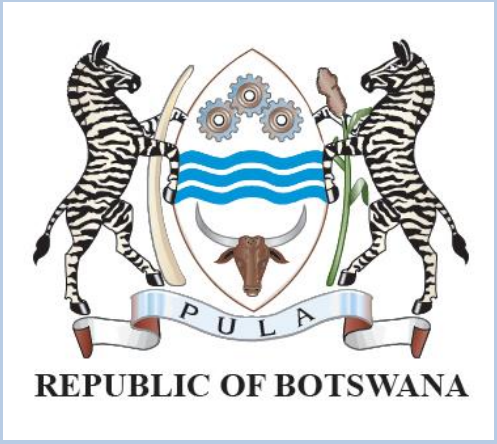

National Disaster Management Office

Office of the President

NATIONAL DISASTER RISK REDUCTION STRATEGY 2013-2018

Beyond vulnerability – Towards resilience

Executive Summary

Disasters are increasing in frequency and magnitude. The nature, spread and cost of disasters call for mainstreaming of disaster risk reduction at both the national and local levels. Disaster risk reduction strategies and activities contribute to the decrease of disaster risks and the negative impacts of disasters and attainment of sustainable development and poverty alleviation, by facilitating the integration of disaster risk reduction into development and day to day risk-deduction-related decision making.

It is clear that disasters can have a significant negative impact on the economy and the people and that disaster risk reduction should be a national priority.

The current National Policy on Disaster Management (1996), as well as the National Disaster Risk Management Plan (2009), addresses all aspects of disaster risk management in the country. Disaster risk reduction needs to be planned and implemented in a focussed manner and hence the need for this strategy to guide and act as a framework for disaster risk reduction implementation in the country.

This strategy aims to achieve the following objectives:

- To establish and incorporate the foundational guiding arrangements for disaster risk reduction in the country.
- To increase awareness and knowledge of disaster risk reduction methods and opportunities.
- To inform the legal and institutional basis for efficient disaster risk reduction planning and implementation.
- To contribute towards the inclusion of disaster risk reduction into development policy, programmes and projects.
- To establish a strategic platform for public-private-sector co-operation in disaster risk reduction.
- To contribute to community resilience against the threats and effects of disasters.

The Strategy suggests strategic directions to achieve these objectives.

This document consists of five main components, namely:

- The background and objectives of this strategy.
- A situational analysis of current disaster risk reduction initiatives and actions in the country.
- The strategic goals, drivers, initiatives and mission success factors to achieve these goals.
- The tools for effective implementation of the strategy.
- A measurable implementation and action plan.

It is a living document, which is the product of consultation and inputs by various stakeholders.

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1. GENERAL

1.1 Custodianship and status of this document

The custodianship of this strategy lies with the Office of the President, operationally implemented by the National Disaster Management Office. The principles and responsibilities contained in this document guide disaster risk reduction throughout the country. As this is a national strategy, each sector and district will develop its own disaster risk reduction strategy, unique to its area. The power and opportunity for sustainably reducing the risks of disasters lie with the people, guided and supported by government.

2. DEFINITIONS

The following main definitions are applicable to this document[1]:

A disaster is defined as: A serious disruption of the functioning of a community or a society involving widespread human, material, economic or environmental losses and impacts, which exceeds the ability of the affected community or society to cope using its own resources.

A hazard is a dangerous phenomenon, substance, human activity or condition that may cause loss of life, injury or other health impacts, property damage, loss of livelihoods and services, social and economic disruption, or environmental damage.

Disaster Risk: The potential disaster losses in lives, health status, livelihoods, assets and services, which could occur in a particular community or society over some specified future time period. The definition of disaster risk reflects the concept of disaster as the outcome of continuously present conditions of risk. Disaster risk comprises of different types of potential losses which are often difficult to quantify. Nevertheless, with knowledge of the prevailing

[1] Source: National Disaster Risk Management Plan and UNISDR terminology. A more extensive list of disaster risk management related definitions is contained in the National Disaster Risk Management Plan.

hazards and the patterns of population and socio-economic development, disaster risks can be assessed and mapped, in broad terms at least.

The level of disaster risk is established by assessing the hazards in relation to the vulnerability and resilience of those affected. If the nature and impact of the hazard is high and the people are vulnerable, with a low level of resilience, the disaster risk for the area will generally be high, and the other way around. This concept is summarised in Figure 2 below:

Risk = [Hazard x Vulnerability] / [Resilience]

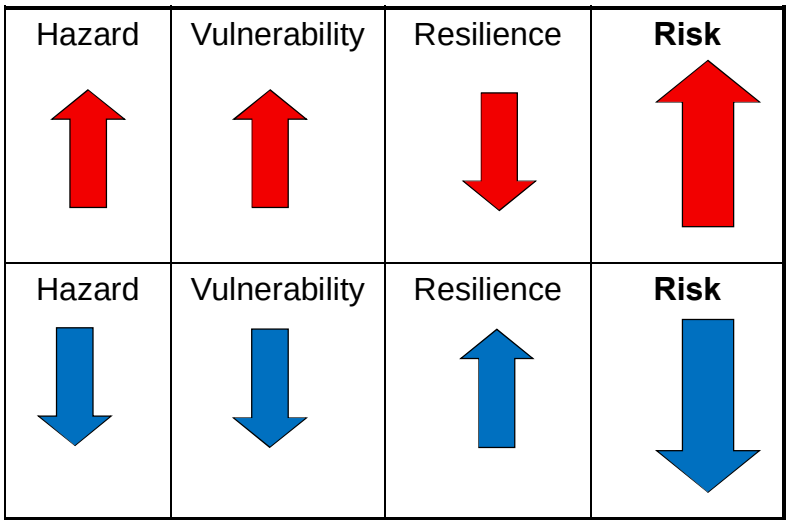


Figure 2: The relation between hazards, vulnerability, resilience and disaster risks

This interaction also forms the basis for disaster risk reduction planning. The aim of disaster risk reduction planning will be to facilitate one, two or all three of the following:

- Reduce the hazard level, by changing either the severity of the hazard, or the probability of the hazard occurring;
- Decrease the vulnerability of the receiving entity by changing the physical, social, economic or environmental characteristics of the receiving entity; and
- Increasing the capacity of the affected community, society or organisation by increasing the physical, institutional, social or economic means as well as skilled personnel or collective attributes such as leadership and management and thereby contribute to greater resilience against disasters.

The identification of risk reduction measures should therefore be focus on at least one of the above three factors to adequately reduce the risk of disaster. It might often only be necessary to address one component, such as, for example, mitigate the hazards level. If the hazard level is adequately addressed, the risk level will decrease even if the vulnerability and capacity levels remain unchanged.

It is therefore important to consider the most relevant and cost effective risk reduction measure, by comparing different available measures, before selecting and implementing the measures. This can be done by making use of various techniques, including cost-benefit analysis.

Disaster risk management is defined as: The systematic process of using administrative directives, organisations, and operational skills and capacities to implement strategies, policies and improved coping capacities in order to lessen the adverse impacts of hazards and the possibility of disaster.

Disaster Mitigation: The lessening or limiting of the adverse impacts of hazards and related disasters.

Capacity: The combination of all the strengths, attributes and resources available within a community, society or organisation that can be used to achieve agreed goals.

Vulnerability: The characteristics and circumstances of a community, system or asset that make it susceptible to the damaging effects of a hazard.

Climate Change: For the purposes of this document, the definitions for climate change are taken from the Inter-governmental Panel on Climate Change and the United Nations Framework Convention on Climate Change. The Inter-governmental Panel on Climate Change defines climate change as: *"a change in the state of the climate that can be identified (e.g., by using statistical tests) by changes in the mean and/or the variability of its properties, and that persists for an extended period, typically decades or longer. Climate change may be due to*

natural internal processes or external forcings, or to persistent anthropogenic changes in the composition of the atmosphere or in land use".

Early Warning System: The set of capacities needed to generate and disseminate timely and meaningful warning information to enable individuals, communities and organisations threatened by a hazard to prepare and act appropriately and within sufficient time to reduce the possibility of harm or loss. Early warning systems and data are crucial in managing disaster risks. These include weather services warnings, real time data received by flood monitoring stations and information from external sources and stakeholders.

Disaster risk reduction is 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.

Note: Disaster risk reduction is therefore part of disaster risk management, but does not focus primarily on (although it does link with) disaster response and recovery.

A disaster risk reduction strategy is a document prepared by an authority, sector, organisation or enterprise that sets out goals and specific objectives for reducing disaster risks together with related actions to accomplish these objectives.

In this case the National Disaster Risk Reduction Strategy is aimed at reducing disaster risks, contributing to the resilience of Botswana as a country.

Sustainable development is development that meets the needs of the present without compromising the ability of future generations to meet their own needs.

3. BACKGROUND AND OBJECTIVES

3.1 Background

Disaster Risk Reduction should not be implemented in an isolated manner. It takes cognisance of international agreements and guidelines. The UNISDR[2] Hyogo Framework for Action: 2005-2015 highlighted the following relevant strategic action points against which disaster risk management activities, such as disaster risk reduction, should be measured.

1. *Ensure that disaster risk reduction is a national and a local priority with a strong institutional basis for implementation.*
2. *Identify, assess and monitor disaster risks and enhance early warning.*
3. *Use knowledge, innovation and education to build a culture of safety and resilience at all levels.*
4. *Reduce the underlying risk factors.*
5. *Strengthen disaster preparedness for effective response at all levels.*

Disaster risk reduction is closely linked with sustainable development. Development projects should be informed by disaster risk reduction planning and activities.

The National Development Plan also confirms this link as follows:

"11.38 More attention will be paid to making development more sensitive to the impacts that climate (and global) change will have on land and water resources in particular, and on how disaster risk management will be integrated into development planning. Without proper planning, the lack of adaptation to climate change may impact heavily on the country's long-term development."

Disaster risk reduction is influenced by a number of factors (such as climate change, economic and regional growth and development, capacity to implement planning, etc.) and the country has to think carefully and in new ways about effectively reducing its disaster risks.

[2] See the United Nations International Strategy for Disaster Reduction (UNISDR): www.unisdr.org

Managing the risk and consequences of disasters/potential disastrous events/incidents in line with the national and international disaster risk management strategic approach, is everybody's business and a partnership between government, the private sector and communities, as depicted in the Figure 1. below.

