



MYANMAR ACTION PLAN ON DISASTER RISK REDUCTION, 2017

Fostering resilient development through integrated action plan

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2017**



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FOREWORD



Building disaster resilience is not an option. Past events have clearly demonstrated the far reaching, detrimental impact of disasters on hard-won development gains. I congratulate the National Disaster Management Committee for preparing the "Myanmar Action Plan on Disaster Risk Reduction 2017", which lays out the path that must be followed to make our country disaster resilient. The backbone of our nation is our people and their role in the implementation of the Plan cannot be overstated. Let us all join with the National Disaster Management Committee to build a truly disaster resilient Myanmar.

A handwritten signature in blue ink, reading "Aung San Suu Kyi".

H.E. Daw Aung San Suu Kyi
State Counsellor, Republic of the Union of Myanmar
9-10-2017

MAP DRR 2017 | MESSAGE



Myanmar Action Plan on Disaster Risk Reduction has crafted a determining feature of disaster risk reduction landscape in Myanmar and gone beyond the traditional relief and response measures towards preparedness and prevention in undergoing disaster management.

The Action Plan covers not only natural hazards but also man-made disasters and will be implemented through a people-centred and inclusive approach focusing on managing risks rather than managing disasters.

H.E. U Henry Van Thio
Vice President, Republic of the Union of Myanmar
Chairman, National Disaster Management Committee
9-10-2017

MAP DRR 2017 | PREFACE

Myanmar launched the 12-point Economic Policy in 2016, which identified the rapid development of fundamental economic infrastructure and the formation of policies to increase foreign investment among other priorities. The existing development landscape will undergo substantial change and so will be the disaster risk landscape, as development is not risk neutral.

Myanmar is prone to almost all types of hazards such as earthquake, tsunami, floods, landslide, cyclone, strong wind, lightning, soil erosion, fire, forest fire, drought, industrial and technological hazards. The existing risk can increase many fold due to climate change and skewed development. Our Economic Policy envisions people-centered, inclusive and continuous growth; hence it is important to imbibe 'resilience' into our development interventions in letter and spirit. It is equally important to prepare for disaster response, rehabilitation and reconstruction.



The 'Myanmar Action Plan on Disaster Risk Reduction (MAPDRR), 2017', developed under the guidance of the National Disaster Management Committee, has laid long-term vision for building resilience by 2030. It has laid path for realizing the vision through concrete actions in phased manner. The 32-priority actions, identified for implementation over 2016-2020, are ambitious but doable. The implementation requires strong cooperation and coordination among government departments, development partners, private sectors and community. NDMC is committed to MAPDRR, 2017 and has already started taking steps towards its implementation.

MAPDRR, 2017 drafting went through a rigorous consultative process. A series of thematic and regional consultations were held in different parts of the country to address technical and ground level issues respectively. Four technical working groups led by four departments (Department of Meteorology and Hydrology, Ministry of Transport and Communications; General Administration Department, Ministry of Home Affairs; Planning Department, Ministry of Planning and Finance; and Department of Highways, Ministry of Construction) drafted four thematic chapters of the action plan. An inter-agency Task Force, led by the Relief and Resettlement Department (RRD), Ministry of Social Welfare, Relief and Resettlement, with members drawn from government, development partner, private sector and civil society organization coordinated the overall process. United Nations Development Programme (UNDP) has worked closely with RRD and other departments in this endeavour.

Sincere thanks to line ministries, departments, regional/ state government, development partners including UNDP, private sector and civil society organisations for supporting this timely initiative and I look forward for their continued cooperation during implementation.

Let's work together towards resilient Myanmar.

A handwritten signature in black ink, appearing to be 'Win Myat Aye'.

H.E. Dr. Win Myat Aye
Vice Chairman, National Disaster Management Committee
Union Minister for Social Welfare, Relief and Resettlement

EXECUTIVE SUMMARY

Resilience is key to sustainable development as disasters wipe out development gains of several decades in a matter of hour and day as demonstrated by the floods of 2015 and the Cyclone Nargis of 2008 in Myanmar. The country is prone to almost all types of hazards ranging from earthquakes to floods and from cyclones to fires. Climate change and skewed development can increase the existing risk by many folds, if it is not addressed in comprehensive and systematic manner.

The Government of the Union of Myanmar developed the Myanmar Action Plan on Disaster Risk Reduction, 2017 (MAPDRR, 2017) through an inter-agency Task Force mechanism in a wider-consultative mode over 2016-17. The process involved a series of thematic discussion at national level and consultations at sub-national level to bring ground issues.

