



**MUNICIPAL COUNCIL OF MBABANE**

# **DISASTER RISK MANAGEMENT POLICY**

May 2016

## **A. Acronyms and abbreviations**

AMICAALL Alliance of the Mayors Initiative for Community Action on AIDS at Local Level

CBD Central Business District

CBOs Community Based Organisations

CCA Climate Change Adaptation

CEO Chief Executive Office

CSO Central Statistical Office

DM Disaster Management

DMA Disaster Management Act

DMP Disaster Management Policy

DMPs Disaster Management Plans

DRA Disaster Risk Assessment

DRM Disaster Risk Management

DRMPF Disaster Risk Management Policy Framework

DRR Disaster Risk Reduction

DRRAC Disaster Risk Reduction Advisory Committee

DRRMT Disaster Risk Reduction Management Team

DWA Department of Water Affairs

EDS Economic Development Strategy

EIA Environmental Impact Assessment

EPR Emergency Preparedness and Response

EPRC Emergency Preparedness and Response Committee

HFA Hyogo Framework for Action

ICLEI International Council for Local Environmental Initiatives

ICS Incident Command System

IDP	Integrated Development Plan
IEC	Information Education and Communication
IFRC	International Federation for Red Crescent
IMS	Incident Management System
KPA	Key Performance Area
KPI	Key Performance Indicator
MCM	Municipal Council of Mbabane
MHCP	Multi Hazard Contingency Plan
MHUD	Ministry of Housing and Urban Development
MoH-EPR	Ministry of Health- Emergency Preparedness and Response
MoPWT	Ministry of Public Works and Transport
NDMA	National Disaster Management Agency
NDRMP	National Disaster Risk Management Policy
NDS	National Development Strategy
NEWU	National Early Warning Unit
NGOs	Non-Governmental Organisations
PRSAP	Poverty Reduction Strategy and Action Plan
RSP	Royal Swaziland Police
SALGA	South Africa Local Government Association
SEC	Swaziland Electricity Company
SFDRR	Sendai Framework for Disaster Risk Reduction
SNFES	Swaziland National Fire and Emergency Services
SOPs	Standard Operating Procedures
SPTC	Swaziland Post and Telecommunications
SWSC	Swaziland Water Services Corporation

TRA	Tinkhundla and Regional Administration
ULAs	Urban Local Authorities
ULG	Urban Local Government
UN	United Nations
UNDP	United Nations Development Programme
UNISDR	United Nations International Strategy for Disaster Reduction
USDF	Umbufo Swaziland Defence Force

## **B. FOREWORD**

“More effective prevention strategies would save not only tens of billions of dollars, but save tens of thousands of lives. Building a culture of prevention is not easy. While the costs of prevention have to be paid in the present, its benefits lie in a distant future. Moreover, the benefits are not tangible; they are the disasters that did NOT happen.” Kofi Annan, Former United Nations Secretary-General.

As the bonafide Urban Local Government, the Municipal Council of Mbabane has the primary responsibility for disaster management within its precinct. It strives to ensure effective planning, coordination and management of local risks and disasters occurring or which may occur within the Municipality.

Through the adoption of the DRM Policy, Council is demonstrating commitment towards safeguarding the lives, property, and economic base of the Municipal Council and preserving our environment for present and future generations. Council recognises a diversity of risks and disasters that occur or may occur within the Municipal area and gives priority to developmental measures that reduce the vulnerability of disaster-prone areas, communities and households.

In keeping with international and national best practice, the DRM Policy Framework places explicit emphasis on the risk reduction concepts of disaster prevention and mitigation, preparedness, response and recovery as the core principles to guide disaster risk management in the Municipality.

On behalf of the Municipality, I would like to thank the stakeholders, municipality management and employees who contributed to the successful drafting of this DRM Policy in order to ensure that our City is safe from disasters.

.....  
**GIDEON MHLONGO**  
**CHIEF EXECUTIVE OFFICER**

## Table of Contents

A. Acronyms and abbreviations.....	i
B. FOREWORD .....	iv
1.0 INTRODUCTION .....	1
1.1 Legislation and linkages with other policies and strategies .....	2
1.2 Custodian of the DRM Policy .....	5
2.0 BROAD POLICY DIRECTIONS .....	5
2.1 PURPOSE .....	5
2.2 VISION .....	6
2.3 MISSION .....	6
2.4 INTENDED POLICY OUTCOMES .....	6
2.5 BROAD POLICY OBJECTIVE.....	6
2.5.1 Specific Policy Objectives .....	6
3.0 POLICY PRIORITY AREAS.....	7
3.1 Priority 1: Strengthening disaster risk governance to manage disaster risk.....	7
3.1.1 Establish an Institutional Framework for effective DRR Coordination.....	7
3.1.2 Integrated execution of DRM Policy amongst Municipal Departments .....	7
3.1.3 Information Management and Communication System .....	8
3.1.4 Cooperation with Regional and National DRM System and Programmes .....	9
3.1.5 International Cooperation .....	9
3.2 Priority 2: Understanding Disaster Risk .....	11
3.2.1 Determine Disaster Risk Priority Areas.....	11
3.2.2 Updating Comprehensive Disaster Risk Assessment .....	12
3.2.3 Community Based Disaster Risk Assessment .....	12
3.2.4 Disaster Risk Assessment Methodology.....	13
3.2.5 Undertaking Disaster Risk Assessment .....	13
3.2.6 Monitoring Disaster Risk.....	14
3.2.7 Consolidation and Classification of Disaster Risk Information.....	15
3.3 Priority 3: Prior Investing in Disaster Risk Reduction for Resilience .....	16
3.3.1 Disaster Prevention and Mitigation.....	16
3.3.1.1 Structural Disaster Prevention and Mitigation.....	16
3.3.1.2 Non-structural Disaster Prevention and Mitigation .....	17
3.4 Priority 4: Enhancing Disaster Preparedness for effective Response, and to “Build Back Better” in Recovery, Rehabilitation and Reconstruction.....	18

3.4.1 Disaster Preparedness or Emergency Planning.....	18
3.4.1.1 Develop and implement strategy for the dissemination of early warnings .....	19
3.4.2 Disaster Response .....	19
3.4.3 Recovery .....	20
3.5 Declaration of Emergency .....	21
3.5.1 Duties upon declaration of an emergency.....	21
3.5.2 Coordination of response and recovery efforts .....	21
3.6 Incident Management System (IMS) .....	22
4.0 IMPLEMENTATION ARRANGEMENTS .....	24
4.1 Relevant Key Stakeholders .....	24
4.1.1 National.....	24
4.1.2 Regional .....	24
4.1.3 Local Government.....	24
4.2 Disaster Management Structures .....	24
4.2.1 The Council.....	24
4.2.2 DRM reports to Council.....	25
4.2.3 Annual reports.....	25
4.2.4 Reports on Priority Risk Reduction Planning .....	25
4.3 Disaster Management Structures .....	26
4.3.1 Disaster Risk Reduction Advisory Committee (DRRAC).....	26
4.3.2 DRR Coordination .....	27
4.3.3 Disaster Risk Reduction Management Team.....	28
4.3.4 Emergency Preparedness and Response Committee.....	29
4.3.5 DRR Task Team/s.....	30
4.4. Funding Mechanism.....	30
4.4.1 Resource mobilisation and assistance during emergency .....	30
4.5 Monitoring and Evaluation .....	31
4.6 Review of Policy.....	31
ANNEXS .....	32
Annex 1: Definition of Key Terms .....	32
Annex 2: Natural and Anthropogenic Hazard Classification.....	38

## 1.0 INTRODUCTION

Mbabane City faces a number of disasters, both natural and man-made which include flash and storm floods, drought, heavy rains, strong winds, hailstorms, landslides, earth tremors, infrastructure collapse, diseases outbreaks, civil disorders, riots, fire, spillage of hazardous substances, industrial and road traffic accidents. Disasters may occur suddenly (a quick onset e.g. storms), or they may develop over a period of time (a slow onset e.g. drought). The intensity and frequency of disasters has been increasing, in light of climate change and climate variability, rapid urbanization, environmental degradation, population growth especially in informal settlements within urban boundaries. More often than not most informal settlements are at high risk from flash flooding and storm hazards due to substandard infrastructure.

Disasters disrupt people's livelihoods, endanger human and food security, damage infrastructure and hinder socio-economic growth and development. Disasters also increase the poverty of urban households and erode the ability of the national economy to invest in key social sectors which are important to reducing poverty. Disasters are not only triggered by natural events and should not be viewed as a single discrete event. They are also products of social, political and economic environments (as distinct from natural environment) because of the way these structure the lives of different groups of people. These social processes have a very significant role in determining people's vulnerability from hazards. It is paramount to consider who is most at risk from hazards considering where people live and work, and in what kind of buildings, their level of hazard protection, preparedness, information, wealth and health.

The MCM subscribes to Local Agenda 21<sup>1</sup>, a sustainable development global blue print for Local Governments. This is reflected in the Municipality's strategic vision which is "to be the preferred destination in Southern Africa offering quality life" (MCM Revised Strategic Plan 2012). In its quest to achieve this vision the MCM, fundamentally aims to develop a City characterised by being the most preferred place to live in, raise a family in and work in (MCM 2012). In achieving this dream, the MCM has committed to achieve a world class built environment underscored by continuous environmental sustainable practices.

Sustainable development is not achievable if disasters are continuously damaging infrastructure, property and livelihoods. Disaster prevention, reduction and mitigation of risk are primary drivers in the MCM development strategies. Given the nexus between development and disasters, the DRM Policy provides a framework for the effective planning, coordination and management of disasters in the Municipal City and to safeguard development gains.

---

<sup>1</sup>The Local Agenda 21 notion recognise the inextricable link between the economic, environment and social needs of the local community and balance of these can be achieved through broad-based participation

Disaster risk management is a core priority of the MCM which is embedded under thrust area 6 of the Integrated Development Plan (IDP) 2014-2019. Thrust area 6 places the safety and security of City residents as a priority agenda for Council in the next 5 years i.e. from 2014 until 2019 (MCM IDP 2014).

The MCM like her counterpart Local Governments has the primary duty to save lives, protect property, protect the economic base of the community, and preserve the environment. To accomplish this it must have disaster risk reduction and management programme/s that mitigate, prepare for, respond to, and recover from the effects of any emergency or disaster. Immediately before, during, and after an event, Council will implement local procedures and respond with all available resources. When local resources cannot fill the needs created by the emergency or disaster, Council may invoke previously established mutual aid agreements with relevant government agencies, essential services providers and or seek assistance from the National Disaster Management Agency (NDMA).

