

## **Section A:**

# **Introduction**

## Introduction

### 1. Background

The Union of Myanmar located between latitudes 9°32' N & 28°31' N and longitudes 92°10'E & 101°11'E, with a total area of 676,578 sq. km is the largest country in the mainland South-East Asia.

**Administrative Units:** It is administratively divided into 7 Divisions and 7 States. The Divisions and States are sub-divided into 67 Districts, Districts into 330 Townships, Townships into Wards and Village Tracts. A Village Tract comprises villages. Table 1<sup>1</sup> shows the State-wise/Division-wise number of Districts, Townships, Sub-townships, Wards, Village Tracts and Villages.

**Table 1** Administrative units of Myanmar

Division/State	Districts	Townships	Sub-townships	Wards	Village Tracts	Villages
Kachin State	4	18	9	143	597	2583
Kayah State	2	7	1	31	79	620
Kayin State	3	7	6	74	374	2161
Chin State	2	9	3	37	471	1352
Mon State	2	10	2	80	383	1200
Rakhine State	4	17	3	133	1040	3860
Shan State	12	55	20	432	1629	15387
Bago Division	4	28	-	254	1423	6452
Sagaing Division	8	37	3	187	1768	6087
Tanintharyi Division	3	10	6	83	264	1230
Magway Division	5	25	1	163	1541	4771
Mandalay Division	8	36	2	297	1597	5424
Yangon Division	4	45	1	742	620	2089
Ayeyarwady Division	6	26	7	235	1912	11701
<b>TOTAL</b>	<b>67</b>	<b>330</b>	<b>64</b>	<b>2,891</b>	<b>13,698</b>	<b>64,917</b>

**Population:** The estimated population of Myanmar is 56.52 million in 2006-07, registering a growth rate of 2.02 percent over the previous year. Approximately 70 percent of the population resides in rural areas. The population density is 77 per km<sup>2</sup> and it ranges from 595 persons per km<sup>2</sup> in Yangon Division to 14 per km<sup>2</sup> in Chin State.

The Union of Myanmar is made up of 135 national groups speaking over 100 languages and dialects. The major ethnic groups are Kachin, Kayah, Kayin, Chin, Mon, Bamar, Rakhine and Shan.

<sup>1</sup> RRD and ADPC, 'Institutional Arrangements for Disaster Management in Myanmar'

**Economy:** Myanmar is regarded as an agriculture based country as it accounts for 40.2 percent of the GDP and employs 64.1 percent of the work force. Others sectors such as Livestock-breeding, fishery, forestry, services and trade contribute the rest of the GDP.

**Climate:** It has a tropical climate with three seasons namely Rainy (mid-May to mid-October), Winter (mid-October to mid-February) and Summer (mid-February to mid-May). There is large variation in average precipitation as coastal areas receive average precipitation in the range of 4000mm to 5600 mm while central dry zone receives precipitation in the range of 600mm to 1400 mm.

## **2. Hazard Profile of Myanmar**

The Union of Myanmar is exposed to multiple natural hazards and it has been periodically hit by natural disasters. Recent major natural disasters are as follows:

- Cyclone Nargis, 2008 led to loss of 84,537 human lives, 53,836 persons missing and damage to property to the tune of approximately 4.1 billion USD<sup>2</sup>,
- Cyclone Mala, 2006 led to loss of 37 lives
- Indian Ocean Tsunami, 2004 claimed 61 lives and
- Taungdwingyi Earthquake (M: 6.8 RS), 2003 led to loss of 7 lives

Fire is the most frequent disaster in Myanmar and accounts for 71 percent of the disasters within the country. Floods and Storms account for 11 percent and 10 percent of the disasters respectively while other disasters including earthquake and landslide accounts for 8 percent of the disasters.

An overview of nine frequent hazards of Myanmar is as follows:

### **2.1 Earthquake**

The earthquakes in Myanmar originate from two main sources namely ( i ) Result of collision between the northward moving Indian Plate underneath the Burma Plate, and ( ii ) The northward movement of the Burma Plate from a spreading center in the Andaman Sea.

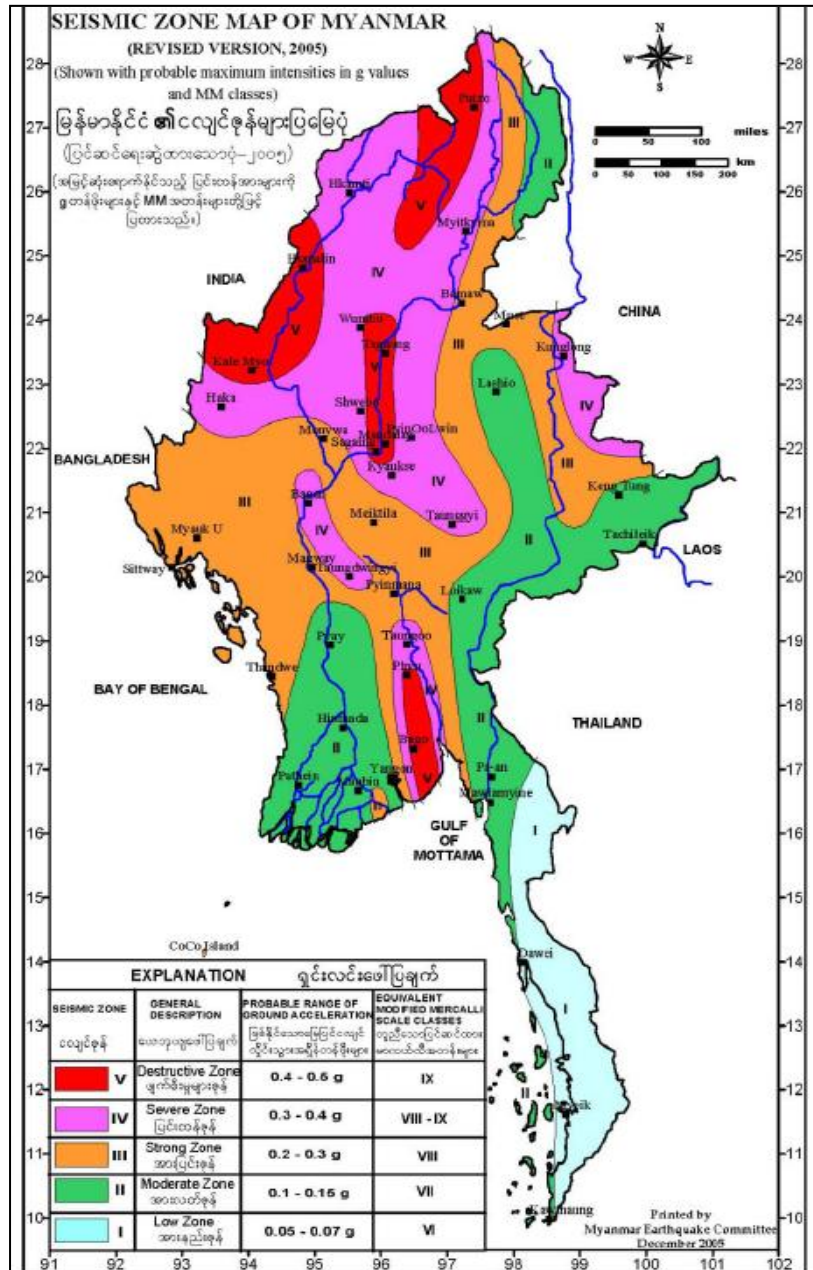
Myanmar can be divided into three seismically active regions namely: The Northwestern Region, the Central Lowland, and the Shan Plateau-Yunnan Region. The subduction and collision caused many shallow and intermediate earthquakes of considerable magnitude.

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<sup>2</sup> Tripartite Core Group, Myanmar , ' Post-Nargis Joint Assessment'

During the 20<sup>th</sup> Century, at least 18 large earthquakes had happened along the Central Lowland where the well-known Sagaing Fault passing through. Another large seismogenic fault called Kyaukkyan Fault is about 500 km long in the western part of the Shan Plateau. As per Seismic Zone Map of Myanmar, Bago-Phyu, Mandalay-Sagaing-Tagaung, Putao-Tanaing and Kale Myo-Homalin areas fall in the highest seismic zone.

Figure 1 Seismic zone map, Myanmar



## 2.2 Landslide

The landslides of various scale occurs in mountainous regions especially in the Western Ranges and some localities in the Eastern Highland of Myanmar. The Western Ranges has experienced all types of landslide and earth movement such as rock falls, rock slides, soil avalanche and mud flows. Due to the sparsely populated areas, the direct impacts of landslide in this region damage infrastructure rather than human settlement.

## 2.3 Tsunami

Myanmar coastline can be divided into three parts namely Rakine coastal area in the west, Ayeyarwaddy Delta in the middle and Taninthayi coastal area in the south. The Rakine Coast is built up of shallow sea with a chain of islands and some delta growth. The Ayeyarwaddy Delta is being built up at mouth of Ayeyarwaddy River and the sedimentation and annual delta growth rate increase lead to further shallow water sandbars in the Martaban Sea up to 50 km southward. The Taninthayi coastal line is almost straight in north-south direction. The southern part of Taninthayi coastal line is composed of chain of islands called Myeik Archipelagos. The intensity of the tsunami in terms of round-up and the extent of the inundation was comparatively lower than other countries around the Indian Ocean and the casualty and damage was also lesser this is because the computed tsunami amplitudes are relatively smaller along the Myanmar coast. The amplitudes are slightly large off Ayeyarwaddy delta, because the shallow delta extends offshore to cause concentration of tsunami energy. Another reason for the smaller tsunami is due to the fact that the coast of Taninthayi Division is being protected by offshore islands of the Myeik Archipelago trending north-south direction.

