



# Dzongkhag Disaster Management Planning Guidelines



DEPARTMENT OF DISASTER MANAGEMENT  
MINISTRY OF HOME AND CULTURAL AFFAIRS  
ROYAL GOVERNMENT OF BHUTAN

*"Reducing Disaster Risk For Safe and Happy Bhutan"*



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Ministry of Home and Cultural Affairs  
Royal Government of Bhutan  
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#### Disclaimer

*The document is a compilation of various consultation workshops; desk based research, and analysis of existing documents/reports. Any discrepancies are unintended. Due care has been taken in factual descriptions and data source. This document remains open for any correctness in facts, figures and visuals.*

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## ACRONYMS

<b>CBDRM</b>	Community Based Disaster Risk Management
<b>DDM</b>	Department of Disaster Management
<b>DDMC</b>	<i>Dzongkhag</i> Disaster Management Committee
<b>DM</b>	Disaster Management
<b>DM Act, 2013</b>	Disaster Management Act of Bhutan, 2013
<b>GNH</b>	Gross National Happiness
<b>HVCA</b>	Hazard, Vulnerability, Capacity Assessment

## ACKNOWLEDGEMENT

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The Department also acknowledges the technical support from the Asian Disaster Preparedness Center (ADPC), and the financial assistance provided by the Global Facility for Disaster Reduction and Recovery (GFDRR) of The World Bank (WB).

# CHAPTER 1

## INTRODUCTION





## Rationale

As per the Disaster Management Act of Bhutan 2013, Sections 67, 68, 74, 76 and 77 state that every agency notified by the National Disaster Management Authority (NDMA) and private sector are mandated to prepare its Contingency Plan. Under Section 31 and 77, the Dzongkhags, through the Dzongkhag Disaster Management Committees (DDMC), shall develop, review, update and implement the Dzongkhag Contingency Plan in consultation with the local governments within its jurisdiction. Section 74 states that the Department of Disaster Management (DDM) shall prepare the National Plan in line with the Contingency Plan prepared by the agencies and Disaster Management Committees. The Dzongkhag Contingency Plans shall be submitted to NDMA as per Section 78. The Section 79 prescribes that the Contingency Plan should be updated at least once a year whereas the review of the plans will take place every five years.

## Disaster Management Planning in Bhutan

National and Local Government Plans of Bhutan are guided by the development philosophy of the Gross National Happiness (GNH). In this regard, the implementation of short- and long-term plans by different sectors holds key to achieving the results set forth in the central plans.

However, DM planning and implementation at the national or local level could not draw sufficient attention in the past due to the absence of a dedicated and devolved DM system backed up by legal instruments. Nonetheless, the Government invested a fair amount of resources in initiating and strengthening the Community Based Disaster Risk Management (CBDRM) throughout the 20 *Dzongkhags* as a process to enable them to develop their own DM Plans.

After the enactment of the Disaster Management Act of Bhutan, 2013 (DM Act, 2013), the Government has started putting together its efforts for promoting DM in Bhutan at all levels. As one of the significant part of such efforts, *Dzongkhag* DM plans will be developed and mainstreamed into the **Five-Year Plans** for resource allocation and effective implementation. As a first step in this direction, the Guideline has been developed with a view to facilitating the DM planning process to be undertaken by the *Dzongkhag* Disaster Management Committees (DDMCs).



## Legal Context

Under Section 77 of the DM Act, 2013, *Dzongkhags*, through DDMCs, are mandated to develop DM plans in consultation with *Dzongkhag* sectors and other relevant agencies. Section 78 prescribes that the DDMCs shall submit the *Dzongkhag* DM plans to the National Disaster Management Authority. Similarly, under Section 79, DM plans should be updated at least once a year whereas the review of plans will take place every five years.

## Objectives

The Guideline seeks:

- i. to provide a systematic approach and methodology to develop *Dzongkhag* DM plans in accordance with section 77 of the DM Act, 2013; and
- ii. to provide assistance and guidance to DDMCs for preparing realistic and implementable *Dzongkhag* DM plans by establishing linkages with **Annual** and **Five-Year Plans**.

## Framework

The Guideline has been developed considering the following framework:

- i. It is consistent with the DM Act, 2013 as well as the Disaster Management Strategic Policy Framework so that all the technical and operational aspects could be managed within a legal and technical framework.
- ii. It seeks to provide the opportunity of mainstreaming DRR into socio-economic development plans, programs and projects.
- iii. It focuses on developing mitigation and preparedness as well as post-disaster recovery and reconstruction activities.
- v. Simulation exercises were conducted in Wangdue Phodrang *Dzongkhag* and Gelephu Thromde, in order to pilot the draft Guidelines and help prepare the core parts of the Contingency Plans. Participants' feedback was documented and incorporated into the Guidelines;
- vi. Guidelines were revised and finalized taking into consideration the comments received;



- vii. Guidelines were approved by DDM and shared with Dzongkhags and other relevant stakeholders.