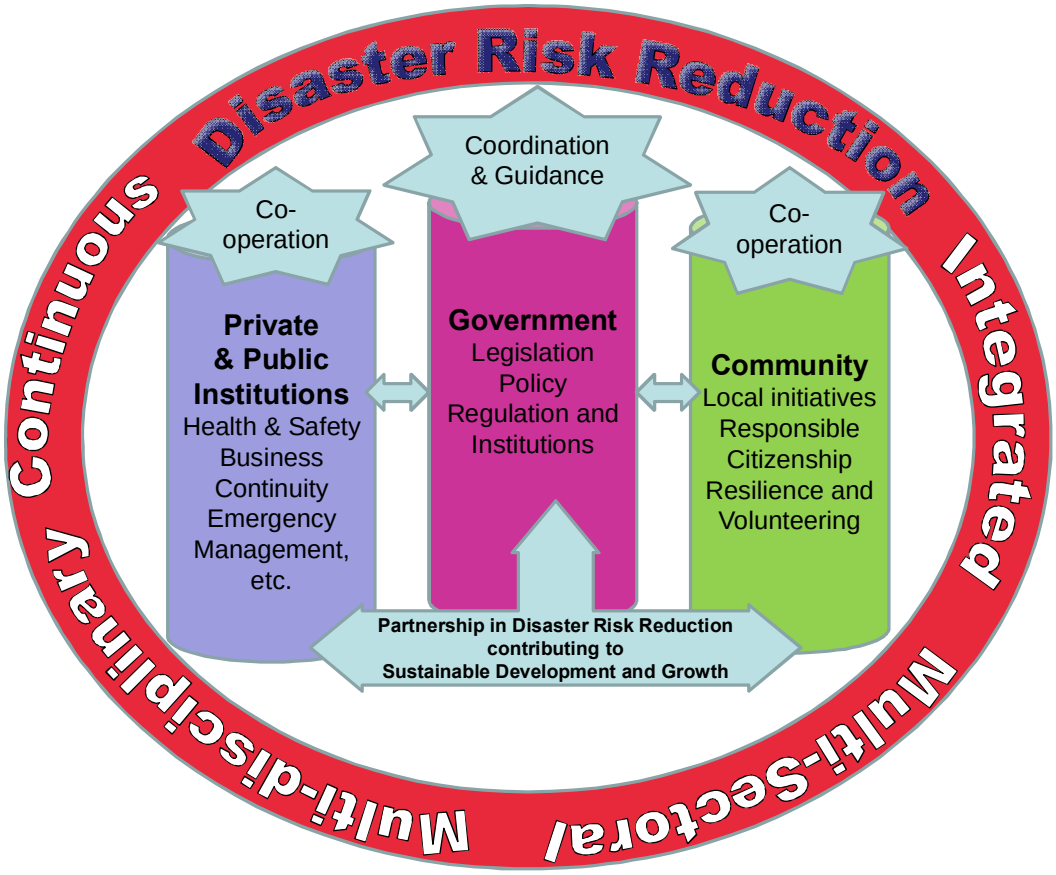


Figure1: The disaster risk management and risk reduction partnership

3.2 The need for this strategy

Disasters are increasing in frequency and magnitude. Disasters cause economic losses and finances required for upliftment and development are often spent on disaster response, recovery and reconstruction. As an example, the outbreak of Contagious Bovine Pleuro-pneumonia (CBPP) in Ngamiland in 1995 resulted in the eradication of 300,000 cattle at a substantial cost to the Government estimated at over P270 million[3].

[3] Source: National Disaster Risk Management Plan

In the 2001 Gaborone floods P5 million worth of private and public property was damaged. National Disaster Management Office reports and statistics and the Natural Disasters Digest (2008) clearly shows that hundreds of households and thousands of people are annually affected by storms and floods. Since 1981, the country has been experiencing country-wide droughts. A total of P978, 423,040 was used in 6,460 projects from 2002 to 2008 to reduce the effects of drought on the affected population.[4]According to Drought and Household Food Security Outlook for the year 2008, 'the programme covered primary school feeding with an enrolment of 260,507 and vulnerable group feeding (at health facilities) with 230,301 beneficiaries.'

The 2007 and 2008 fires affected approximately 14 million of hectares of land .[5] Affected areas included among others Central Kgalagadi Game Reserve, Ngamiland, Chobe, Kweneng and Central District. Localised storms are also becoming a regular occurrence especially in areas around Mahalapye, Palapye, Serowe and Selibe Phikwe. These disasters destroy people's livelihoods, the environment, public and private property and in some instances kill or maim people.

It is clear that disasters can have a significant negative impact on the economy and the people and that disaster risk reduction should be a national priority. The nature, spread and cost of disasters call for mainstreaming of Disaster Risk Reduction at both the national and local levels. Disaster risk reduction strategies and activities contribute to the decrease of disaster risks and the negative impacts of disasters and attainment of sustainable development and poverty alleviation, by facilitating the integration of disaster risk reduction into development and day to day risk-deduction-related decision making.

The current National Policy on Disaster Management (1996), as well as the National Disaster Risk Management Plan (2009),addresses all aspects of disaster risk management in the country.

[4] Source: Environment Statistics 2000; Rural Development Office; Natural Disasters Digest (2008)

5 Source: Natural Disasters Digest (2008)

Disaster risk reduction needs to be planned and implemented in a focussed manner and hence the need for this strategy to guide and act as a framework for disaster risk reduction implementation in the country.

3.3 Objectives of this strategy

This strategy aims to achieve the following objectives:

- To establish and incorporate the foundational guiding arrangements for disaster risk reduction in the country.
- To increase awareness and knowledge of disaster risk reduction methods and opportunities.
- To inform the legal and institutional basis for efficient disaster risk reduction planning and implementation.
- To contribute towards the inclusion of disaster risk reduction into development policy, programmes and projects.
- To establish a strategic platform for public-private-sector co-operation in disaster risk reduction.
- To contribute to community resilience against the threats and effects of disasters.

This strategy should be read in conjunction with the National Disaster Management Plan, Policy, or other related legislation or documents. This is a living document, which is the product of consultation and inputs by various stakeholders. The success of this strategy will lie in its effective implementation and monitoring throughout the country. This can however only be achieved through co-operation and partnership between all stakeholders in disaster risk reduction.

4. SITUATIONAL ANALYSIS

4.1 Disaster risk reduction in Botswana and Southern Africa

Botswana

Botswana is vulnerable to a range of disasters, both natural and human induced. These occur with varying degrees of regularity and intensity. Major disasters include drought, floods, wild land fires, animal diseases and HIV/AIDS in addition to structural fires, major transport accidents, pest infestation, strong winds, industrial accidents and earthquakes. Drought is a frequent phenomenon countrywide and major droughts have occurred in the 1980s. Floods occur during the rainy season from October to March. Wild land fires both natural and human induced are a regular occurrence during the dry months of April to November, with a peak in July. They occur mainly in National Parks and forest reserves. They have adverse effects on agriculture, wildlife, forestry and other natural resources. They also destroy life and both public and private property.

In 1996, the Government formulated the National Policy on Disaster Management. The Policy relates to the following elements of disaster management: prevention, mitigation, preparedness, response and recovery and development. The Policy advocates for integration of disaster management into development. In 2009, the National Disaster Risk Management Plan was developed, addressing planning for disaster risk management in totality. In terms of legislation, only Sector Specific Acts are in place. This strategy, that needs to contribute to reducing the risks of disasters, emphasises and provides measurable indicators for the achievement of disaster risk reduction components and objectives in the above two documents.

The overall responsibility for disaster management rests with the Office of the President. In 1998, the National Disaster Management Office was established to coordinate disaster management in the country. It also has to facilitate integration of disaster management into sectoral policies and programmes. The National Committee on Disaster Management (NCDM) is an inter-ministerial Committee of Deputy Permanent Secretaries from Ministries and representatives of Botswana Police Service, Botswana Defence Force, Botswana Red Cross Society, United Nations and Non-Governmental Organisations and acts as a national platform for disaster risk reduction. The committee is a policy formulation body responsible for developing a disaster management strategy for the country. The National Disaster Management Technical Committee (NDMTC) is a multi-sectoral technical advisory body

composed of professionals from all sectors. The Committee advises the National Disaster Management Office and NCDM on all disaster management issues. At district level, District Disaster Management Committees are addressing planning and implementation of disaster risk reduction. 30 District Disaster Management Committees that have been formed in all the Districts. These committees are responsible for protection of lives, property and environment and the putting in place of measures that will reduce the impact of disaster should it occur.

The constitution also provides for social and economic development which is a critical aspect for reducing vulnerability. The Constitution therefore provides an overall framework for disaster risk reduction in the country. The disaster risk reduction responsibilities assigned in the above two documents, are therefore strategically planned in this document, in a measurable manner.

Public awareness and education is the cornerstone of our Disaster Risk Reduction initiatives. These campaigns enhance individual and community resilience to disasters. The National Disaster Management Office participated in the following public awareness and education activities; Trade Fair, Vision 2016, UN Day just to name a few. Moreover, the NDMO issued press releases on impending disasters, participated in radio and TV programs. In addition, the NDMO commemorates annually the International Disaster Reduction Day. The objective of this commemoration is to raise awareness on initiatives to be taken to reduce people's risk to disasters. In addition, the NDMO in partnership with UNDP managed to train Trainer of Trainers in Community Based Disaster Risk Reduction. The purpose of these trainings was to build capacity at the District level.

The National Disaster Relief Fund Order assists with life sustaining needs during disaster, is centrally administered at the NDMO. Existing disaster risk reduction measures are being implemented by various sectors such as Agriculture, Forestry and Health. Botswana has various acts and policies that impact on disaster risk reduction. This legislation and policies are addressed in detail in the National Disaster Risk Management Plan.

Southern Africa

At regional and sub-regional level, this strategy is guided by the Africa Regional Strategy for Disaster Risk Reduction (2004) and the draft Southern African Development Community's Disaster Risk Reduction Strategy and Plan of Action 2010 – 2015. The two Strategies are also guided by the Hyogo Framework for Action (2015-2015). The overall goal of the African Regional Strategy for Disaster Risk Reduction is to reduce the social, economic and environmental impacts of disasters on the African people and economy, thereby facilitating the achievement of the Millennium Development Goals and other development aims in Africa. The Strategy's specific objectives are to:

(1) increase political commitment to disaster risk reduction;

(2) improve identification and assessment of disaster risks;

(3) enhance knowledge management for disaster risk reduction;

(4) increase public awareness of disaster risk reduction;

(5) improve governance of disaster risk reduction institutions; and

(6) integrate disaster risk reduction in emergency response management.

The Executive Council of the African Union endorsed the Extended Programme of Action for the Implementation of the Africa Regional Strategy for Disaster Risk Reduction (2006-2015). The specific objectives of the programme are to:

- Mainstream risk reduction management and climate change adaptation as an integral part of sustainable development, and related programmes.
- Strengthen long term capacities at regional and sub-regional levels to systematically contribute to building resilience to natural hazards.
- Develop and maintain sustainable mechanisms of coordination at regional and sub-regional levels to support the implementation of the Africa Strategy and the Programme of Action for disaster risk reduction.
- Strengthen national mechanisms, legislative frameworks and capacities at national levels for mainstreaming and implementing disaster risk reduction strategies and programmes.