The probable earthquake and tsunami hazards along the Myanmar coastal areas are summarized at Table 2.

**Table 2 Probable earthquake and tsunami hazards along the Myanmar coastline**

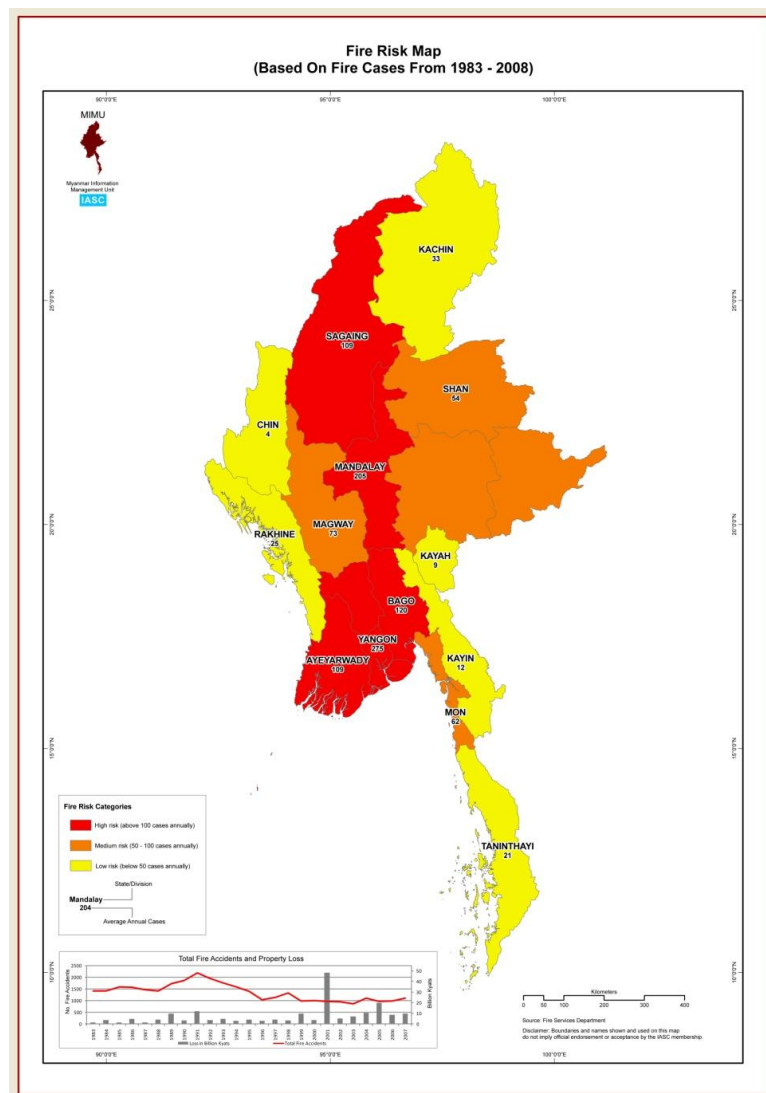
Coastal Region	Area	Earthquake Hazard	Tsunami Hazard
Rakhine Coast	Northern part	Strong Zone with MMI 8	Moderate*
	Southern part	Moderate Zone with MMI 7	Moderate
Delta Area	Ayeyarwady Delta	Moderate Zone with MMI 7	Moderate
	Sittoung Estuary	Severe Zone with MMI 8-9	Moderate
Tanintharyi Coast	Northern part	Moderate Zone with MMI 7	Moderate
	Southern part	Moderate Zone with MMI 7	Light**

\* Maximum run-up height 4 m, \*\*Maximum run-up height 2 m

## 2.4 Fire

The Fire hazard is the most frequent hazard in terms of frequency, which accounts for 71 percent of the disasters. The number of fire cases is decreasing while the losses due to fire is showing increasing trend. The high incidences of fire cases are concentrated mainly in Yangon, Mandalay, Ayeyarwady, Sagaing and Bago. These Divisions account for 63 percent of the total fire cases of the country, while the financial loss is approx. 38 percent. The main causes of fire are kitchen related fires and negligence which accounts for 83 percent of the fire cases and period from January to May is the high season for fires. The average annual fire cases are about 900.

**Figure 2 Fire hazard map, Myanmar**



## **2.5 Dry zone/Drought**

The Dry zone of Myanmar is located in the central part of the country in Magway, Mandalay and Sagaing (lower) Divisions and covers approx. 10 percent of total area of the country. It falls under arid to semi-arid zone as per different zonation criteria. As it being located in rain fed area, hence the average annual precipitation is below 1000mm. Approx. 51 townships spread across 13 districts in 3 Divisions fall under the Dry zone as per the Dry Zone Greening department. The deterioration of natural resources such as soil erosion and deforestation has made the agricultural production base unstable.

## **2.6 Floods**

Flooding has always been one of the major hazards in Myanmar, accounting for 11% of all disasters, second only to fire. Between 1910 and 2000, there were 12 major floods. Flooding leads to loss of lives and properties, damage to critical infrastructure, economic loss and health related problems such as outbreak of water borne diseases when the lakes, ponds and reservoirs get contaminated.

The country receives practically all its rainfall between mid-May and October, the rainy season, during which flooding and landslides are common. In Myanmar, the threat of flooding usually occurred in three waves each year: June, August and late September to October with biggest danger arriving in August as peak monsoon rains occurred around that time. Throughout the period of the rainy season, riverine floods are common in the river delta while the flash floods and landslides are frequent in the upper reaches of the river systems, which are normally the mountainous areas, whereas the coastal areas experience intermittent flooding from cyclone.

## **2.7 Cyclone**

Myanmar having a long coastline along the Bay of Bengal is prone to cyclones. April, May and October are considered to be cyclone months as per last 100 years record. In last four decades, six major cyclones hit Myanmar in 1968(Sittwe cyclone), 1975 (Patheingyi cyclone), 1982 (Gwa cyclone), 1994 (Maundaw cyclone), 2006(cyclone Mala) and 2008 (cyclone Nargis). The Sittwe cyclone led to loss of 1037 lives, Patheingyi cyclone claimed 304 lives and Nargis the most devastating in the living memory of Myanmar, led to loss of 138,373 lives, affected 2.4 mn population and properties to the tune of 4.1 billion USD got damaged.

## **2.8 Storm surge**

Myanmar has a very long coastline and densely settled low-lying lands are particularly vulnerable to rising sea levels. Even diminutive rises in sea level vertically can lead to enormous erosion horizontally. As per the Inter-Government Panel on Climate Change (IPCC) report, a rise in sea level of one centimeter can result in beach erosion of one meter horizontally. The low-lying areas of Myanmar's Ayeyarwaddy Delta, interspersed with many tidal waterways, are naturally exposed to storms and monsoon winds blowing from the southwest. Rising sea levels, stronger cyclones and ecosystem degradation mutually reinforce each other, exacerbating the fallout from seaward disasters. During Cyclone Nargis, 90 percent of deaths were caused as a direct consequence of the storm surge.

## **2.9 Forest fire**

The forest fires in Myanmar are normally surface fire, most frequent during the dry season, starting around December until May. It occurs in almost all States and Divisions though sporadic, however more common in upland regions namely Bago, Chin, Kayah, Kachin, Mandalay, Rakhine and Shan. It causes haze problem which leads to negative impact on the community.

## **3. Institutional Arrangements for Disaster Management in Myanmar**

**Global and Regional Commitments of Myanmar:** The Union of Myanmar is committed to various global and regional Frameworks and Declarations on Disaster Management and Disaster Risk Reduction. It has endorsed the Hyogo Framework for Action [HFA] along with other 167 countries. It is a member of the **ASEAN Committee on Disaster Management (ACDM)** and **Regional Consultative Committee on Disaster Management (RCC)**.

**National Disaster Preparedness Central Committee:** The National Disaster Preparedness Central Committee (NDPCC), under the Prime Minister, is the 37-member apex body for Disaster Management. The Committee includes Secretary ( I ), State Peace and Development Council (Co-chair), Chairmen of all State/Division (including Sub-Division/State) Peace and Development Council, Ministers of concerned ministries, Mayors of Yangon and Mandalay City Development Committees and Director-General of the Government Office. Secretary ( I ) is co-chairman, Minister, Ministry of Social Welfare, Relief and Resettlement is Secretary while Deputy Minister, Ministry of Home Affairs is Joint-Secretary.

**National Disaster Preparedness Management Working Committee and Sub-Committee:** The 36-member National Disaster Preparedness Management Working Committee under the Secretary (I) of State Peace and Development Council is constituted to supervise the implementation of Disaster Management activities in accordance with guidelines of National Disaster Preparedness Central Committee (NDPCC) and also to coordinate the activities of NDPCC. The Minister, Ministry of Social Welfare, Relief and Resettlement (MSWRR) is Co-Chairman and Deputy Minister, Home Affairs and Deputy Minister, MSWRR are Secretary and Joint-Secretary respectively.

Ten Sub-Committees, under the National Disaster Preparedness Management Working Committee, have been constituted for effective implementation of activities laid down by it. This apart, each Ministry has constituted its Executive Committee for Disaster Management. The overall institutional framework for Disaster Management at national level is at figure 3.