## Key Considerations

While developing a *Dzongkhag* DM plan, following key considerations have to be kept in mind:

- i. Refer to the **Five Year Plan** in order to create better linkages between DM and development activities. This will help Dzongkhags make the DM plan an integral part of the central planning document for resource allocation and effective implementation.
- ii. The DM Planning activity should be completed before/along with the formulation of the **Five Year Plan**.
- iii. The **Five Year Plan** provides key result areas for sectors and *Dzongkhags*. The DM plan, therefore, must make a clear reference to those key results areas for ensuring linkages to the outcome of the sector plan.
- iv. Seek professional inputs from relevant agencies, especially during the process of risk assessment.
- v. Refer to CBDRM plans and Hazard, Vulnerability and Capacity Assessment (HVCA) results for completing risk assessment at Dzongkhag level.
- vi. Reference to be made to DM terminologies that are enshrined in the DM Act, 2013. However, for additional terms and concepts, UNISDR's glossary of terms may be consulted.

## Users

This guideline is developed with the primary aim of enabling the local governments and DDMCs to prepare their respective DM plans. Therefore, the Dzongkhag Disaster Management Officers, Dzongkhag Planning Officers and other stakeholders identified by DDMCs, will be the primary users of this guideline.

However, Thromde Disaster Management Sub-committees, Dungkhag Disaster Management Sub-committees and Gewog Disaster Management Sub-committees can also use this guideline if the formations of such sub-committees are mandated by the DDMC as per Section 35.

## Guidelines Development Process

A number of relevant documents were reviewed in addition to individual meetings, group discussions and multi-stakeholders' consultations at the national and local levels. The Department of Disaster Management (DDM) prepared the initial draft of the guideline in 2009 in an attempt to complement the requirements specified in the National Disaster Risk Management Framework, 2006. Later, a revised version of the guideline was shared with Dzongkhags for inputs in 2012 followed by a multi-stakeholders consultation with Dzongkhag officials and NGOs for more inputs.

In 2013, a more detailed version of the guideline was developed and reviewed by a Technical Working Group (TWG) and Dzongkhag Planning Officers (DPO)/Dzongkhag Disaster Focal Persons (DFP). It all led to this final version of the guideline.

*Dzongkhag*  
Disaster Management  
Planning Guidelines



CHAPTER 2  
PLANNING  
APPROACH AND  
PROCESS





## Approach

The DM Act, 2013 provides the legal basis for the formulation of *Dzongkhag* DM plans through DDMCs, while the Five Year Plan offers operational and budgetary options for the implementation of *Dzongkhag* DM plans. Similarly, CBDRM framework and interventions also contribute towards the formulation of Dzongkhag DM planning and implementation. Therefore, the approach to developing *Dzongkhag* DM plans seeks to benefit from the existing instruments (**Five Year Plan** and CBDRM) in order for Dzongkhag sectors to be able to make maximum use of available options and opportunities. The Guideline encourages Dzongkhags to identify and prioritize DM plan activities corresponding to the relevant sectors.

Likewise, the Guideline reinforces the fact that it is not the plan but the planning process and its practical implementation that is important. An inclusive planning process yields far better results both in terms of the plan's ownership by all stakeholders as well as the overall implementation of identified interventions within a stipulated period of time.

## Planning Authority

Section 30 of the DM Act, 2013 provides the legal and administrative mandate to DDMCs for coordinating and managing all disaster management operations under the direction and supervision of the National Disaster Management Authority. The Planning Authority will, therefore, be the DDMCs in their respective Dzongkhags. Also, under Section 77 of the DM Act, 2013, DDMCs are mandated to prepare the *Dzongkhag* DM plan.

## Stakeholders

Section 25 of the DM Act 2013 prescribes the composition of DDMCs, which should be considered as key members responsible for the formulation of the DM Plan. The Dzongkhag sectors should be the essential stakeholders in addition to other significant members from relevant agencies/regional offices. DDMCs will discuss and prepare a list of most relevant stakeholders, which will then be circulated to all concerned .<sup>1</sup>

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<sup>1</sup> A sample of stakeholders' Terms of Reference is annexed for further guidance

