

**DISASTER RISK REDUCTION PLAN AND
INTEGRATION INTO DEVELOPMENT PLANNING
FOR THE LANGEBERG MUNICIPALITY
2025**

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ACRONYMS AND ABBREVIATIONS

ACRONYM/ ABBREVIATION	EXPLANATION
CWDM	Cape Winelands District Municipality
DEA&DP	Department of the Environment and Development Planning
DFFE	Department of Forestry, Fisheries and the Environment
DLG	Department of Local Government
DMA	Disaster Management Act
DRR	Disaster Risk Reduction
DWS	Department of Water and Sanitation
GCF	Green Climate Fund
ICS	Incident Command System
IDP	Integrated Development Plan
MSA	Municipal Systems Act
MSDF	Municipal Spatial Development Framework
NDMF	National Disaster Management Framework
SALGA	South African Local Government Association
SANBI	South African National Biodiversity Institute
SAWS	South African Weather Services
SDGs	Sustainable Development Goals
SFDRR	Sendai Framework for Disaster Risk Reduction
SPLUMA	Spatial Planning and Land Use Management Act
WC: DoA	Western Cape Department of Agriculture
WC: PDMC	Western Cape Provincial Disaster Management Centre
WFPA	Winelands Fire Protection Association

KEY TERMINOLOGY

TERM	TERMINOLOGY
CLIMATE CHANGE	Climate change refers to long-term shifts in temperatures and weather patterns.
DISASTER RISK REDUCTION	A policy objective aimed at preventing new and reducing existing disaster risk and managing residual risk, all of which contribute to strengthening resilience.
DISASTER RISK REDUCTION PLAN	A document prepared by an authority, sector, organisation, or enterprise that sets out goals and specific objectives for reducing disaster risks together with related actions to accomplish these objectives.
DISASTER RISK ASSESSMENT	A qualitative or quantitative approach that is used to determine the nature and extent of disaster risk by analysing potential hazards and evaluating existing conditions of exposure and vulnerability that together could harm people, property, services, livelihoods and the environment on which they depend.
DISASTER RISK	Disaster risk is the likelihood of a community, society, or system experiencing loss of life, injury, or damage to assets within a specific time period. It's the result of a hazard interacting with the characteristics that make people and places vulnerable and exposed.
DISASTER RISK CREATION	Disaster risk creation is the process by which human actors construct risk in relation to natural hazards. Disasters can be prevented by identifying and anticipating the factors that contribute to disaster risk creation.
INTEGRATED DEVELOPMENT PLAN	An IDP encompasses all of a municipality's goals and objectives for economic and social development in the short, medium and long term. IDPs are meant to outline strategies to manage municipal finances for the purpose of facilitating everything from basic service provision to infrastructural development, improved spatial planning and even disaster management.

MUNICIPAL SPATIAL DEVELOPMENT FRAMEWORK	A Spatial Development Framework is a framework that seeks to guide the overall spatial distribution of current and desirable land uses within a municipality, to give effect to the vision, goals and objectives of the municipal Integrated Development Plan.
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1. INTRODUCTION

The Langeberg Municipality is faced with several hazards that repeatedly threaten the environment, economic activity, and livelihoods of the municipal area. The increased prevalence and severity of disasters necessitate a concerted effort to reduce vulnerability and prevent the creation or exacerbation of disaster risk. The Langeberg Municipality has not been exempted from the increase in disasters, experiencing catastrophes of unprecedented scale.

The interaction between underlying vulnerabilities in communities, prevailing capacities, and hazards contributes to the occurrence of disasters. To mitigate the impact and eliminate the growing risk of disasters, a paradigm shift from a response-centric approach to one focused on Disaster Risk Reduction (DRR) is essential. In this context, the Langeberg Municipality, in collaboration with the Western Cape Provincial Disaster Management Centre (WC: PDMC) through the Department of Local Government (DLG), has initiated the development of a DRR plan for the municipality.

This document outlines the DRR plan for the Langeberg Municipality. It begins with a discussion of the methodology used in creating the plan, followed by an overview of international and national policies regarding DRR. The hazard profile of the Langeberg Municipality is then detailed, along with an analysis of existing land use management policies and other supportive policies for DRR. Strategies to integrate DRR into sector plans are also presented. Finally, measures to reduce and mitigate risks associated with various hazards—such as urban and riverine flooding, and informal settlement fires and wildfires—are outlined.

The WC: PDMC supported the development of the Langeberg Municipality's DRR plan. The approach employed emphasizes the need to understand the interplay between hazards, community vulnerabilities, and the existing capacity within municipal institutions.

1.1. METHODOLOGY USED IN DEVELOPING THE PLAN

The methodology used to develop the DRR Plan for the Langeberg Municipality encompassed three (3) phases:

- **PHASE 1:** Desktop research was undertaken to analyse the extent of integration into municipal policies. It entailed a process whereby documents related to DRR such as land use policies, municipal by-laws and related documents.
- **PHASE 2:** A focus group discussion was held with the land use planning and environmental section of the municipality. The focus group was also meant to engage with the land use planning section on opportunities for integration of DRR into land use planning processes.
- **PHASE 3:** Hazard-focused workshops to solicit inputs from a myriad of stakeholders were undertaken. The hazard-focused workshops were on flooding (urban and riverine) and informal structure fires.

2. OVERVIEW OF INTERNATIONAL AND NATIONAL POLICY FOR DISASTER RISK REDUCTION

This section discusses the international and local policy frameworks related to DRR. The first part deals with international policy, namely, the Sendai Framework for Disaster Risk Reduction (SFDRR)¹ (2015-2030) and the Sustainable Development Goals (SDGs).

2.1. INTERNATIONAL POLICY FOR DISASTER RISK REDUCTION

The legislative and policy mandate for developing a DRR plan emanates from international and national policy frameworks. The SFDRR calls on signatory states to prevent new and reduce existing disaster risks through the implementation of integrated and inclusive economic, structural, legal, social, health, cultural, educational, environmental, technological, political, and institutional measures that prevent and reduce hazard exposure and vulnerability to disasters, increase preparedness for response and recovery, and ultimately strengthen resilience.