**Figure 3 Institutional framework for Disaster Management at National Level**



**Division/State Level Committees:** The State and Division Disaster Management/Preparedness Committees have been constituted under the

Chairman of State and Division Peace and Development Council respectively. The membership varies from 35 to 40, which includes heads of line departments at State or Division level. The committee has constituted ten Sub-Committees (varies among Division, State) and/ or Working Committee to carry out the specific tasks under Disaster Management.

**Sub-Division/Sub-State Level Committees:** The District, Township and Village Tract Disaster Preparedness Committees have been constituted at District, Township and Village Tract levels under Chairman of District, Township and Village Tract Peace and Development Councils respectively. At each level, ten Sub-Committee (varies among District, Township and Village Tract) have been constituted to assist the Disaster Preparedness Committees in discharging its duty.

#### **4. Need of the Guideline on Township Disaster Management Plan**

**Standardization of the Disaster Management Plans:** A well-laid out institutional system, which includes Disaster Preparedness Committees and Disaster Management Plan, for disaster management exists in Myanmar. 'Institutional Arrangements for Disaster Management in Myanmar' report prepared by Relief and Resettlement Department, Ministry of Social Welfare, Relief and Resettlement and Asian Disaster Preparedness Center (ADPC) identified the need to further strengthen the system which includes Standardization of the Disaster Management terminologies, Strengthening preparedness and mitigation measures and Regular updation of the Disaster Preparedness Plans apart from other interventions.



**Action Point under Standing Order on Natural Disaster Management:** Also, the National Disaster Preparedness Central Committee's 'Standing Order for Natural Disaster Management' mention 'The various sub-committees of the National Committee on the Natural Disaster Management, Ministries and Departments, State and Division, Townships, Ward/Village and grassroots level organizations should prepared and issue their own action plans and standing orders' ( No.20).

**Sub-component of the Myanmar Action Plan on Disaster Risk Reduction:** The Myanmar Action Plan on Disaster Risk Reduction (MAPDRR), prepared by, Ministry of Social Welfare, Relief and Resettlement, has identified 64 sub-components for implementation including 'Multi-hazard response plan for Division/State, District and Township' sub-components.

**Township-critical in Disaster Management Structure:** Township is an important cog in whole Disaster Management System of Myanmar as it provides a crucial linkage between community and Division/State or District level institutions. Also, most of the government departments have representation at township level and township level is key for disaster risk reduction and response. Thus, in light of the above, there is a need of disaster management planning tool for Township Disaster Management Plan. The 'Guideline on Township Disaster Management

Plan' will help the concerned authorities in drafting the Township Disaster Management plan and improving the existing plan.

**Improved Coordination among Stakeholders:** The improved Township Disaster Management Plan will augment the coordination among various response agencies such as Myanmar Red cross Society, NGOs, some civil societies and others at township level in the event of disaster and also to undertake mitigation and preparedness measures.

## **5. Process involved in development of this Guideline**

The Guideline on Township Disaster Management Plan has been developed through:

- Desk review of existing literature on Township Disaster Management Planning including the Government of the Union of Myanmar's Standing Order on Natural Disaster Management
- Study of Disaster Preparedness Plans of selected Townships, District and Division
- Discussion in the Task Force Meetings of the MAPDRR
- Review of the draft Guideline on Township Disaster Management Plan by members of Bago, Twantay and Thanlin Township Disaster Preparedness Committees
- Wider consultation with Civil Society Organizations
- Discussion in the Disaster Risk Reduction Working Group meetings
- Technical consultations with concerned Government departments

## **6. Objectives and scope**

The 'Guideline on Township Disaster Management Plan' has been prepared with the following objectives:

- To assist the Township authorities to prepare the Township Disaster Preparedness Plan
- To assist in ensuring uniformity in Township Disaster Preparedness Plan across Townships by standardization of Disaster Management terminologies
- To provide a standard template for Township Disaster Management Plan

The scope of Guideline on Township Disaster Management Plan covers all townships of Myanmar. It can also serve as a reference document for drafting Disaster Management Plans at Division/State, District and Sub-Township levels.

## **7. Structure of the Guideline**

The 'Guideline on Township Disaster Management Plan' has four sections namely Introduction, Approach for preparation of TDMP, Outline of the TDMP and Explanatory notes. A brief of each section is as follows:

### **7.1 Section A: Introduction**

The Introduction section comprises of 7 sub-section namely Background, Hazard Profile of Myanmar, Institutional Arrangements for Disaster Management in Myanmar, Need of the Guideline on Township Disaster Management Plan, Process involved in development of this Guideline, Objectives and scope and Structure of the Guideline.

The sub-section on Background provides an overview of the geographical location of Myanmar, description of administrative units and information on population, physical features, climate and economy.

The sub-section 'Hazard Profile of Myanmar' covers nine frequent natural hazards namely Earthquake, Landslide, Tsunami, Fire, Dry zone/Drought, Floods, Cyclone, Storm surge and Forest fire.

The sub-section 'Institutional Arrangements for Disaster Management in Myanmar' provides an overview of the existing institutional system for disaster management in the country at all administrative levels from national to Township and Sub-township levels.

The sub-section on Need of the Guideline on Township Disaster Management Plan includes rationale of the Guideline on TDMP.

The sub-section on Process involved in development of this Guideline captures the methodologies used in developing the Guideline.

The sub-section 'Objectives and scope' mentions the objectives of developing the Guideline on Township Disaster Management Plan and its coverage.

## **7.2 Section B: Approach for preparation of Township Disaster Management Plan**

The 'Approach for preparation of Township Disaster Management Plan' section includes two sub-sections namely Guiding principles and Key considerations in Township Disaster Management Planning and Process for developing Township Disaster Management Plan.

The sub-section on Guiding principles and Key considerations in Township Disaster Management Planning mentions the need of special attention to the most vulnerable groups in the community in developing the Township Disaster Management Plan.

The sub-section on Process for Developing Township Disaster Management Plan captures the suggestive approach for development of Township Disaster Management Plan, which can help in making it more effective and also lead to ownership of the plan by agencies involved. It will take due consideration of the local context.

### **7.3 Section C: Outline of the Township Disaster Management Plan**

The 'Outline of the Township Disaster Management Plan' section includes suggestive contents of the Township Disaster Management Plan, which include chapters and sub-chapters of the Plan.

### **7.4 Section D: Explanatory notes on Outline of the Township Disaster Management Plan**

The 'Explanatory notes on Outline of the Township Disaster Management Plan' section explains the each chapter and sub-chapter identified under the Outline of the Township Disaster Management Plan.

***Section B:***

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**Approach for Preparation of the  
Township Disaster Management Plan**

## Approach for Preparation of Township Disaster Management Plan

The Township Disaster Management Plan essentially aims to enhance disaster response, ensure fast recovery, augment disaster preparedness and mitigation and coordination among various stakeholders. It should be prepared in wider consultative mode and should be holistic. The disaster preparedness, mitigation and response components of the plan should be based on the hazards, vulnerabilities and risks of the concerned township. It is important to mention that the return period of some of the hazards such as Tsunami and Earthquake is long in Myanmar (though it can happen any time), hence sustainability and periodic up-dation of the plan is an important element. The plan should focus on vulnerable groups such as women, children, elderly, physically and mentally challenged as they are the worst affected during disasters.

### 1. Guiding principles and key considerations in Township Disaster Management Planning

Some of the key Guiding principles and key considerations in Township Disaster Management Planning are as follows:

- **Pro-active:** There has been a paradigm shift in Disaster Management in recent years and now focus is on preparedness and mitigation which calls for pro-active approach. It should be embedded in all phases of disaster management (before, during and after disaster).
- **Multi-hazard:** Myanmar is prone to multiple-hazards and most of the townships are prone to more than one hazards. Hence, the preparedness, mitigation and response measures identified in the Plan should have multi-hazard approach.
- **Culture of preparedness and mitigation:** The Plan should try to promote the culture of preparedness and mitigation as investment in pre-disaster activities is much more economical than post-disasters measures.
- **Needs of vulnerable and special groups:** Several studies has confirmed that women, aged, children, physically and mentally challenged are the worst affected during disaster. The Township Disaster Management Plan should pay focus on the needs of these vulnerable groups.
- **Wider-consultation:** Disaster Management is a cross-cutting theme, hence all government departments and other agencies such as Myanmar Red Cross Society, NGOs, business groups, professional bodies, etc should be involved in planning and implementation of the Township Disaster Management Plan. The consultation with all concerned stakeholders during planning helps in smooth implementation.
- **Living document:** The Township Disaster Management Plan should be seen as a dynamic document and it should be up-dated at periodic interval, at least once in a year. It is important to mention that Plan has always

scope for improvement and lessons' learned from past disasters and mock drill should guide up-dation of the Plan.

- **Sectoral Plan:** Disaster Management is a cross-cutting issue and it involves all line departments and other agencies, hence the Township Disaster Management Plan should be supplemented with the departmental disaster management plans and agency specific disaster management plans. The sectoral plans should be linked with the Township Disaster Management Plans for coordinated and effective response, mitigation and preparedness.

## **2. Process for developing Township Disaster Management Plan**

In order to prepare a robust and effective Township Disaster Management Plan, it is important to prepare it in consultative mode. The suggestive steps for preparation of Township Disaster Management Plan are as follows:

The initial consultation meeting with all stakeholders, usually comprising of township level all line departments, township level Myanmar Red Cross Society and others NGOs operating in the areas should be initiated to deliberate on the preparation of Township Disaster Management plan. The discussion on hazards, past disasters , its impact and existing resources of the township should also be discussed and identified.