MAPDRR, 2017 is a comprehensive and unified action plan for disaster risk reduction with prioritized interventions across Myanmar till 2020. With a long-term vision and considering deep-rooted underlying drivers of disaster risk, it has set overall target for 2030. It aims to provide a base for mobilizing and leveraging, primarily, national and external resources and will provide a basis for result-oriented outcomes.

"Vision: Protected lives, economy, heritage and environment, through inclusive approach, towards sustainable development in Myanmar."

The action plan has identified 32-priority actions under the four pillars namely Risk information and awareness; Risk governance; Risk mitigation; and Preparedness for response, rehabilitation and reconstruction. Each priority action has identified objectives, activities, outputs, duration and lead ministry/department. Also, other departments and partners to support the lead agency have been identified. The priority actions aim to strengthen policy framework and systems for long-term risk reduction. A number of development policies and interventions are in nascent stage and it offers a window of opportunity for disaster and climate risk informed development to avoid creating new risk. Preparedness for disaster response, rehabilitation and reconstruction is key for addressing existing risk.

The action plan has laid out robust implementation, funding, monitoring and evaluation mechanism to realize the vision of the MAPDRR, 2017. The identified lead ministry/department will spearhead the implementation of respective priorities. A high-level MAPDRR Steering Committee will be the main coordinating body and NDMC will provide oversight and strategic guidance. The priorities will be funded through internal as well as external sources. A multi-layer monitoring and evaluation mechanism has been planned at various stages of the execution.

It is important to remember that the disaster risk created over years and decades require coordinated, systematic and long-term interventions by all stakeholders including government, development partners, private sector, civil society organizations and community.

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ACRONYMS AND ABBREVIATIONS

AADMER	:	ASEAN Agreement on Disaster Management and Emergency Response
CCA	:	Climate Change Adaptation
CDA	:	Community Development Association
DACU	:	Development Assistance Coordination Unit
DICA	:	Directorate of Investment and Company Administration
DM	:	Disaster Management
DMH	:	Department of Meteorology and Hydrology
DMTC	:	Disaster Management Training Centre
DRM	:	Disaster Risk Management
DRR	:	Disaster Risk Reduction
DSW	:	Department of Social Welfare
DUHD	:	Department of Urban and Housing Development
DWIR	:	Directorate of Water Resources and Improvement of River Systems
ECD	:	Environmental Conservation Department
EOC	:	Emergency Operation Centre
FSD	:	Fire Services Department
GAD	:	General Administration Department
HCT	:	Humanitarian Country Team
IASC	:	Inter-Agency Standing Committee
IOM	:	International Organization of Migration
IWUMD	:	Irrigation and Water Utilisation Management Department
MAPDRR	:	Myanmar Action Plan on Disaster Risk Reduction
MCDC	:	Mandalay City Development Committee
MDLD	:	Myanmar Disaster Loss and Damage Database
MEC	:	Myanmar Earthquake Committee
MES	:	Myanmar Engineering Society
MGS	:	Myanmar Geosciences Society
MIMU	:	Myanmar Information Management Unit
MoALI	:	Ministry of Agriculture, Livestock, and Irrigation
MoC	:	Ministry of Construction
MoHS	:	Ministry of Health and Sports
MoPF	:	Ministry of Planning and Finance
MPD-Network	:	Myanmar Private Sector Disaster Management Network
MRCS	:	Myanmar Red Cross Society
MTU	:	Mandalay Technological University
MU	:	Mandalay University
NCDP	:	National Comprehensive Development Plan
NDMC	:	National Disaster Management Committee
NPT CDC	:	Naypyitaw City Development Committee

PAPRD	:	Project Appraisal and Progress Reporting Department
PD	:	Planning Department
PTD	:	Post and Telecommunications Department
RRD	:	Relief and Resettlement Department
SDC	:	Swiss Development Cooperation
SDGs	:	Sustainable Development Goals
SFDRR	:	Sendai Framework for Disaster Risk Reduction
TWG	:	Technical Working Group
UMFCCI	:	Union of Myanmar Federation of Chamber of Commerce and Industries
UNDP	:	United Nations Development Programme
UNOCHA	:	United Nations Office for the Coordination of Humanitarian Affairs
WRUD	:	Water Resources Utilization Department
YCDC	:	Yangon City Development Committee
YTU	:	Yangon Technological University
YU	:	Yangon University