The SFDRR outlines four key priorities, as illustrated in Figure 2, below. Priority three (3) of the SFDRR, emphasizes the importance of public and private investment in disaster risk prevention and reduction through structural and non-structural measures. Such investments are critical to enhancing the economic, social, health, and cultural resilience of persons, communities, countries, and their assets, as well as the environment.

¹ The Sendai Framework for Disaster Risk Reduction (2015-2030): <https://www.undrr.org/publication/sendai-framework-disaster-risk-reduction-2015-2030>.

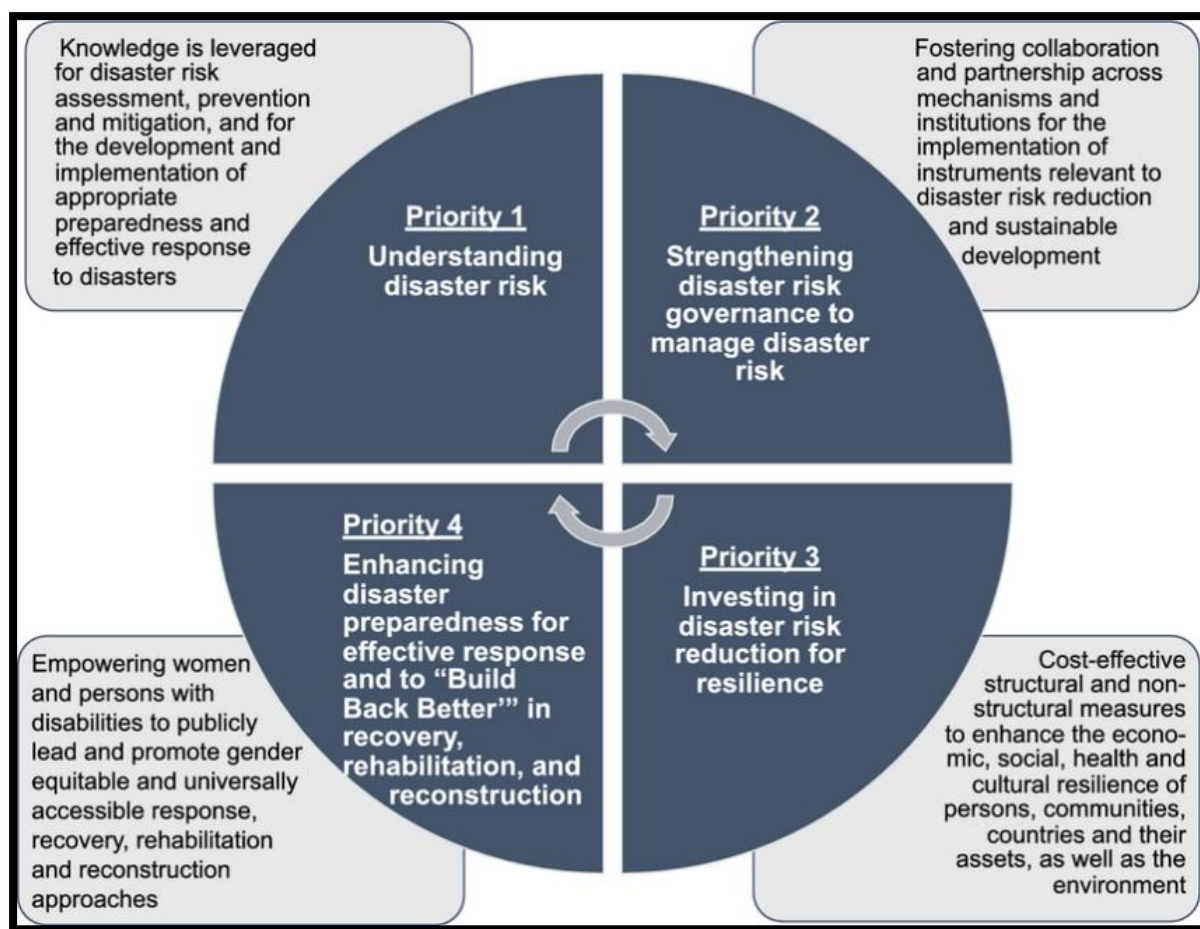


Figure 1: The four (4) priorities of the Sendai Framework for Disaster Risk Reduction

The SDGs and DRR are interlinked and are critical for building a sustainable and resilient world. Moreover, the interrelation between sustainable development and DRR is well established, with the 2030 Agenda for Sustainable Development recognising the urgent need to reduce the risk of disasters as part of the umbrella of actions needed to achieve sustainable development. The SDG goals which are closely linked to DRR are as follows²:

- (a) **GOAL 1:** End poverty in all its forms everywhere: By 2030, build the resilience of the poor and those vulnerable.
- (b) **GOAL 2:** End hunger, achieve food security and improve nutrition, and promote sustainable agriculture.
- (c) **GOAL 6:** Ensure availability and sustainable management of water and sanitation for all.
- (d) **GOAL 9:** Build resilient infrastructure, promote inclusive and sustainable industrialization and foster innovation.
- (e) **GOAL 13:** Take urgent action to combat climate change and its impacts.

² The SDGs and DRR: <https://climate.gov.ph/>

- (f) **GOAL 14:** Conserve and sustainably use the oceans, seas, and marine resources for sustainable development.
- (g) **GOAL 15:** Protect, restore, and promote sustainable use of terrestrial ecosystems, sustainably manage forests, combat desertification, and halt and reverse land degradation and biodiversity loss.

The figure below elaborates further on how DRR initiatives supporting key SDGs.