## Process

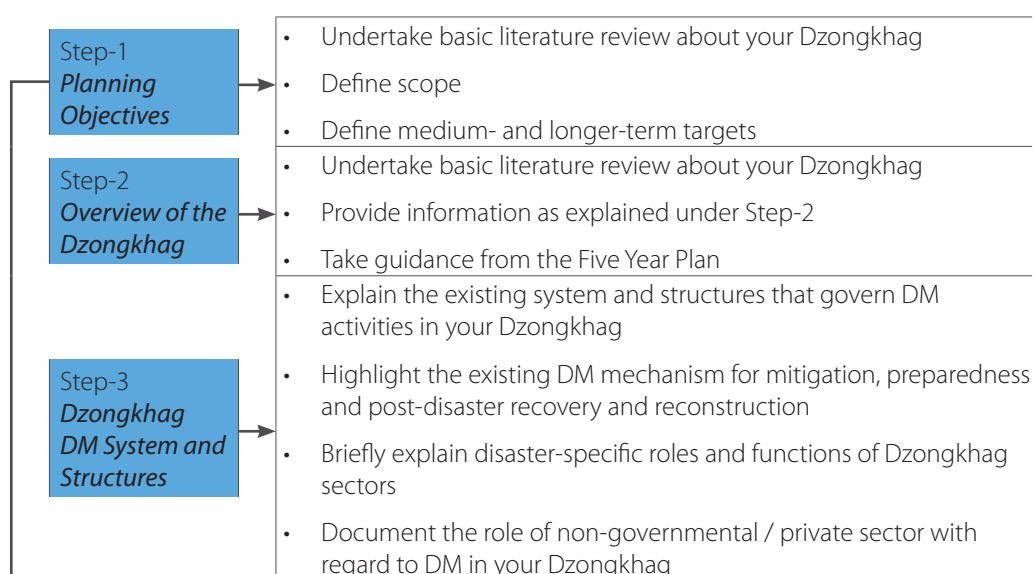
The success of an effective DM plan lies in the planning process that allows different stakeholders to generate gather, process and analyze required technical information and data; formulate strategies; prioritize actions; allocate budget; and devise a workable implementation mechanism.

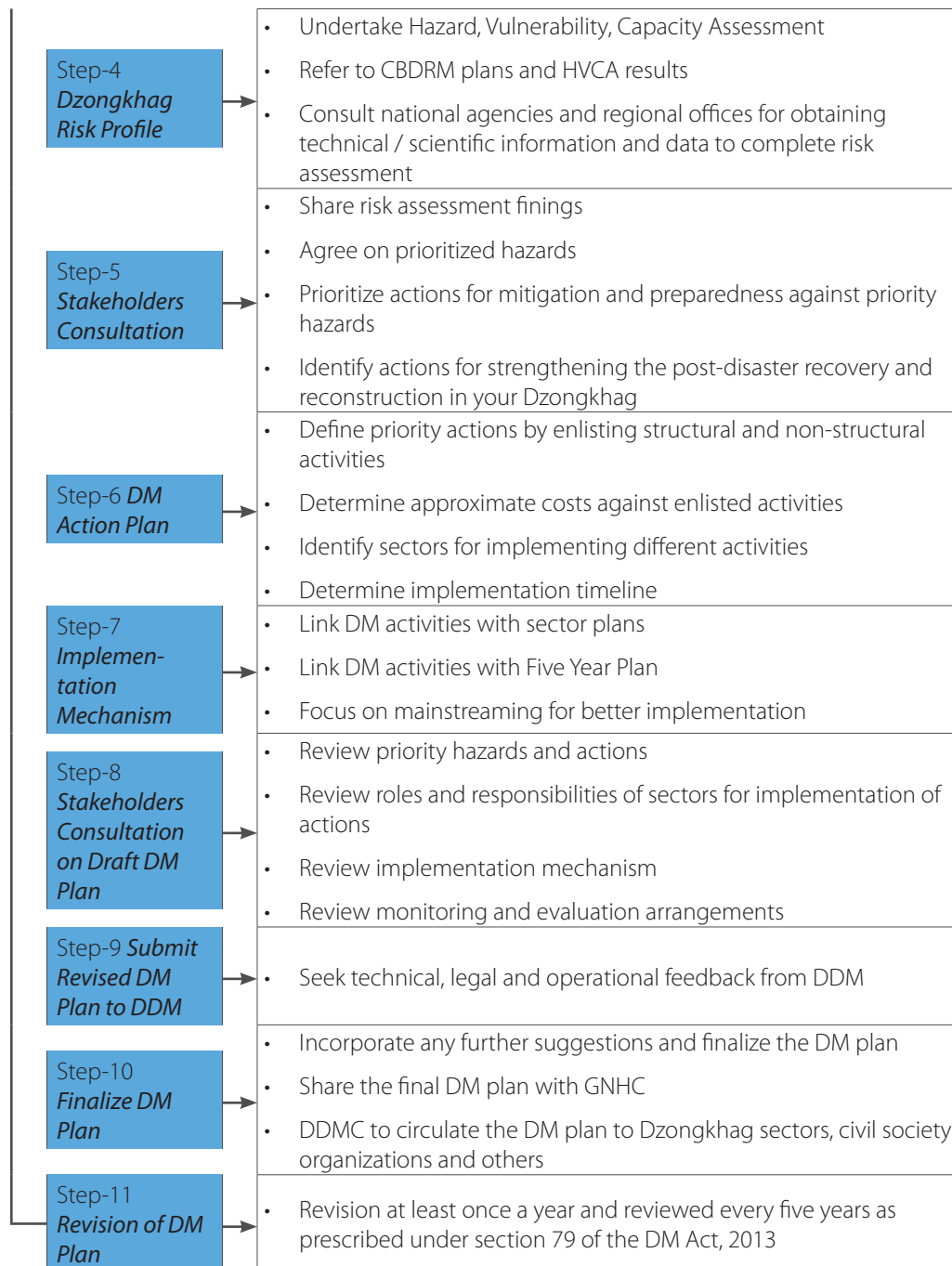
The following pages offer guidance with regard to initiating the DM planning process and undertaking different activities in a logical order. The guidance essentially provides a framework within which the entire planning process should take place. As far as the methodology for each planning step is concerned, it is neither exhaustive nor rigid.