Development, Disaster Risk and Resilience in Myanmar

Setting context

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1.1

Myanmar's Development Vision

Myanmar has embarked on an ambitious development trajectory and launched the Economic Policy of the Union of Myanmar¹, which envisages a people-centred, inclusive and continuous development of the country. The balanced economic development across the states and regions is one of its key objectives. The country aims to reach 'a developed nation' status (middle income country) that is integrated into the global community with a seven to nine percent GDP growth rate annually on an on-going basis.² This will contribute to lift millions of people out of poverty and provide access to quality employment, housing, education and medical care. The country is also taking steps to a balance between peace and development, as development without peace is not durable, as is peace without development.³

The 12-point economic policy prioritised the rapid development of fundamental economic infrastructure such as electricity generation, roads, ports, building environmentally sustainable cities, upgrading public services and utilities, expanding public spaces, and making greater efforts to protect and conserve our cultural heritage. In addition, it calls for the formulation of specific policies to increase foreign investment.

Myanmar is strategically located at the crossroads of East Asia, Southeast Asia and South Asia and has the potential to be a regional hub for a multi-modal transportation-land-bridge between ASEAN, China and India.⁴ It entails creating power, transportation, logistics and communication systems, economic corridors and economic zones. It would lead to Myanmar's full integration into the global value chain and regional production networks. These interventions are likely to reshape the development and the disaster risk landscape of the country.

Myanmar's development approach and framework, including its economic policy, calls for resilient development as disaster is intimately connected to development. A disaster can put development gains at risk and at the same time, the development choices made by individuals, communities and a country as a whole, can pave the way for unequal distributions of disaster risk.⁵

¹ Union of Myanmar, Economic Policy of the Union of Myanmar, 2016.

² Ministry of National Planning and Economic Development, National Comprehensive Development Plan, (2030), 2014.

³ Union of Myanmar, Speech of State Counsellor, the Myanmar Democratic Transition Forum, 11 August 2017.

⁴ Asian Development Bank, Myanmar: Unlocking the potential, ADB Economics Working Paper Series, July 2015.

⁵ United Nations Development Programme, Reducing Disaster Risk: A Challenge for Development, 2004.

1.2

Development and Disasters: Lessons Learnt

The ambitious development trajectory of Myanmar can be severely derailed in hours or days by a disaster, as the country is prone to hydrological, meteorological, geological, industrial and technological hazards. Key development sectors were severely affected by disasters and Table 1.1 captures the impact (damage and losses) of two major disasters on key development sectors and the GDP of Myanmar.

Table 1.1: Impact of Disasters on Key Development Sectors in Myanmar

(Figures are in million kyats)

Development Sectors	Cyclone Nargis 2008 ⁶	Floods and Landslide 2015 ⁷
Agriculture, Livestock and Fisheries	571,000 - 694,000	713,217
Industry and Commerce	2516,600	480,808
Housing	711,900	542,233
Education	116,300	50,772
Health	18,900	8,185
Total damage and loss as a percentage of the GDP of the previous fiscal year	21	3.1

Disasters not only cause immediate damage, but they also have far-reaching implications, particularly on poor rural households, small businesses, farmers and marginalized groups and can continue for several years afterwards. A study,⁸ five years after Cyclone Nargis to analyze its social impact, found that the disaster had a profound impact on the social and economic fabric of its affected communities. These effects evolved over time, based on the strength of the community to cope, the effectiveness of aid efforts, subsequent external events, and changes in the wider social and economic environment.

It is important to recognize that the impact of future disasters in Myanmar may be severely felt even beyond its borders, as the country's development vision envisages it as a hub of Asia. Therefore, any disruption in Myanmar can affect the overall supply chain across East Asia, Southeast Asia and South Asia.

6 The Tripartite Core Group (TCG), Post- Nargis Joint Assessment Report, July 2008.

7 Government of the Republic of the Union of Myanmar, Myanmar Post-Disaster Needs Assessment of Floods and Landslides, July-September, 2015, November 2015.

8 The World Bank Group and et al, Another Nargis Strikes Everyday: Post-Nargis Social Impacts Monitoring Five Years On, 2014.