The preparation of the DRM Policy coincided with a drought emergency resulting from the effects of an El Nino weather phenomenon. This event threatened water security given the low water level in the Municipality's sole reservoir and socio-economic development priorities of the Municipality in particular and the country in general. Concerns were raised in regard to public health given that water is a critical element in the provision of quality sanitation. In order to abate the adverse effects of the El Nino event, Council in collaboration with key DRR stakeholders formulated and implemented a Water Emergency Response Plan which has measures such as rationing of water supply in order to prolong supply capacity.

The DRM Policy provides a framework for the management of disasters in the Municipality. It recognises that a diversity of risks and disasters occur or may occur in the Municipality. It is a result of extensive consultation with key stakeholders to identify issues and capabilities in disaster management for prevention, preparedness, response and recovery. It is predominantly aligned to the Sendai Framework for Disaster Risk Reduction (SFDRR), global blue print for DRR and the national legislative framework for DRR.

### **1.1 Legislation and linkages with other policies and strategies**

The ultimate responsibility for DRM in Swaziland rests with government through the National Disaster Management Agency (NDMA) in terms of Section 13 of the Disaster Management Act (DMA) of 2006. The NDMA is the Principal Institution for Disaster Management at national level of government. The mandate of the NDMA is to “promote an integrated and coordinated system of disaster management focused on decreasing vulnerability and increasing preparedness and mitigation capacity” (DMA 2006 S.14).

According to Section 1.4 of the national DRM Policy (2010), by virtue of its establishment, the NDMA is the advisory wing of government on issues of disaster and has the responsibility to

coordinate and subscribe to international and regional standards, conventions, protocols and other regulatory instruments relevant to disaster risk management. It has the responsibility to advise the MCM on all matters relating to DRM within the Municipal Council's jurisdiction.

The MCM DRM Policy is aligned to the national Disaster Management Act (DMA) (2006) and National Disaster Risk Management Policy (NDRMP) (2010). Part VI S.33 of the DMA Act (2006) obligates Ministries in collaboration with the NDMA to "prepare Disaster Management Policies and Emergency Management Plans (EMPs), within the two years of coming into force of the Act and at least every five years thereafter..."

Consistent with the provisions of the DMA (2006), the MCM DRM Policy sets out, the way by which measures for the different phases of disaster management is to be applied in its functional area and Municipal Council's jurisdiction.

The MCM DRM Policy is consistent with the vision of the national DRM Policy (2010) which states that, "By 2022, Swaziland will have a functional national disaster risk management system that minimizes community vulnerability to hazards and effectively prevents and mitigates the impact of disasters within the context of sustainable development."

Additionally, Sections 6.1.7; 6.4; 6.5.2 and 6.5.3 of (DRM Policy 2010) which advocate that every organisation, sector and inter-sectoral structure should set aside budget for DRM, prepare and periodically update their DRM plans, in compliance with national guidelines. However, national DRR legislation does not have specific provision on DRR institutional structures for local governments i.e. DRR structures that should be established by local governments, how they should operate including how they should be financed. Urban local government authorities are subsumed under the Ministry of Housing and Urban Development (MHUD) who administers the Urban Government Act (1969).

The Urban Government Act (1969) is the principal Act for managing urban local governments and must supersede other legislations in terms of management and provision of services by the Municipality. The Urban Government Act (1969) provides for the establishment and regulation of urban authorities and confers local authorities with the power to make bye-laws (S. 77) not in conflict with laws to ensure effective regulations, administration and management of urban areas. Urban Local Government Authorities (ULGAs) can use the provision of this law to make the necessary bye-laws to ensure security and protection of urban communities from the effects of natural and man-made hazards. Part VII, sections 47-56 of the Urban Government Act (1969) provides for the prevention and control of fire hazards. Also sections 18 and 28 of the Building and Housing Act (1968) provides for fire safety and reduction of danger from fire in existing buildings and in the design and construction of buildings respectively. Section 34 provides for conditions for design and construction of weather proofed buildings.

The Town Planning Act (1961) provides for the preparation and carrying out of town planning schemes. Town planning schemes provides the physical planning framework for the

development of the urban area. The Town Planning Act (1961) is expected to advance sustainable land use of the urban area that ensures promotion of public health, safety, order, amenity, convenience and general welfare (see section 8 (1)) as well as efficiency and economy in the process of development. The Mbabane Town Planning Scheme Structure Plan, Volume 2 (IDEC 2013:26) asserts that the development of the Mbabane town planning schemes was informed by ecological and anthropological circumstances.

Swaziland has solid environmental legislation notwithstanding capacity constraints associated with enforcement of legislation. The Environmental Management Act (2002) (Part VI section 45) and Part XII section 31 of the Waste Regulations (2000) provides the functions and requirements for waste management by Local Authorities. Part III and Sections 15-20 of the Urban Government Act (1969) (see also section 35 of the Buildings and Housing Act, 1968) provides for management of refuse and night soil, which in essence caters for the management and control of potential outbreak of environmental hazards and disasters associated with unsustainable waste management practices.

The Public Health Act (1969) (Part II, III and IV) provides for the prevention, control and management of public health hazards associated with unsustainable food and hygiene practices. Epidemic outbreaks such as cholera may be triggered by unsustainable water, sanitation and hygiene (WASH) practices associated with poor settlements, inexistent public health and social services. More often than not, this scenario is compounded by natural events such as above normal and or below normal rainfall patterns. In recent times, the City was faced with an El Nino emergency resulting from prolonged dry spells. This occurrence was threat to water security given the low water level in the city's sole reservoir. Consequently, this posed serious public health concerns given the correlation between sustainable water supply and quality sanitation.

The Sendai Framework for Disaster Risk Reduction (SFDRR) 2015-2030, succeeded the Hyogo Framework for Action (HFA) for Disaster Risk Reduction (DRR) 2005-2015 as the global blueprint for DRR practice. It is a Multilateral Agreement that Swaziland is Party to as was evidenced by the participation of His Majesty the King Mswati III including the Deputy Prime Minister and other senior government officials at the launch of the SFDRR in Sendai, Japan in March 2015. The DRM Policy was informed by and is aligned to the SFDRR 2015-2030. The DRM Policy priority areas are thus aligned to the SFDRR's four priority areas.

The MCM's Multi Hazard Contingency Plan (MHCP) provides a framework for disaster preparedness planning, response and recovery. The MHCP is consistent with priority 4 of the Municipality's DRM Policy and the SFDRR 2015-2030. As it is a living document, the MCM should ensure that it is adapted accordingly by implementing the relevant roles and responsibilities of this plan in the context of the Municipality.

As local government, the MCM ensures that its programmes are aligned with national development policies, plans and programmes. The IDP consolidates the approach the MCM pursue its development plans and programmes in alignment with national objectives espoused in the National Development Strategy (NDS), Poverty Reduction Strategy and Action Plan (PRSAP) and Country Programme of Action 2013-2018 and others.

Consistent with the theoretical and legal framework, the MCM must ensure the following measures are in place:

- a. Set up structures for the effective coordination and management of disasters or hazards occurring in the Municipality;
- b. Plan for the protection of critical infrastructure, facility or service whose damage or disruption during disaster events would result in serious and widespread consequences;
- c. Plan for seasonal threats, such as heavy rainfall, storm flooding, strong winds, drought, fire in open spaces and communicable disease outbreaks;
- d. Ensure that disaster risk is mainstreamed in town planning schemes and the entire Municipal corporate practice;
- e. Build institutional disaster management capabilities to plan and coordinate disaster management programmes.

## **1.2 Custodian of the DRM Policy**

Council is the custodian of the DRM Policy and must ensure that the MCM is complying with the provisions of the policy.

The MCM CEO is responsible for:

- a. Establishing mechanisms for the development and implementation of the DRM Policy;
- b. Setting up of DRR structures and establish DRR Coordination system
- c. Facilitate the establishment of MoUs or cooperative agreements with relevant government departments and essential services stakeholders such as MoPWT, DWA, SWSC, SEC, SPTC to ensure the provision of service during emergency or disaster;
- d. ensuring the regular review and updating of the DRM Policy;
- e. ensuring that the DRM Policy and any amendments thereto are executed; and
- f. that copies of the DRM Policy as well as any amendments thereto are submitted to:
  - i. the National Disaster Management Agency; and
  - ii. all relevant role players and stakeholders.

## **2.0 BROAD POLICY DIRECTIONS**

### **2.1 PURPOSE**

The purpose of the Disaster Risk Management Policy is to assist the MCM to anticipate, plan for, reduce disaster risk and curb disaster losses in order to effectively protect persons, communities,

property, infrastructure, and ecosystems by addressing hazards and people’s vulnerability to them, throughout the disaster management cycle.

## **2.2 VISION**

Have a safe Municipality that is resilient to disasters and emergencies ensuring that Mbabane is the preferred destination in Southern Africa offering quality life.

## **2.3 MISSION**

The MCM shall strive to deliver high quality services through:

- ✚ Preserving, protecting environment, property and infrastructure from damage from natural and man-made disasters and enhancing the quality of life through sustainable development based modern technological, environmental, economic and social principles.

## **2.4 INTENDED POLICY OUTCOMES**

The intended outcomes of the DRM Policy are as follows:

- a. Effective and coordinated preparedness for, response to and recovery from disasters.
- b. DRM mainstreamed into Municipal corporate practice areas; and
- c. Increased resilience of Municipal communities to disasters.

## **2.5 BROAD POLICY OBJECTIVE**

The overall objective of the DRM Policy is to create an enabling environment for the establishment of a comprehensive and coordinated DRM framework for the MCM in order to prevent new and reduce existing disaster risk through the implementation of integrated and inclusive institutional measures that prevent and reduce hazard exposure and vulnerability to disaster, increase preparedness for response and recovery, and thus strengthen resilience.

### **2.5.1 Specific Policy Objectives**

The specific objectives of the DRM Policy are to:

- a. Facilitate the establishment of an effective and coordinated system for disaster risk management in the Municipality;
- b. Develop a systematic approach for conducting disaster risk assessments;
- c. Promote investing in DRR for resilience amongst DRM stakeholders, including communities; and
- d. Strengthen disaster preparedness for effective coordinated response and to “Build Back Better” in recovery, rehabilitation and reconstruction.