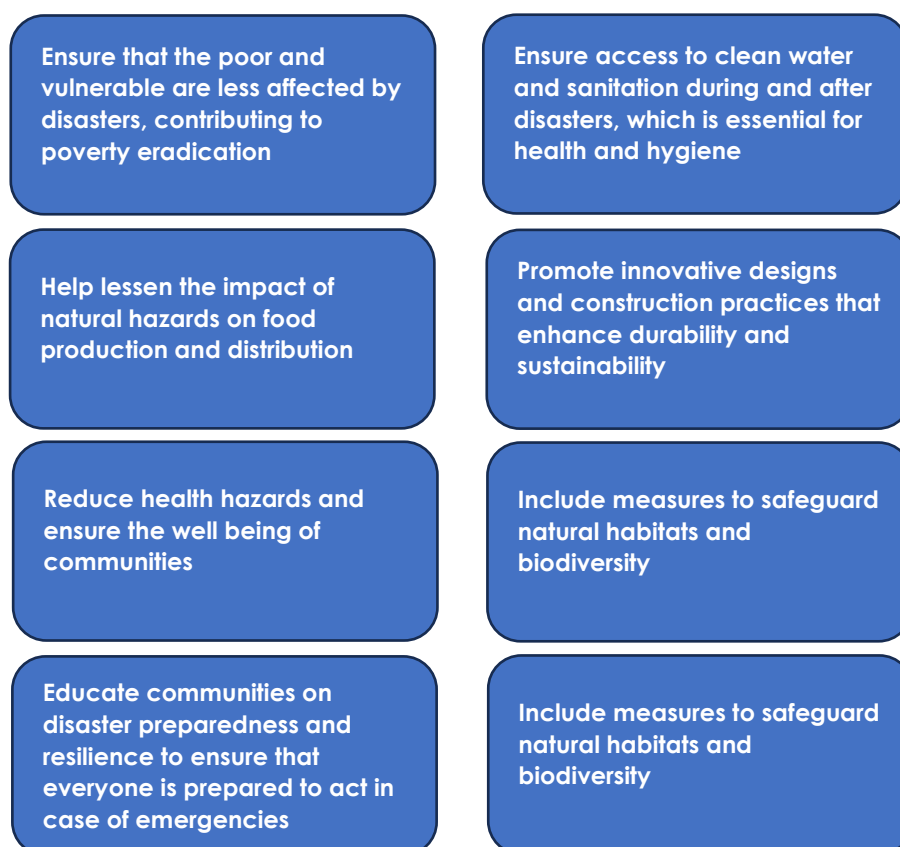


Figure 2: The Sustainable Development Goals and Disaster Risk Reduction

2.2. NATIONAL POLICY FRAMEWORKS FOR DISASTER RISK REDUCTION

Section 24 (a) of the Constitution³ of the Republic of South Africa states that everyone has the right to an environment that is not harmful to their health or well-being and Section 24 (b) of the Constitution of the Republic of South Africa states that everyone has the right to have the environment protected, for the benefit of present and future generations, through reasonable legislative and other measures that:

³ The Constitution of the Republic of South Africa: <https://www.gov.za/documents/constitution/chapter-2-bill-rights#24>

1. Prevent pollution and ecological degradation;
2. Promote conservation and
3. Secure ecologically sustainable development and use of natural resources while promoting justifiable economic and social development.

These provisions in the Constitution of the Republic of South Africa promote DRR in that by protecting the environment against ecological degradation, vulnerability to the impacts of disasters can be reduced. Furthermore, securing ecologically sustainable development ensures that ecosystems are protected and can continue to offer services which contribute to reducing a myriad of disaster risks.

In addition, the Municipal Systems Act⁴ (MSA) (No. 32 of 2000) mentions that a core component of an Integrated Development Plan (IDP) is a Disaster Management Plan. Moreover, the Disaster Management Act⁵ (DMA), as amended (No. 57 of 2002), calls for the integration of risk reduction into development planning. The Spatial Planning and Land Use Management Act (SPLUMA) (No. 16 of 2013) also emphasises developing spaces that are sustainable and resilient. Spatial sustainability encourages development in locations that are sustainable and limits the rapid expansion of urban areas. Spatial resilience involves adjusting spatial plans, policies, and land use management systems to support sustainable livelihoods for communities that are at high risk of being affected by economic and environmental disturbances.

Moreover, the National Disaster Management Framework (NDMF) urges provincial and municipal disaster management centres to establish mechanisms in association with spatial planners in both spheres of local and provincial government to ensure the relevant spatial information informs DRR planning and must also ensure that verified risk information is incorporated into spatial development plans and maps.

⁴ The Municipal Systems Act: https://www.gov.za/sites/default/files/gcis_document/201409/a32-000.pdf

⁵ The Disaster Management Act: https://www.gov.za/sites/default/files/gcis_document/201409/a57-020.pdf

Table 1: National Policy Framework for Disaster Risk Reduction

NATIONAL POLICY FOR DISASTER RISK REDUCTION	
Local Government Systems Act (No. 32 of 2000)	Section 26: An integrated development plan must reflect applicable disaster management plans.
Disaster Management Act (No. 57 of 2002), as amended	Section 47: Local governments are required to the extent that they have the capacity) to guide organs of state, the private sector, non-governmental organisations, communities and individuals to assess and reduce the risk of disasters including: (a) The development and implementation of appropriate prevention and mitigation methodologies (b) The integration of prevention and mitigation methodologies with development plans, programmes and initiatives (c) The management of high-risk developments Section 53: Disaster management plans for municipal areas: (1) Each municipality must: (d) Provide measures and indicate how it will invest in disaster risk reduction and climate change adaptation including ecosystem and community-based adaptation approaches Section 53. (2) A disaster management plan for a municipality must: (1) Place emphasis on measures that reduce the vulnerability of disaster-prone areas, communities and households (a) Provide appropriate prevention and mitigation strategies

Climate Change Act (No. 22 of 2024)	Section 7(1) Every organ of state that exercises a power or performs a function that is affected by climate change, or is entrusted with powers and duties aimed at the achievement, promotion and protection of a sustainable environment, must review and if necessary, revise, amend, coordinate and harmonise their policies, laws, measures, programmes and decisions to— • ensure that the risks of climate change impacts and associated vulnerabilities are taken into consideration; and • give effect to the principles and objects set out in this Act. Principles under Section 3 require: The interpretation and application of this Act must be guided by— (f) the need for decision-making to consider the special needs and circumstances of localities and people that are particularly vulnerable to the adverse effects of climate change, including vulnerable workers and groups such as women, especially poor and rural women, children, especially infants and child-headed families, the aged, the poor, the sick and persons with disabilities; (g) the need for a risk-averse and cautious approach to be adopted, which takes into account the limits of current knowledge about the causes and effects of climate change and the consequences of decisions and actions in relation thereto; (h) the need for climate change mitigation and adaptation responses to be informed by evolving climate change scientific knowledge and decisions which must be based on the best available science, evidence and information; (i) an effective climate change response which requires preventative measures to mitigate the causes of climate change and to strengthen resilience through the adoption of adaptation measures;
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2.3. HAZARD PROFILE FOR THE LANGEBERG MUNICIPALITY

It is important to note that the plan make provisions for the following priority hazards:

- (i) Flooding (urban and riverine flooding)
- (ii) Informal structure fires and
- (iii) Wildfires

However, it is important to note that DRR also aims to address the risk drivers and the underlying vulnerabilities such as poverty and unemployment and measures aimed at reducing vulnerability, building resilience, and managing risk drivers that contribute to reducing vulnerability to disasters for communities at risk.