There are various mechanisms to draft the Plan and constitution of a small working group or drafting group will help this process. The group should have limited members representing various departments and other stakeholders.

The Working /Drafting group will study the existing documents on hazards, vulnerability, capacity and risk of the country with focus on TDMP including concerned township. The Group will also look into Standing Order on Natural Disaster Management of National Disaster Preparedness Central Committee (NDPCC) and Guidelines on Township Disaster Management Plan. The Drafting Group should also study the disaster management plans of the District and State/Division in which the township belongs. The concerned Ward/Village Tract Disaster Management Plans should also be studied, if available.

The draft of Township Disaster Management Plan prepared by the Drafting Group should be discussed with Township Disaster Preparedness Committee and other relevant agencies and comments should be invited for further improvement. The groups should try to incorporate all relevant comments.

The revised Plan should be discussed with the Township Disaster Preparedness Committee for approval and implementation of activities identified under the

plan. The final plan should be shared with all stakeholders and it should be updated at periodic interval.

The above-mentioned steps are suggestive and broad and in actual implementation it may be revised to suit the context.

### ***Section C:***

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## **Outline of the Township Disaster Management Plan**

## **Outline of Township Disaster Management Plan**

The following components or chapters should be considered while preparing a Township Disaster Management Plan. The Township Disaster Management Planner should develop the plan contextualizing this template to suit the local need.

- **Cover page**
- **Table of Contents**
- **List of Tables and Figures**
- **List of Abbreviations and Acronyms**

### **1. Introduction of Township Disaster Management Plan**

#### **1.1 Background**

[It should provide a brief description of the historical disasters and its impact, Usefulness of the TDMP, Disaster Management planning mechanism and Stakeholders of the plan]

#### **1.2 Goal and objectives of the TDMP**

- Goal
- Objectives

### **2. Profile of the Township**

It should provide basic information related to Township Profile which includes administrative structure, geography, demography, basic infrastructure, climate and socio-economic status. It is mostly data-based and information-oriented. The township disaster management planners need such details for preparation of the Township Disaster Management Plan. Most of the information will be available with the township level departments.

It captures a brief overview of the township in terms of:

- 2.1 Administrative Structure
- 2.2 Geography
- 2.3 Demography
- 2.4 Basic Infrastructure
- 2.5 Climate
- 2.6 Socio-economic Status

### **3. Risk profile of Township**

The Risk Profile of Township is the outcomes of Hazard, Vulnerability and Capacity Assessment of the township and it serve as base for Township Disaster Management Planning Process.

- 3.1 Hazard Assessment
- 3.2 Vulnerability Assessment
- 3.3 Capacity Assessment
- 3.4 Risk Profile

#### **4. Institutional Arrangements for Disaster Management at Township**

It is important to have formal structures and arrangements at different levels. A good Township Disaster Management Plan calls for a proactive and organized institutional framework, involving all the stakeholders at various levels. The institutional arrangement should ensure that disaster management planning process is robust.

- 4.1 Township Disaster Preparedness Committee
- 4.2 Sub-Committees: In line with sub-committees of National Disaster Preparedness Management Working Committee, the following sub-committees should be constituted in order to assist the TDPC.
  - A. News and Information
  - B. Emergency Communication
  - C. Search and Rescue
  - D. Assessment and Emergency Relief
  - E. Confirmation of Damage and Loss
  - F. Transportation and Route Clearance
  - G. Township Disaster Reduction Emergency Shelter Provision
  - H. Health Care Sub-Committee
  - I. Rehabilitation and Reconstruction
  - J. Security
  - K. DRR sub-committee: The Disaster Risk Reduction (DRR) sub-committee should be formed to oversee Ward/Village Tract Disaster Preparedness Committees, mitigation and preparedness measures in the township. It will undertake preparedness and mitigation activities and try to include DRR in development planning and implementation activities.
- 4.3 Linkages with District and Village Tract Disaster Preparedness Committee

#### **5. Roles and responsibilities of Committee and Sub-Committees and others**

The roles and responsibilities of TDP committee and sub-committee should clearly mention the tasks to be taken during various phases of disaster management, i.e. before, during and after disaster. The roles and responsibilities related to mitigation and preparedness measures should be highlighted as it is important.

Also activities like creating awareness, including DRR into departmental development activities should be emphasized for long-term risk reduction.

- 5.1 Roles and Responsibilities of Township Disaster Preparedness Committee
- 5.2 Roles of Sub-Committees
- 5.3 Roles and Responsibilities of other agencies

## **6. Mitigation, Preparedness, Recovery and Rehabilitation Measure**

Development of an action plan for the implementation of Township Disaster Management Plan and prioritizing the activities allows the Township Disaster Preparedness Committee to identify the required resources and their effective allocation. Activities need to be detailed out under each sub-heading provided below.

- 6.1 Mitigation measures:
- 6.2 Preparedness measures:
- 6.3 Response measures:
- 6.4 Recovery and Rehabilitation:

## **7. Monitoring and review and Updation of Plan**

In this section, measures for monitoring the Disaster Risk Reduction activities should be mentioned. The monitoring measures should be simple. As TDMP is a living document hence it should be updated at periodic interval.

**ANNEXURE I**

**\*Emergency Aid Request Form**

\_\_\_\_\_ **Township**

1. Name of the Affected Township: \_\_\_\_\_
2. No. of Affected Population: \_\_\_\_\_
3. No. of Houses Destroyed (Estimate): \_\_\_\_\_
4. No. of People Killed (Estimate): \_\_\_\_\_
5. No. of People Injured (Estimate): \_\_\_\_\_
6. Search and Rescue: \_\_\_\_\_ Required/Not Required
7. Emergency Assistance: \_\_\_\_\_ Required/Not Required
8. Drinking Water: \_\_\_\_\_ Required/Not Required
9. Instant Food: \_\_\_\_\_ Required/Not Required
10. Clothing: \_\_\_\_\_ Required/Not Required
11. Emergency Shelter: \_\_\_\_\_ Required/Not Required

**\*Source:** This Emergency Aid Request Form is extracted from National Disaster Preparedness Central Committee's Standing Order on Natural Disaster Management

## ANNEXURE II

### \*Damage Assessment Form

#### Casualties and Damage to Housing

State/ Division	Affected Township	Affected Area	Affected Population	No. of Deaths	No. Missing	No. Injured	Affected House - holds	Houses Entirely Destroyed		Houses Partially Destroyed	
1	2	3	4	5	6	7	8	9		10	
								No.	Value	No.	Value

#### Losses and Damage to Livelihoods

Loss of Livestock		Loss of Poultry		Damage to Crops		Partially Damaged Crops		Damage to Salt Making		Damage to Prawn Farms		Damage to Fish Farms	
11		12		13		14		15		16		17	
No.	Value	No.	Value	No.	Value	Acre	Value	Acre	Value	Acre	Value	Acre	Value

#### Losses and Damage to Schools, Hospitals/Clinics

No. of Damaged Schools				No. of Damaged Universities/Colleges			No. of Damaged Hospitals		No. of Damaged Clinics	
18				19			20		21	
High	Middle	Primary	Value	University	College	Value	Hospital	Value	Clinic	Value

#### Losses and Damage to Religious Buildings

Pagodas/ Buddha Images		Monasteries		Nunneries		Churches		Mosques		Hindu Temples	
22		23		24		25		26		27	
No.	Value	No.	Value	No.	Value	No.	Value	No.	Value	No.	Value

**Losses and Damage to Offices, Factories, Workshops, Warehouses and Markets**

Offices		Factories		Workshops		Warehouses		Markets		Others	
28		29		30		31		32		33	
No.	Value	No.	Value	No.	Value	No.	Value	No.	Value	No.	Value

**Losses and Damage to Roads, Dams/Embankments/Reservoirs, Forests,  
Power Lines and Telephone Lines**

Damaged Roads (Miles)		Partially Damaged Roads (Miles)		Damaged Dams/ Embankments/ Reservoirs		Partially Damaged Dams/ Embankments/ Reservoirs		Damaged Forests		Damaged Power Lines		Damaged Telephone Lines	
34		35		36		37		38		39		40	
No.	Value	No.	Value	No.	Value	Acre	Value	Acre	Value	Acre	Value	Acre	Value

**Other Losses and Damage**

Damaged Wells/Ponds		Damaged Boats/Motorboats		Damaged Fishing Nets		Damaged Vehicles/Machinery		Others	
41		42		43		44		45	
No.	Value	No.	Value	No.	Value	No.	Value	No.	Value

**\*Source:** This Damage Assessment Form is extracted from National Disaster Preparedness Central Committee's Standing Order on Natural Disaster Management

## ANNEXURE III

### Resource inventory

Resource inventory enable the township disaster management planners to clearly examine whether the existing resources (material and human) are sufficient to deal with a potential disaster. If the resources are insufficient, contingency arrangements can also be identified. The Resource Inventory also helps in coordination.

#### ANNEXURE III.I

Contact details of National and concerned State/Division and District Disaster Preparedness Committees and Ministries and Departments.