Dzongkhag officials are encouraged to use and adapt the existing tools and templates for gathering, generating, processing and analyzing disaster-related information in the context of each *Dzongkhag*.

In view of a number of natural and human factors, the nature and type of risks and vulnerabilities would continue to change and affect the local populations in different ways. It is, therefore, imperative that the DM plans are reviewed and updated regularly in order to be able to address the changing patterns of risks and vulnerabilities in Bhutan.

**Figure 1**  
DISASTER  
MANAGEMENT  
PLANNING  
GUIDELINES





Following step-by-step guideline explains the process and methodology for developing a Dzongkhag DM plan:



## Step 1

### Formulate Planning Objectives

Discuss and formulate planning objectives in terms of specific targets and scope that the DM plan intends to achieve over a specific period of time. The time period should be in coherence to the planning process time-line, which is followed during the preparation of the Annual Work Plan and Five Yearly Plan by the local governments. Additionally, the objectives must align with those of the objectives of the overall Dzongkhag Plan.

The objective and scope of the DM Plans could be



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The DM Plan for Dzongkhag is prepared as per the DM Act 2013 for the use of Dzongkhags, the DMMC and all stakeholders for implementation of DM activities in response of natural disasters and other manmade disasters

**The DM Plan provides a set of arrangements ( short, medium and long Term) which describe how the Preparedness, Response, Relief and Recovery activities will be handled.**

**Contingency Plan for specific situation is part of this DM plan where sectoral response are incorporated.**

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## Step 2

### Overview of the Dzongkhag

Find out the most updated information and data about the Dzongkhag for which the DM plan is being developed. Provide brief information about the geography, population, weather patterns, and the administrative system, etc.

Additionally, provide information about Dzongkhag's development strategy and key priorities and also, enlist some of the key challenges and issues with regard to the overall development programmes in the Dzongkhag. Such information are available in the Annual Statistics produced by the National Statistics Bureau. Additional information for DM plan must be authentic and verifiable.

## Step 3

### Dzongkhag DM System and Structures

Describe the organizational structure that exists at the **Dzongkhag, Gewog, Thromde** and community levels for disaster risk management at the time of developing the DM plan.



Provide details about the existing mitigation, preparedness as well as the post-disaster recovery and reconstruction mechanism at the *Dzongkhag* level. Such information may include:

- i. Names of **Dzongkhag** sectors/**Gewogs/Thromdes/Chiwogs** and regional offices, which are mandated to undertake mitigation, preparedness, recovery and reconstruction activities;
- ii. Nature of specific disaster-related activities that each identified sectors/**Gewogs/Thromdes/Chiwogs** and regional offices have actually been performing in the Dzongkhag;
- iii. Explain the existing mechanism for recovery and reconstruction activities at the **Dzongkhag** level;
- iv. Describe the key challenges that the **Dzongkhag** sectors/**Gewogs/Thromdes/Chiwogs** and regional offices have been facing with regard to performing disaster-related activities.

One of the most important aspects, which should be explained, is the financial arrangement for undertaking different kinds of disaster-related activities by different sectors/**Gewogs/Thromdes/Chiwogs** and regional offices in the Dzongkhag. This will require some background work such as the information about the volume of budget that has been earmarked for disaster management activities over the past few years. Similarly, it would be useful to look for any instances of disaster-specific budget allocated by sectors/**Gewogs/Thromdes/Chiwogs** and regional offices as part of annual or **Five Year Plans**.