2.4 CLIMATE CHANGE

Climate change projections indicate that by 2050:

- Drought risk in the Cape Winelands District will more than double (from just over 2 possible drought years per decade to 5 years).
- Temperatures will also continue to rise, resulting in 21 more hot days (temperatures above 30 degrees Celsius) per year in the area.
- Rainfall will decrease and combined with the higher temperatures will increase concerns over water security and the risk of wildfires.
- Increased overall temperatures and lower river water flow will also aggravate issues with pollution and vegetative clogging of waterbodies.

2.4.1. DETAILED CLIMATE CHANGE OUTLOOK FOR MID-CENTURY¹

Detailed climate change projections and their respective implications for development planning are provided in Table 2 below⁶

Table 2: Climate change projection and their implications

CLIMATE PARAMETER ⁽¹⁾	CHANGE FROM PRESENT CONDITIONS (PROJECTIONS FOR 2050 ⁽²⁾	SEASONAL	IMPLICATIONS
Decrease in total annual precipitation ^[3]	Total annual decrease between - 22mm and - 45mm	Decreases in winter rainfall period, with small potential for increased rainfall in summer in further inland areas	Substantial drought risk, as there is a 10%-20% change in some parts
Change in number of days per year with >10mm of rain	-1 to -2 days	Decrease throughout the year, with small possibility of increase in winter in the South	Drought risk, but also slight increase in flood risk in the southern parts

^[1] Most data obtained from projections compiled by the Climate Systems Analysis Group at the University of Cape Town - <https://www.elsenburg.com/wp-content/uploads/2022/08/SmartAgri-Climate-Change.pdf>

^[2] Projections are based on a conservative cluster of outputs from global climate models, avoiding extreme temperature and precipitation projections, and using an SSP2-4.5 scenario. They show a 2030-2060 mean as compared to the 1902-2020 historic mean for temperature, and 1982-2020 mean for precipitation.

^[3] Due to natural variability and lack of a definite historical trend, projections for precipitation remain statically uncertain although most climate models agree on the negative trend.

CLIMATE PARAMETER ⁽¹⁾	CHANGE FROM PRESENT CONDITIONS (PROJECTIONS FOR 2050 ⁽²⁾	SEASONAL	IMPLICATIONS
Change in maximum amount of rain in a 5-day period	+2 to -11 mm	Generally, decreases for all seasons, but slight intensification in winter (East) and summer (North)	Implications for winter flood risk
An additional number of dry years per decade	5 years/decade (3 years more than at present)	~	Water security, ecosystem stress, fire risk, agriculture
Increase in average annual temperature	1.19°C	All seasons	Increased biomass, drying
Additional days per year with temperatures above 30°C	18 days	Most change in summer and little to no change in winter	Fire risk, heat stress, ecosystem stress
Decrease in number of days per year with temperatures below 0°C	-1.5 to -5 days	On the whole, no more frost days in winter	Effectively frost-free, with implications for fruit industry

3. POLICIES AND BY-LAWS SUPPORTING DISASTER RISK REDUCTION

This section identifies and outlines the policies and by-laws of the Langeberg Municipality which support DRR (where applicable).

3.1. LANGEBERG MUNICIPALITY: BY-LAWS FOR DISASTER RISK REDUCTION

NAME OF BY-LAW	SECTION IN BY-LAW	DISASTER RISK REDUCTION MEASURES
LANGEBERG MUNICIPALITY ELECTRICITY SUPPLY BY-LAW, 2023	Section 19	19. Right to disconnect or remove supply (2) In the case of a contravention of section 18(1) of this By-law, the municipality has the right to limit the supply of electricity to the premises from which electricity is supplied or sold and to remove or destroy the illegal connection between premises.
	Section 24	24. Tampering with service connection or supply mains (1) No person may in any manner- (a) tamper or interfere with, any meter or metering equipment or service connection or service protective device or supply mains or any other equipment of the municipality (b) vandalize, fix advertising medium to or deface it; or (c) illegally connect into the electricity wiring of the network or any other consumer.
	Section 27	27. Unauthorized connections No person may directly or indirectly connect, attempt to connect or cause or permit to be connected any electrical installation or part thereof to the supply mains or service connection.

LANGEBERG MUNICIPALITY STORMWATER MANAGEMENT BY- LAW, 2023	Section 4	4. Prohibited conduct (1) states that no person may, except with the written consent of the municipality: (c) undertake any action that is likely to destroy, damage, alter, endanger or interfere with the free flow of water or the stormwater system, or the operation thereof, which action includes, but is not limited to: (vi) changing the design of the use of, or otherwise modify any feature of the stormwater system which alone or in combination with other existing or potential land uses, may cause an increase in flood levels or create a potential flood risk; or (vii) any activity which alone or in combination with other existing or future activities, may cause an increase in flood levels or create a potential flood risk.
	Section 5	5. Application and conditions which municipality may impose (2) states that when considering an application, the municipality may require the applicant to provide the municipality, at own cost, the impact studies such as, but not limited to, environmental impact studies or environmental impact investigations which are required by environmental legislation. (3) also states that the municipality may also require the applicant to establish and provide documentation indicating flood lines.
LANGEBERG MUNICIPALITY WATER AND SANITATION SERVICES BY-LAW, 2023	Section 47	47. Waste of water (1) states that no consumer shall permit- (a) The purposeless or wasteful discharge of water from terminal water fittings; (b) Pipes or water fittings to leak; (c) The use of maladjusted or defective water fittings;