No.	Name	Office Telephone	Fax number
1	National Disaster Preparedness Central Committee and Ministries and Departments		
2	Concerned State/Division Disaster Preparedness Committee		
3	Concerned District Disaster Preparedness Committee		

#### ANNEXURE III.II

Contact details of Township Disaster Preparedness Committee and sub-committee

No.	Name	Designation in Disaster Preparedness Committee	Office Telephone	Mobile phone	Fax number

**ANNEXURE III.III**

Other Contact details for emergency support functions

No.	Organization	Phone	Fax	Mobile phone
1	Hospital • • •			
2	Ambulances • •			
3	Police station • •			
4	Name of NGO and INGO • • • •			

## **ANNEXURE IV**

### **Maps**

Maps of the township with administrative boundary

Township risk map

Township map showing transportation, communication, etc

**ANNEXURE V**

Important government standing orders related to disaster management.

## **ANNEXURE VI**

### **Inter-Agency Plan by International Humanitarian Community in Myanmar**

In order to support the effort of government in disaster response, the humanitarian community in Myanmar has prepared Inter-Agency Contingency Plan which aims to ensure that the humanitarian community is well organized to provide better and coordinated support. To ensure coordinated action a 'Clusters' approach has been identified. In the event of disaster affecting a certain size of population, the Contingency Plan will be activated and clusters will begin to work, under pre-identified cluster leads. The pre-identified Cluster Leads may not be operational in a particular township, but they will maintain the overall coordination of the response in that sector.

Below is a summary of the pre-agreed<sup>3</sup> structure at the national level:

<b>Theme</b>	<b>Lead Agency</b>
Food	WFP
Health	WHO and Merlin
Nutrition	UNICEF
Water and Sanitation	UNICEF
Protection	UNHCR
Logistics	WFP
Emergency Telecoms	WFP / UNICEF / OCHA
Emergency Shelter	IFRC / UNHCR
Education	UNICEF and Save the Children
Coordination	RC/HC Office / OCHA
Early recovery	UNDP
Agriculture	FAO
Camp Coordination / Camp management	IOM / UNHCR

It is important to mention that the Contingency Plan will be activated only if a population of 50,000 or more is affected and needs support. In case of an emergency of a lesser scale, focal points can be contacted, but they will not operate under the pretext of an activated Contingency Plan.

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<sup>3</sup> These will be reviewed every year when updating the Contingency Plan, but there is little chance of any changes.

## **ANNEXURE VI**

### **Local NGOs Contingency Plan for the period (May 2010-April2011)**

The Local NGO Contingency Plan aims to complement the IASC Contingency Plan to ensure the preparedness and response activities of the International and Local Humanitarian Organizations are well-coordinated. The Local NGOs Contingency Plan Working Group (CPWG) adapted the cluster approach of IASC and 8 cluster/sectors are formed in Local NGO CP. As such, cluster lead organizations have been identified and these will coordinate with the different humanitarian organizations to support local communities and respective government line ministries in preparedness and response. LNGO CP will be activated only if a population of at least 5000 for rural areas and 20000 for urban areas is affected and needs support.

<b>Theme</b>	<b>Lead Agency</b>
<b>Food and Nutrition</b>	Network Activities Groups and ECLOF U Bobby, Network Activities Group, 098553185, <a href="mailto:ceo@nagmyanmar.org">ceo@nagmyanmar.org</a>
<b>Health</b>	Myanmar Chirstian Health Workers' Service Association and Border Development Association Dr Tin Shwe, MCHWSA, 095053121, <a href="mailto:drtinshwe@gmail.com">drtinshwe@gmail.com</a>
<b>Water and Sanitation</b>	Myanmar Health Assistant Association and Social Vision Service U Tin Oo, MHAA, 01-645722, <a href="mailto:mhaa.org.94@gmail.com">mhaa.org.94@gmail.com</a>
<b>Protection</b>	Thingaha Gender Working Group and NGO GG U Billy Khan Myat, TGWG, 01-524799, <a href="mailto:newthingaha@gmail.com">newthingaha@gmail.com</a>
<b>Emergency Shelter</b>	Swanyee Development Foundation and Ar Yone Oo Relief and Development U Kan Aung, SDF, 01-541854/ 095041459, <a href="mailto:kanaung@gmail.com">kanaung@gmail.com</a>
<b>Education</b>	Lawka Alin and Border Development Association U Ye Htut, LA, 095166827,

[koyae.la@gmail.com](mailto:koyae.la@gmail.com)

**Early recovery**

Kayin Women Action Group and REAM  
Dr Myo Thant Tyn, Chair of MNGOs CP  
Activationg Body, 095006860,  
[myotyn@gmail.com](mailto:myotyn@gmail.com)

**Agriculture**

Metta Development Foundation and Dear  
Myanmar  
U Khin Maung Latt, MDF, 095502172,  
[lattkhinmaung1@gmail.com](mailto:lattkhinmaung1@gmail.com)

***Section D:***

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**Explanatory notes on Outline of  
the Township Disaster Management  
Plan**

## **Explanatory notes on Outline of Township Disaster Management Plan**

- **Cover Page**

The Cover Page should include name of the Township and date of preparation/updation of Township Disaster Management Plan.

- **Table of Contents**

It is a list of contents of Township Disaster Management Plan mentioning chapter-wise and sub-chapter-wise along with respective page number.

- **List of Tables or Figures**

It is a list of Tables or Figures mentioned in the document of Township Disaster Management Plan. For example, organogram of township disaster preparedness committee is mentioned by numbering along with its page number.

- **List of Abbreviations**

It is a list of acronyms used in the Township Disaster Management Plan. For example, NDPCC: National Disaster Preparedness Central Committee

### **1. Introduction of Township Disaster Management Plan**

#### **1.1 Background**

It should be an overview of the Township Disaster Management Plan and it can mention disasters in the region where the township located and the positive and negative affects these have each year and also reference to the worst disasters, summary of disasters in previous years and detailed description of the previous years' disasters. It can also mention the usefulness of the plan, the planning mechanism and stakeholders of the plan.

#### **1.2 Goal and Objectives of the Township Disaster Management Plan**

The Goal of Township Disaster Management Plan (TDMP) should be a short statement which tells the overall objectives of the TDMP. For example, the Goal of the TDMP can be *"To reduce vulnerabilities of the township communities to Disasters"*.

Objectives are broad steps which will help in achieving the Goal. For example, in order to achieve the Goal of TDMP, the objectives of TDMP can be as follow.

- To enhance the coordination among various stakeholders including government departments in disaster response
- To raise the awareness of general public on the various hazards and their associated risks
- To enhance the capacity of the township communities to prepared for, response to and recover from disaster impacts

- To strengthen Disaster Risk Management System at township level in order to integrate Disaster Risk Reduction concepts into the over-all development agenda.

## **2. Profile of the Township**

The Township Profile is a bio data of the Township in terms of its geography, demography, and basic infrastructure. All the above elements are important to assess the needs and future priority actions in a disaster management plans. The future trends should also be mentioned. The general information required for Township level disaster management plan is presented as below:

### **2.1 Administrative Structure**

- a) Number of wards, village tracts/villages (administrative set-up)
- b) Departments at Townships level

### **2.2 Geography**

- a) Detailed location of the Township (coordinates, township boundaries, area)
- b) Climate ( annual rain fall )
- c) Landholding pattern and main rivers and other water resources

### **2.3 Demography**

- a) Population details which may include age structure, dependants, single parent families etc,
- b) Literacy rate
- c) Migration

### **2.4 Basic infrastructure**

A brief description of:

- a) Main road and road types
- b) Any water ways ( main canal system )
- c) Number of hospitals (government and private) and health centres
- d) Sources of drinking water
- e) Educational institutions
- f) Pagodas, Temples and other religious places
- g) Bridges
- h) Critical installations (police stations, bus terminal, airports if any, radio and TV stations, jetty) including service facilities
- i) Emergency facilities [ fire brigade, etc. hydrological and metrological stations, search & rescue posts ( fire sentry posts etc. ), safe areas for township( higher ground for flood etc,)]

### **2.5 Climate**

- a) Climate and seasons
- b) Rainfall

- c) Temperature

## **2.6 Socio-economic condition**

- a) Predominant occupations and livelihood
- b) Income generating activities
- c) Cropping pattern
- d) Major festivals

## **3. Risk Profile**

Risk Profile involves an assessment of Hazard, vulnerability and Capacity.

### **3.1 Hazard Assessment**

- Identifying hazards that the township is exposed to
- The township experiences on disasters and impact analysis of past disasters
- Hazard maps
- For example, Flood hazard assessment can be conducted using the following data:
  - History of flood hazards (e.g. background overview, average length/period of inundation, river bank erosion, loss of productive land, loss of livelihood, displacement, epidemic)
  - Causes and seasonality/duration of annual flood
  - Frequency and flood hydrograph ( start, peak, and recession time)
  - Intensity/volume/severity of the annual flood
  - Annual area of inundation
  - Future scenario projections due to climate change, upstream and downstream development, etc, if available)

Likewise, assessments of other hazards such as Fire and Drought etc can also be undertaken.

### **3.2 Vulnerability Assessment**

The vulnerability assessment identifies people and infrastructure most vulnerable to different types of disaster and potential damages within a geographical area that may be incurred.

In assessing vulnerability, it is crucial to recognize that there are a variety of factors contributing towards vulnerability, often in combination. Vulnerability can change overtime-it can either increase or decrease according to the position of or situation of the community or an individual, which may change over time. Vulnerability is not homogenous with any given area: it varies according to income, exposure and level of preparedness.