1.3

Disaster and Climate Risk in Myanmar

1.3.1 Hazard Profile of Myanmar

Myanmar is prone to almost all types of hazards, which include fire, forest fire, earthquake, strong wind/cyclone, storm surge, tsunami, landslide, floods, drought and industrial/technological hazards.⁹ In recent years, the country is also witnessing a spate of localised disasters such as lightning and riverbank erosion. In 2014-2017, lightning led to the loss of 175 lives. During the same period, Myanmar also experienced loss of 261 and 782 lives due to riverbank erosion and strong wind respectively.¹⁰ The 2015 floods caused damages and losses amounting to USD1.5 billion,¹¹ while the 2008 Cyclone Nargis led to USD4.1 billion.¹²

Since comprehensive multi-hazard risk assessment of Myanmar needs to be done at the national level. Table 1.2 presents basic information pertaining to major hazards in Myanmar.¹³

Table 1.2 Hazard Profile of Myanmar

Hazard	Profile
Earthquake and Tsunami	Two main sources: Sagaing fault, and the Sunda subduction mega thrust zone. Four areas are designated as the Destructive Zone: 1) Bago-Phyu, 2) Mandalay-Sagaing-Tagaung, 3) Putao-Tanaing, and Kale-Homalin. Although the latter two have major earthquake hazards, their risk-level is low because they are sparsely populated. In coastal areas of Myanmar: Rakhine Coast falls in the Strong Zone with MMI 8, the Ayeyawady Delta and Taninthayi coasts fall in the Moderate Zone with MMI 7. ¹⁴
Fire/Forest fire	Most frequent hazards occurring in Myanmar. In the last ten years (2007-2016), 12,000 cases were recorded and Yangon, Mandalay, Ayeyarwaddy, Sagaing and Bago are the most affected States and Regions.
Drought	Approximately 51 townships spread across Magway, Mandalay and Sagaing (lower) regions are prone to drought.
Landslide	The mountainous regions, especially in the western ranges and some localities in the eastern highland are prone to landslides. The western ranges have experienced different types of landslides and earth movements such as rock falls, rockslides, soil avalanches and mud flows.

⁹ Department of Meteorology and Hydrology, Myanmar and et al., Hazard Profile of Myanmar, July 2009.

¹⁰ Annual Disaster Statistics, Relief and Resettlement Department, 2017.

¹¹ PDNA, 2015

¹² The Tripartite Core Group (TCG), Post- Nargis Joint Assessment Report, July 2008.

¹³ Japan International Cooperation Agency and et al, Country Report Myanmar.

¹⁴ Journal of Earthquake and Tsunami Hazard in Myanmar, June 2009

Floods	Flood is one of the most frequent hazards in Myanmar. The threat of flooding usually occurs three times per year, in June, July-August late, September and October with the biggest threat in August, as monsoon rains peak around that time. Most of the areas of Myanmar are prone to floods and the central part of Ayeyarwaddy Region is the most affected one.
Cyclone/Storm Surge	Myanmar is highly vulnerable to these hazards, particularly, during the months of April and May, and also during October to November. Cyclones often occur in the middle of the monsoon season, but they usually don't reach their maximum strength. However, in 2015 Cyclone Komen had disruptive effects, causing heavy rain, landslides and flood. In coastal areas, cyclone can cause storm surges. Climate change is likely to worsen the risk of existing cyclone/storm surge.
Industrial/Technological Hazards	Myanmar has 51 industrial parks (limited information), primarily located in Yangon and Mandalay regions. Most of the companies are small to medium enterprises, and lack disaster risk management and business continuity plans. There is a need for profiling of industrial/technological hazards. ¹⁵

1.3.2 Climate Change and Variability

Studies at the global level have found that climate change is reconfiguring hazards and increasing the risks of disasters. The rise in sea levels, changes in the intensity of the strongest storms and the frequency with which they occur. This in turn increases extreme temperatures, and alters precipitation patterns. Although, it is difficult to link an individual extreme event to climate change, Myanmar has witnessed some extreme events in recent years. For example, in the Chin State, during the last seven days of July 2015, the recorded rainfall was 30 percent higher than in any other month over the past 25 years. The monthly rainfall of July measured at the weather station in Hakha was equal to a 1-in-1000-year rainfall.¹⁶ In July 2009, 434 mm of rainfall fell in a single day in Launglon, which was the highest rainfall recorded in the country during a 24 hours period. In August 2009, the Bago Region experienced its highest 24 hours rainfall in 45 years.

On 21st July 2011, 739 mm of rainfall within a 24 hours period in Taungoke, Rakhine, was recorded as the highest rainfall in the country. On 14th May 2010, the highest temperature, reaching 47.2°C, was recorded in Myanmar.