		(d) An overflow of water to persist; or (e) An inefficient use of water to persist The measures mentioned above are also aimed at ensuring efficient use of water, thus mitigating potential water shortages or drought.
	Section 50	50. Equipment specification to facilitate water conservation (1) New or replaced water closet cisterns may not exceed 6 litres in capacity. (2) Only flushing urinals that are user activated may be installed with preferably double flush capacity. (3) All automatic flushing cisterns fitted to urinals, must be replaced with either manually operated systems or non-manual apparatus which causes the flushing device to operate only after each use of such urinal. (4) The maximum flow rate from any tap installed on a hand wash basin must not exceed 6 litres per minute. (5) The maximum flow rate of the shower head may not exceed 7 litres per minute in a water installation where the dynamic water pressure is more than 200kPa at a shower control valve, and where the plumbing has been designed to balance the water pressures on the hot and cold water supplies to the shower control valve. (6) Automatic top up systems using a float valve fed from a potable water source to supply swimming pools and garden ponds are not allowed. (7) Wash hand basins provided in public facilities must be fitted with demand type taps. (8) Showers provided at public facilities must be fitted with demand type valves. (9) Standpipe draw-off taps must be at a height of at least 450mm, measured above ground level. (10) Terminal water fittings installed outside any buildings other than a residential dwelling must— (a) incorporate a self-closing device;

		(b) have a removable handle for operating purposes; or (c) be capable of being locked to prevent unauthorized use; or (d) be of a demand type that limits the quantity of water discharged in each operation. (11) Where a hosepipe is used to irrigate a garden, park or sports field a controlling device such as a sprayer or automatic self-closing device must be attached to the hose end. (12) A hosepipe used for washing vehicles, boats or caravans must be fitted with an automatic self-closing device.
	Section 51	51. Water demand management The municipality may identify water demand management measures to be implemented where considered necessary, which measures may include the installation of water demand management meters.
	Section 52	52. Water restrictions (1) also states that the municipality may, by public notice to prevent the wasteful use of water in terms of section 41 or in the event of water shortage, drought or flood- (e) Prohibit or restrict the consumption of water in the whole or part of its area of jurisdiction in general or for (i) specified purposes (ii) during specified hours of the day or on specified days; an (iii) in a specified manner; and (f) Determine and impose- (i) Limits on the quantity of water that may be consumed over a specified period. The measures stipulated above allow the municipality to put in place measures that can assist in mitigating drought or water shortages by putting in place water

		restrictions and curtailing the supply of water over a specific period.
	Section 53	53. Owner to prevent pollution of water (1) stipulates that an owner shall provide and maintain approved measures to prevent the entry of a substance, which may be a danger to health or the environment or adversely affect the potability of water or affect its fitness for use, into- (a) the water supply system; (b) any part of the water services installation on his premises; (c) any storm water system; (d) any sewage disposal system; and (e) the environment.
LANGEBERG MUNICIPALITY BY-LAW ON MUNICIPAL LAND USE PLANNING, 2015	Section 66	Conditions of approval 66 (2) Conditions imposed in accordance with subsection (1) may include conditions relating to— (i) requirements aimed at addressing climate change;

Recommendations on additional provisions for Disaster Risk Reduction in the municipal By-laws:

- (a) Articulate a provision for managing development on floodplains by limiting expansion on flood-prone areas and areas within the 1:50 and/or 1:100-year flood lines.
- (b) Where no flood lines are available, the municipality must request that the developer undertake a flood line study before approving the development.
- (c) A provision for new developments ensuring that all new developments (residential) install water tanks to mitigate flooding and drought.

While by-laws provide the legal basis to institute DRR measures, they are not DRR measures by themselves. Only once they are enforced can DRR come into effect.

3.2. INTEGRATION OF DISASTER RISK REDUCTION INTO DEVELOPMENT PLANNING PROCESSES

DRR can be realized by considering measures in development planning processes such as the Integrated Development Plan (IDP), its urban planning components such as the Municipal Spatial Development Framework (MSDF), and associated land use planning by-laws. To enable

the integration of DRR into urban planning processes, governance mechanisms must be established, these include the establishment of structures to ensure knowledge sharing between the disaster management section, environment, and the planning section of the municipality to ensure disaster risk considerations are proactively incorporated in planning processes. Moreover, all departments and role players submitting input content of the current and future IDP of the Langeberg Municipality are implored to consider the inclusion and integration of disaster risk management into their strategies, operational planning, and project implementation. Disaster risk concerns should be integrated into the municipal budget to ensure that levels of public expenditure on DRR are sufficient and that there are adequate funding arrangements to manage residual risk.

All departments and role players submitting input content of the current and future IDP of the Langeberg Municipality are implored to consider the inclusion and integration of disaster risk management into their strategies, operational planning, and project implementation. Disaster risk concerns should be integrated into the municipal budget to ensure that levels of public expenditure on DRR are sufficient and that there are adequate funding arrangements to manage residual risk.

Annual reviews of the IDP should reflect on the progress made on institutional arrangements, risk assessment updates, risk reduction objectives, and projects, as well as reflect mechanisms in place for preparedness, response, and contingency planning. In addition, it should include a review of progress on the policy amendments and project implementation of the SDF, according to the priority listings and expenditure programs of the various sector departments' budgets.

This approach avoids creating new risks (disaster risk creation). The next section outlines strategies for integrating DRR into land use management planning.

3.2.1. INTEGRATION OF DISASTER RISK REDUCTION INTO URBAN PLANNING PROCESSES

Considering that DRR can be integrated into various processes, urban planning processes and policies offer a unique integration opportunity. Urban planning tools can be used to integrate utilizing the following strategies:

- **Reducing exposure to risk by managing developments in hazardous areas.**

Poorly managed urban planning is a major contributor to climate-related disaster risk, such as riverine flooding. Curtailing expansion into high-risk areas and adopting a strategy to reduce existing risk where communities are settled already is critical. Moreover, this also

means ensuring that low-cost housing is suitably located as it is often placed in high-risk areas as these areas are the ones often available for impoverished communities.

- **Mitigating the impacts of disasters by preserving natural land and prioritizing land for nature-based solutions.**

Limiting urban sprawl by concentrating urban growth in areas that are already developed by increasing densification assists in preserving natural land and water systems adjacent to urban areas. The preservation of these ecosystems contributes to disaster resilience by protecting natural floodplains, safeguarding water catchment areas, and protecting wetlands. Further, urban planning can integrate natural elements to reduce risk, such as sustainable urban features within the built environment.

To enable the integration of DRR into urban planning, the figure on the next page details a process flow that shows pre-planning measures that need to be undertaken.