- Translate policies and strategies into practical tools for decision makers and practitioners to facilitate the implementation of the Africa Strategy, the Programme of Action and the Hyogo Framework for Action.
- Develop and mobilise resources to contribute to the implementation of programmes and projects on disaster risk reduction.
- Embed a holistic approach to systematically incorporate risk reduction measures into design and implementation of disaster preparedness, response and recovery programmes.

The Southern African Development Community's Disaster Risk Reduction Strategy and Plan of Action 2010 – 2015, indicate the following disaster risk reduction-related objectives:

1. Increase political commitment to disaster risk reduction at regional and national levels and promote the mainstreaming of disaster risk reduction in development frameworks and programmes of Southern African Development Community sectors and member state governments.
2. Facilitate the incorporation of climate change and climate change adaptations into disaster risk reduction programmes and measures.
3. Facilitate the implementation and monitoring of global and regional disaster risk reduction strategies.
4. Improve multi-hazard risk analysis and strengthen early warning systems at regional and national levels.
5. Develop and strengthen regional coordination mechanisms and partnerships as well national mechanisms, policy and legislative frameworks for implementing disaster risk reduction strategies and programmes.
6. Develop and enhance institutional capacities of regional mechanism and among Southern African Development Community Member States to contribute to the reduction of vulnerabilities and building communities resilient to natural hazards.
7. Promote a holistic and systematic incorporation of risk reduction measures into design and implementation of disaster preparedness, response and recovery programmes of national governments and partner organisations.

8. Develop and maintain sustainable resources mobilization strategies to contribute to the implementation of disaster risk reduction programmes at regional and national levels.
9. Promote the practical application disaster risk measure through campaigns such as "Safe Cities" Safe Hospitals and Safe Schools.

The Southern African Development Community's Regional Indicative Strategic Development Plan also emphasises co-operation in sustainable food security in order to achieve lasting access to safe and adequate food at all times by all people in the Southern African Development Community. The Regional Indicative Strategic Development Plan has formulated strategies for attaining the above sustainable food security goal and objectives. Food Security policies and strategies have addressed the Southern African Development Community strategic priority to develop an effective disaster preparedness and management mechanism by implementing programmes and projects aimed at early detection, early warning and mitigating the disaster effects.

4.2 Hazards

As identified in the National Disaster Risk Management Plan, actual, potential, slow or rapid onset, natural and human induced hazards that may occur in Botswana are as follows:

Drought: Drought is a frequent phenomenon not just countrywide, but also throughout the Southern African Development Community region. Botswana has been afflicted by drought periods from time immemorial. As such, the government has developed a well-coordinated structure and an integrated set of activities to respond to the impacts of drought.

Earthquakes: The potential for earthquakes in Botswana exists, as is demonstrated by the number of recorded earthquakes since 1950. Although most of them were minor, there are records of a few relatively strong ones. One such earthquake occurred in Maun in 1952 measuring 6.7 on the Richter scale. It is believed that, had the area been as developed as it is at present, extensive damage would have been experienced.

Floods: Floods are caused by a number of factors. The most common factors are storm surge from tropical cyclones, sudden and heavy rains, intense successive precipitation, and overflow of dams resulting in spillage. Floods in Botswana are mainly caused by heavy rains in the country as well as in the riparian region.

Tropical Cyclones: Tropical Cyclones are among the most devastating natural hazards known to mankind. They are frequent within the South West Indian Ocean region during summer. In isolated cases tropical storms have moved considerable distance inland as low pressure centres (depression) and affected the weather of Botswana directly. The occurrence of this results in heavy rainfall and flooding.

Strong Winds: Botswana experiences a lot of severe thunderstorms during the rainy season which spans from October to March. These storms are associated with whirlwinds, strong/gusty winds and sometimes hailstones which in some instances destroy buildings and infrastructure facilities. This hazard can occur throughout the country, but the districts of Mahalapye, Selibe Phikwe, Palapye and Kweneng are particularly affected.

Wild Land Fires: Wild land fires resulting from man-made or natural causes are regular occurrences throughout the country during the dry period from the months April to November. Widespread wild land fires are most common in communal grazing areas, National Parks and Forest Reserves in Chobe, Central, Kgalagadi, Ghanzi and Kweneng Districts.

Structural Fires: The risk of structural fires (often referred to as urban fires) strongly exists in Botswana and occurs mostly in Gaborone and Francistown.

Pest Infestations: The most common pest infestations result from quelea birds, locusts, the African ball worm and the armyworm. These are common, especially after heavy rains, and usually attack sorghum crops. Tsetse fly has been predominant in the Okavango Delta, especially in Gumare, Seronga and Beetsha. Humans and cattle become exposed to the risk of trypanosomiasis.

Animal Diseases: Foot and Mouth Disease (FMD) was in the past the most serious animal disease. The re-emergence of the disease in 2002/2003, 2005 and 2006 has highlighted its impact on the national economy. The Department of Veterinary Services reported the following Major Disease Outbreaks: Foot and Mouth Disease, Pasteurella, Heart water, Cattle lung disease, Contagious abortion, Rabies, Lumpy skin, Anthrax and Mange infestation. The Department of Crop Production reported the following major pests and diseases: Quelea birds, Army worms, Fruit fly, Locust, Corn Cricket.

HIV/AIDS: The impacts of HIV/AIDS at the macro-economic level have long term implications. HIV/AIDS have negative effects on productivity due to loss of adults during their productive years. Demographic impacts of HIV/AIDS manifest themselves as increases in mortality rates (both infant and adult); falling life expectancy; increases in the number of orphans and dependents; and changes in the size and structure of the population. In economic terms, HIV/AIDS lead to huge financial expenditure.

Other Epidemics: Malaria outbreaks are regular and quite serious in the Okavango Delta, Ngamiland and Central districts. During the heavy rains, malaria may, at times, affect more than 50 percent of the population in the Okavango. Otherwise epidemics commonly associated with floods are not regular occurrences in Botswana. However, pit latrines and sewerage facilities tend to overflow during heavy rains, which may lead to contamination of water sources and outbreaks of waterborne diseases such as cholera and typhoid. Furthermore, there is always the danger of contaminating water sources with oil and chemical spillages. Diarrhoea is also a widespread concern. Deaths to children under five due to diarrhoea increased from 93 in 2002 to 146 in 2003.

Asylum Seekers/Illegal Immigrants Influx: As a signatory to the 1951 United Nations Convention on the Status of Refugees and its 1967 Protocol as well as the 1969 Organisation of African Unity's Convention governing specific aspects of the African Refugees, Botswana has an obligation to be prepared to deal with possible humanitarian emergencies, and is therefore a home to some refugees. At the height of political instability in Southern Africa, Botswana provided sanctuary to political refugees of varying magnitude. At present, the country is witnessing an increasing influx of illegal immigrants who face a high level of political and

economic hardships in their home countries. This large influx of people can become a major challenge to Botswana, given the country's small population size.

Accidents

Motor Vehicle Accidents: These Accidents are a serious problem in Botswana taking a heavy toll on life and resulting in economic losses. Government has a National Road Safety Committee, which is replicated in districts to enhance road safety.

Aircraft Accidents: The worst recorded aircraft accident was the Francistown Wenela Air Disaster in 1974 which caused 78 fatalities and 6 burn injuries. Gaborone, Maun and Kasane are at high risk because of considerably high volumes of aircraft traffic.

Industrial Accidents: The risk of industrial accidents is likely to increase as a result of increasing industrial sites in fast growing cities (e.g. Gaborone and Francistown) and villages (e.g. Palapye, Mogoditshane, Tlokweng and Serowe).

Mine Accidents: The mining operations are of hazardous nature and therefore, the risk of accidents in mines is always there and with increase in number and size of mining operation the accidents may increase.

***Hazardous Materials*:** Botswana is a transit route for transportation of goods to and from Angola, Namibia, South Africa, Zimbabwe and Zambia. Increasing urbanisation and industrialisation may correspondingly increase the risk of hazardous materials. There are also dangers of disasters resulting from petroleum fuel depots, gas suppliers, chemical and waste material storage sites, nuclear gauges and ionizing radiation sources.

The national disaster risk assessment contains more details on these hazards and their relative risk categorisation and prioritisation, per area. A detailed disaster risk assessment for the country has been conducted in 2007-8, but will be updated.

4.3 Climate Change and the Impact on Botswana

Climate change is considered a global concern, requiring actions on International, National and Local levels. Based on this, climate change should preferably not be considered a single hazard

amongst various other hazards. However, problems associated with climate change can lead to an increase in various other hazards within Botswana and the Sub-Saharan region. It is therefore important that issues related to climate change should be managed on an International, Regional and National level in order to mitigate the impact on the economy, environment, agricultural sector and communities of Botswana.

According to the World Bank (WBG 1998) climate change is likely to impact seriously on Africa. Increased intensity of droughts, floods and changes to growing seasons may have significant implications for soil productivity, water supply, food security, human welfare and poverty. Climate change can also have a severe impact on the environment in terms of biological diversity. Figure 3 below presents aspects related to the climate change process and considerations.