The DM plan should also provide information about the ongoing and planned disaster-related activities of the national and international NGOs as well as the private sector in the Dzongkhag.

#### Step 4

### Dzongkhag Risk Profile

Literature review will be required to undertake assessment of hazards, vulnerabilities and capacities. Relevant maps, tables and figures must be included. It would be useful to refer to the existing CBDRM and HVCA tools, especially those developed by the International Federation of the Red Cross (IFRC).

A. **Hazard Assessment**<sup>2</sup>: Start it with the history of past disasters that the Dzongkhag has experienced.

Provide summary of damages and losses that past disasters have inflicted upon people and the environment of specific areas of the Dzongkhag. It should include both public and private-sector damages and losses. A brief analysis of the overall impact of past disasters on Dzongkhag economy would be useful.

Produce a *Dzongkhag* Hazard Map describing areas prone to specific hazards. This will help determine the most hazard-prone areas of the *Dzongkhag* and serve as the basis for future development interventions and risk mitigation measures. A two-pronged research approach can be adopted:

- i. Generate primary information through meetings and discussions with experts, local communities, government officials, NGOs and other relevant stakeholders; and
- ii. Gather secondary information and data by reviewing the existing literature and key disaster statistics of the *Dzongkhag*. This may include, among others, official reports, notes and statistics documented by the national and sub-national governments and line agencies; technical documents and studies developed by NGOs, government institutions and other agencies; and any relevant materials available online.

In short, the Hazard Assessment must provide information about:

- i. Key natural and human-induced hazards in your *Dzongkhag*;
- ii. Brief about the past hazards and their impact;
- iii. Information about the most hazard-prone areas of the *Dzongkhag*;
- iv. List of prioritized hazards that need to be addressed through the DM plan.

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<sup>2</sup> For ease of reference, a template for Hazard Assessment is annexed to this document



B. **Vulnerability Assessment**<sup>3</sup>: Once hazards and risks are understood and prioritized, take stock of the conditions that have been contributing to increasing the level of different types (physical, social, economic, environmental, political, organizational, etc.) of vulnerabilities.

It is also important to contact national technical agencies for their scientific inputs while conducting the hazards and vulnerability assessments.

Additionally, a number of organizations, including IFRC, have developed some user-friendly tools for vulnerability assessment that can be modified in the specific context of each *Dzongkhag*. However, following are some of the basic things to be undertaken in this regard:

- i. Map all the elements at risk such as geographical areas, rural and urban settlements, public and private infrastructure, means of livelihoods, and hazardous sites and industries, etc.
- ii. Try to identify and analyze different conditions that may have contributed to the vulnerabilities in your Dzongkhag.
- iii. Highlight the key challenges in reducing or addressing the identified vulnerabilities.

C. **Capacity Assessment**<sup>4</sup>: Hazard and Vulnerability assessment must be followed by capacity assessment in order to understand the existing capacities that can be used for disaster mitigation and preparedness at the Dzongkhag level. Following steps are important to assess the capacities:

- i. Making an inventory of all the resources available with the government, development partners and the community for disaster preparedness, prevention and mitigation;
- ii. Acquiring information about indigenous techniques that had been helpful in reducing the risk of hazard prone populations and infrastructure; and

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<sup>3</sup> For ease of reference, a template for Vulnerability Assessment is annexed to this docu

<sup>4</sup> For ease of reference, a template for Capacity Assessment is annexed to this document

- iii. Documenting the key challenges with regard to awareness generation, training and capacity building for different stakeholders including community.

Provide a summary of key results of the risk assessment, which should clearly highlight the priority hazards, major forms and causes of existing vulnerabilities, and the major capacities that can be used for reducing disaster risks in the Dzongkhag.

## Step 5

### Multi-Stakeholders Consultation<sup>5</sup>

Once the risk assessment is done, organize a multi-stakeholders consultation inviting all the institutions identified in Step 3 in addition to relevant stakeholders from the non-governmental sector.

Share the key findings of the hazards, vulnerability and capacity assessment and develop consensus on priority hazards that need to be addressed in the *Dzongkhag* DM plan.

Identify structural and non-structural activities separately. Work out the estimated cost together with timeline to implement the identified activities. Also, try to find out answers to the following questions:

- i. What could be the possible funding options for the implementation of identified activities?
- ii. Which of the identified activities can be made part of the **Five Year Plan**?
- iii. Which of the identified activities need to be implemented through stand-alone projects?
- iv. Which of the identified activities can be implemented in collaboration with the private sector / NGOs?