### **3.0 POLICY PRIORITY AREAS**

The following key priority areas are informed and aligned to the Sendai Framework for DRR (2015-2030).

#### **3.1 Priority 1: Strengthening disaster risk governance to manage disaster risk**

##### **3.1.1 Establish an Institutional Framework for Effective DRR Coordination**

A strong institutional disaster risk governance system is vital to the effective and efficient management of disasters by the MCM given recurrent natural hazards resulting from climate change and climate variability. Consistent with this Policy, Council should establish the following DRM structures stated in section 4. The MCM must ensure effective organisation, coordination and implementation of DRR activities within the Municipality and involving all key DRR stakeholders stated in section 4.

The MCM must put in place the following measures in order to ensure a strong DRM governance system:

- a. Develop internal capabilities for disaster risk planning and management;
- b. Establish Memorandum of Understanding (MoU) and or Cooperative Agreements<sup>2</sup> with the relevant sphere of Government and non-state stakeholders with clear mandate, specific roles and responsibilities for the efficient management of critical public facilities, and infrastructure before, during and after emergency or disaster.
- c. The MCM must establish and maintain MoUs or Cooperative Agreement with relevant DRM stakeholders and emergency service providers such as: SWSC, SEC, SPTC, RSP, USDF, SNFES, MoH-EPR, MoPWT, and Department of Meteorology and other relevant emergency service providers. Specifically, the MOU must spell out the following:
  - ✚ Jurisdictional contents and fully confer management mandate and resources for disaster prevention, mitigation, preparedness, response and recovery, and rehabilitation of public facilities and infrastructure critical to efficient service provision by the Municipality.

##### **3.1.2 Integrated execution of DRM Policy amongst Municipal Departments**

The MCM must prepare and implement a DRM Plan setting out the way in which the concept of principles of disaster management are to be applied in its functional areas. The DRM must form

---

<sup>2</sup>Cooperative Agreements are legal documents which must clearly spell out the roles and responsibilities including financial arrangements and liabilities of each party.

an integral part of the municipality's integrated development plan (IDP). The MCM must specifically ensure that each municipal department does the following:

- a. Integrate DRM in its core functional areas of responsibility;
- b. Identify and fulfil its role and responsibilities in relation to disaster prevention, mitigation, preparedness, response, recovery, and rehabilitation;
- c. Must assess its capacity to fulfil those responsibilities; and must develop and implement measures to build capabilities that are relevant for its functional area for the purposes of executing its DRM responsibilities;
- d. The head of department must identify and appoint a person to serve as the focal point for DRM for the department. The responsibilities of DRM focal points must be executed in accordance with the departmental functional responsibilities for DRM;
- e. DRM responsibilities must be reflected in the Key Performance Areas (KPA) of the relevant role players in each department and Key Performance Indicators (KPI) must be provided for the execution of those responsibilities.

### **3.1.3 Information Management and Communication System**

An effective DRM system depends on access to reliable hazard and disaster risk information as well as effective information management and communication system to enable the receipt, dissemination and exchange of information. In this regard the MCM must develop a comprehensive information management, and communication system. This system must establish communication links with all DRR role players, internally and externally operating within in the Municipality. Specifically, the MCM must do the following:

- i. Develop an information, education and communication (IEC) strategy targeted at both internal and external stakeholders to disseminate information and educate stakeholders about hazards and risks occurring or most likely to occur in the Municipality;
- ii. Establish a clear information dissemination process to alert communities at risk of an impending hazard such as seasonal threat from diseases during rainy season or technological hazards that are likely to result in human, property loss or damage in event of a disaster;
- iii. Develop a communication plan with clear communication processes and protocols for different emergency situations, including the dissemination of situation updates;
- iv. Ensure that information is disseminated on a timely basis, using appropriate language for the target stakeholders/audience(s);
- v. Develop a public awareness, education and training programme for communities in high risk zones from the impact hazards and risk occurring or most likely to occur in their communities;
- vi. Developing and implementing mechanisms for knowledge management, sharing of lessons learnt and best practices.

### **3.1.4 Cooperation with Regional and National DRM System and Programmes**

Aligned with the DMA (2006) and National DRM Policy (2010), the Municipality must establish and maintain cooperation with the regional and national DRM programmes for the purposes of DRM which must include but need not be confined to:

- a. Participation of the MCM in regional and national DRM programmes led, coordinated and managed by the National Disaster Management Agency (NDMA);
- b. Participation by the DRR Coordination personnel and other key municipal role players in relevant regional and national DRM programmes;
- c. Participation by the DRR Coordination personnel in regional and national DRM programmes meetings;
- d. Participation by the DRR Coordination personnel and other key municipal role players in Regional or National Disaster Preparedness and Response Teams;
- e. Participation by the DRR Coordination personnel and other key municipal role players in Inter-municipality DRM programmes; as well as in planning/technical task teams and Inter-municipal technical support structures for specific identified priority transboundary risks; and other relevant DRM matters;
- f. Participation by the DRM Coordination personnel in the IDP and other developmental planning structures;
- g. Establish and maintain MoUs or Cooperative Agreements with DRM role players in the private sector, academia, development partners and others in the provision of or collaboration in mutual DRR programmes;
- h. Establish collaboration and partnerships with organisations such as NGOs, CBOs and other stakeholders in establishing and strengthening Community Based DRM programmes in the Municipality.

### **3.1.5 International Cooperation**

The MCM must identify and establish collaboration and strategic partnerships with internationally bodies and organisations such as the International Council for Local Environmental Initiatives (ICLEI) in climate change adaptation (CCA) and DRR programmes that will benefit the Municipality. The MCM must take the necessary steps to:

- i. Establish and promote twinning and strategic partnership as a means for mutual learning/ capacity development and sharing of best practices in DRR with similar municipalities or cities, in Southern Africa and globally; and
- ii. Seek membership in international bodies or networks that will add value to the municipal's DRR programme such as "LinkedIn groups on disaster risk reduction and urban planning".

<b>KEY PERFORMANCE AREA 1: Strengthening Disaster Risk Governance to Manage Disaster Risk</b>	
<b>IMPERATIVE</b>	
<b>1.1 Establish an Institutional Framework for Effective DRR Coordination</b>	
<b>Indicators</b>	DRR structures established and are functional
	DRR coordination and management system is established and is functional
	Capabilities for DRR planning and management developed and in use by all focal municipal departments personnel
	Existence of MoUs and /or cooperative agreements between the MCM and relevant government and non-state stakeholders with specific jurisdictional contents in regard to effective management of critical public facilities, and infrastructure before, during and after emergency or disaster
	# of functional partnership established with NGOs, CBOs and other stakeholders in Community Based DRM programmes
<b>IMPERATIVE</b>	
<b>1.2 Integrated execution of DRM Policy amongst Municipal Departments</b>	
<b>Indicators</b>	DRR is integrated in core functional areas of responsibility by municipal departments
	DRR roles and responsibilities of municipal departments have been identified, assigned and included in the KPAs of key personnel
	Focal persons identified and appointed for each municipal department and are executing responsibilities in accordance with departmental functional responsibilities for DRM
	MCM benefiting through twinning and partnership agreement/s on DRR
<b>IMPERATIVE</b>	
<b>1.3 Establish an Information Management and Communication System</b>	
<b>Indicators</b>	Functional information management and communication system for DRR disseminating hazard information to both internal and external stakeholders
	Functional information dissemination process to alert communities at risk of an impending hazard/s
	Existence of a communication plan with clear communication processes and protocols for different emergency situations, including the dissemination of situation updates
	# of communities in high disaster risk accessing benefiting from DRR public awareness, education and training programme
	Existence of knowledge management, sharing of lessons learnt and best practices

<b>IMPERATIVE</b>	
<b>1.4 Establish and maintain cooperation with Regional and National DRM System and Programmes</b>	
<b>Indicators</b>	MCM benefiting through participation in regional and national DRM programmes hosted by the NDMA
<b>IMPERATIVE</b>	
<b>1.5 Establish strategic international cooperation with relevant DRR partners</b>	
<b>Indicators</b>	MCM benefiting through participation in relevant DRR international networks

### 3.2 Priority 2: Understanding Disaster Risk

#### 3.2.1 Determine Disaster Risk Priority Areas

In line with the DRM Policy, within the one year of coming into force of this Policy and at least every three years thereafter, the MCM must conduct comprehensive disaster risk assessment (DRA) for the entire Municipality. The DRA will assist the Municipality to better understand disaster risk in all its dimensions of vulnerability, capacity, exposure of persons and assets, hazard characteristics and the environment. Additionally, pre-disaster risk assessment will assist the MCM to establish measures for prevention and mitigation and for the development and implementation of appropriate preparedness and effective response to disasters undertaken by municipal departments and other role players operating within the Municipality’s jurisdiction. The outcome of the comprehensive pre-disaster risk assessment is a Disaster Risk Profile for the Municipality.

In identifying risk the following are critical i.e. know what risk; know what population and assets occupy the risk areas; know how vulnerable are these population, their settlements and assets; know how these settlement were/have been developed; and know existing coping mechanisms vis-a-vis the prevailing or impending risk. The comprehensive risk assessment must identify the areas, communities or households at risk. The MCM has the following sectors which must be covered by the risk assessment:

- a. Residential (formal and informal)
- b. Central Business District (CBD)
- c. Industrial
- d. Commercial and institutional
- e. Social facilities (educational, community, markets, health and caretaking, sports and recreation, taxi-bus terminals)

Risk assessment must produce the following specific baseline data such as:

- a. Population profile, settlements and their spatial distribution;
- b. Road network, infrastructure and alternative access points into and out of the Municipality;

- c. Land use including developable and non-developable land and disaster risk zones;
- d. Profile on ecological and environmental assets including quality;
- e. Climate data, flood plains, wetlands etc.;
- f. Hydrology profile, water supply and quality;
- g. Water sanitation and hygiene analysis especially for informal settlements; and
- h. Geological profile.

The MCM must produce comprehensive hazard and risk map/s depicting hazard and disaster prone zones in the Municipality informed by pre-disaster risk assessment. Maps depicting disaster events, post-disaster and recovery activities should be produced in order to inform disaster preparedness planning as per the disaster management cycle.