For example, some factors that may cause vulnerability are:

- Unplanned development with poor drainage and sanitation

- Development of squatter communities on marginal land such as on embankments, river banks and within river channels
- Poor housing
- Poverty
- Inadequate preparedness
- Lack of awareness
- Lack of early warning system
- Climate change effects
- Environmental and geographical vulnerability

In the Township Disaster Management Plan document, a table can be presented to provide information on:

- Number of vulnerable wards/village and the corresponding population likely to be effected by different disasters ( breakdown into male, female, male headed household, female headed household as well as age breakdown of the population, if possible)
- Potential causes of vulnerability
- Physical vulnerability or elements at risk (road system, canals/embankment , number of schools and hospital in the high risk zone, other critical infrastructures and total agricultural or other productive land area)

### **3.3 Capacity Assessment**

Capacity Assessment helps to prepare human (skills, expertise), material and financial capacities available in the township as well as the required resources. The following resources and capacities can be considered :

- Shelter facilities ( total number of safe areas and total number of shelters, locations of safe areas and shelters )
- Transportation facilities
- Communication system
- Disaster protection facilities, for example dams, dykes and other structures
- Storage facilities
- Medical facilities
- Disaster Preparedness Committees, existence of community organizations etc,
- Human resources ( Red Cross volunteer, mass organizations, trained search and rescue teams, police, fire service personnel, health personnel, NGOs and INGOs working in the locality )

### **3.4 Risk Profile**

Hazard, vulnerability and Capacity Assessment of all hazards of the township are undertaken to formulate Risk Profile of the township. It helps in giving a clear picture of:

- The potential damage and loss in a particular location due to a particular hazard
- The existing capacities to prepare for a particular hazard

For example, risk assessment involves an analysis of

- Past pattern of particular hazards
- Present, associated threats to the community (hazard assessment), combined with an understanding of how hazard become disasters (vulnerability assessment)
- How different people measure and perceive risk.

In developing Risk Profile of the Township, the following two key points need to be taken into consideration:

- Information on hazard risk, specific to vulnerable areas and at various levels (Ward, Village tract etc ) will be limited and township level departments such as Meteorological and Hydrological station, Irrigation department, fire services brigade etc are the main source of data information.
- Prioritization of hazards as high, medium and low are to be identified and this identification can be carried out in area wise such as southern or northeast part of the township

#### **4. Institutional Arrangements for Disaster Management at Township**

Having institutional mechanism for Disaster Management is very important because it will strengthen coordination among agencies and this will also improve communication within formal structures and communities so that the effective preparedness plan will be efficiently developed and coherently implemented.

##### **4.1 Township Disaster Preparedness Committee**

The Institutional Arrangements for Disaster Management at Township means formation of Township Disaster Preparedness Committee, composition of the committee, organogram and its linkages to larger institutional framework (its sub-committee, district, State/Division and central level institutional mechanism).

The Government of Union of Myanmar constituted National Disaster Preparedness Central Committee in 2005. For standardization of the Disaster Management terminology, this guideline suggests that these committees at different administrative levels should be named as disaster preparedness committee which is in line with National Disaster Preparedness Central Committees. For example, Yangon Division Disaster Preparedness Committee, Kachin State Disaster Preparedness Committee, Pyapon District Disaster Preparedness Committee and Waingmaw Township Disaster Preparedness Committee.

### Composition of Township Disaster Preparedness Committee:

For wider representation, all the concerned heads of township level government departments, representatives from civil societies and interested NGOs should be included in the Township Disaster Preparedness Committee. The Twantay Township Disaster Preparedness Committee comprises of the following members:

**Table 3 Twantay Township Disaster Preparedness Committee**

No.	Departments or Organizations or Associations	Designation
1	Chairman, Twantay Township Peace and Development Council	Chairman
2	Township Police Officer, Myanmar Police force	Member
3	Township Medical Officer, Township Health Department	Member
4	Township Executive Officer, Township Development Affairs Department	Member
5	Township Officer, Township Immigration & National registration Dept	Member
6	Township Officer, Settlement and Land Records Dept	Member
7	Township Engineer, Public works	Member
8	Township Officer, Fire Service Department	Member
9	Staff Officer, Livestock Breeding and Veterinary Dept (Township)	Member
10	Township Manager, Myanmar Agriculture Services	Member
11	Township Executive Officer, Yangon Electricity Supply Board	Member
12	Township Executive Officer, Myanmar Post & Telecommunication	Member
13	Township Officer, Irrigation Department	Member
14	Secretary, Township Union Solidarity and Development Association	Member
15	Chairman, Township Myanmar Red cross Society	Member
16	Chairman, Township War Veteran Association	Member
17	In-charge, township transportation Supervision Committee	Member
18	Staff Officer, Information & Public Relation Dept	Member
19	Officer, Planning Department	Secretary

**The** composition of Twantay Township Disaster Preparedness Committee has been mentioned as an example. The township disaster preparedness committee's composition should be according to the context.

## **Sub-Committees**

### **Rationale of forming Sub-Committees:**

The sub-committees can be constituted according to activities or local conditions. The order number 30 of "Standing Order for Natural Disaster Management" also states that natural disaster preparedness activities at the State/Division level need to be determined by the local context, just as practical plans, preparations and implementations at the level of township and villages are shaped by local conditions.

### **Number and Naming of Sub-Committees:**

The National Disaster Preparedness Management Working Committee is comprised of 10 sub-committees namely News and Information, Emergency Communication, Search and Rescue, Assessment and Emergency Relief, Confirmation of Damage and Loss, Transportation and Route Clearance, National Disaster Reduction Emergency Shelter Provision, Health Care Sub-Committee, Rehabilitation and Reconstruction and Security (Figure 3 ).

The Sub-Committees structure of Twantay Township Disaster Preparedness Committee (Figure 4 ), aligns with the Sub-Committees structure of National Disaster Preparedness Management Working Committee.

To ensure uniformity, the number and name of Sub-Committees of National Disaster Preparedness Management Working Committee can be similar but it doesn't mean that local context should not be taken into consideration. One more sub-committee called DRR sub-committee which oversees wards/village tracts disaster preparedness committees, mitigation and preparedness measures in the township should be constituted and this sub-committee may be headed by Chairman of Township Peace and Development Council and Township Disaster Preparedness Committee considering DRR being a cross-cutting issue.

**Heads of Sub-committee:** In choosing the heads of sub-committees of Township Disaster Preparedness Committee, the following pursuits are suggested.

- If possible and practical, heads of sub-committee of Township Disaster Preparedness Committee should be assigned to township level head from the particular Ministry/Department which is heading the same sub-committee at the National or State/Division or district level Sub-Committee of Disaster Preparedness Committee.

- If, heads of sub-committees of Township Disaster Preparedness Committee are assigned by other reasons and considerations (not by reason mentioned above), then there will be frequent reassignments since all the government staffs are retired or transferred. The Organogram of Twantay Township Disaster Preparedness Committee is given below as a sample.

**Figure 4 Organization Chart of Twantay Township Disaster Preparedness Committee**

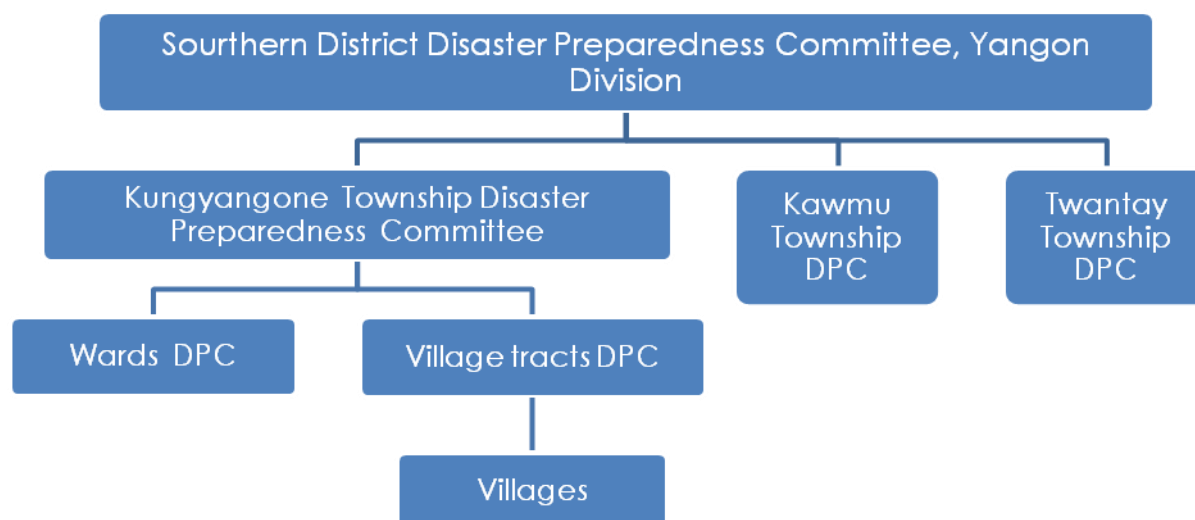


### 4.3 Linkages with District and Village Tract/Ward committee

The roles and responsibilities of Township Disaster Preparedness Committee include issuing directives to Village Tract/Ward Disaster Preparedness Committees and to seek guidance from District Disaster Preparedness Committee. For effective implementation of Township Disaster Management Plan, synchronized efforts must be made by district, township and village tract/ward disaster preparedness committees. The Diagram of linkages of Kungyangone Township Disaster Preparedness Committees with Southern District

Disaster Preparedness Committee and Village Tracts/Ward Disaster Preparedness Committees is shown at Figure 5.