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<sup>5</sup> The Guidelines have suggested two multi-stakeholders consultations to be organized during the DM planning process. However, the DDMC may decide on organizing more than two consultations, if it deems necessary.



## Step 6

### DM Action Plan<sup>6</sup>

During the process of identifying activities and populating the action plan, each *Dzongkhag* sector would come up with both structural and non-structural activities.

Gender, Climate Change Adaptation, and Environmental concerns and considerations must clearly be addressed and reflected as part of priority measures in the DM Plan.

## Step 7

### Implementation Mechanism

DM plan must clearly explain the implementation mechanism. One of the fundamental challenges that a DM Plan may face is lack of strong linkages with and its subsequent integration in the **Five Year Plan**.

At times, creating a separate budget line for the implementation of DM activities becomes difficult. It is, therefore, important for the DM plan to create explicit linkages with the following:

- i. Five Year Plan
- ii. *Dzongkhag* Annual Work Plan

The DM Act, 2013 has made it possible for such linkages to be established through the mainstreaming of Disaster Risk Reduction (DRR) into the development plans, policy, programs and project. For example, under the functions of **DDMCs**, Section 31 (d) calls for ensuring mainstreaming of DRR into the development plan, policy, programme and projects. Similarly, Section 39 (b) binds the Gup and Thrompon / **Thromde** Thuemi to ensure mainstreaming DRR into **Gewog** and **Thromde** plan, policy, programme and projects.

Most significantly, Section 71 of the DMA Act, 2013 makes it clearer that: "Every **Gewog, Thromde, Dzongkhag** and agency shall make provision for funds in its five year plan and annual plan and budget for the purpose of mainstreaming of DRR and carrying out the activities set out in its DM plan".

<sup>6</sup> Based on the inputs of the multi-stakeholders consultation, prepare an action plan spanning over a period of 5 years. A sample template for this purpose is annexed.

The DM Plan must take advantage of the above-mentioned legal entry points of DRR-mainstreaming by making different disaster-related activities a part of regular annual and Five Year Plans.

The DM plan must explain the mechanism through which the national and international non-governmental organizations as well as the private sector could be engaged for the implementation of the DM Plan.

Lastly, the DM plan must also come up with a viable monitoring and implementation mechanism so that the progress on its implementation could be gauged and reviewed, and measures for improvement may be taken.

#### Step 8

### Multi-Stakeholders Consultation on Draft DM Plan

Organize another multi-stakeholders' consultation to discuss, review and improve the first draft of the DM plan.

The consultation must ensure the participation of all key stakeholders such as Dzongkhag sectors, technical institutions, relevant public-sector organizations, and development partners.

Revise the first draft and circulate it to all concerned stakeholders for further comments and suggestions. This should be done through the Dzongkhag Disaster Management Committee.

#### Step 9

### Submit the Revised DM Plan to DDM for Comments

Submit the revised draft of the DM plan to DDM for technical, legal and operational feedback.

#### Step 10

### Finalize the DM Plan

Consider the feedback from DDM while finalizing the DM Plan.

The DDMC will share / circulate the final DM Plan among Dzongkhag stakeholders.



Step 11

### Revision and Updating of DM Plan

The plan should be revised and updated at least once every two years. It should be reviewed every five years as prescribed under section 79 of the DM Act, 2013. This can be coordinated with the timeline of preparing the Annual Work Plan and **Five Year Plan**.





# ANNEX A

## Outline of *Dzongkhag* Disaster Management Plan

Executive Summary

Acronyms

Acknowledgements

Objectives

Disaster Terminology

### Chapter 1

## Overview of the Dzongkhag

1.1 Administration

1.2 Geography

1.3 Weather and Climate

1.4 Demography

1.5 Economy

1.6 Development Framework

### Chapter 2

## Dzongkhag Disaster Management Structures

2.1 Composition of DDMC

2.2 Roles and Responsibilities of DDMC

2.3 Roles of Key Dzongkhag sectors

### Chapter 3

## Disaster Risk Profile of the Dzongkhag<sup>7</sup>

Introduction to Dzongkhag Disaster Management Setup

3.1 Hazard Assessment

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<sup>7</sup> Refer Annex B for templates and guiding notes.



- 3.2 Vulnerability Assessment
- 3.3 Capacity Assessment
  - 3.3.1 Preparedness and Mitigation
  - 3.3.2 Contingency Planning
  - 3.3.3 Emergency Response Management
  - 3.3.4 Recovery and Reconstruction
  - 3.3.5 Research and Training
  - 3.3.6 Role of NGO/Private Sector
- 3.4 Key Challenges

## Chapter 4

### Dzongkhag Disaster Management Action Plan<sup>8</sup>

- 4.1 Preparedness and Mitigation<sup>8</sup>
- 4.2 Recovery and Reconstruction

## Chapter 5

### Implementation Mechanism

- 5.1 Overall Coordination
- 5.2 Resource Mobilization
- 5.3 Monitoring and Evaluation
- 5.4 Reporting system

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<sup>8</sup> Refer Annex D for guidance.