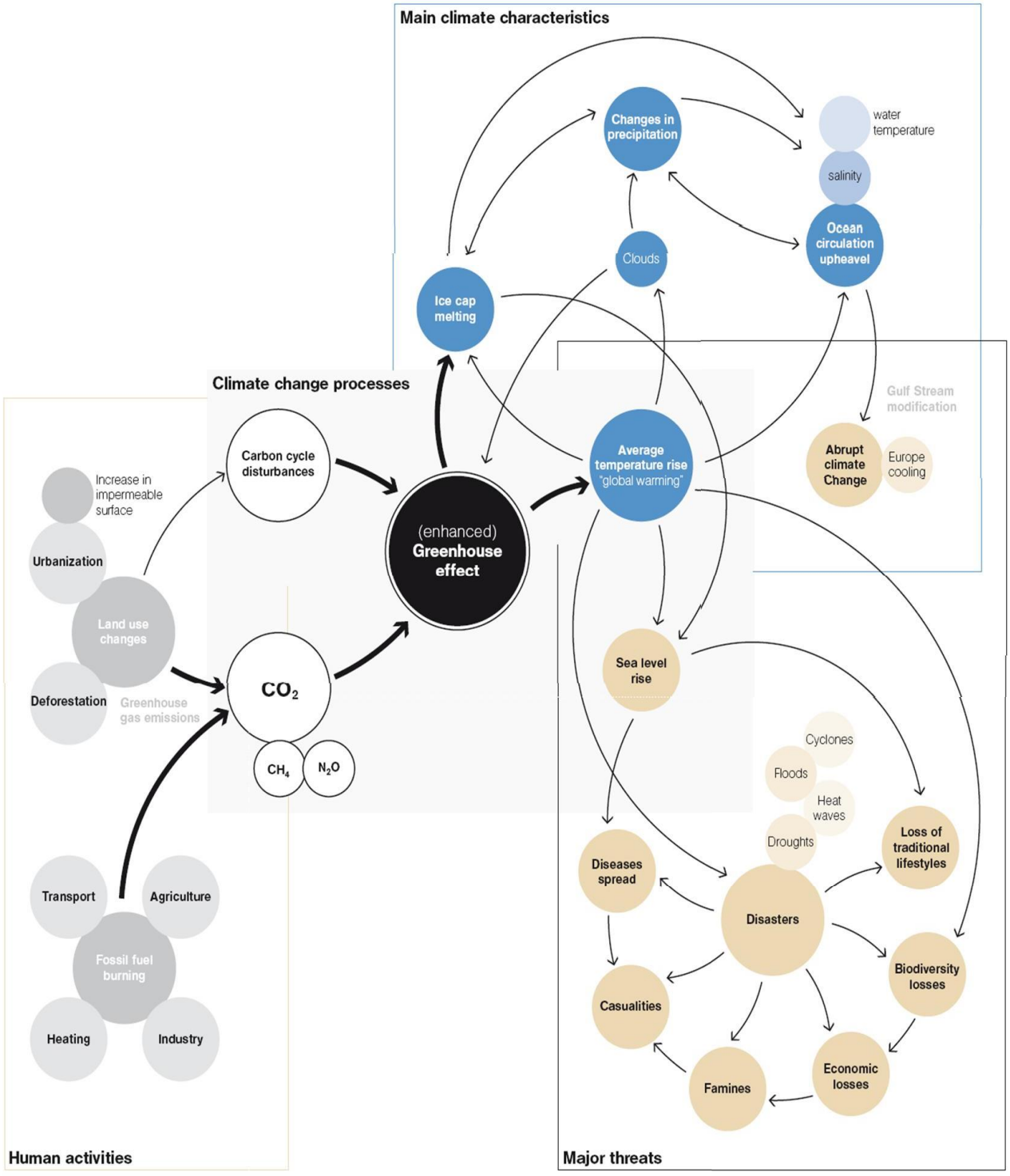


Figure 3:Climate change: processes, characteristics and threats[6]

[6]Source: UNEP/GRID–Arendal, http://maps.grida.no/go/graphic/climate_change_processes_characteristics_and_threats

Changes experienced due to climate change can include changes in precipitation, evaporation and hydrology. Climate change can also influence the occurrence of extreme weather events such as floods, droughts and severe storms and also impact on primary production, ecological systems, public health and poverty.

The Botswana National Climate Change Policy and Comprehensive National Climate Change Strategy and Action Plan are being developed.

4.4 Vulnerability and Capacity

The disaster risk assessment conducted for the country identified the following in this regard:

Based on feedback received from community representatives, the impression was created that communities in Botswana are vulnerable due to various causes, including limited access to services, unemployment, poverty, social problems such as alcoholism and health problems. All these factors have a negative impact on the resilience of the communities.

While there has been some progress in diversifying the economy of Botswana, the country remains highly dependent upon the export of diamonds. This leaves the nation vulnerable to fluctuations in international markets (GUDC 2003:25). This is also the case for individual towns and districts within Botswana. Some communities depend entirely on a specific sector such as mining, tourism or agriculture.

Communities depending on, for example, agricultural activities, are extremely vulnerable to natural hazards such as drought, flooding and animal diseases. The diversification of the economies of these towns is very important to decrease the vulnerability of the communities. Some communities depend largely on the natural environment. However, growth in the communities places additional strain on the surrounding environment, leading to the depletion of natural resources. Challenges experienced in the diversification of activities include a lack of resources, a lack of access to markets and skill shortages.

It is important to consider that, even though development initiatives can be used to decrease disaster risk, uncontrolled development can also increase the severity of hazards or the vulnerability of a community. One example might be found in the uncontrolled abstraction of gravel and sand from riverbeds for construction. Even though the sand and gravel can be used to construct new houses in order to reduce the vulnerability of a community, the un-rehabilitated site can increase the risk of pollution and even increase the occurrence of diseases such as malaria. It is therefore important to ensure that development takes place in terms of a sustainable development framework.

Another concern is the fact that increased pressures on natural resources can increase the severity of hazards, which in turn can cause a greater impact on the community. For example – an increase in the collection of fire wood in the area surrounding a settlement can lead to deforestation. Over time, the lack of vegetation can lead to an increase in run-off as well as erosion. This can cause additional problems to the community. It is therefore important to consider the impact of the socio-economic activities and developments on the vulnerability of the communities.

From various development plans and based on consultations with community representatives, it seems that general challenges experienced with manageability levels in Botswana are mostly related to a shortage of suitable trained personnel, resources and equipment and financial resources. A high demand for equipment and skills also often result in an increase in prices, placing additional strain on financial resources

.

Individual challenges experienced by the relevant departments and functions are discussed in detail in each of the focus areas' development plans, and will therefore not be duplicated in this report. However, generally speaking, and based on community consultation, some government departments and functions generally achieved a higher score in terms of performance with regard to disaster management activities.

The national disaster risk assessment contains more relevant information pertaining to vulnerability and how the profiled hazards impact on the lives and livelihoods of men, women, children, the elderly and other socially marginalised groups.

4.5 Status on disaster risk reduction initiatives in the country

The current status of disaster risk reduction in the country is summarised in the table below. The table indicates to what extent measurable disaster risk reduction activities and principles have been implemented to date.

Item/ action / outcome	National status 1=Not yet addressed/achieved; 2=Started-in process/Partially achieved; 3=Fully addressed/achieved
The implementation of risk reduction or other initiatives are based on the disaster risk assessment results	**1**
Case studies, initiatives and lessons learned in risk reduction have been documented and disseminated	**2**
Risk reduction-related projects and initiatives have been included in development plans	**1**
Disaster risk reduction programmes, projects and initiatives have been implemented	**2**
Progressive application of disaster risk reduction techniques and measures are reported in annual reports and submitted to the National Disaster Management Office.	**2**
Effective and appropriate early warning strategies have been developed and implemented and the information communicated to stakeholders to enable appropriate responses	**2**
Disaster risk reduction is the focus of all disaster risk management awareness programmes	**2**
Awareness of disaster risk management is promoted at schools and in communities known to be at risk	**2**
Awareness of disaster risk management is widespread, and risk-avoidance behaviour is integrated into the day-to-day activities of all stakeholders	**1**
Articles and news on disaster risk management are regularly published in the media	**3**
Disaster risk reduction is included as a standard agenda item for consideration at meetings of all **governmental** role players and stakeholders	**1**
Disaster risk reduction is included as a standard agenda item for consideration at meetings of all **non-governmental** role players and stakeholders	**1**

Item/ action / outcome	National status 1=Not yet addressed/achieved; 2=Started-in process/Partially achieved; 3=Fully addressed/achieved
Budgets in all spheres of government include the costs of routine disaster risk reduction measures and activities	**1**
Feasibility studies for capital projects include information drawn from disaster risk assessments and appropriate risk reduction measures	**1**
Capital budgets clearly reflect the costs of disaster risk reduction	**1**
There is a clear correlation between disaster risk reduction and effective law, bylaw and policy enforcement	**1**
Vulnerability have decreased in the last five years as a result of risk reduction initiatives	**2**

4.6 SWOT analysis on disaster risk reduction in the country

The following current strengths, weaknesses, opportunities and threats pertaining to disaster risk reduction in the country have been identified. These strengths, weaknesses, opportunities and threats provide a better understanding of what has been and still have to be achieved in terms of disaster risk reduction in the country.

STRENGTHS	WEAKNESSES
• The National Disaster Management Office is in place and strategically located in the Office of the President • Existing National and District contingency plans • Disaster preparedness at district level • Capacity for early warning systems are in place	• No legislation on disaster risk management • No dedicated disaster risk management staff (capacitated focal points) in the districts • Inadequate resources at all levels • Botswana does not have a disaster risk budget • Disaster risk reduction is not sufficiently mainstreamed in development plans • Lack of sufficient disaster preparedness at community-level • Lack of communication signals e.g. radio, television, mobile phones, etc.
THREATS	**OPPORTUNITIES**
• Emerging hazards such as H1N1, SARS, Climate Change • Minimal economic diversification • Declining international funding support • Instability and resistance in some communities due to cultural beliefs	• Capacity to establish partnerships • Learning from good practice from other countries due to increased disaster risk reduction knowledge globally. Taking advantage of these information and communication technology advances and availability of disaster risk management tools and approaches. • Exploring other methods of early warning systems • Enhancing volunteerism

5. THE NATIONAL STRATEGY FOR DISASTER RISK REDUCTION

5.1 Vision and mission

The vision and mission for disaster risk reduction in Botswana for the next five years are indicated below:

Vision:

To enhance disaster resilience for all

Mission:

To enhance resilience to disaster risk through creation of co-ordinated and integrated strategies and programmes for disaster risk reduction, stakeholder collaboration and innovative use of skills, technologies and resources

5.2 Mission success factors and priorities for change

The following factors are important to ensure the effectiveness of implementing the strategic goals and initiatives:

- Political buy-in and support.
- Strategic leadership by management.
- Uniform standards, supported by national policy and legislation.
- Stakeholders and responsible agencies need to accept responsibility and be held accountable for neglecting responsibilities in terms of disaster risk reduction.
- Capacity and awareness at local level.
- Appropriate systems and technologies.
- Private-sector support.
- Optimising the use of resources: Using fewer resources to achieve more.

- The involvement and co-operation of non-governmental role players and historical information, to be inter alia gathered through indigenous knowledge, is of paramount importance.
- The National Disaster Management Office must establish mechanisms to ensure integration and joint standards of practice in the execution of disaster risk management policy throughout the country.

The following priority changes need to be effected, to ensure the successful implementation of this strategy:

- Disaster risk reduction needs to be entrenched in national legislation.
- Disaster risk reduction capacity needs to be enhanced and dedicated disaster risk management staff assigned or appointed in each District Commissioner Office.
- Adequate disaster risk reduction funding and capacity for the National Disaster Management Office and district offices. Specific funding need to be made available for implementing this strategy.
- Disaster risk reduction should be a standing agenda point for all development planning meetings.
- Disaster risk reduction-related Mutual Aid Agreements and Memoranda of Understanding need to be signed and implemented between relevant stakeholders and role players.

5.3 Specific strategic goals for disaster risk reduction by 2018

By 2018 Botswana wants to have achieved the following specific strategic goals for disaster risk reduction:

- To improve the legal and institutional basis for efficient disaster risk reduction.
- To mainstream disaster risk reduction and emergency management into development policy, programmes and projects.
- To build disaster risk reduction capacity at national, district, community and household levels.

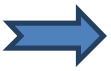
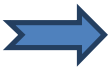
- To increase awareness of disaster risk reduction methods and opportunities through information sharing, strategic partnerships, education and training.
- To strengthen and implement knowledge, information management and technologies on disaster risk reduction in all sectors.
- To strengthen disaster preparedness and climate change adaptation at all levels.