### **3.2.2 Updating Comprehensive Disaster Risk Assessment**

Disaster risk is driven by a combination of hazard, risk and vulnerability factors including changing patterns of land use, infrastructure development/maintenance, urban growth and settlement densification. Similarly, household size and composition, wealth and health status and level of livelihood security, affect household potential for loss. Some risks, particularly those triggered by climate processes, must be reviewed seasonally prior to the rainy season or hot summer months. The Department of Meteorology produce various weather and related products such as the seasonal rainfall forecasts which the Municipality should access and analyse their implication in order to inform their disaster prevention and mitigation interventions.

Other risks, such as water supply and quality or flood risks may require extensive water supply and quality or flood hydrology investigations. The MCM through the relevant department must seek technical advice from recognised risk specialists to determine the need for updating a comprehensive assessment for a specific threat.

All municipal departments must review their disaster risk profile for their functional areas annually to determine if risk conditions have changed detrimentally. If physical, atmospheric, environmental, health or socio-economic conditions have worsened considerably, or if there are increasing disaster losses reported from small and medium-size events, the assessment and disaster risk profile must be updated.

### **3.2.3 Community Based Disaster Risk Assessment**

Communities are often the first time responders in emergencies or disasters and they bear the consequences of disaster impact. In simple terms, the risk of a disaster happening depends on what the hazards are, how vulnerable the community is, and how well they can limit the damage by being prepared and forewarned.

In an effort to increase local capacity so as to minimise the risk and impact of disasters, disaster risk assessment efforts must actively include the participation of vulnerable communities and

households, including physically isolated communities, female-headed and child-led households. The MCM in collaboration with relevant stakeholders such as NGOs and other DRM stakeholders must facilitate the conducting of disaster risk assessments in the various communities of the Municipality including peri-urban communities. The information collected through scientific DRA methodology can be significantly enhanced by local and indigenous knowledge relating to DRM. In addition, the active engagement of special needs groups, such as women, children and the elderly, improves the quality of the DRA findings and increases the likelihood of community ownership in any disaster risk reduction interventions that may follow.

### **3.2.4 Disaster Risk Assessment Methodology**

The MCM must establish a uniform approach to assessing and monitoring disaster risks that will inform disaster risk management planning and disaster risk reduction and management to be undertaken within the municipality. The DRA methodology adopted when conducting disaster risk assessments must be consistent with acceptable global or regional or national methodology including best practice in conducting similar exercise. The MCM must develop Terms of Reference (ToR) which must establish criteria, scope and elements to be covered by the DRA.

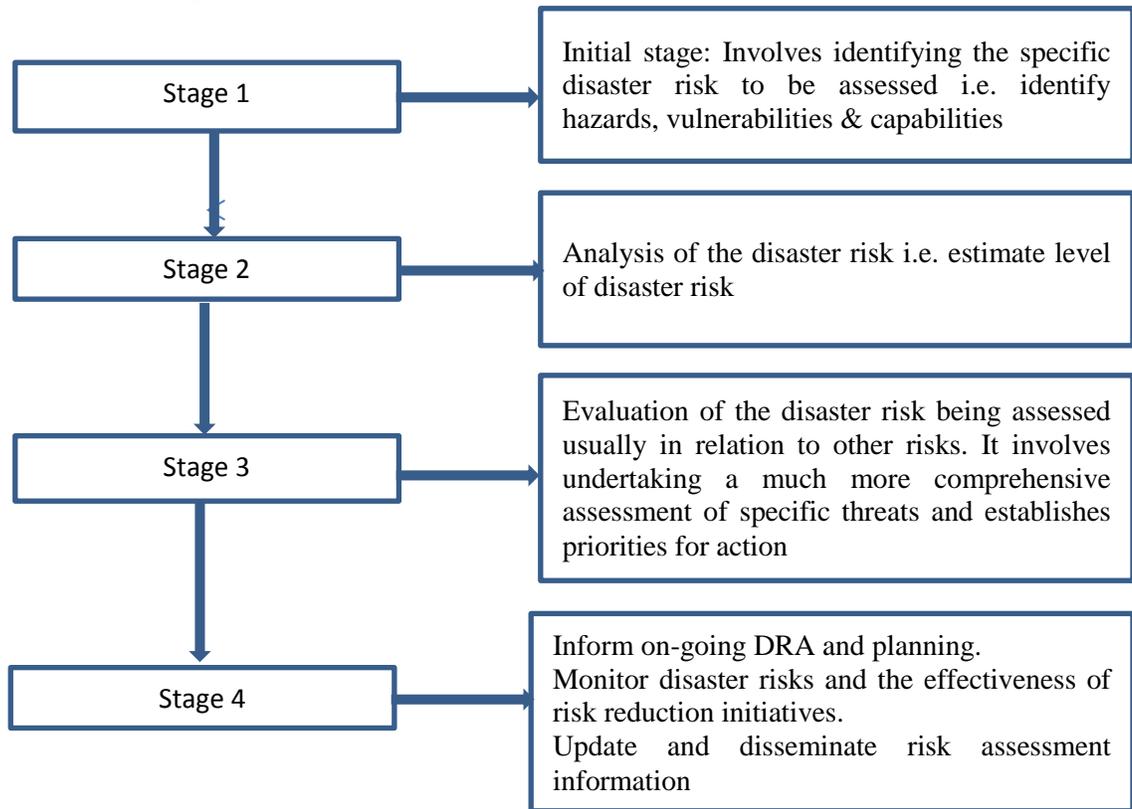
When commissioning comprehensive DRA, the MCM must appoint a DRR Task Team drawn from members of the Disaster Risk Reduction Advisory Committee (DRRAC) and other experts who will provide technical and advisory assistance regarding disaster risk assessment ToR; methodology for conducting DRA; monitoring progress; and to assist with the interpretation of the findings and validation of the DRA outcomes.

### **3.2.5 Undertaking Disaster Risk Assessment**

There are many different methods for carrying out disaster risk assessments. These vary, depending on the type of risk being assessed, the specific characteristics of the population at risk, as well as those related to the area, infrastructure, service or business concerned.

Risk assessment methods used are determined by the urgency for the assessment and the availability of relevant hazard and vulnerability information, as well as appropriate specialist and other resources to undertake it. Figure 1 present a common approach/methodology for conducting DRA that serves as guidance to the MCM when commissioning DRA exercises.

**Figure 1: The Basic stages of a Disaster Risk Assessment**



### 3.2.6 Monitoring Disaster Risk

Disaster risks are not static just like any other risk. They change seasonally and over time. To recognise such changes, and to strategically adjust programmes accordingly, all municipal departments must monitor hazards and risk relevant to their specific functional responsibilities. The MCM must establish formal collaboration with national early warning service providers who monitor various hazards and disaster risk such as the following:

Department	Hazard and Early Warning Responsibility
Department of Meteorology	Weather/climate hazards
Department of Geology	Geological hazards
Department of Water Affairs	Floods monitoring
Ministry of Health Emergency Preparedness and Response (MoH-EPR) Centre	Biological/epidemiological hazards
Ministry of Agriculture- National Early Warning Unit (NEWU)	Agriculture production and food security
Royal Swazi Police (RSP)	Civil disorders, riots and crime etc.

This mechanism forms the basis for sounding timely warnings of, or alerts for, impending significant events or disasters. They are also essential for monitoring the effectiveness of on-going disaster risk reduction efforts. The MCM must ensure the following measures are in place:

- a. Ongoing monitoring of disaster risk in the municipality; as well as for risks prevailing in neighbouring municipal areas and beyond that may pose risk to the municipality;
- b. Develop and maintain disaster damage and loss data base;
- c. Establish Risk Observatory System (ROS) to identify, monitor/track hazards and risk;
- d. Vulnerability monitoring i.e. identify, monitor/track population, assets, property, facilities and infrastructure at risk from hazards.

### 3.2.7 Consolidation and Classification of Disaster Risk Information

Hazard and vulnerability assessments must be consolidated according to hazard classification provided in Annex 2. This facilitates integrated Inter-departmental planning and with other key government and external DRM stakeholders. It also supports risk management cooperation between administrative areas (for example, two or more municipalities) affected by the same risk.

<b>KEY PERFORMANCE AREA 2: Understanding Disaster Risk</b>	
<b>IMPERATIVE</b>	
<b>2.1 Conduct Comprehensive Disaster Risk Assessment</b>	
<b>Indicators</b>	DRR Task Team in place and is providing technical and/or advisory assistance regarding conducting of disaster risk assessments
	Comprehensive disaster risk profile for the municipality with hazard and risk maps
	Maps of critical public facilities and infrastructures at risk from hazards or disasters
<b>IMPERATIVE</b>	
<b>2.2 Monitoring Disaster Risk</b>	
<b>Indicators</b>	Alert messages for impending hazards or disaster risk
	Hazard monitoring or tracking reports
	Situation reports with maps on disaster or emergency events
	Updated hazard and disaster risk profiles
	Risk Observatory System in place effectively used to monitor hazards, risks and vulnerability
	Damage and loss data base in place
<b>IMPERATIVE</b>	
<b>2.3 Community Based Disaster Risk Assessment</b>	
<b>Indicators</b>	Ward/zone based disaster risk profiles with maps
	Updated ward/zone hazard and disaster risk profiles

### **3.3 Priority 3: Prior Investing in Disaster Risk Reduction for Resilience**

Public and private investment in disaster risk prevention and reduction through structural and non-structural measures are essential to enhance the economic, social, health and cultural resilience of persons, communities and their assets, as well as the environment. These can be drivers of innovation, growth and job creation. Such measures are cost-effective and instrumental to save lives, prevent and reduce losses and ensure effective recovery and rehabilitation. The MCM must ensure that risk reduction measures are put in place given the expected population growth, urbanisation, and land developments in order to prevent or reduce the impact of disaster and climate risks.

#### **3.3.1 Disaster Prevention and Mitigation**

The MCM should explore ways in which disaster risk prevention and mitigation can be incorporated especially in public works programmes through structural and non-structural measures<sup>3</sup> involving public and private investments for all types of hazards and risks. Given that Mbabane is characterised by hilly landscapes with development confined to lower lying areas, there is potential threat of encroachment to wetlands which may result in environmental disaster which if unabated has severe implications for socio-economic development of the City.

Development projects such as residential, roads and commercial should integrate disaster risk prevention and mitigation measures aimed at achieving resilience. Storm flooding and water management is a major challenge requiring urgent attention to prevent disaster events or emergency that might discourage visitors or investments into the City. Disaster prevention and mitigation measures aimed at “building back better” should be incorporated in all recovery, retrofitting or rehabilitation programmes/projects.