**Figure 5: Linkages with district and village tracts/ward committees**



The composition of Village Tract Disaster Preparedness Committee as per the Action Plan of Kungyangone Township Disaster Preparedness Committee, is shown in Table 3.

**Table: 4 Composition of Village Tract Disaster Preparedness Committee**

Sr. No.	Membership	Designation
1	Chairman, Village Tract Peace and Development Council	Chairman
2	Myanmar Police Force ( if Police Sub-station is in Village Tract)	Member
3	Health Department	Member
4	Member, Village Tract Peace & Development Council	Member
5	Education Department	Member
6	Union Solidarity and Development Association	Member
7	Auxiliary Fire Brigade	Member
8	Myanmar Red Cross Society	Member
9	Civil Defense ( Pyi Thu Sit)	Member
10	Myanmar Maternal and Child Welfare Association	Member
11	Myanmar Women Affairs Federation	Member
12	Clerk, Village Tract Peace & Development Council	Secretary

## 5. Roles and responsibilities of Committee and Sub-Committees

### **5.1 Roles and Responsibilities of Township Disaster Preparedness Committee**

It describes Roles and Responsibilities of Township Disaster Preparedness Committee in all phases of disaster management and in other words, it mentions tasks, preparedness and mitigation measures to be performed before disaster, tasks and responses to be performed during disaster and relief, reconstruction, rehabilitation, recovery activities, to be performed after disaster.

Roles and responsibilities of Twantay Township Disaster Preparedness Committee in all phases of disaster management are given below.

#### **Before Disaster**

- Prepare hazard profile including the past disasters of the township and identify priority vulnerable areas
- To convene regularly the meetings of Township Disaster Preparedness Committee and its sub-committees and undertake continuous watches on the disaster risk reduction and preparedness measures
- To look after constituting of wards/village tracts disaster management committees and supervising of drawing and implementing the systematic disaster management plans
- To set up teams of Search and Rescue, First Aids, early warning dissemination in the wards/village tracts and to undertake and supervise necessary capacities building activities
- To undertake assessments on disaster preparedness plans during March and April of pre-monsoon periods
- Educate people on To Dos and Not To Dos regarding disaster
- To strengthen and maintain the existing buildings and to ensure structurally sound constructions that can withstand earthquake and natural disasters
- To renovate and reconstruct the buildings from low lying flood prone areas systematically into sound buildings that can withstand any hazard such as by putting long leg to the houses/buildings
- To check the strength of Dam and to build life saving hills for low lying inhabitants
- To build embankments/dams to prevent saltwater coming into agricultural land, paddy fields and drinking water ponds
- To organize mock drills in which Township Disaster Management Committee, its sub-committee and communities are involved in to check effectiveness and practicability of the plan
- To ensure that enough stocks of drugs is arranged in pre monsoons
- To arrange systematic stocking of rice, crops in pre monsoons so that it is safe when disaster strikes
- To identify safe places in advance for refuge in times of disaster for different types of disasters e.g. hill and higher land for flooding, field for earthquake

- To designate the place suitable for opening of temporary Relief Center
- To specify times for regular mock exercises of Emergency Rescue Team (ERT) e.g. once in pre monsoons for flooding and once in pre summer for fire
- To plan tools, vehicles with fuel and boats for emergency rescue efforts in pre monsoons
- To grow plants for leeway
- To prepare plan for likely outbreak of epidemic diseases after disaster e.g. after flood and after storm
- To setup early warning dissemination system so that emergency warning news is quickly disseminated to the grassroots levels
- To prepare a list of contacts so that emergency warning news is widely disseminated.

### **During Disaster**

- To disseminate early warning to the working committee, sub-committee and public with clearness and exactness
- To evacuate quickly the people from vulnerable places into the safe places as soon as emergency warning is received
- To evacuate elders, women, children and disables first
- To start performing of assigned duties of working committee and sub-committees and office of committee shall be functional 24 hours
- To issue instructions for evacuation as per the disaster
- To make arrangement for relief, resettlement, health and security for the affected people by collecting information from other agencies
- To make arrangement for temporary shelter place
- To block grapevine and to inform public the real ground situation
- To report the state of disaster to district disaster management committee and above

### **After disaster**

- To dispose debris and shift injured people
- To collect and compile data on death toll, damage and loss, affected people and report to district disaster management committee and above
- To receive and distribute relief materials and medicines at relief camps
- To control epidemic
- To reopen schools as soon as possible
- To give special attention to women-led households, elderly, orphans, disabled in distributing of relief materials and helps
- To record the experiences, lessons mentioning pros and cons deriving from disaster management activities
- To review relief and resettlement works

- To monitor and document the response and update Township Disaster Management Plans based on learning of the past disaster
- To exchange news and views among members of sub-committees under directive of working committee
- To report the disaster management activities to district disaster management committee and to make arrangement for implementation of directions from higher authorities
- To construct new schools in higher ground to escape from flooding and construct buildings that can withstand storms and quakes
- To resupply mangroves and leeway plants
- To give required trainings to different types of construction workforces so that they know how to construct the buildings and infrastructures that can withstand disaster

## **5.2 Roles and Responsibilities of Sub-Committees**

Roles and Responsibilities of Sub-Committees of Pyapon Township Disaster Preparedness Committee are given below.

### **(5.2.1) Search and Rescue Sub-Committee**

- To carry out emergency rescue
- To provide foods in emergency period
- To provide emergency shelter
- To search and help lost victims
- To clear debris
- To arrange cremation for dead victims.
- To counsel with left families and provide assistance as needed.

### **(5.2.2) Health Sub-Committee**

- To provide health care for victims
- To provide emergency temporary clinics
- To provide carry out emergency treatments
- To give immunization to prevent epidemics
- To put Chlorine in wells & ponds
- To make arrangement for sufficient drinking water in each village and provide assistance as needed.

### **(5.2.3) Data Collection Sub-Committee**

- To compile data on damage and loss by building type
- To compile data on dead people and animals
- To compile detailed data on loss of each business
- To compile data on private and religious damaged buildings
- To provide data as per the requirement of the higher authority
- Coordination with others for data availability.

### **(5.2.4) Accepting & Transfer of Materials and Fund Sub-Committee**

- Systematic registration for donation
- To open an account at Myanmar Economic Bank
- To record in a cashbook
- To allow withdrawal for expenditure permitted by Minister's Office
- To transfer donated materials to Management & Distribution of Relief Materials sub-Committee.

**(5.2.5) Management and Distribution of Relief Materials Sub-Committee**

- To accept and maintain donated materials which are transferred from "Accept & Transfer Sub-Committee"
- Distribute donated materials to Village Tracts/ Wards and other organizations as decided by regional responsible Minister
- Based on type of materials, first come, first serve basis to be practiced for distribution
- To maintain the materials systematically based on type of materials to prevent from damage.

**(5.2.6) Reconstruction sub-Committee**

- To perform reconstruction for totally collapsed villages at the guidance of Minister
- To supervise on construction work of new houses and villages by the Minister's guidance and permission.
- To identify public buildings which should be reconstructed and to report to Minister.

**(5.2.7) Resettlement Sub-Committee**

- To provide resettlement of houses for totally collapsed villages
- To resettle homeless victims in affected villages
- To settle disputes on land
- To coordinate and settle issues related to inter-department for collapsed departmental buildings/ compounds.
- To implement as per the instructions of the Minister

**(5.2.8) Rehabilitation Sub-Committee**

- To take rehabilitation activities for restoration of normal operation of departments (Government Offices) as the first priority.
- To perform rehabilitation for education and health.
- To perform rehabilitation for roads transportation and security.
- To perform rehabilitation for paddy fields and related works.
- To perform rehabilitation for fisheries.
- To perform rehabilitation for salt firms
- To implement as per the instructions of the Minister

**(5.2.9) Security Sub-Committee**

- To maintain township security during emergency relief period.

- To coordinate with public forces and NGOs for Wards/ Village Tracts security.
- To ensure safety of offices and properties of regional authority and departments.
- To provide security for the committee and sub-committees

**(5.2.10) Transportation Sub-Committee**

- To accept and deliver systematically materials sent by NDPCC.
- To arrange vehicles and boats for field trips of the committee and Sub-Committees.
- To coordinate and facilitate local transport for NGOs in performing relief activities.
- To reserve boats and vehicles for emergency use within the township
- To arrange boats and vehicles for delivering relief materials if necessary

**6. Mitigation, Preparedness, Recovery and Rehabilitation Measure**

This chapter deals with guidance on various measures to be taken to minimize adverse impacts of disasters.

**6.1 Mitigation measures**

Mitigation refers to long term measures undertaken to reduce the overall risks of disaster and these measures can be structural and non- structural. The structural measures refer to construction and management of physical masses (dams, raised settlements etc.). The non-structural measures include training, planning and awareness raising etc. The activities involved in this task can be as follows.

- Structural mitigation
  - Construction
  - Retrofitting such as including hazard resistant features in infrastructure
- Non-structural mitigation
  - Public awareness raising and education
  - Institutional building
  - Training and capacity building
  - Early warning system establishment and maintenance
  - Hazard mapping
  - Identification of responsible departments/agencies
  - Development of indicators (against each activity)
  - Identification of required resources ( against each activity)

**6.2 Preparedness measures**

Preparedness activities determine specific actions which are practiced before disaster which needs to be performed after disasters. It helps in quick and effective response. The activities involved in this phase can be as follows.