5.4 Strategic drivers and initiatives to support the goals

The above goals can be reached through implementation of the following strategic driving approaches and activities:

STRATEGIC GOALS	INITIATIVES
To improve the legal and institutional basis for efficient disaster risk reduction	❖ Develop national disaster risk management legislation. [7] ❖ Review and update the National Policy on Disaster Management and the National Disaster Risk Reduction Plan. ❖ Ensure that disaster risk reduction is included in contingency planning and arrangements. ❖ Conduct district-level disaster risk assessments and update current national disaster risk assessment. ❖ Spearhead the implementation of disaster risk reduction at community and district level. ❖ Formalise and enhance volunteerism at local level. Volunteerism is an inexpensive and effective mechanism to be used in disaster risk reduction. Volunteers normally know the area and people they work in/with very well. Volunteerism should be formalised and enhanced at local level. A volunteer management strategy should be developed and volunteers trained. ❖ Develop disaster risk reduction plans for each district and each sector.

❖ [7] Legislation, unlike policy, ensures legal responsibility and accountability and in a country where the rule of law is important, this is important to ensure adherence to national policy and strategy.

STRATEGIC GOALS	INITIATIVES
To mainstream disaster risk reduction and emergency management into development policy, programmes and projects 	❖ Create awareness throughout the country that disaster risk reduction is part of everybody's daily work and lives and is a bottom-up approach, beginning at communities and that the National Disaster Management Office should only be responsible for guidance, co-ordination and integration. ❖ Ensure that disaster risk management and disaster risk reduction is included in the detail and key performance indicators of all development and strategic plans, policies, programmes and projects.
To build disaster risk reduction capacity at national, district, community and household levels 	❖ Invest in disaster risk reduction: Ensure sufficient budget, staff and other resources for the National Disaster Management Office. ❖ Place capacitated, dedicated disaster risk management focal point staff in each District Commissioner's Office, reporting directly to the District Commissioner and the National Disaster Management Office. ❖ Develop a resource mobilisation inventory and plan for disaster risk reduction. ❖ Execute disaster risk reduction capacity assessments as part of the implementation of the National Disaster Risk Management Plan capacity assessment process.
To increase awareness of disaster risk reduction methods and opportunities through information sharing, strategic partnerships, education and training 	❖ Draft a detailed disaster risk reduction communication and awareness strategy for country. ❖ Confirm/establish memoranda of understanding, mutual aid agreements and public-private partnerships on disaster risk reduction. ❖ Ensure cross-border (inter and external) co-

STRATEGIC GOALS	INITIATIVES
	planning and integration on disaster risk reduction. ❖ Ensure that disaster risk reduction-related information and preparedness guides be shared at schools, community meetings, organised business and economic meetings, through the media, etc. ❖ Integrate disaster risk reduction into the school curricula. ❖ Link with tertiary education and research institutions with regard to formal training and knowledge sharing.
To strengthen and implement knowledge, information management and technologies on disaster risk reduction in all sectors	❖ Procure/develop disaster management information systems and technology to assist with disaster risk reduction implementation. ❖ Constant monitoring and reporting on this strategy.
To strengthen disaster preparedness and climate change adaptation at all levels.	❖ Enhance and extend internal and cross boundary early warning mechanisms and systems, such as flood management systems, climate indicators, etc. ❖ Plan and execute simulation exercises. ❖ Ensure that the Botswana National Climate Change Policy and Comprehensive National Climate Change Strategy and Action Plan are effectively implemented. ❖ Ensure effective logistics and resource planning for disaster response and relief. ❖ Ensure that disaster risk reduction is a deliverable of post-disaster impact and risk assessment recommendations.

5.5 Principles guiding to the above initiatives

The following general principles guide the above goals and initiatives:

- Enhance and support advocacy on disaster risk reduction.
- Work within current reality-optimising usage of existing resources and capacity, whilst awaiting additional funding and capacity, is very important.
- Plan pro-actively and not re-actively for disaster risk reduction.

- Adopt a more holistic approach to disaster risk reduction and building resilience. The 'silos should be broken' and all risk factors should be recognised and addressed holistically and in an integrated manner.
- Utilise the historic indigenous knowledge of the people when disaster risks are assessed.
- Utilise private sector advertisement funding to further disaster risk reduction advocacy and information sharing.
- Communities need to understand the benefits from contributing to disaster risk reduction and support disaster risk reduction initiatives: Disaster risk reduction can save their lives and property.
- Effective law enforcement is critical for disaster risk reduction.
- Communities should be active participants in disaster risk assessments and disaster risk reduction planning and programmes.
- Work, within the correct and sensitive protocols, with traditional leaders and Community-Based Organisations.
- Focus resources and efforts primarily on disaster risk reduction and less on disaster relief.
- Understand that national/regional programmes such as poverty reduction is mid to long-term goals, but disaster resilience should be built/enhanced within current reality as well. Poor and un-resilient people, communities and groups should be assisted to become more resilient within their current realities.
- Cross-cutting considerations such as gender (for example, the value of utilising woman in disaster risk reduction), youth (sustainable disaster risk reduction starts with the children), people with disabilities, people with less access to facilities and risk transfer-mechanisms such as insurance, must be taken cognisance of in disaster risk reduction planning and initiatives.
- Because disaster risks cannot be totally reduced, the remaining economic risks need to be shared, spread or financed so that individual people, companies and communities are not forced into poverty or bankruptcy if a disastrous event occurs. Mechanisms for sharing or transferring risk are an important component of disaster risk reduction. At the national or district level, this can be achieved through the establishment of reserve funds, contingent credit arrangements, or purchase of offshore insurance or disaster bonds. These usually require supporting arrangements at international level though the private sector or

multilateral banks. At local level, the insurance industry can become a partner in disaster risk reduction and communities can be encouraged (through incentives agreed upon with insurance companies) to ensure themselves against loss.

6. THE TOOLS FOR IMPLEMENTING THE STRATEGY

6.1 Arrangements for integrated institutional capacity for disaster risk reduction

In 2005,the UN General Assembly, resolution A/RES/59/231:called upon Governments to establish national platforms or focal points for disaster reduction, encouraged governments to strengthen platforms where they already existed and urged the United Nations system to provide appropriate support to those mechanisms.

The objectives of a national platform were identified as:

- Increase national leadership and commitment to the sustainability of disaster risk reduction and implementation of the Hyogo Framework;
- Enhance collaboration and coordination among national stakeholders in order to increase levels of knowledge and skills on disaster risk reduction;
- Increase national commitment to help the most vulnerable and at-risk population;
- Serve as national focal points in the UNISDR system and strengthen links with the UNISDR secretariat and Task Force.

The National Committee on Disaster Management and the National Disaster Management Technical Committee acts as the above platform in the country.

The functions and responsibilities of The National Committee on Disaster Management are to:

1. Advise the Office of The President (OP) on disaster situations requiring a declaration of a state of disaster-induced emergency.

2. Serve as a reference committee and recommend the OP for approval of the national policies, plans and strategies related to Disaster Risk Reduction.

3. Facilitate and monitor the implementation of Hyogo Framework for Action and disaster risk management related activities in the country and make recommendations as may be required.

4. Endorse and recommend funding for the costs related to disaster preparedness and relief.

5. Participate in emergency operations activities during a state of disaster-induced emergency, including staffing the National Emergency Operations Centre when activated.

The functions and responsibilities of National Disaster Management Technical Committee are to:

1. Advise the National Disaster Management Office and the National Committee of Disaster Management on all disaster operations, issues and activities.

2. Participate in emergency operations activities during a state of disaster-induced emergency, including staffing Emergency Operations Centres once activated.

3. Provide technical support to the National Disaster Management Office in developing and implementing disaster risk management related activities and building of District and Village level disaster management teams and stakeholders.

4. Represent the National Disaster Management Office in various forums and events as may be assigned.

The institutional basis for disaster risk reduction should however not only depend on national structures and initiative. In fact, as mentioned above, effective disaster risk reduction should be a bottom-up and not top-down approach.

The following figures illustrate the institutional levels and arrangements for disaster risk reduction in the country and highlight the strategic importance of districts and communities in disaster risk reduction. The first figure indicates the strategic levels were disaster risk reduction is being implemented in the country and the second indicates responsibilities, inputs and integration between stakeholders with regard to disaster risk reduction.

Figure 4:Strategic levels were disaster risk reduction is being implemented in the country

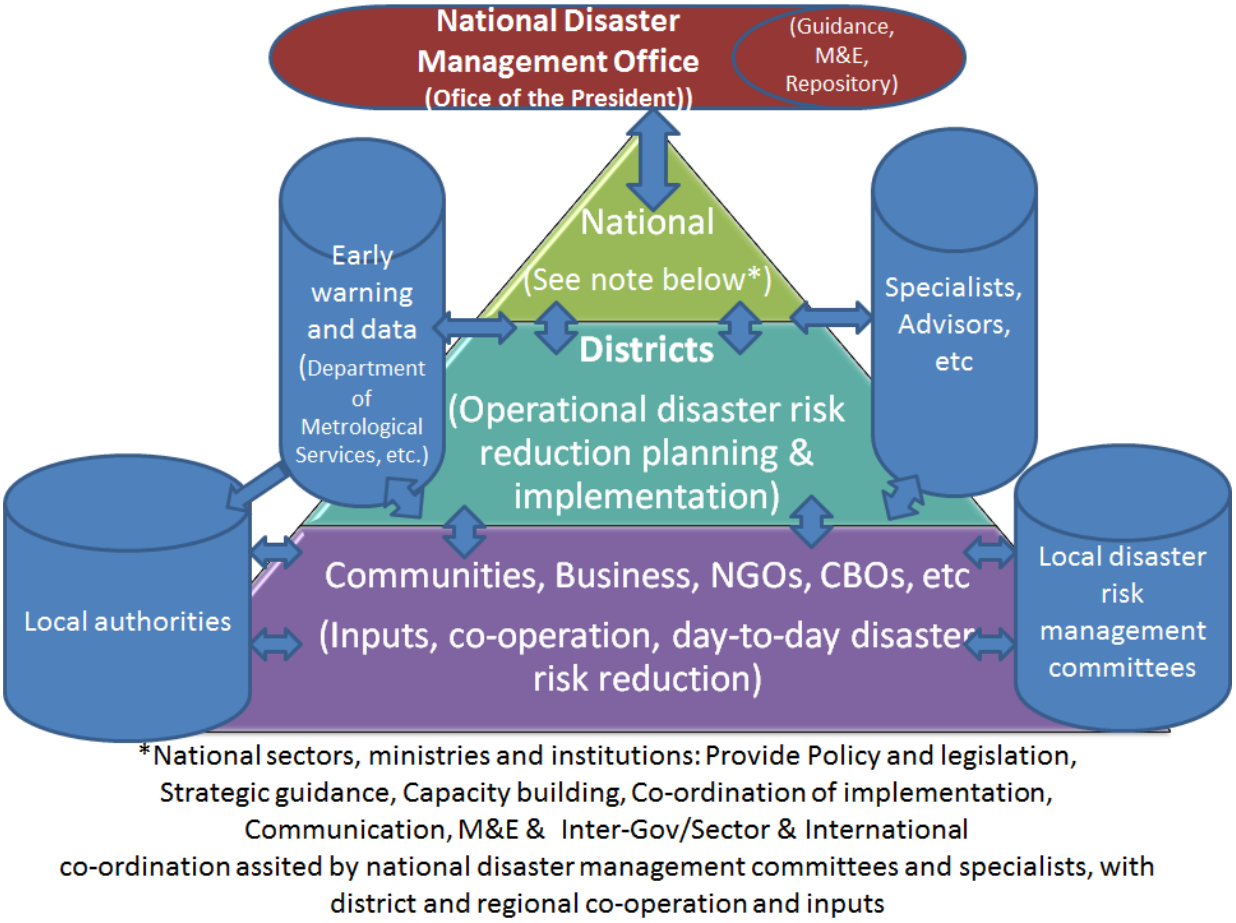


Figure 5: The first figure indicates the strategic levels were disaster risk reduction is being implemented in the country.