##### **3.3.1.1 Structural Disaster Prevention and Mitigation**

The MCM should ensure that the following structural measures are in place:

- a. Infrastructure projects (e.g. residential, commercial etc.) have effective storm drainage control in order to abate vulnerability of residents and businesses to storm flooding and public health risks resulting from flooding;
- b. New or upgrading projects (public infrastructure, facilities) such as buildings, lifts, roads and traffic lights have provision for people living with disability in order to protect them from potential threats of natural and technological hazards;
- c. Roads infrastructure improvements and maintenance are climate proof in order to abate perennial patching of potholes which pose risk of traffic accidents, loss of life and property damage;

---

<sup>3</sup>Structural and non-structural measures are undertaken to limit the adverse impact of natural hazards, environmental degradation and technological hazards.

- d. Sewer is installed e.g. in Pine Valley in order to abate potential public health risks given climate variability;
- e. Land property development should be risk informed by taking into consideration threats from climate variability and change;
- f. Installation of fire breaks in order to control fire from spreading to other residential areas;
- g. Public buildings have functional fire prevention and control systems, evacuation procedures and assembly point;
- h. Installation and regular servicing of fire prevention and control systems in community, social and health centres;
- i. New public buildings and facilities have alternative sanitation such as dry sanitation given the effect of climate variability in regard to water supply;
- j. Promote structural measures for water harvesting and conservation in residential, commercial and public facilities in collaboration with private sector and relevant service providers;
- k. Climate smart building plans (public and private) in order to prevent and mitigate vulnerability to climate risks e.g. strong winds, hailstorms;
- l. Careful positioning of storm-water drainage and its on-going maintenance in order to prevent disruption to critical services during violent storms;
- m. Planting indigenous grasses or trees on a recently burned slope near roads or dwellings to stabilise the soil and prevent damaging land subsidence.

### **3.3.1.2 Non-structural Disaster Prevention and Mitigation**

The MCM should ensure that the following non-structural measures are in place:

- a. Develop bye-laws for building codes and standards to regulate and enforce compliance in order to promote the protection of residents, assets, property, infrastructure, and environment from threats of climate hazards e.g. fire, flooding;
- b. Establish and maintain MoUs and or Cooperative agreements with relevant government sphere in order to fully confer management responsibility of public buildings, roads and facilities in order to facilitate the effective development of disaster prevention, mitigation, response and recovery, and rehabilitation (see section 3.1.1 b.);
- c. Outlaw developments in high risk zones and or only permit developments in such areas provided that strict structural and non-structural disaster prevention and mitigation measures are put in place;
- d. Land-use planning and management takes into consideration threats from natural hazards given climate variability. For example, the siting of public works projects such as residential developments, roads, public facilities and others should be informed by risks such as floods, landslides, tremors given the terrain of the municipality;
- e. Collaborate with insurance sector to provide public infrastructure insurance products against climate risk;

- f. Ensure public services have safety regulations (e.g. energy, water, transportation);
- g. Establish and promote community based Fire Protection Associations (FPAs) in order to reduce vulnerability to fire hazards especially in an informal settlements;
- h. Establish assembly points and provide basic fire-fighting training for community and social health centres;
- i. Enforce environmental laws and regulations to ensure protection of environmental assets and property;
- j. Protection of natural wetlands, to prevent destructive flooding during heavy rain.

<b>KEY PERFORMANCE AREA 3: Prior Investing in Disaster Risk Reduction for Resilience</b>	
<b>IMPERATIVE</b>	
<b>3.1 Prior Public and Private Investment in Disaster Prevention and Mitigation</b>	
<b>Indicators</b>	Existence of private and public investments with structural measures for disaster prevention and mitigation e.g. roads, residential, commercial, facilities, and other public infrastructure(see section 3.3.1.1)
	Existence of private and public investments with non-structural measures for disaster prevention and mitigation e.g. roads, residential, commercial, facilities, and other public infrastructure (see section 3.3.1.2)

**3.4 Priority 4: Enhancing Disaster Preparedness for effective Response, and to “Build Back Better” in Recovery, Rehabilitation and Reconstruction**

The Municipality must develop and strengthen emergency or disaster preparedness for response, take action in anticipation of events, integrate disaster risk reduction in response preparedness and ensure that capacities are in place for effective response and recovery at all levels of Municipal corporate practice areas/programmes.

The Municipality must take the necessary measures to implement the provision of section 3.1.1; 3.1.2; 4.2.1 and 4.3.4 including but not limited to the emergency or disaster preparedness and response, and recovery measures presented in section 3.4.1; 3.4.2; and 3.4.3.

**3.4.1 Disaster Preparedness or Emergency Planning**

Disaster preparedness contributes to disaster risk reduction through measures taken in advance to ensure effective response to the impact of hazards, including timely and effective early warnings and the temporary evacuation of people and property from threatened areas.

Disaster preparedness enables the Municipality, other institutions and stakeholders involved in disaster DRM, including the private sector, communities and individuals to mobilise, organise, and provide relief measures to deal with an impending or occurring disaster, or with the after

effects of a disaster or emergency. Preparedness differs from prevention and mitigation as it focuses on activities and measures taken in advance of a specific threat or disaster. Preparedness actions include:

- a. Planning for the protection of strategic infrastructure or services whose damage or disruption during disaster events would result in serious and widespread consequences;
- b. Planning for the protection of 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;
- c. Planning for the protection of critical economic, commercial, agricultural and industrial zones or sites whose damage or disruption would have serious and widespread consequences;
- d. Planning for seasonal threats, such as heavy rainfall, flooding, strong winds, drought, fires in open spaces and communicable disease outbreaks;
- e. Anticipating and planning for the potential threats associated with large concentrations of people at sporting, shopping centres/malls, civil disorders, riots, marches, or other events;
- f. Planning for the protection of urban 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;
- g. Identifying evacuation procedures, routes and sites in advance of expected emergencies, the evacuation of communities in areas exposed to landslides;
- h. Developing, in advance, clear communication processes and protocols for different emergency situations, including the dissemination of early warning messages for an impending extreme weather threat to all urban communities and other stakeholders.

Where possible, this process must take place in consultation with those most at risk. These actions are key components of Contingency Plans that should be developed for specific threats as part of the MCM's Disaster Risk Management Plan.

#### **3.4.1.1 Develop and implement strategy for the dissemination of early warnings**

- a. Establish MoUs with early warning service providers (see section 3.2.6);
- b. Establish strategic emergency communication links with communities in high risk areas;
- c. Establish clear information dissemination processes to alert communities at risk of an impending seasonal threat, such as a potential outbreak of cholera during the rainy season.

#### **3.4.2 Disaster Response**

Disaster response involves the provision of emergency services and public assistance during or immediately after a disaster in order to save lives, reduces health impacts, ensure public safety and meet the basic subsistence needs (food, water and sanitation, shelter and protection) of the

people affected by disaster or emergency. Disaster response measures include but not limited to the following:

- a. Activate the Multi Hazard Contingency Plan (MHCP) or Contingency Plan (CP) prepared for the impending specific hazard;
- b. Disseminate warning messages to the communities affected or likely to be affected where applicable;
- c. Conduct a rapid assessment to determine what has happened, where and the most urgent needs;
- d. Notify the NDMA about the impending/or the actual event that has happened using agreed notification format;
- e. Coordinate and manage the relief operation in collaboration with emergency and essential services responders and relevant stakeholders;
- f. Notify and initiate cooperation where applicable with other Municipalities for possible assistance that may be required;
- g. Continue monitoring and communicating details of the event to the MCM CEO and the NDMA CEO in the event that national or external assistance will be required

### **3.4.3 Recovery**

Recovery activities address reconstruction, rehabilitation and re-establishment demands across physical, social, emotional, psychological, environmental and economic elements. It is aimed at the restoration and improvement, where appropriate, of facilities, livelihoods and living conditions of disaster-affected communities, to a more resilient standard with the aim to reduce the need for significant expenditure on recovery in the future. Recovery begins soon after the emergency phase has ended, and should be based on pre-existing strategies and policies that facilitate clear institutional responsibilities for recovery action and enable public participation.

Disaster recovery is a critical opportunity to build back better, including through integrating disaster risk reduction into development measures, Municipality communities' resilience to disasters. Following a disaster event, there are usually high levels of awareness about the risk factors that increased the impact. These present opportunities to introduce disaster risk reduction efforts consultatively with the affected communities and key stakeholders in order to reduce the likelihood of future loss. Disaster recovery includes:

- a. Rehabilitation of the affected areas, communities and households;
- b. Reconstruction of damaged and destroyed infrastructure; and
- c. Recovery of losses sustained during the disaster event, combined with the development of increased resistance to future similar occurrences.

### **3.5 Declaration of Emergency**

The Prime Minister may on the advice of the Minister in consultation with the MCM and with the National Disaster Management Agency determine whether the event qualifies as an emergency or disaster in terms of this Policy.

An event is duly deemed an emergency or disaster if:

- a. It affects the entire Municipality; and
- b. The Municipality does not have the capacity to cope with the event using its own resources.

#### **3.5.1 Duties upon Declaration of an Emergency**

The MCM through the Office of the CEO shall carry out the necessary action as required by the relevant contingency plans and procedures including but not limited to actions in section 3.1.2; 4.2.1 and 4.3.4.

#### **3.5.1 Duties upon Declaration of an Emergency**

The MCM through the Office of the CEO shall carry out the necessary action as required by the relevant contingency plans and procedures including but not limited to actions in section 3.1.2; 4.2.1 and 4.3.4.

#### **3.5.2 Coordination of Response and Recovery efforts**

Responsibility for coordinating response to specific known rapid and slow-onset significant events and disasters must be allocated to a specific government agency in accordance to its institutional mandate. For example, flood monitoring, response and recovery efforts would involve the combined efforts of many stakeholders, but the primary responsibility must be allocated to a specific government agency with the other stakeholders assuming supportive responsibilities.

In the case of river floods, for example, the Department of Water Affairs (DWA) has the primary responsibility for river or dam flood monitoring, and the Royal Swazi Police (RSP) could bear primary responsibility for search and rescue operations. The Department of Meteorology has the primary responsibility for weather forecasting and related early warning services, while a combination of agencies play various roles as per their institutional mandates in the event of extreme weather events (see section 3.2.6). The MCM assisted by the NDMA where possible would assume the primary responsibility for coordinating and managing disaster events occurring within the Municipality.