- Forecasting and early warning
- Safe area preparation
- Search and rescue planning
- Water, sanitation and health care planning
- Livelihood planning
- Drills and mock exercises

### **6.3 Response measures**

The effectiveness of response is based on effective coordination, effective logistics management and level of responsiveness of the community. The activities involved in this phase can be as follows.

- Evacuation strategy
- Safe area management
- Communication arrangement
- Medical and health arrangements
- Immediate repairs of critical infrastructures
- Volunteer recruitment and management
- Hazard monitoring
- Search and rescue operation
- Emergency relief operations
- Coordination arrangement

### **6.4 Recovery and Rehabilitation**

The recovery and rehabilitation phase aims to restore normalcy and help people to get back to their routine social and economic engagements. The activities involved in this phase can be as follows.

- Post disaster damage and needs assessment
- Recovery planning, based upon needs assessment
- Linking recovery plan with township development plan
- Environmental remediation
- Repair/reconstruction of damaged houses and infrastructure
- Provision of psychosocial care
- Coordination and reporting system
- Identification of responsible departments/agencies
- Development of indicators against each activity
- Identification of required resources against each activity

### **( 7 ) Monitoring and review and Updating of Plan**

Given the nature of disaster preparedness planning, the Township Disaster Management Plan should be regarded as a working document. The development of the Township Disaster Management Plan is an ongoing exercise and it should takes into consideration more recent situations and changes in context.

The Township Disaster Management Plan should be updated at regular intervals. It allows periodic re-adjustment of the quantitative information base of the plan such as Township Profile, Resource Inventory, Risk Profile, as well as operatives and administrative data.

### **Interpretation of Early Warning Signs (Extracts from Standing Order on Natural Disaster Management)**

As per '**Appendix E and Appendix H**' of Standing Order on Natural Disaster Management by the National Disaster Preparedness Central Committee, it is imperative to understand the red flag system and color codes.

The Red Flag System has Alert level 1 to 11 and the Alert Level (1) means that there is no possibility of a storm in the areas and the public should pay particular attention to weather news updates and comply with instructions and the Alert Level (11) means that the storm has struck and communication have been disrupted.

The color codes designate an emergency as Yellow stage, Orange stage, Red stage, Brown stage and Green stage.

**Yellow Stage:** The formation of a tropical storm in the Bay of Bengal and the Andaman Sea is designated as the Yellow Stage.

**Orange Stage:** When a tropical storm has formed in the Bay of Bengal and the Andaman Sea and begins moving toward the Myanmar coast, the Orange Stage is designated.

**Red Stage:** When a storm moving towards Myanmar coast is expected to make landfall in 12 hours, the Red Stage is designated.

**Brown Stage:** When a storm makes landfall on the Myanmar coast, the Brown Stage Emergency is designated.

**Green Stage:** When a storm has weakened and the storm hazard has passed, the Green Stage is designated

## Terminology of Disaster Risk Reduction (DRR) \*

Disaster Risk Reduction involves a number of terms and concepts such as Hazard, Risk, Mitigation, etc. Selected terms of Disaster Risk Reduction used in the Guideline on TDMP are described as follow:

**Hazard:** Any phenomenon, substance or situation, which has the potential to cause disruption or damage to infrastructure and services, people, their property and their environment.

**Vulnerability:** A concept which describes factors or constraints of an economic, social, physical or geographic nature, which reduce the ability of a community to prepare for and cope with the impact of hazards.

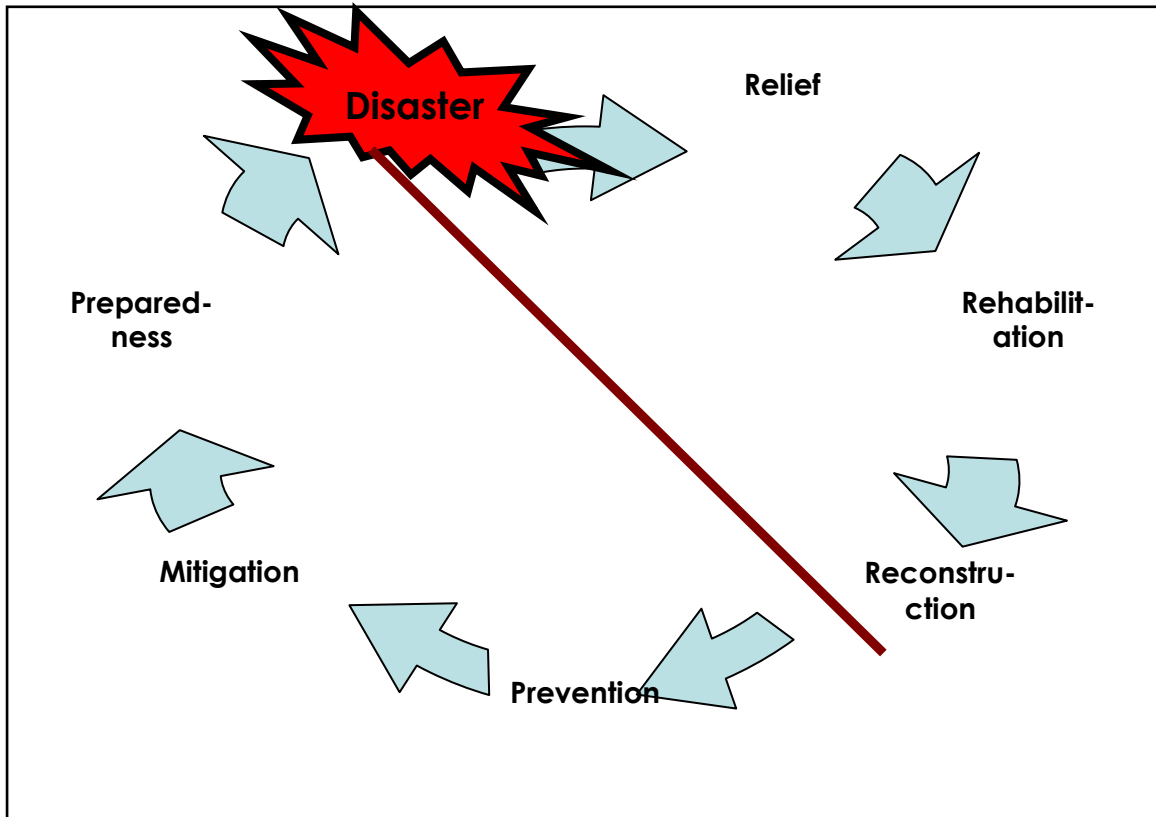
**Capacities:** The resources and skills people posses, can develop, mobilize and access, which allow them to have more control over shaping their own future and coping with disaster risks.

**Disaster:** The serious disruption of the functioning of society, causing widespread human, material or environmental losses, which exceed the ability of the affected communities to cope using their own resources. Disasters occur when the negative effects of the hazards are not well managed.

**Risk:** The probability of harmful consequences, or expected losses (deaths, injuries, property, livelihoods, economics activity disrupted or environment damaged) resulting from interactions between natural or human-induced hazards and vulnerable conditions.

$$\text{Risk} = \frac{\text{Hazard} \times \text{Vulnerability}}{\text{Capacity}}$$

**Disaster Management Cycle:** Disaster Management Cycle includes following phases and it is important to note that the different phases of disaster management are not necessarily compartmentalized or sequential. Sometime, the mitigation measures are included in the rehabilitation and reconstruction phase. Even preparedness measures are undertaken during the reconstruction and rehabilitation phase.



- **Response:** Actions taken immediately following the impact of a disaster when exceptional measures are required to meet the basic needs of the survivors.
- **Relief:** Measures those are required in search and rescue of survivors, as well to meet the basic needs for shelter, water, food and health care.
- **Rehabilitation:** The operations and decisions taken after a disaster with a view to restoring a stricken community to its former living conditions, whilst encouraging and facilitating the necessary adjustments to the changes caused by the disaster.
- **Reconstruction:** Actions taken to re-establish a community after a period of rehabilitation following a disaster. It includes construction of permanent housing, full restoration of all services, and complete resumption of the pre-disaster state. A long term development project that follows a disaster or emergency that reconstructs a community's infrastructure to pre-existing levels. Reconstruction is often associated with an opportunity to improve a community rather than to simply "reconstruct" a pre-existing system.
- **Recovery:** Decisions and actions taken after a disaster with a view to restoring or improving the pre-disaster conditions of the stricken

community, while encouraging and facilitating necessary adjustments to reduce disaster risk.

- **Prevention:** Encompasses activities designed to provide permanent protection from disasters, including engineering and other physical protective measures, but also legislation on land use and urban planning.
- **Mitigation:** Structural and non-structural measures undertaken to limit the adverse impact of natural hazards, environmental degradation and technological hazards.
- **Preparedness:** Measures taken in anticipation of a disaster to ensure that appropriate and effective actions are taken in the aftermath.

] **Source:** Terminology of Disaster Risk Reduction was extracted from *Myanmar Community Based Disaster Risk Management Manual* developed by UNDP and ADPC.

## References

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4. Natural Disaster Preparedness Central Committee (NDPCC) **'Standing Order on Natural Disaster Management'**, January 2009
5. Asian Disaster Preparedness Center (ADPC) **'Manual on Flood Preparedness Program for provincial and district level authorities in the lower Mekong Basin Countries'**
6. UNDP and ADPC **'Myanmar Community Based Disaster Risk Management Manual'**