6.2 Disaster mitigation and prevention

Disaster mitigation and prevention planning and activities are crucial to disaster risk reduction.The recommendations and plans stipulated in the various urban and district development plans will already alleviate and treat many of the disaster risks. The National Disaster Risk Management Plan also outlines the mitigation responsibilities of each Ministry.

Annexure B contains typical mitigation/prevention activities pertaining to main hazard categories, which can be utilised for further hazard-specific disaster risk reduction planning and initiatives.

6.3 Disaster risk reduction through effective response, recovery and reconstruction

The risks of certain disasters can be reduced through effective response, recovery and rehabilitation activities. For example, buildings, roads or bridges can be reconstructed in such a place or way that it will not suffer the same fate as in the past when the hazard (like a flood) reaches it. When new structures are designed, disaster risk reduction through environmental design techniques should be taken into account.

It is therefore important that disaster risk reduction is a deliverable of post-disaster impact and risk assessment recommendations.

6.4 Effective integration and mobilisation of indigenous knowledge, traditional authorities, women and children and marginalised groups

The indigenous knowledge of communities regarding disaster risk reduction, for example the way in which traditional structures are built and knowledge about weather patterns, is a valuable source of disaster risk reduction information and should be integrated into all disaster risk assessments and disaster risk reduction planning. This should be done whilst taking cognisance of the leadership of traditional authorities and structures.

Equally important is the key role that women play in day-to-day disaster risk reduction activities and awareness, from household to community-based organisation level.

Children are the future implementers of disaster risk reduction and if they are educated and capacitated in disaster risk reduction thought and activities, they will form a cornerstone for sustainable disaster risk reduction in the country. Boys and girls need to be engaged with whilst taking cognisance of their unique nature and circumstances.

The specific needs of marginalised groups such as the elderly, disabled persons and the poor, should be taken cognisance of and integrated into disaster risk reduction planning. Specific disaster risk reduction projects and programmes can be developed in this regard.

6.5 Information management and communication

A disaster risk management stakeholder contacts database is available at the National Disaster Management Office and District Commissioner Offices.

A detailed disaster risk reduction communication and awareness strategy will be drafted for the country. In the interim, the following principles should guide disaster risk reduction communication in the country:

- The anticipated outcomes of the communication and public information inputs are focussed on strengthening the communications component of disaster risk reduction.
- Community involvement is a continuous process that necessitates well planned participative plans and communication initiatives. These initiatives will ensure that trust and credibility is developed by the affected communities, and even regulators. Capacity building initiatives and education will not have a sustainable effect if trust and credibility is lacking. It is very important to note that communities trust a person with continuous presence, using culturally appropriate messages communicated through recognizable media.
- The critical communication mechanisms to employ would be continuous engagement with communities via meetings, providing risk reduction-focused information material in the form of flyers/brochures and posters, and capacity building sessions. These mechanisms are focused to create understanding, in order to build capacity, and should be easily accessible to communities and even regulators.
- The involvement of communities to ensure resilience and sustainability is becoming more prominent. For this reason, it is important to implement participative strategies when considering disaster risk reduction, and more so, well formulated communication strategies and plans that will facilitate participation.

- Various communication mechanisms are employed at the different stages of disaster risk reduction, each delivering on a specific objective. It is critical that the correct communication mechanism is used at the correct disaster risk management phase since they require specific resources and have different accessibility levels.

The following aspects are to be considered from a communications perspective in order to support the focus of this enabler:

- Communities need to take ownership for the development of risk reduction initiatives.
- Integrated awareness programmes must be culture fit/friendly and should make use of existing traditional communication mechanisms and/or channels.
- Sustainable relationships must be established between regional branch community liaison officers and communities through the use of focussed community engagement plans.

Communities should be involved with disaster risk response plan formulation and risk reduction initiatives to ensure transfer of local knowledge and establishment of trusting relationships. Standard Operating Procedures of response agencies and communities should be aligned and/or clarified, to ensure that all stakeholders, including communities, are certain of what is expected of them and other stakeholders during an incident. Clear Command and Control responsibilities should be agreed upon.

6.6 Resource mobilisation and funding

A disaster risk reduction resource inventory and mobilisation plan needs to be developed by the National Disaster Management Office and District Commissioner Offices. The resource inventory should take into account all possible disaster risk reduction resources on national, district and community level.

Technology and equipment, such as disaster risk management systems, early warning systems and gauging stations, internet connectivity, basic telecommunication, etc., and the effective

management and maintenance thereof, are crucial support tools for disaster risk reduction and need to be procured and enhanced.

Disaster risk reduction funding will be accessed in terms of the National Policy on Disaster Management. One of the functions of the National Disaster Management Office is to endorse and recommend funding for the costs related to disaster preparedness and relief. Each Ministry, Sector and District should include disaster risk reduction in its budget. The Ministry of Finance and Development Planning will ensure that Ministries/Departments make provision for prevention, mitigation and preparedness programmes in National Development Plans and budgets.

External funding for disaster risk reduction should constantly be sourced, through the National Disaster Management Office. This funding includes funding for specific disaster risk reduction capacity and initiatives by United Nations Agencies, the Southern African Development Community and international humanitarian and relief organisations.

7. IMPLEMENTATION PLAN

7.1 Strategic implementation directives and priorities for strategic change

The following strategic implementation directives will be applicable to disaster risk reduction in the country for the next five years:

- The principles of co-operation, effective communication and information management, reporting and alignment (joint standards of practice) of planning and implementation on disaster risk management will at all times be adhered to by all institutions, stakeholders and role players.
- Training, capacity building and research on disaster risk management will continually be executed by all institutions, stakeholders and role players.
- The involvement and co-operation of non-governmental role players and specialists, and the inclusion of historical and indigenous information and knowledge relevant to disaster hazards, will be ensured by all institutions, stakeholders and role players.

- All institutions, stakeholders and role players will execute detailed research; obtain all required technical advice and inputs required and guide and monitor disaster risk management implementation, co-operation, communication and information dissemination on a constant basis.
- International and trans-boundary co-operation and integration will be further ensured by all institutions, stakeholders and role players.
- The country will be responsible to guide and monitor the implementation of these directives and implement its own legislative or assigned functions within the country, but detailed disaster risk reduction planning and implementation need to be executed by all institutions, stakeholders and role players.
- Disaster risk reduction planning and risk reduction is the responsibility of all institutions, stakeholders and role players in the country, working with disaster risk management functionaries, but disaster response, recovery and rehabilitation remains the primary responsibility of the institution holding ownership and/or legislative or assigned responsibility over the area and/or assets affected by a potential disastrous incident, working with all relevant institutions, stakeholders and role players, irrespective whether a state of disaster is declared or not.

7.2 Assignment of responsibilities

Although each stakeholder should identify its own role in disaster risk reduction as part of its own disaster risk management and disaster risk reduction planning. All sectors and ministries should include disaster risk reduction in their annual strategic planning processes.

The National Disaster Risk Management Plan details the disaster risk management (and consequent disaster risk reduction) roles and responsibilities of the relevant national departments and other institutions and this is not repeated in this strategic document.

The table below provides an indication of the main sectors and their primary responsibilities in disaster risk reduction specifically.

SECTOR	MAIN DISASTER RISK REDUCTION RESPONSIBILITIES	RESPONSIBLE MINISTRIES
Agriculture and Food Security	❖ Monitor and report on the status of national food production, security, distribution and sales ❖ Drought early warning management ❖ Monitor and report on the status of animal and zoonotic disease	❖ Ministry of Agriculture ❖ Ministry of Finance and Development Planning ❖ Ministry of Local Government
Development and Land use Planning	❖ Ensure that all developmental planning, authorisations and projects include disaster risk reduction as a core principle	❖ Ministry of Finance and Development Planning ❖ Ministry of Local Government ❖ Ministry of Lands and Housing
Environmental	❖ Monitor and report on environmental impacts ❖ Ensure disaster risk reduction is included in all environmental impact assessments and projects	❖ Ministry of Local Government ❖ Ministry of Health ❖ Ministry of Environment, Wildlife and Tourism ❖ Ministry of Infrastructure, Science and Technology
Water and Sanitation	❖ Monitor and report on water quality and quantity status ❖ Ensure that all authorisations include disaster risk reduction as a core principle ❖ Ensuring that medical drugs for waterborne diseases are available on all areas prone to flooding	❖ Ministry of Local Government ❖ Ministry of Mineral Energy and Water Resources ❖ Ministry of Health ❖ Ministry of Environment, Wildlife and Tourism
Infrastructure Development	❖ Ensure that all infrastructure is developed, maintained and	❖ Ministry of Infrastructure,

SECTOR	MAIN DISASTER RISK REDUCTION RESPONSIBILITIES	RESPONSIBLE MINISTRIES
	repaired with disaster risk reduction in mind ❖ Enforce building standards and codes and ensure that specific codes apply to specific relevant areas' unique conditions and constant building inspections ❖ Ensure settlement in unsafe (like flood prone) areas does not happen ❖ Monitoring seismogenic areas ❖ Ensure continuous electricity supply	Science and Technology ❖ Ministry of Finance and Development Planning ❖ Ministry of Local Government ❖ Ministry of Lands and Housing ❖ Ministry of Minerals, Energy and Water Resources
Health and nutrition	❖ Monitor and report on the status of national health and disease	❖ Ministry of Health ❖ Ministry of Local Government
Safety and security	❖ Monitor and report on the status of national security ❖ Effective law enforcement	❖ Ministry of Defence, Justice and Security ❖ Ministry of the State President
Information Management	❖ Information collection, management and dissemination	❖ Ministry of State President ❖ Ministry of Transport and Communication
Education	❖ Education and awareness	❖ Ministry of Education and Development Skills
Financial	❖ Ensure funding ❖ Private sector financial and implementation contribution	❖ Ministry of Finance and Development Planning ❖ Ministry of Local Government ❖ Ministry of State President
Transport	❖ Monitoring of transportation of hazardous materials ❖ Monitoring of road worthiness	❖ Ministry of Transport and Communication

SECTOR	MAIN DISASTER RISK REDUCTION RESPONSIBILITIES	RESPONSIBLE MINISTRIES
	of transporting vehicles ❖ Maintenance of road infrastructure ❖ Road safety, emergency response to major accidents, including wild-life on the roads ❖ Managing of water transport-related hazards (for example: ferry crossings at Kazungula and Mohembo)	❖ Central Transport Organisation ❖ Ministry of Local Government ❖ Ministry of Health (paramedics, etc.)