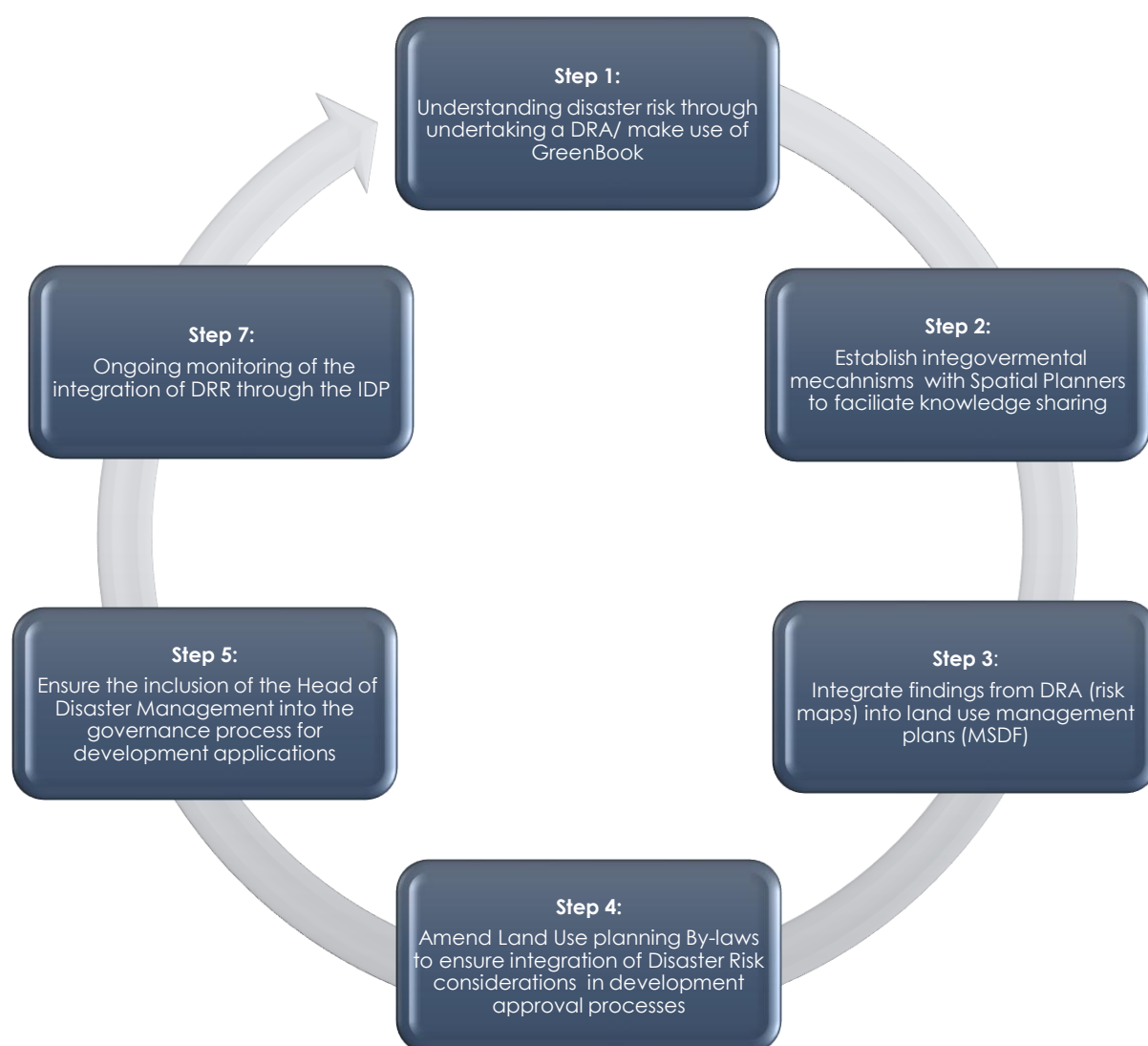


Figure 3: A framework for integration of DRR into the MSDF and development planning approval process

It is imperative that to achieve sustainable development, the municipality integrates DRR into its urban planning processes in a coordinated and intentional manner. This can be expressed through the governance and policy mechanisms of the municipality such as land use planning processes.

3.2.2. OPPORTUNITIES FOR INTEGRATION OF DISASTER RISK REDUCTION MEASURES INTO SECTOR PLANS

DRR can be integrated into sector plans to build resilience and support sustainable development, this can be done through:

1. Vulnerability reduction through positioning local economic development for communities with multiple vulnerabilities.
2. Integration of DRR into infrastructure projects by using risk knowledge to inform the siting of infrastructure and developments.
3. Integration of DRR into housing projects by ensuring that risk knowledge is taken into consideration for siting and the design of housing projects.
4. Using transport plans to reduce vulnerability and ensure transport services are resilient against shocks.

4. DISASTER RISK REDUCTION MEASURES

This section outlines the current and proposed DRR measures for flooding (riverine and urban), informal settlement fires and wildfires.

4.1. DISASTER RISK REDUCTION MEASURES FOR FLOODING (RIVERINE AND URBAN)

TECHNOLOGICAL HAZARDS	
FLOODING (RIVERINE AND URBAN)	
Objective	To reduce the impact of flooding on people, property, and infrastructure and to prevent the placement of infrastructure and residential areas in flood prone areas.
Areas Affected	Langeberg Municipal Area.
Performance Indicators	A reduction in urban areas impacted by flooding.
	An increase in community resilience to flooding.
CURRENT DRR MEASURES	
DESCRIPTION	STAKEHOLDERS
INFRASTRUCTURE	
Upgrading Breede River pump station in Ashton	Langeberg Municipality
Formalizing of stormwater drainage in Bonnievale	Langeberg Municipality
EDUCATION, TRAINING AND AWARENESS	
Awareness to address the impact of pollution in the informal settlement	Langeberg Municipality
Flood awareness in McGregor informal settlement as the settlement has a high-water table.	Langeberg Municipality
Disaster Awareness Campaign in the form of an industrial theatre for primary school learners.	Western Cape: Provincial Disaster Management Centre (WC: PDMC)
Disaster Management awareness which addresses amongst others flooding	Cape Winelands District Municipality (CWDM)