The operational plans and guidelines of the various response agencies that contribute to field operations must be considered when allocating responsibilities for response and recovery. In this regard, primary and secondary responsibilities must be allocated for each of the operational activities associated with disaster response, for example, evacuation, shelter, search and rescue, emergency medical services and fire fighting.

Response and recovery operations must also make provision for the delegation of responsibilities by the Office of the CEO as a contingency in the event that a particular agency itself is affected or has limited capacity to cope with disaster or is unable to continue to operate (see section 4.2.1).

### **3.6 Incident Management System (IMS)**

Incidents and emergencies handled on a daily basis by emergency and essential services personnel are routinely managed by an incident commander of a particular agency in terms of that agency's internal line-function policies. However, in the case of significant events and disasters which occur or are threatening to occur, a response management system must be developed and implemented to ensure a **systematic coordinated approach** to the effective utilisation of facilities, personnel, equipment, resources, procedures and communication.

An Incident Management System provides for the clear allocation of roles, responsibilities and mechanisms for strategic, tactical and operational direction and a participative approach to the management of the event. The MCM must therefore develop an Incident Command System (ICS), which complies with the requirements of the national standard for response management systems.

The system must identify specific roles and responsibilities for each response and recovery activity included in the operational plans of the various agencies participating in response and recovery efforts. It must also provide for mechanisms to determine the level of implementation of response and recovery measures according to the magnitude of the event or disaster and the capacity of an agency to deal with it, using only their own resources.

The ICS must be introduced in all Municipal departments. The MCM should facilitate cooperative agreements and partnerships, for the purpose of enhancing capacity, between the Municipality and government agencies involved in response and recovery, including the private sector, NGOs, traditional leaders, technical experts, communities and volunteers.

Each agency identified in the IMS must establish Standard Operating Protocols or Procedures (SOPs) for coordinating response and recovery operations and for ensuring government and business continuity.

The SOPs must be consistent with the requirements of relevant legislation, regulations and standards. The IMS must clearly identify the stakeholders responsible for the operational command, control and coordination of an event.

**KEY PERFORMANCE AREA Priority 4: Enhancing Disaster Preparedness for effective Response, and to “Build Back Better” in Recovery Rehabilitation and Reconstruction**

**IMPERATIVE**

**4.1 Disaster Preparedness or Emergency Planning**

<b>Indicators</b>	Multi Hazard Contingency Plan (MHCP) developed and its tested
	Capacities in place for effective disaster preparedness for response and recovery in the relevant municipal departments
	Plan developed for the protection of critical public infrastructure, economic, commercial, and industrial zones or sites from damage or disruption from natural or technological hazards
	Plan developed for the protection of fragile natural ecosystems and environmental assets that offer protective environmental services
	Plans developed for regular seasonal threats, such as heavy rainfall, flooding, strong winds, drought, fires in open spaces and communicable disease outbreaks
	Existence of MHCP including their regular testing (simulation)

**IMPERATIVE**

**Develop and implement strategy for the dissemination of early warnings (see section 3.1.3 and 3.2.6)**

<b>Indicators</b>	Effective and appropriate early warning strategies have been developed and implemented and the information communicated to stakeholders to enable appropriate responses
	Strategic emergency communication links have been established in high risk areas and communities
	MoUs or Cooperative Agreements with Emergency and Early Warning (EW) service providers to receive regular EW information
	Timely and effective early warnings and the temporary evacuation of people and property from threatened areas

**IMPERATIVE**

**Effective coordination of response and recovery efforts**

<b>Indicators</b>	
	The MCM and relevant emergency services and other stakeholders executing their primary and/or secondary roles and responsibilities according to their institutional mandate during an emergency or disaster
	Incident command system in place
	Effective restoration of public services affected by disaster or emergency
	Response integrate disaster risk reduction
	Reconstruction and rehabilitation of areas, communities, households and infrastructure affected by disaster integrate “build back better” recovery principle

## **4.0 IMPLEMENTATION ARRANGEMENTS**

### **4.1 Relevant Key Stakeholders**

Disaster risk reduction is “everyone’s business” because disasters affect everyone across all sectors of development. It is a shared responsibility, which must be fostered through multidisciplinary approaches and partnerships involving key stakeholders in both central and local government, civil society, private sector, academia, media, rate payers and development cooperating partners. The Municipality should ensure the active involvement of all key stakeholders (both internal and external) in DRM programmes.

#### **4.1.1 National**

At the national level, the NDMA has established a multi-sectoral institutional framework. The MCM should participate in the relevant national DRM programmes.

#### **4.1.2 Regional**

At the regional level, DRR institutional mechanism exists. All key stakeholders should be mobilised. The Municipality should participate in the relevant regional DRM programmes.

#### **4.1.3 Local Government**

Since DRR is a multidisciplinary practice, it requires the active involvement of all departments of the Municipality's governance and programmes. Council should also ensure the participation of all key stakeholders.

### **4.2 Disaster Management Structures**

#### **4.2.1 The Council**

Council is responsible for developing and establishing a Disaster Risk Management Policy Framework (DRMPF), which makes provision for an integrated, coordinated and uniform approach to disaster risk management by all municipal departments and entities, non-governmental organisations (NGOs) involved in DRM, the private sector and individuals.

Council through the Office of the Chief Executive Officer (CEO) has the primary responsibility for the coordination and management of local disasters that occur in the Municipality (see section 1.2). Council must ensure the establishment of an effective and coordinated system for DRM aligned to the DMA (2006) and the National DRM Policy (2010). The CEO cannot declare disaster or emergency in terms of national disaster legislation (see section 3.5).

In the event of disaster within the Municipality caused by natural hazards such as wind, heavy rain, flooding, drought, earth tremors, and man-made hazards such as fire, industrial, road traffic accidents etc. the CEO must take such steps as per the MCM's Disaster Contingency Plan:

- (a) As he may deem necessary to secure the continuation of administration and services by the Council;
- (b) As he may be directed to take within Municipal area by the Minister responsible for Local Government concerning:
  - (i) Firefighting;
  - (ii) Traffic control;
  - (iii) Rescue and evacuation work;
  - (iv) Medical treatment and care of injured and sick persons;
  - (v) The provision of emergency shelter;
  - (vi) The continuation of other public health services;
  - (vii) The maintenance of essential services and the protection of essential industries, trades, places and areas; and
  - (viii) Transport and communications.
- (c) To this end he may assume full charge of officers, employees, land, buildings, materials, vehicles, supplies and equipment or any other article or thing under control of Council;
- (d) Ensure Council effective participation in Local Government DRR programmes at regional, national and global levels.

#### **4.2.2 DRM reports to Council**

In order for Council to continuously monitor the implementation of the DRM Policy, all municipal departments must include performance reports on DRM activities in their monthly reports to the MCM.

#### **4.2.3 Annual reports**

In terms of annual performance and financial reporting to Council, the Office of the CEO must submit a report to Council on its DRM activities during the year and also submit a copy of the report to the NDMA and the parent Ministry responsible for Local Government.

#### **4.2.4 Reports on Priority Risk Reduction Planning**

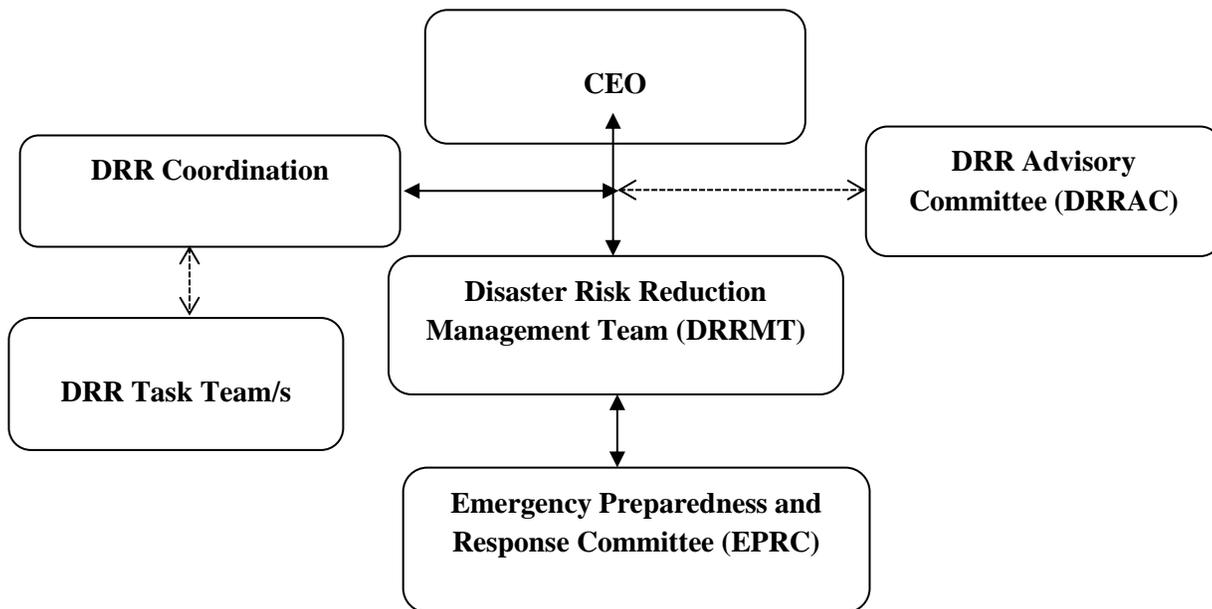
The Office of the CEO must submit a report to Council before the end of September each year on disaster risks which have been identified in the disaster risk assessment report as priorities for the development and implementation of risk reduction and prevention initiatives, strategies, plans

and actions for inclusion by municipal departments in Council’s Integrated Development Planning (IDP) for the ensuing year.

### 4.3 Disaster Management Structures

Council through the Office of the CEO must ensure the establishment of the following basic structure for DRM (Figure 2). The CEO is the focal point and convener of the Disaster Risk Reduction Advisory Committee (DRRAC).

**Figure 2: MCM DRM Structure**



#### 4.3.1 Disaster Risk Reduction Advisory Committee (DRRAC)

The DRRAC shall comprise of all internal and external role-players. The DRRAC should meet annually and/or frequency as determined by Council.