7.3 Action plan for implementation

The action plan for implementing this strategy is attached as Annexure A.

7.4 Reporting and monitoring

This is version 01-2013 of the 5 year disaster risk reduction strategy for the country.

This document will be assessed annually and updated as required. The strategy will be reviewed in 2016.

Effective reporting, monitoring and evaluation are crucial to the success of this strategy.

Every 6 months, all the Ministries and National stakeholders will be given a standard format to provide progress information on their disaster risk reduction related activities. Similarly, District Commissioners/District Officers will provide their updates with clear challenges and recommendations to the National Disaster Management Office. Lessons learnt is an important tool and should constantly be employed in evaluation and re-planning activities and communicated to all stakeholders.

This strategy will further be monitored through quarterly assessments of the status of implementation of Annexure A, by the National Disaster Management Office.

Annexure A : Implementation Action Plan

STRATEGIC GOAL	STRATEGIC DRIVING ACTIVITIES	MEASURABLE KEY OUTPUT/INDICATOR	STAKEHOLDER(S) RESPONSIBLE	ROUGH ORDER OF MAGNITUDE COST ESTIMATE (Pula)	TIME FRAME TARGET FOR ACHIEVEMENT
To improve the legal and institutional basis for efficient disaster risk reduction.	❖ Review and update the National Policy on Disaster Management and the National Disaster Risk Reduction Plan.	National policy and plan updated	National Disaster Management Office (NDMO)	1,000,000	2014
	❖ Develop national disaster risk management legislation.	National legislation developed	NDMO	1,000,000	2015
	❖ Ensure that disaster risk reduction is included in contingency planning and arrangements.	-	-	-	Constant
	❖ Conduct district-level disaster risk assessments and update current disaster risk assessment	District-level disaster risk assessments completed and updated national disaster risk assessment	District Commissioners and NDMO	3,000,000	2018
	❖ Implementation of disaster risk reduction should be spearheaded at community and district level.	This should be reflected in all reporting to the NDMO by all stakeholders	NDMO, District and Local DRM Committees	-	2014

STRATEGIC GOAL	STRATEGIC DRIVING ACTIVITIES	MEASURABLE KEY OUTPUT/INDICATOR	STAKEHOLDER(S) RESPONSIBLE	ROUGH ORDER OF MAGNITUDE COST ESTIMATE (Pula)	TIME FRAME TARGET FOR ACHIEVEMENT
To improve the legal and institutional basis for efficient disaster risk reduction.	❖ Volunteerism should be formalised and enhanced at local level. A volunteer management strategy should be developed and volunteers trained. ❖ Develop disaster risk reduction plans for each district and each sector.	A developed volunteer strategy Disaster risk reduction plans for each district and each sector drafted	NDMO District and Local DRM Committees All districts and sector leaders	500,000 500,000 per plan	2018 2018
To mainstream disaster risk reduction and emergency management into development policy, programmes and projects.	❖ Create awareness throughout the country that disaster risk reduction is part of everybody's daily work and lives and is a bottom-up approach, beginning at communities and that the National Disaster Management Office should only be responsible for guidance, co-ordination and integration.	Progress to be reported in NDMO annual report	NDMO	-	Constant

STRATEGIC GOAL	STRATEGIC DRIVING ACTIVITIES	MEASURABLE KEY OUTPUT/INDICATOR	STAKEHOLDER(S) RESPONSIBLE	ROUGH ORDER OF MAGNITUDE COST ESTIMATE (Pula)	TIME FRAME TARGET FOR ACHIEVEMENT
	❖ Ensure that disaster risk management and disaster risk reduction is included in the detail and key performance indicators of all development and strategic plans, policies, programmes and projects.	NDMO and all departments and districts to monitor this	NDMO, All departments and districts	-	Constant
To build disaster risk reduction capacity at national, district, community and household levels.	❖ Invest in disaster risk reduction: Ensure sufficient budget, staff and other resources for the National Disaster Management Office. ❖ Place capacitated, dedicated disaster risk management focal point staff in each District Commissioner's Office, reporting directly to the District Commissioner and the National Disaster Management Office.	Sufficient budget received Capacitated, dedicated disaster risk management focal point staff in each District Commissioner's Office	National Finance NDMO and District Commissioners	- To be estimated	Constant 2018

STRATEGIC GOAL	STRATEGIC DRIVING ACTIVITIES	MEASURABLE KEY OUTPUT/INDICATOR	STAKEHOLDER(S) RESPONSIBLE	ROUGH ORDER OF MAGNITUDE COST ESTIMATE (Pula)	TIME FRAME TARGET FOR ACHIEVEMENT
	❖ Develop a resource mobilisation inventory and plan for disaster risk reduction.	Resource mobilisation plan developed.	NDMO and District Commissioners	500,000	2014
	❖ Execute disaster risk reduction capacity assessments as part of the implementation of the National Disaster Risk Management Plan capacity assessment process.	Disaster risk reduction capacity assessments completed	NDMO and District Commissioners	-	Annually
To increase awareness of disaster risk reduction methods and opportunities through information sharing, strategic partnerships, education and training.	❖ Draft a detailed disaster risk reduction communication and awareness strategy for country.	Disaster risk reduction communication and awareness strategy drafted	NDMO	500,000	2014
	❖ Confirm/establish memoranda of understanding, mutual aid agreements and public-private partnerships on disaster risk reduction.	Memoranda of understanding, mutual aid agreements and public-private partnerships on disaster risk reduction confirmed / established and reported in annual reports	NDMO and District Commissioners	-	Constant

STRATEGIC GOAL	STRATEGIC DRIVING ACTIVITIES	MEASURABLE KEY OUTPUT/INDICATOR	STAKEHOLDER(S) RESPONSIBLE	ROUGH ORDER OF MAGNITUDE COST ESTIMATE (Pula)	TIME FRAME TARGET FOR ACHIEVEMENT
		to the NDMO			
	❖ Ensure cross-border (inter and external) co-planning and integration on disaster risk reduction.	Evidence of cross-border co-planning and integration on disaster risk reduction in NDMO annual report	NDMO and District Commissioners	-	Constant
	❖ Ensure that disaster risk reduction-related information and preparedness guides be shared at schools, community meetings, organised business and economic meetings, through the media, etc.	This should be reflected in all reporting to the NDMO	NDMO, District Commissioners and Ministry of Education and Development Skills	-	Constant
	❖ Integrate disaster risk reduction into the school curricula.	Disaster risk reduction included in school curricula	Ministry of Education and Development Skills	-	Constant

STRATEGIC GOAL	STRATEGIC DRIVING ACTIVITIES	MEASURABLE KEY OUTPUT/INDICATOR	STAKEHOLDER(S) RESPONSIBLE	ROUGH ORDER OF MAGNITUDE COST ESTIMATE (Pula)	TIME FRAME TARGET FOR ACHIEVEMENT
	❖ Link with tertiary education and research institutions with regard to formal training and knowledge sharing.	Links with tertiary education established	Ministry of Education and Development Skills and NDMO	-	2014
To strengthen and implement knowledge, information management and technologies on disaster risk reduction in all sectors.	❖ Procure/develop disaster management information systems and technology to assist with disaster risk reduction implementation.	Disaster management information systems and technology to assist with disaster risk reduction implementation	NDMO	5,000,000	2018
	❖ Invest in research and development in disaster risk reduction.	Proven research and development in disaster risk reduction	NDMO and District Commissioners	-Can work with tertiary institutions and NGOs etc.	Constant
	❖ Constant monitoring and reporting on this strategy.	Six-monthly monitoring and reporting on this strategy is very important	NDMO and District Commissioners	-	Six-monthly

STRATEGIC GOAL	STRATEGIC DRIVING ACTIVITIES	MEASURABLE KEY OUTPUT/INDICATOR	STAKEHOLDER(S) RESPONSIBLE	ROUGH ORDER OF MAGNITUDE COST ESTIMATE (Pula)	TIME FRAME TARGET FOR ACHIEVEMENT
To strengthen disaster preparedness and climate change adaptation at all levels	❖ Enhance and extend internal and cross boundary early warning mechanisms and systems, such as flood management systems, climate indicators, etc.	Cross boundary early warning mechanisms and systems enhanced and procured	NDMO and District Commissioners	1,000,000	2018
	❖ Plan and execute simulation exercises.	At least one simulation exercises executed annually	NDMO, District Commissioners And other relevant stakeholders	200,000	Annually
	❖ Ensure that the Botswana National Climate Change Policy and Comprehensive National Climate Change Strategy and Action Plans are effectively implemented.	Progress to be reported in NDMO annual report	National Climate Change Section, with the support of the NDMO	-	Constant
	❖ Ensure effective logistics and resource planning for disaster response and relief and that disaster risk reduction is a	Logistics and resource planning for disaster response and relief executed and disaster risk	NDMO	-	Constant

STRATEGIC GOAL	STRATEGIC DRIVING ACTIVITIES	MEASURABLE KEY OUTPUT/INDICATOR	STAKEHOLDER(S) RESPONSIBLE	ROUGH ORDER OF MAGNITUDE COST ESTIMATE (Pula)	TIME FRAME TARGET FOR ACHIEVEMENT
	deliverable of post-disaster impact and risk assessment recommendations.	reduction is a deliverable of post-disaster impact and risk assessment recommendations			

Annexure B : General disaster risk reduction activities for specific hazard categories

MAIN HAZARDS:	TYPICAL PREVENTION/MITIGATION ACTIONS:	MEANS	DOES THE COUNTRY HAVE ENOUGH CAPACITY AND RESOURCES TO SUCCESSFULLY REDUCE THE RISKS OF THESE HAZARDS?
Fires	Residential related fires. Awareness programmes	Awareness communication materials (pamphlets/calendars), Media campaigns	**No**
	Wild land fires. Awareness programme in and around open spaces, fire breaks administered	Awareness communication materials (pamphlets/calendars), Media campaigns, Notice boards; Fire breaks	**Yes**
	Early fire risk predictions. Early warning of high fire risk places & times, based on weather and vegetation/field condition	Early warning system, linked with Weather Services; Warnings via television, radio, newspapers, verbal.	**Yes**
Industrial (including mining) fires / explosions /	Survey of industries (for fire and hazardous materials risks); strict compliance with safety regulations and other safety requirements, associated updating of hazard severity map;	Database design, development and population; Exact information, locality and hazardous materials known. Ensure industries have emergency and evacuation plans in place	**Yes**