PREPAREDNESS PLANNING	
Distribution of Impact-Based Severe Weather Warnings to role-players	Langeberg Municipality, CWDM, WC: PDMC
EPWP project to address stormwater and road maintenance	Langeberg Municipality
Development of a River Maintenance Management Plan for Montagu	Langeberg Municipality
Dam safety plan for the dams in McGregor being developed	Langeberg Municipality
Standard Operating Procedures (SOP) for the closure of low water bridges during flooding	Langeberg Municipality
Early warning systems for pump station protection for all areas and the development of an SOP	Langeberg Municipality
Development of dam safety plan for Ashton storage dam	Langeberg Municipality
A plan for silt removal and repairs to Houtbaai River and Keisers river has been approved	Langeberg Municipality
Procurement of excavator for river clearing	Langeberg Municipality
PROPOSED DRR MEASURES	
INFRASTRUCTURE	
Construction of a bridge to McGregor sewerage plant that have been washed away	Langeberg Municipality
Relocation of the McGregor sewerage plant	Langeberg Municipality
Upgrading of an alternative access route for Montagu	Langeberg Municipality
Upgrading of low water bridges in Montagu	Langeberg Municipality
Stabilization and repair to the Hospital Embankment	Department of Health and Wellness
Reinstatement of embankments of the Hoeks River	Langeberg Municipality
Upgrading of stormwater drainage in Montagu	Langeberg Municipality
EDUCATION, TRAINING AND AWARENESS	
Establishment of Disaster Awareness Working Group to coordinate awareness initiatives by all role players working in the municipal area.	Langberg Municipality, CWDM. WC: PDMC, Department of Social Development (DSD), Department of

	Local Government Community Development Workers (DLG CDW)
Development of annual awareness strategy for collaborating on awareness	Langberg Municipality, CWDW. WC: PDMC, DSD, DLG CDW
Awareness of emergency number	Langeberg Municipality
Utilize existing community structures and forums such as NPO Forum to create awareness in communities.	DSD, Langberg Municipality
Initiate community dialogues to educate community members about fires	DSD, Langberg Municipality
Community dialogues in Sotho to address language barriers to create awareness of flooding and pollution	DSD, Langeberg Municipality
Community awareness about the impact of dumping in stormwater drainage	Langeberg Municipality
Placement of standing items on Ward Committee meetings to create awareness about flooding and prevention and preparedness messages	Langeberg Municipality
PREPAREDNESS PLANNING	
Updating the stormwater master plans for Ashton, Bonnievale, McGregor and Montagu	Langeberg Municipality
EPWP stormwater cleaning project	Langeberg Municipality
Removal of waste from waste places (Stormwater areas) in Nkqubela	Langeberg Municipality
Development for River Maintenance Management Plans for all rivers in towns except for Montagu	Langeberg Municipality
Facilitation of the River Maintenance Management Plan for Montagu by the Water Users Association	Langeberg Municipality
Removal of silt and the rehabilitation of rivers damaged during flooding	Langeberg Municipality
Formalization of a protocol for cross boundary early warnings i.e. water raising in rivers	Langeberg Municipality
Flood line studies required for all rivers	Langeberg Municipality
Hydrological study for De Hoop Valley to address flooding impacting Johan de Jong Drive	Langeberg Municipality
Hydrological study for the Martinus Vlei near Unipak and the Ashton Water Reserve	Langeberg Municipality
Development of a Flood Contingency Plan for the Municipality	Langeberg Municipality
Development of community early warning systems	Langeberg Municipality

Formalize the process of distribution of early warnings	Langeberg Municipality
Procurement of additional river clearing equipment	Langeberg Municipality
Annual clearing under the Voortrekker Bridge in Montagu as winter preparedness initiatives	Department of Infrastructure

4.2. DISASTER RISK REDUCTION MEASURES FOR INFORMAL STRUCTURE FIRES

TECHNOLOGICAL HAZARDS	
INFORMAL STRUCTURE FIRES	
Objective	To build resilience by reducing the number of fire incidents in informal settlements by putting in place DRR measures that aim to protect lives and ensure sustainable livelihoods.
Areas Affected	Informal settlements within the Langeberg Municipality.
Performance Indicators	A substantial reduction in the occurrence of informal settlement fires.
	A reduction in several houses affected by informal settlement fires.
CURRENT/ KNOWN DRR MEASURES BEING IMPLEMENTED	
DESCRIPTION	STAKEHOLDERS
INFRASTRUCTURE	
Informal settlement upgrade project in Boekenhoutskloof, Bonnievale	DOI, Langeberg Municipality
Formalizing illegal connections to houses and dwellings in Bonnievale	Langeberg Municipality
Minimizing illegal connections through the upgrading of due to the upgrading of services and electrical infrastructure	Langeberg Municipality
Relocation of households to White City in McGregor	Langeberg Municipality
Upgrading of main Eskom line in Langeberg area as it has reached capacity	Eskom
Land acquisition in the process to relocated people from Nkqubela in Robertson	Langeberg Municipality
Development of the Kingna Housing development in Montagu	Langeberg Municipality
PREPAREDNESS PLANNING	
Installation of smoke alarms	Langeberg Municipality, WC: Fire and Rescue Services (WC: FRS)
Provision of Fire Services Capacity Grant	WC: FRS

Fire hydrant maintenance programme	Langeberg Municipality
Establishment of a dedicated emergency number for Fire Services	Langeberg Municipality
Security Consortium to respond to incidents of land invasions	Langeberg Municipality
Development of a Pre-Attack Plan for McGregor	WC: FRS, Langeberg Municipality
Budget for emergency relief	Langeberg Municipality, CWDM
AWARENESS, EDUCATION AND TRAINING	
Fire and life safety awareness in communities, schools and crèches	Langeberg Municipality
Awareness conducted during the installation of smoke alarms	Langeberg Municipality
Support to municipalities with awareness materials	WC: PDMC, WC: FRS
Emergency number awareness	Langeberg Municipality
Disaster Awareness Campaign in the form of an industrial theatre for primary school learners.	WC: PDMC
Disaster Management awareness which addresses amongst others informal settlement fires	CWDM
Youth Ambassadors Programme in McGregor	DSD
Job readiness and other sessions in Zolani	DSD
Collaboration with McGregor Business Forum to support community initiatives	DSD
PROPOSED DRR MEASURES	
DESCRIPTION	RESPONSIBLE/ IMPLEMENTING ENTITY
INFRASTRUCTURE	
Super blocking of Nelson Mandela square	Langeberg Municipality
Construction of Fire Stations in Montagu and Bonnievale	Langeberg Municipality
Development of Heyland for mixed development. This will accommodate informal settlement residents from Droëheuwel and Nkqubela.	Langeberg Municipality
Development of 205 units at Robertson Heights	Langeberg Municipality

