procedures to consolidate, map, update and make accessible information on the district's priority disaster risks.
- WDM DMC must establish a multi-purpose monitoring and evaluation tool for the purposes of -
 - Quantification of risk data to prioritise disaster risks in high risk areas;

- Making high level recommendations of the strategy to be employed to manage the priority disaster risks (i.e. treat, tolerate, transfer or terminate); and
- Measuring the success of any risk reduction measure implemented to manage the priority disaster risks identified.
- The WDM DMC as well as municipal organs of state must establish and document clear mechanisms for accessing, consolidating and updating relevant information on hazards, vulnerability and disaster occurrence from partners responsible for monitoring specific risks;
- The WDM DMC as well as municipal organs of state must establish and document clear mechanisms for disseminating DRA and monitoring information for ongoing planning, as well as for managing conditions of heightened risk.
- The WDM DMC must appoint a TAC prior to commissioning any DRAs for the district municipality. The TAC must be linked to the WDM DMAF.
- The WDM DMC must establish an integrated DRM IMCS that supports a DRA component for the WDM;
- The WDM DMC must establish GIS capabilities for the district to allow for DRA information to be represented as GIS-based risk maps.
- The WDM DMC must conduct a training needs analysis for all municipal DRM officials involved with the DRA process and develop a training programme in response to gaps identified;
- The WDM DMC must establish a research agenda based on the priority disaster risks identified for the WDM in order to form a more robust and comprehensive disaster risk profile for the district.
- The WDM DMC must estimate the cost of a comprehensive district-wide community based DRA and ensure it is included in the budget of the Municipal DMC.

8.1.3 Chapter 5: Disaster Risk Reduction

- The WDM DMAF must identify primary and support agents responsible for managing the priority district disaster risks identified. In so doing, the DMAF must establish appropriate Technical Task Teams in order to facilitate the discussion around the identification of appropriate, innovative and cost-effective solutions to manage the disaster risks in question.
- Technical Task Teams identified by the WDM DMAF must identify and scope DRRPs for identified priority district disaster risks, to be adopted and approved by the WDM DMAF, DICDRM and the District Council.
- The WDM DMC must establish mechanisms for linking DRMPs and DRRPs with IDPs and SDF;
- The WDM DMAF must establish mechanisms for the monitoring of the inclusion of DRMPs and DRRPs in IDP and SDF processes;

- The WDM DMC must ensure IDP budgets make provision for DRM.
- The WDM DMC must establish mechanisms monitoring and communicating the effectiveness of disaster risk reduction initiatives implemented within the district municipal area.
- The WDM DMC must establish an integrated DRM IMCS that supports an integrated planning functionality to assist role-players in all spheres of government with the development and updating of DRMPs.
- The WDM DMC must develop and implement a training programme based on a district-wide needs analysis conducted among DRM stakeholders and role-players; and
- The WDM DMC must develop and implement an integrated district public awareness strategy based on the district indicative disaster risk profile that focusses on disaster risk reduction.
- The WDM DMC must ensure a policy is developed and implemented for the use and management of private funds for public sector projects and initiatives;
- The WDM DMC Must determine a percentage of municipal organs of state and sector department's budget to be set aside for DRM based on their existing operating revenue.

8.1.4 Chapter 6: Preparedness Planning

- The WDM DMC must develop a guideline for the implementation of a Community-based Early Warning System for priority disaster risks where required;
- The WDM DMC must prepare a detailed, integrated, effective, innovative, multi-sectoral response plan for the priority disaster risks identified in the district indicative disaster risk profile; and
- The WDM DMC must prepare a detailed, integrated, effective, innovative, multi-sectoral relief plan for the priority disaster risks identified in the district indicative disaster risk profile.
- The WDM DMAF must identify primary and support agents responsible for responding to priority district disaster risks identified. In so doing, the DMAF must establish appropriate Technical Task Teams in order to develop appropriate preparedness plans for identified disaster risks.
- DPPs must be critically reviewed by Technical Task Teams established by the WDM DMAF to determine their relevance in light of the reviewed district indicative disaster risk profile.
- Municipal organs of state that must bear primary responsibility for contingency planning and the coordination of known hazards must be identified and allocated such responsibility.
- Stakeholders that must bear responsibility for contingency planning and the coordination of known hazards must be identified and allocated such responsibility; and
- Contingency plans for known priority disaster risks must be developed.

- The WDM DMC must establish an integrated DRM IMCS that supports an integrated planning functionality to assist role-players in all spheres of government with the development and updating of preparedness plans for identified disaster risks within the municipality.

8.1.5 Chapter 7: Response

- The WDM DMC must ensure access to guidelines for initial assessments of the immediate needs of those affected by relevant role-players, and ensure relevant training and capacity building is made available for their correct application.
- A Communications SOP must be developed and maintained by the DMC.
- The WDM DMC structure of operations in the case of an escalation to Catastrophic Operations must be established.
- The WDM DMC must develop an implementation plan for the establishment of a unit of volunteers to participate in DRM in the municipality (S 58 (1) of the DMA).
- The WDM DMAF must establish a Relief Management Technical Task Team for the effective coordination and equitable distribution of humanitarian relief in the WDM.
- The WDM DMC must design and implement an integrated IMCS with a comprehensive response component that meets the requirements of the details described above.
- The WDM Council must prescribe percentage thresholds for disaster management for municipal organs of state based on their existing operating revenue.

8.1.6 Chapter 8: Recovery

- The WDM DMC through the mechanism of the WDM DMAF must establish a Rehabilitation and Reconstruction Group for effective co-ordination of recovery operations in the WDM.

In order to reach the next desired plan level, the above listed action must be implemented. The WDM HOC should facilitate the development of an implementation plan, taking the actions above into account. The actions done according to the implementation plan should form part of standard reporting. As such, the progress made with implementation should show clearly in the annual reports.

9 REVIEW OF THE PLAN

The WDM will regularly review and update this DRMP as required by Section 53 of the DMA as amended. The WDM DMAF shall be responsible for the review of this plan on an annual basis, based on changing circumstances and ongoing developments in the WDM. All updates to the plan must be submitted to the Limpopo PDMC.

The following arrangements will inform and provide guidance for the review and updating of the WDM DRMP –

- WDM DRMPF;
- WDM DMAF associated Technical Task Teams; and
- District-wide DRA informing district disaster risk reduction strategies.