MAIN HAZARDS:	TYPICAL PREVENTION/MITIGATION ACTIONS:	MEANS	DOES THE COUNTRY HAVE ENOUGH CAPACITY AND RESOURCES TO SUCCESSFULLY REDUCE THE RISKS OF THESE HAZARDS?
spillage / accidents	Compilation of hazardous materials register/database, indicating the location and contents of facilities spatially and in database format; Stakeholder meetings to confirm and refine the findings. Integrated register/database		
Epidemics (Human & Animal)	Epidemic statistic tracking and warnings. Early warning of possible epidemics in specific areas	Awareness communication materials (pamphlets/calendars), Media campaigns, Notice boards; Warnings via television, radio, newspapers, verbal.	**Yes**
	Ensure potable water supply delivery to all settlements, even informal settlements if possible. Water supply delivery programmes in areas where population density is high but water supply not available	Budget allocation for water piping & supply projects	**Yes**

MAIN HAZARDS:	TYPICAL PREVENTION/MITIGATION ACTIONS:	MEANS	DOES THE COUNTRY HAVE ENOUGH CAPACITY AND RESOURCES TO SUCCESSFULLY REDUCE THE RISKS OF THESE HAZARDS?
	Immunization programmes.	List of areas and places immunized	**Yes**
	Logging system and monitoring of communicable diseases on a daily basis at clinics and hospitals, on a central database. Communicable diseases report including graphs	Database of communicable diseases updated weekly/monthly; monthly digital reports presented to National Disaster Management Office	**Yes**
Infrastructure failure: Power, sanitation, water & other key services	Co-ordination between water, electricity and sanitation services to identify cross-impacts and severity of impacts. Quarterly task group meetings	Co-ordination and integrated planning	**No**
Surface water/land	Specific incidences quickly and effectively reported and information distributed for	Awareness communication materials (pamphlets/calendars), Media campaigns,	**Yes**

MAIN HAZARDS:	TYPICAL PREVENTION/MITIGATION ACTIONS:	MEANS	DOES THE COUNTRY HAVE ENOUGH CAPACITY AND RESOURCES TO SUCCESSFULLY REDUCE THE RISKS OF THESE HAZARDS?
pollution	possible evacuation. Immediate warnings once incidents take place	Notice boards; Warnings via television, radio, newspapers, verbal.	
	Industry, Mining and Private individuals' compliance to pollution control requirements. Quarterly/yearly reports; Possible polluter-pays measures, Environmental education of public	List of pollution-control required industries/mines, waste sites etc., specific license requirements; database of industries/mines checked for reporting and compliance quarterly/annually; list of public education initiatives	**Yes**
	Agricultural awareness. Awareness programmes with farmers with regard to pesticides, herbicides etc. control	Awareness communication materials (pamphlets/calendars), Media campaigns, Notice boards; Warnings via television, radio, newspapers, verbal.	**Yes**
Air pollution: industrial	Monitor industrial related air pollution, in areas where applicable. Quarterly/yearly	Industries providing proof of prevention/mitigation measures	**Yes**

MAIN HAZARDS:	TYPICAL PREVENTION/MITIGATION ACTIONS:	MEANS	DOES THE COUNTRY HAVE ENOUGH CAPACITY AND RESOURCES TO SUCCESSFULLY REDUCE THE RISKS OF THESE HAZARDS?
	reports; Bylaws; license requirements; Possible polluter-pays measures		
Air pollution: informal settlements	Awareness and subsequent minimization of air pollution in communities that utilize fuel for heat and cooking, instead of electricity. Awareness programmes in informal settlements	Pamphlets and public meetings where community leaders urge community to utilize electricity rather than fires, where possible	**Yes**
Transport: rail, road, hazmat	Road maintenance. Road maintenance projects	Budget allocation for road maintenance and upgrade projects	**Yes**
	Railway maintenance. Railway maintenance projects	Budget allocation for railway maintenance and upgrade projects	**Yes**
	Specific incidences quickly and effectively reported and information distributed for possible evacuation. Immediate warnings	Warnings via television, radio, newspapers, verbal.	**Yes**

MAIN HAZARDS:	TYPICAL PREVENTION/MITIGATION ACTIONS:	MEANS	DOES THE COUNTRY HAVE ENOUGH CAPACITY AND RESOURCES TO SUCCESSFULLY REDUCE THE RISKS OF THESE HAZARDS?
	once incidents take place		
	Hazmat transport inspections on road.	List of hazmat transporters and spot-checks to ensure they have what they are listed to carry, forwarded bi-monthly to National Disaster Management Office	**Yes**
	Transport and container inspections by railway authorities	List of hazmat transporters and spot-checks to ensure they have what they are listed to carry, forwarded bi-monthly to National Disaster Management Office	**Yes**
Transport: air	Monitoring of types and severity of incidents that may lead to disasters. Yearly reports and inclusion of data into National Disaster Management Office database	Reports submitted to National Disaster Management Office on yearly basis	**Yes**

MAIN HAZARDS:	TYPICAL PREVENTION/MITIGATION ACTIONS:	MEANS	DOES THE COUNTRY HAVE ENOUGH CAPACITY AND RESOURCES TO SUCCESSFULLY REDUCE THE RISKS OF THESE HAZARDS?
Major Events	Preparation and planning, and informing communities of events and disaster plans relating to it. Event plans and pamphlets	Plans designed and distributed well beforehand	**Yes**
	Database indicating all possible venues and available evacuation and other plans for that venue	Lists of all venues that could house 250+ persons and associated risks for each, submitted to the National Disaster Management Office and/or Districts/Towns	**No**
Drought / water shortage	Alternative dams and/or cross-border water supply negotiations	Budget and programme action plans for specific water supply schemes	**Yes**
	Installation of water collection and storage containers in strategic locations	Budget and location identification for containers	**No**
	Installation of collection and storage containers at industries and organisations	Awareness communication materials (pamphlets/calendars), Media campaigns, Notice boards; Warnings via television, radio,	**Yes**

MAIN HAZARDS:	TYPICAL PREVENTION/MITIGATION ACTIONS:	MEANS	DOES THE COUNTRY HAVE ENOUGH CAPACITY AND RESOURCES TO SUCCESSFULLY REDUCE THE RISKS OF THESE HAZARDS?
		newspapers, verbal.	
	Installation of collection and storage containers at private homes	Awareness communication materials (pamphlets/calendars), Media campaigns, Notice boards; Warnings via television, radio, newspapers, verbal.	**Yes**
	Linkages of data to monitor long term weather patterns vs. water demand in Botswana. Change monitored and predictions made	Scenarios indicated and planned for	**Yes**
	Ground water resources. Ground water resources usability known	Ground water quality survey and impact assessment	**Yes**

MAIN HAZARDS:	TYPICAL PREVENTION/MITIGATION ACTIONS:	MEANS	DOES THE COUNTRY HAVE ENOUGH CAPACITY AND RESOURCES TO SUCCESSFULLY REDUCE THE RISKS OF THESE HAZARDS?
Desertification	Link with Weather Services: Monitoring and studies. Draft medium-longer term contingency plans for areas at risk	Mainly monitoring	**Yes**
Civil unrest (including terrorism)	Monitoring system implemented. Database with incidents indicated	Graphs and probability evaluations updated	**Yes**
	Incident database to be set up and maintained. Incident database updated and maintained	Incident database designed, developed and implemented; updated	**Yes**
Floods	Assessment of dam break impacts on existing developments. Dam break flood impacts	Documentation indicating impacts and consequences	**Yes**
	Develop indicative flood mapping, giving an indication of the 100-year and flood lines along the major watercourses.	Major impacts on especially informal and low-income settlements	**Yes**

MAIN HAZARDS:	TYPICAL PREVENTION/MITIGATION ACTIONS:	MEANS	DOES THE COUNTRY HAVE ENOUGH CAPACITY AND RESOURCES TO SUCCESSFULLY REDUCE THE RISKS OF THESE HAZARDS?
	High water markers and beacons to indicate depth of rivers. Maintenance of beacons, and installation of additional high water markers	Maintaining of beacons; identification of positions for high water level markers; installation of high water markers	**Yes**
	Flood hazard assessments for selected watercourses. Hazard assessment studies, reports and associated maps	Budget allocation for the various projects	**Yes**

MAIN HAZARDS:	TYPICAL PREVENTION/MITIGATION ACTIONS:	MEANS	DOES THE COUNTRY HAVE ENOUGH CAPACITY AND RESOURCES TO SUCCESSFULLY REDUCE THE RISKS OF THESE HAZARDS?
	Storm water maintenance. On-going storm water maintenance	Storm water asset management register and maintenance scheduled and budgeted for	**Yes**
Storms	Early storm risk predictions based on weather	Early warning system, linked with Weather Services; Warnings via television, radio, newspapers, verbal.	**Yes**

MAIN HAZARDS:	TYPICAL PREVENTION/MITIGATION ACTIONS:	MEANS	DOES THE COUNTRY HAVE ENOUGH CAPACITY AND RESOURCES TO SUCCESSFULLY REDUCE THE RISKS OF THESE HAZARDS?
Environmental degradation	Waste site location and management. Integrated waste management plans	Drafting and acceptance of the waste management plans, and spatial data indicating location of all existing and future waste sites	**Yes**
	Erosion protection, especially where sand and gravel mining is taking place. Stricter environmental controls	Decreased erosion and extraction	**Yes**
Plant invasion/overpopulation	Monitoring of types and severity of incidents that may lead to disasters. Yearly reports and inclusion of data into National Disaster Management Office database	Reports submitted to National Disaster Management Office on yearly basis	**Yes**
Animal/Insect invasions/overpopulation	Monitoring of types and severity of incidents that may lead to disasters. Yearly reports and inclusion of data into National Disaster Management Office database	Reports submitted to National Disaster Management Office on yearly basis	**Yes**

MAIN HAZARDS:	TYPICAL PREVENTION/MITIGATION ACTIONS:	MEANS	DOES THE COUNTRY HAVE ENOUGH CAPACITY AND RESOURCES TO SUCCESSFULLY REDUCE THE RISKS OF THESE HAZARDS?
Geological (Earthquake, Landslides, Subsidence, Erosion, Land Degradation)	Detailed Geological Risk Study in areas at possible risk. Monitoring of types and severity of incidents that may lead to disasters. Yearly reports and inclusion of data into National Disaster Management Office database	Contingency Plans for possible occurrences. Reports submitted to National Disaster Management Office on yearly basis	**Yes**
Deforestation	Monitoring of types and severity of incidents that may lead to disasters. Yearly reports and inclusion of data into National Disaster Management Office database	Reports submitted to National Disaster Management Office on yearly basis	**Yes**
Loss of biodiversity	Monitoring of types and severity of incidents that may lead to disasters. Yearly reports and inclusion of data into National Disaster Management Office database	Reports submitted to National Disaster Management Office on yearly basis	**Yes**