#### Internal Stakeholders:

- i. Councillors
- ii. CEO
- iii. HODs and Managers
- iv. Information and Public Relations Office
- v. Neighbourhood watch schemes
- vi. Local Community Leaders
- vii. Ward Committees
- viii. Other stakeholders (add as necessary)

**External Stakeholders:**

- i. National Disaster Management Agency
- ii. Line Ministries and their relevant departments
- iii. Emergency service providers i.e. Royal Swazi Police (RSP); Umbufo Swaziland Defence Force (USDF); Swaziland National Fire and Emergency Services (SNFES); Ministry of Health- Emergency Preparedness and Response (MoH-EPR)
- iv. Essential Service Providers i.e. Swaziland Water Services Corporation (SWSC); Swaziland Electricity Company (SEC);and Swaziland Post and Telecommunications (SPTC)
- v. Residents Association/s
- vi. NGOs & CBOs
- vii. Business Community/Private Sector
- viii. Media
- ix. Academia and research institutions
- x. Development partners
- xi. Volunteers
- xii. Other stakeholders (add as necessary)

**Roles and function of the DRRAC:**

- i. advising and making recommendations to Council on issues relating to DRM in the Municipality;
- ii. Contribute to DRM planning and co-ordination;
- iii. Establish standards of practice;
- iv. Provide advice on implementation of preparedness and response management systems;
- v. Gather critical information about MCM's capacity to manage local risks and disasters; and
- vi. Assist with public awareness, resource mobilisation, training and capacity building.

**4.3.2 DRR Coordination**

The Office of the CEO must facilitate the establishment of a position designated within MCM for DRR Coordination.

**Roles and function of the DRR coordination mechanism:**

- i. Coordination and Management of the day-to-day DRR activities within Council;
- ii. Ensure integration/mainstreaming of DRR in the municipal IDP development and implementation process and across municipal departments and programmes in liaison with Heads of Department (HODs) and managers;
- iii. Facilitate and manage the development and implementation of Municipal DRM programme/s;

- iv. Facilitate effective liaison, partnership and networking between Council and like-minded DRR stakeholders at national, and global levels;
- v. Facilitate the establishment and management of technical task teams for the development and the implementation of plans for DRM based on the findings of disaster risk assessments. Plans to be developed by technical task teams must include Multi Hazard Contingency Plans (MHCP) for specific known priority risks; for response and recovery operations; for vulnerability reduction; and for specific priority risk reduction programmes and projects for high risk groups, communities, areas and developments with multiple vulnerabilities; including any projects and programmes originating from the strategic planning process; and for any other relevant DRM programmes and operations in the municipality;
- vi. Develop terms of reference which define the minimum composition, the scope of operations, responsibilities, reporting, budgeting and time frames for each task team project;
- vii. Develop terms of reference including facilitating the sourcing and management of DRR consultants recruited to provide specialised DRR technical services;
- viii. Conduct public awareness, research, training and capacity building on DRR issues in liaison with relevant departments and stakeholders.

#### **4.3.3 Disaster Risk Reduction Management Team**

The Office of the CEO must facilitate the establishment of inter-departmental Disaster Risk Reduction Management Team (DRRMT).

The DRRMT shall comprise of the following:

- i. DRR Coordination Office
- ii. HODs and/or Managers
- iii. Information and Public Relations Officer

#### **Roles and function of the DRRMT**

- i. Ensuring the mainstreaming/ integration of DRR in Municipal departmental plans and programmes in liaison with the DRR coordination;
- ii. Ensuring the integration of disaster risk management in IDP, land-use planning, building codes, environmental, social and economic plans/ programmes in liaison with the DRR coordination;
- iii. Facilitating the relevant department's DRM arrangements and planning for disaster prevention and mitigation, response, recovery and rehabilitation;
- iv. Ensuring adequate planning, budgeting and implementation of Council's DRM programme;
- v. Support DRR capacity building and resource mobilisation activities;

- vi. Ensure that Municipal DRM programme is consistency with the regional and national disaster management frameworks;
- vii. Facilitating the alignment of the department's DRM plans and arrangements with those of other organs of Government and other institutional role players;
- viii. Ensuring that each department is complying with requirement in section 3.1.2.

#### **4.3.4 Emergency Preparedness and Response Committee**

The Office of the CEO must facilitate the establishment of Emergency Preparedness and Response Committee (EPRC). The relevant external emergency management stakeholders will act accordingly depending on the emergency and within their institutional mandate. The EPRC saves as the joint operations team given its composition.

The EPRC shall comprise of the following:

- i. DRRMT
- ii. Essential Services Providers i.e. SWSC, SEC, SPTC, MTN
- iii. Emergency Services i.e. Royal Swazi Police (RSP); Swaziland National Fire and Emergency Services (SNFES); Ministry of Health- Emergency Preparedness and Response (MoH-EPR); Municipal security service
- iv. NDMA
- v. Baphalali Swaziland Red Cross Society (BSRCS)
- vi. Other stakeholders (add as necessary)

#### **Roles and function of the Emergency Preparedness and Response Committee:**

- i. Ensure effective coordination and management of emergency/disaster preparedness, response, recovery and rehabilitation of public services in the Municipality that are disrupted/affected by hazard events;
- ii. Facilitate effective collaboration with emergency and essential services providers to restore essential services disrupted or affected by disaster;
- iii. Ensure coordinated development, review and testing of Multi Hazard Contingency Plan (MHCP) for priority known hazards involving emergency or disaster management agencies and key DRM stakeholders;
- iv. Facilitate development and implementation of contingency plans for specific hazards (if necessary) depending on the scale and magnitude of the impending hazard, disaster or emergency;
- v. Promote sharing of early warning information to communities under threat from both natural and man-made hazards in close collaboration with the relevant stakeholders (see section 3.2.6);
- vi. Facilitate effective collaboration with the NDMA in DRM preparedness programme by the Municipality.

#### **4.3.5 DRR Task Team/s**

The DRR Task Team/s will be constituted as and when a need arises for the MCM to have such to derive a specific task on behalf of any of the above mentioned structures. Members to any of these teams should not exceed 5 persons including the chairperson of the team. One member shall be appointed by Council to represent councillors in task forces constituted to perform any specified assignments as and when the need arise. The team/s will work under the overall supervision of the DRR Coordination Office and reporting to the relevant structure that moved for it to be constituted for a specific period and tasks, after which its terms can be reviewed or its purpose will cease.

#### **Roles and function of the DRR Task Teams**

- ✚ Conduct DRM assignment/s as per the ToR formulated for the purpose of successfully implementing the task at hand.

#### **4.4. Funding Mechanism**

Financial resources for the implementation of the DRM Policy must be an integral part of the budgets of the Municipality as it implements activities as per the DRM devolved departmental functions. The Office of the CEO shall include a programme in the budget for disaster management for the implementation of the policy. Planning and budgeting system and processes of the Municipality must cater for all phases of the disaster management cycle. Council must ensure that funds are set aside to cater for DRM programme for prevention, preparedness, response and recovery, and rehabilitation operations. Budget must include budget lines but not limited to:

- a. Conducting of comprehensive disaster risk assessment i.e. pre-disaster assessment including updating of comprehensive disaster risk assessment;
- b. Regular disaster risk monitoring;
- c. Planning for hiring of plant, equipment, vehicles, temporary shelter and others relief assistance materials necessary for emergency or disaster response, recovery and rehabilitation.

Civil society organisations, development partners and other DRR role players and stakeholders are encouraged to accommodate the aspirations of this policy in their normal programmes.

##### **4.4.1 Resource mobilisation and assistance during emergency**

In the event that an emergency or disaster affecting the Municipality is declared in terms of section 3.5 of this policy, the NDMA shall assist the Municipality to coordinate response and relief efforts in terms section 3.6 of this policy. In line with Section 38 of the DMA (2006) relief assistance shall be taken on charge and accounted for in accordance with any other applicable law governing the receipt, issue and control of public resources and related matters.

Relief assistance shall, wherever possible, only be used for the purpose for which they have been provided that where no conditions are attached; they may be used for the purposes for implementing DRM programmes.

#### 4.5 Monitoring and Evaluation

The implementation of the DRM Policy will be monitored and evaluated for effectiveness in meeting the intended goal and objectives. To facilitate this process a monitoring and evaluation framework must be developed.

#### 4.6 Review of Policy

The DRM Policy will be reviewed and whenever necessary revised at least every three years. The revision will be informed by the results of monitoring and evaluation, disaster risk assessments and other relevant information sources. This will be the initiative of the department responsible for DRM affairs.

<b>KEY PERFORMANCE AREA: Implementation Arrangements</b>	
<b>IMPERATIVE</b> Establish DRR Implementing structures with clear roles and responsibilities	
<b>Indicators</b>	DRRAC established and is functional
	DRR Coordination mechanism and Task Teams established and is functional
	DRRMT established and is functional
	EPRC established and is functional
<b>IMPERATIVE</b> <b>Establish funding mechanism to implement DRM Policy and Plan</b>	
<b>Indicator/s</b>	Budget for DRR programme
<b>IMPERATIVE</b> <b>Establish monitoring and evaluation mechanism for the implementation of the DRM Policy</b>	
<b>Indicator/s</b>	Existence of M&E plan for DRM Policy
<b>IMPERATIVE</b> <b>Develop a plan for Policy Review and Updating</b>	
<b>Indicators</b>	Existence of plan for DRM Policy review

## **ANNEXS**

### **Annex 1: Definition of Key Terms**

#### **Acceptable Risk**

The level of potential losses that a society or community considers acceptable given existing social, economic, political, cultural, technical and environmental conditions

#### **Adaptation**

The adjustment in natural or human systems in response to actual or expected climate stimuli or their effects, which moderates harm or exploits beneficial opportunities

#### **Assessment**

The process of documenting, usually in measurable terms, knowledge, skills, attitude and beliefs on disaster

#### **Biological Hazard**

Processes or phenomenon of organic origin or conveyed vectors, including exposure to pathogenic micro-organisms, toxins and bioactive substances that may cause loss of life, injury, illness or other health impacts, property damage, loss of livelihoods and services, social and economic disruption, or environmental damage

#### **Capacity**

The combination of all strengths and resources available within a community, society or organisation that can reduce the level of risk, or the effects of a disaster. Capacity may include physical, institutional, social or economic means as well as skilled personal or collective attributes such as leadership and management. Capacity may also be described as capability

#### **Capacity Building**

Efforts aimed to develop human skills or societal infrastructures within a community or organization needed to reduce the level of risk

#### **Contingency Planning**

A management process that analyses specific potential events or emerging situations that might threaten society or the environment and establishes arrangements in advance to enable timely, effective and appropriate responses to such events and situations

## **Coping Capacity**

The means by which people or organizations use available resources to face adverse consequences that could lead to a disaster

## **Coping Mechanisms**

Are strategies developed by individuals and communities to address problems relating to hazards and environmental stresses. Such strategies are built upon historical knowledge, cultural acceptability and experience through working contact with the locations within which they lie. Coping mechanisms help communities to adjust and adapt to changing, frequently form part of a community's social mores.