Development and servicing of Droëheuwel	Langeberg Municipality
PREPAREDNESS PLANNING	
Roll out of smoke alarm project in the municipality	Langeberg Municipality, WC: Fire and Rescue Services
Upgrade to the Langeberg Municipality's Fire Services Control Room	Langeberg Municipality
Expansion of the Unifi Reporting system for collation of statistics and reporting	Langeberg Municipality
Development of Pre-Attack Plan for other towns	WC: FRS, Langeberg Municipality
Development of a SOP for emergency relief	Langeberg Municipality
Establish a Food Security Council which can be utilized during incidents	DSD, Langeberg Municipality
EDUCATION, TRAINING AND AWARENESS	
CDW workers to assist against fire and awareness.	CDWs
Community outreach and awareness to the Bonnievale residents	DSD
Training of volunteers to work with full-time staff in emergencies	Langeberg Municipality
Awareness within Boekenskloof and Bonnievale for fires and safety	Langeberg Municipality
Expansion of programmes and counselling services to address substance abuse	CDW, DSD
Development of annual awareness strategy for collaborating on awareness	Langeberg Municipality, CWDM. WC: PDMC, Department of Social Development (DSD), Department of Local Government (DLG) Community Development Workers (CDW), Working on Fire (WOF)
Establishment of Disaster Awareness Working Group to coordinate awareness initiatives by all role players working in the municipal area.	Langeberg Municipality, CWDM. WC: PDMC, DSD, DLG CDW, WOF

Community dialogues in Sotho to address language barriers to create awareness of fires	DSD, Langeberg Municipality
Utilize existing community structures and forums to create awareness in communities.	DSD, Langeberg Municipality
Initiate community dialogues to educate community members about fires	DSD, Langeberg Municipality
Services and projects to address substance abuse in communities	DSD
Training of Control Room Operators and Fire officials on Unifi/FireWeb	Langeberg Municipality
Training of Ward Committees on their role and function during emergencies	Langeberg Municipality
Expansion of the Youth Ambassadors Programme in other communities and the training of these youth in fire safety and awareness	DSD
ENFORCEMENT	
Enforcement of By-laws	Langeberg Municipality
GOVERNANCE	
Re-establish the Disaster Management Advisory Forum	Langeberg Municipality

4.3 DISASTER RISK REDUCTION MEASURES FOR WILDFIRE

HYDRO-METEOROLOGICAL HAZARDS	
WILDFIRE	
Objective	To undertake measures to reduce fire load and reduce the number of uncontrolled fires.
Areas Affected	Areas in the wildland-urban interface, open spaces, rural farms and protected areas within the municipality.
Performance Indicators	A reduction in uncontrolled fires in the Langeberg Municipality.
	A reduction in fuel load.
	An increase in the number of prescribed burns completed in high-risk areas
	All fire breaks are regularly maintained.
CURRENT/KNOWN DRR MEASURES BEING IMPLEMENTED	
DESCRIPTION	RESPONSIBLE/ IMPLEMENTING ENTITY
INFRASTRUCTURE	
Fire breaks are developed on or next to Cape Nature's protected areas.	CapeNature
Fuel load reduction (alien clearing and prescribed burning) on or adjacent to protected areas.	CapeNature
Combined alien vegetation management and awareness.	CapeNature
Ongoing alien vegetation clearing in water catchment areas.	CWDM
Firebreaks are being done in various areas in the CWDM- both strategic and tactical.	WFPA
AWARENESS, EDUCATION AND TRAINING	
Ongoing wildfire and disaster awareness campaigns in various areas targeting schools (learners and teachers).	CWDM
Ongoing wild-fire communication through various media platforms.	CWDM

Fire awareness programmes are conducted in schools, radio, communities and social media.	CapeNature
Basic fire training is conducted internally with staff members to provide additional capacity for firefighting.	CapeNature
Ongoing training of members of the WFPA in wildfire fighting strategies and skills using accredited service providers. Training includes Incident Command System (ICS).	WFPA
Ongoing awareness campaigns at all schools and social media platforms.	WFPA, CWDM Communications
PREPAREDNESS PLANNING	
A wildfire workgroup was established with the participation of various stakeholders to coordinate wildfire management and resource management.	CWDM, CapeNature, WoF, WFPA Department of Forestry, Fisheries and the Environment (DFFE)
Developed wildfire response plans for the entire Cape Winelands District area.	CapeNature
Risk mapping for wildfires.	WFPA
District Wildfire Working Group members engage on an ongoing basis with landowners on risk mitigation for fires.	WFPA, CWDM, CapeNature, DFFE WoF
Identify hotspots, record and populate fire trends, and gather other relevant statistics.	CWDM, WFPA
Early Warning System in place for monitoring fire risk which is disseminated to relevant stakeholders.	South African Weather Services (SAWS)
The dissemination of early warnings and the Fire Danger Index (FDI).	Cape Nature, CWDM, CWDM Communications, Winelands Fire Protection Association (WFPA), WC: PDMC
GOVERNANCE AND INSTITUTIONAL MECHANISMS	
Memorandums of Understanding (MoU) are in place with the various local municipalities for wildfire management and issuing permits for controlled burning.	CWDM

Provide comment and input to land use development applications on behalf of the Department of Environmental Affairs and Planning (DEADP).	CapeNature
Review and update of the Human Settlements RedBook.	Department of Human Settlements Council for Scientific and Industrial Research (CSIR)
PROPOSED DRR MEASURES	
DESCRIPTION	STAKEHOLDERS
Increase the firefighting fleet to serve the entire CWDM.	CWDM
Establish pre- and post-fire season meetings.	CWDM
Review of relevant by-laws coupled with increasing capacity for by-law enforcement in consideration of the long-term increase in drought and fire risk.	WC: PDMC, CWDM