# ANNEX B

## Terms of Reference for DM Planning Stakeholders

### ToRs FOR STAKEHOLDERS

DDMCs may come up with specific Terms of Reference for stakeholders to be involved at different stages of the DM planning process. In a broader context, however, the stakeholders:

- i. Must have the obligation or responsibility execute DM activities to be devised in the plan (for example, Dzongkhag sectors)
- ii. Should be willing to spare time as and when required (for example, civil society members/organizations)
- iii. Should represent most vulnerable geographical areas and groups e.g. women, children and elderly (for example, locally elected individuals, notables, etc.)
- iv. Should possess technical expertise that can be used during the planning stage
- v. Should be committed to providing required / requested information and data during the DM planning process
- vi. Should be willing to act as DRR advocates by raising awareness among hazard-prone communities



## ANNEX C

# Risk Assessment Templates

### Hazard Assessment

Hazards vary according to the geography, topography, climate and land use pattern of an area and thus require different type of mitigation and preparedness measures. Similarly, disaster management is a long-term agenda. It is, however, not possible to deal with each and every hazard that is present in the Dzongkhag. Some risks are considered of insignificant nature and people can live with them. Therefore, it is important to identify most threatening hazards keeping in view their frequency, magnitude and intensity.

While doing Hazard Assessment, consider the following:

#### **Secondary hazards:**

- What types of secondary hazards can the major hazard generate?

#### **Elements at Risk:**

- What are the elements at risk?

#### **Predictability:**

- Is it a low probability and high intensity hazard?
- Is it preventable?
- Is it predictable?

#### **Speed of onset:**

- Is it slow onset or sudden hazard?
- What is the probability of its occurrence?
- What are the warning signs? (how people know the hazard might turn into a disaster)
- What is the time duration between early warning and the onset of the hazard?

**Location:**

- How much area (geographical, population) is exposed to this particular hazard?
- What are the safer areas?

**History:**

- When and what was the last disaster that hit the Dzongkhag?
- How severe it was?
- Is it changing behavior due to climate change?
- What sort of damages did it inflict?

You can record the hazard assessment results for each significant hazard in the following format.

<b>Hazard</b>	<b>Secondary Hazard</b>	<b>Probability of Occurrence</b>	<b>Impact (Damage &amp; Loss)</b>	<b>History</b>

Based on the information put together against each hazard, prioritization process would become easier.



## Vulnerability Assessment

Vulnerability assessment is a process used to identify elements at risk (people, physical infrastructure, livelihoods, crops and services etc.), and analyze the causes that exacerbate existing vulnerabilities or generate new ones. Vulnerability assessment should be hazard specific, as it varies from one hazard to another.

While doing Vulnerability Assessment, consider the following:

### Mapping

- Have you mapped all the elements at risk (geographical areas, population at risk, sectors, public and private infrastructure, level of awareness about disaster risk, unsafe livelihoods, hazardous sites and industries, etc.)?
- Have you identified all conditions contributing to the vulnerability to disaster risk in your Dzongkhag?

### Physical Vulnerability:

- Who are the most vulnerable groups and their location?
- What type of physical infrastructure is vulnerable to specific hazard? (Roads, bridges, public and private buildings, industry, powerhouses etc).
- Why are these structures vulnerable?
- What can be the most viable options to reduce the vulnerability?

### Economic Vulnerability:

- What economic activities are the most vulnerable and why?
- What are unsafe livelihoods even before the disaster?
- Which livelihood activities would be affected by the selected hazard? What types of supplies would be affected by the hazard? (Food, water, medicines, fodder etc.)
- Why economic activities would be affected by the hazard?
- What should be done to reduce the economic vulnerability?

**Social/ Institutional Vulnerability:**

- Is there a functional emergency response system in place?
- What are the gaps in current disaster management system of your Dzongkhag?
- How efficient the institutional mechanism is?
- Are there any legal or inter-organizational issues that hamper the progress on DRR?
- Does a reasonable level of public awareness exist about significant disaster risks?

**Environmental Vulnerably:**

- What natural resources are at risk/?
- What environmental changes are being observed in the area?
- In what ways the identified hazards may affect the environment?

You can record the hazard assessment results for each significant hazard in the following format.

<b>Hazard</b>	<b>Physical Vulnerability</b>	<b>Economic Vulnerability</b>	<b>Social/ Institutional Vulnerability</b>	<b>Environmental Vulnerability</b>

Based on the information against each hazard, prioritization process would become easier.