## **Council**

The political and policy making body of the Municipal Council of Mbabane and it is comprised of elected councillors.

## **Disaster**

A disaster is a serious disruption of the functioning of society, causing widespread human, material, or environmental losses, which exceed the ability of the affected society to cope, using its own resources. Disasters are often classified according to their speed of onset (sudden or slow), or according to their cause (natural or human made) within a timeframe. These disruptions are a result of combination or interaction of:

- ✚ HAZARD EXPOSURE
- ✚ Conditions of VULNERABILITY
- ✚ Insufficient CAPACITY or MEASURES to reduce the potential negative consequences of risk

## **Disaster Management**

Is a collective term encompassing all aspects of planning for and responding to disasters, including both pre-disaster and post disaster activities and it may refer to the management of both the risks and consequences of disasters

## **Disaster Mitigation**

Disaster mitigation refers to all activities aimed at a reducing the threat from and the impact of future disasters. The ultimate goal of disaster mitigation is disaster prevention, which implies elimination of the threat entirely

## **Disaster Preparedness**

Measures taken to prepare for and reduce the effects of disasters, that is to predict and where possible prevent them, mitigate their impacts on vulnerable populations and respond to and effectively cope with their consequences

Disaster preparedness involves forecasting and taking precautionary measures prior to an imminent threat, in response to advanced warnings. Preparedness activities ensure timely and effective disaster response – minimizing negative impacts on urban communities, the economy, infrastructure and the environment, as well as the development priorities of the city and country in general

## **Disaster Prevention**

Measures to eliminate or reduce the impact of hazards, and/or to reduce the susceptibility and increase the resilience of the urban community vulnerable to the impact of those hazards. It is founded on an understanding of disaster risk in all its dimensions of vulnerability, capacity, exposure of persons and assets, hazard characteristics and the environment. Prevention covers a range of activities and strategies involving key stakeholders such as city residents, businesses and local government. It is a continuous phase that must be carried out at all times

## **Disaster Risk**

Disaster risk refers specifically to the likelihood of harm or loss due to the action of hazards or other external threats on vulnerable structures, services, areas, communities and households. It refers to the chance that there will be harmful impact of some kind due to the interaction between natural or other hazards and conditions of vulnerability

## **Disaster Risk Management**

The systematic process of using administrative decisions, organization, operational skills and capacities to implement policies, strategies and coping capacities of the society and community to lessen the impacts of natural hazards and related environmental and technological disasters. This comprises all forms of activities including structural and non-structural measures to avoid (prevention) or to limit (mitigation) adverse effects of hazards

## **(Disaster) Risk Assessment**

A methodology to determine the nature and extent of risk by analysing potential hazards and evaluating existing conditions of vulnerability that could pose a potential threat or harm to people, property, livelihoods and the environment on which they depend

## **Disaster Risk Reduction (Disaster Reduction)**

The concept and practice of reducing disaster risks through systematic efforts to analyse and manage the causal factors of disasters, including through reduced exposure to hazards, lessened vulnerability of people and property, wise management of land and the environment, and improved preparedness for adverse events.

The conceptual framework of elements considered with the possibilities to minimise vulnerabilities and disaster risks throughout a society to avoid (prevention) or to limit (mitigation and preparedness) the adverse impact of hazards within the broad context of sustainable development

### **Early Warning**

Means the identification, interpretation and recognition of events that indicate potential emergency

### **Emergency**

Means a state in which normal procedures are suspended and extra ordinary measures are taken in order to avert a disaster

### **Event**

The actual happening of a hazard or phenomenon

### **Hazard**

A potentially damaging physical event, phenomenon or human activity that may cause the loss of life or injury, property damage, social and economic disruption or environmental degradation

### **Hazard Analysis**

Identification, studies and monitoring of any hazard to determine its potential, origin, characteristics and behaviour

### **Mitigation**

Disaster mitigation refers to structural and non-structural measures that are undertaken to limit the adverse impact of natural hazards, environmental degradation and technological hazards on vulnerable areas, communities and households.

### **Natural Hazards**

Natural processes or phenomena occurring in the biosphere that may constitute a damaging event. Natural hazards can be classified by origin namely: geological, hydrometeorological or biological or epidemiological

## **Occurrence**

The actual happening of a hazard or phenomenon

## **Prioritisation**

The evaluation of a group of items (disasters) and ranking them in their order of importance or urgency

## **Public Awareness**

The extent of common knowledge about disaster risks, the factors that lead to disasters and the actions that can be taken individually and collectively to reduce exposure and vulnerability to hazards.

## **Reconstruction**

The actions taken to re-establish a community after a period of rehabilitation following a disaster. Actions might include the construction of permanent housing, the full restoration of all services, and the complete resumption of the operations of the pre-disaster state.

## **Recovery**

Recovery activities address reconstruction, rehabilitation and re-establishment demands across physical, social, emotional, psychological, environmental and economic elements. It is aimed at the restoration and improvement, where appropriate, of facilities, livelihoods and living conditions of disaster-affected communities to a more resilient standard with the aim to reduce the need for significant expenditure on recovery in the future. Recovery begins soon after the emergency phase has ended, and should be based on pre-existing strategies and policies that facilitate clear institutional responsibilities for recovery action and enable public participation.

## **Rehabilitation**

Concerned with operations and decisions taken after a disaster with a view to restoring an affected community to its former living conditions, while encouraging and facilitating the necessary adjustments to changes caused by the disaster.

## **Response**

The provision of assistance or intervention during or immediately after a disaster to meet the life preservation and basic subsistence needs of those people affected. It can be of an immediate, short term, or protracted duration.

## **Risk**

The potential losses, in lives, health status, livelihoods, assets and services which could occur to a particular community or a society over some specified future time period.

**Risk Management**

A multidisciplinary process of planning and implementation of measures and programmes aimed at dealing with the expected/ anticipated losses that could be caused by a particular hazard.

**Technological Hazard**

A hazard originating from technological or industrial conditions, including accidents, dangerous procedures, infrastructure failures or specific human activities, 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.

**Vulnerability**

The extent to which an individual, community, sub-group, structure, service or geographical area is likely to be damaged, destroyed or disrupted by the impact of a particular hazard. The conditions determined by physical social economic and environmental factors or processes which increase the susceptibility of a community to the impact of hazards.

## Annex 2: Natural and Anthropogenic Hazard Classification

Natural Hazards					Anthropogenic/Man-made	
Biological	Geophysical	Hydro-Meteorological			Intentional	Non-Intentional
		Hydrological	Meteorological	Climatological		
<ul style="list-style-type: none"> <li>• <b>Epidemic</b></li> <li>• Viral Infectious Diseases</li> <li>• Bacterial Infectious Diseases</li> <li>• Parasitic Infectious Diseases</li> <li>• Fungal Infectious Diseases</li> <li>• <b>Insect Infestation</b></li> <li>• <b>Animal Infestation</b></li> </ul>	<ul style="list-style-type: none"> <li>• <b>Earthquake</b></li> <li>• <b>Volcano</b></li> <li>• <b>Mass Movement (Dry)</b></li> <li>• Rockfall</li> <li>• Landslide</li> <li>• Avalanche</li> <li>• Subsidence</li> </ul>	<ul style="list-style-type: none"> <li>• <b>Flood</b></li> <li>• General Flood</li> <li>• Flash Flood</li> <li>• Storm Surge/ Coastal Flood</li> <li>• <b>Mass Movement (Wet)</b></li> <li>• Rockfall</li> <li>• Landslide</li> <li>• Avalanche</li> <li>• Subsidence</li> </ul>	<ul style="list-style-type: none"> <li>• <b>Storm</b></li> <li>• Tropical Cyclone</li> <li>• Extra Tropical Cyclone</li> <li>• Local Storm</li> </ul>	<ul style="list-style-type: none"> <li>• <b>Extreme Temperature</b></li> <li>• Heat Wave</li> <li>• Cold Wave</li> <li>• Extreme Winter Condition</li> <li>• <b>Drought</b></li> <li>• <b>Wildfire</b></li> <li>• Forest Fire</li> <li>• Land Fire</li> </ul>	<ul style="list-style-type: none"> <li>• <b>Mass shootings</b></li> <li>• School shootings</li> <li>• Workplace violence</li> <li>• Hate crimes</li> <li>• Public place shootings</li> <li>• <b>Civil Disobedience</b></li> <li>• Labour riots</li> <li>• Race riots</li> <li>• Political riots</li> <li>• <b>Terrorism</b></li> <li>• State/State Sponsored</li> <li>• International Non-state</li> <li>• Domestic</li> <li>• <b>Weapons of Mass Destruction</b></li> <li>• Explosives</li> <li>• Chemical</li> <li>• Biological</li> <li>• Nuclear/ Radiological</li> </ul>	<ul style="list-style-type: none"> <li>• <b>Technological</b></li> <li>• Acts of People</li> <li>• Technological systems that fail because of complexities and human fallibility (accidents)</li> <li>• <b>Hazardous Material</b></li> <li>• <b>Environmental</b></li> <li>• <b>Industrial</b></li> <li>• Factories</li> <li>• Refineries</li> <li>• <b>Mining</b></li> <li>• Coal</li> <li>• Safety Standards</li> <li>• <b>Nuclear</b></li> <li>• Power plants</li> <li>• Industrial use</li> <li>• Medical use</li> <li>• <b>Transportation</b></li> <li>• Aviation</li> <li>• Highways</li> <li>• Railroads</li> <li>• Maritime</li> <li>• <b>Structural</b></li> <li>• Fires</li> <li>• Collapse</li> </ul>

Source: Adapted from CRED (2009) with modifications by the Mutsigwa (2013)