## Capacity Assessment

Capacity assessment identifies mechanism, resources and conditions that help reduce the consequences of a disaster.

While doing capacity Assessment, consider the following:

### **Physical Capacity:**

- What type of public infrastructure usually remains safe in a disaster?
- What structure would not be affected by hazards?
- Is the physical infrastructure of response and relief departments protected from a disaster?
- Which roads and bridges can be used in a disaster situation?

### **Economic Capacity:**

- What economic activities are not affected by a disaster and why?
- What kind of livelihood has the potential to survive in the case of a disaster?
- Is there any mechanism of risk transfer in place?

### **Social/ Institutional Capacity:**

- Does the *Dzongkhag* have the capacity to manage or mitigate a hazard?
- What is the response capacity of the *Dzongkhag*?
- To what extent *Dzongkhag* is able to meet the basic needs (food, safe drinking water, shelter, health etc) of people in case of a disaster?
- What kind of awareness helps people cope with disasters/hazards?
- What type of local/ traditional mechanisms of disaster management exists in the *Dzongkhag*?

### **Environmental Capacity:**

- What natural resources help cope with a disaster?
- Which natural resources remain safe in a disaster like situation (water sources, pasture, and wild life)?



You can record capacity assessment results against each significant hazard in the following format.

<b>Hazard</b>	<b>Physical Capacity</b>	<b>Economic Capacity</b>	<b>Social/ Institutional Capacity</b>	<b>Environmental Capacity</b>



## ANNEX D

# Action Planning Template

### Action Planning

Based on the Risk assessment results, identify priority areas for devising disaster preparedness and mitigation measures against each prioritized hazard.

Following are the broad priority areas.

1. Preparedness & Mitigation
2. Response
3. Recovery and Reconstruction

While doing Action Planning, consider the following:

- What type of risks this activity would prevent?
  - loss of life
  - loss of livelihood, and environment
  - damage to critical infrastructure
  - loss of or damage to livestock
- Is this activity realistic (easy to implement)?
- Do you have financial resources for this activity?
- Is it cost effective?
- Do you have technical human resource to implement this activity?
- Would the affects of the activity be long-term or short-term?
- Could this activity generate new kinds of hazards?
- Is this activity compatible with other activities?

The DM action planning for preparedness & mitigation, response, recovery and reconstruction may be put in the following table

Key Activities	Nodal Department	Supporting Department / agencies	Timeline
			short
			short
			short
			short





## ANNEX E

### Glossary

The following key terminologies have been taken from the Disaster Management Act, 2013:

#### Disaster

A natural or man-made occurrence, which causes environmental loss, increased mortality, illness or injury, and destroys or disrupts livelihoods, affecting the people or an area as classified under Chapter 9 of the DMA 2013.

#### Disaster Management

A continuous and integrated multi-sectoral process of planning, organizing, coordinating and implementing measures aimed at:

- a) Preventing and reducing disaster risk;
- b) Mitigating severity of disaster;
- c) Capacity building;
- d) Emergency preparedness;
- e) Effective response to disaster;
- f) Effective search, rescue, evacuation and relief operation; and
- g) Recovery and reconstruction activities.

#### Disaster Risk Reduction

The conceptual framework of elements considered with the possibility to minimize vulnerability and disaster risk throughout the society and to avoid or to limit the adverse impact of hazard within the broad context of sustainable development.

## Hazard

A phenomenon, substance or a situation that may adversely affect human life, property, activity or the environment to the extent of causing a disaster.

## Mitigation

A measure aimed at reducing risk, impact or effect of a disaster or an impending disaster situation.

## Preparedness

The state of readiness to deal with a potential disaster situation or disaster and its effect thereof.

## Recovery and Reconstruction

Efforts including development aimed at:

- a) Restoring normalcy in condition caused by disaster;
- b) Mitigating the effect of disaster; or
- c) Creating circumstances that will reduce the risk of similar disasters from occurring.

## Risk

The level of value of expected losses in the form of deaths, injuries, damage to property etc. caused by a hazard.

## Response

Measures taken during or immediately after a disaster in order to bring relief to people and communities affected by the disaster and includes activities such as search and rescue, evacuation, rapid assessment, relief distribution among others.

## Structural Measures

Physical construction to reduce or avoid possible impacts of hazards or application of techniques to achieve hazard resistance and resilience in structures of systems.



### Non-Structural Measures

Any measure not involving physical construction that uses knowledge, practice or agreement to reduce risk and impact.

### Vulnerability

A condition resulting from physical, social, economic, and environmental factors or processes, which increases the susceptibility of a community to the impact of a hazard.





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