Climate change projections: A recent study¹⁷ on climate risk in Myanmar, found that the climate is projected to shift dramatically in the coming decades. The study highlighted the following:

- In every region in Myanmar, temperatures are expected to soar by the middle of the 21st century by 1.3°C–2.7°C.
- The eastern and northern hilly regions are projected to see the most dramatic warming, with temperatures rising as much as 3°C during the hot season.
- In the future, the country can experience anywhere between four to 17 days of extreme heat every month, in contrast to one day a month during the period between 1981–2010.
- Changes in rainfall patterns are projected to vary by region and season. While increases are projected during the monsoon season, both a rise and fall in the temperature is likely during the rest of the year.
- Projections on rising sea levels for the coastline, range from 20 cm to 41 cm by mid-century.

The implication of climate change on six development sectors: agriculture, fisheries and livestock; environment and natural resources; energy, transport and industry; cities, towns and human settlements; climate hazards and health; and education, science and technology has been analyzed in the Myanmar Climate Change Strategy and Action Plan.¹⁸

1.3.3 Vulnerability, Exposure and Trends

There has been a rise in disaster losses over the past decades primarily due to increased exposure of the population and assets in hazardous zones. It is important to profile current vulnerability, exposure and future trends for better understanding of these underlying factors i.e. drivers of disaster risk.

¹⁵ AHA Centre and et al, Country Report Myanmar, Natural Disaster Risk Assessment and Area Business Continuity Plan Formulation for Industrial Agglomerated Areas in the ASEAN Region, March 2015.

¹⁶ PDNA, 2015

¹⁷ Horton, R., De Mel and et al. 2017. Assessing Climate Risk in Myanmar: Summary for Policymakers and Planners. New York, NY, USA: Center for Climate Systems Research at Columbia University, WWF-US and WWF-Myanmar, UN-Habitat Myanmar.

¹⁸ Ministry of Natural Resources and Environmental Conservation, the Republic of the Union of Myanmar, Myanmar Climate Change Strategy and Action Plan 2016-2030 (draft 19th January 2017), 2017.

At the global level, the United Nations¹⁹ has identified key drivers of disaster risk;

- poverty and inequality
- climate change and variability
- unplanned and rapid urbanization and the lack of disaster risk considerations in land management
- environmental and natural resource management
- demographic change
- non-disaster risk-informed policies
- lack of regulations and incentives for private disaster risk reduction investment
- complex supply chains
- limited availability of technology
- unsustainable uses of natural resources
- declining ecosystems
- pandemics and epidemics

There is a need to develop a comprehensive profile of vulnerability and exposure of Myanmar. However, the following trends have been identified:

- **Poverty and inequality:** An estimated 25 percent of Myanmar's population lives in poverty. In certain pockets of the country, the prevalence is higher than in others. For example, in the Chin State 73 percent of its population lives in poverty. Chin is also highly prone to floods and landslides.
- **Rapid urbanization and migration:** The rate of urbanization in Myanmar has increased over the past decades from 24.8 percent of the total population classified as urban in 1983 to 29.6 percent in 2014. Some of these urban centers are exposed to multiple hazard. Yangon, with a urban population of 5.2 million, is the most urbanized region and accounts for about 35 percent of the total urban population. It is projected that by 2040, Yangon will become a megacity with a population of 10 million.²⁰ Approximately four percent of the population, or 2.02 million persons were reported to be living abroad, of which 1.7 million (83 percent) are between the ages of 15 and 39 years.²¹

Migration benefits migrants and host communities. There are however, problems associated with migration, such as social conflict, environmental degradation and difficulties associated with the separation of migrants from their family and community members.

- **Vulnerable population:** The overall number of women is 26,661,667 and it accounts for 51.8% of the total population. The number of children below the age of 15 and the elderly above the age of 65 years are 14,399,569 and 28,97,563 respectively. Together, both these demographics constitute 33.6 percent of the population. The percentage of people with disabilities stands at 4.6 percent and its prevalence starts to increase at the age of 40, with a sharp rise after the age of 65.²²
- **Deforestation:** Myanmar lost over three percent of its forest ecosystem over the past two decades. It has been estimated that 83 percent of mangroves in the Ayeyarwady Delta have been destroyed between 1924 and 1999. Decreased productivity and limited vegetation cover has destabilised soils and caused erosion. The compound effects of land degradation, overutilization and unfavourable agricultural practices are diminishing water supplies for domestic, agricultural and industrial use.²³
- **Housing condition:** Apartments and single storey buildings account for 12% of the housing in the country.²⁴ A large proportion of houses are constructed with materials that are, highly vulnerable to cyclones and strong winds.
- **Limited access to communication:** Almost half of the population or 49.5 percent of households have access to television, 35.5 percent have access to a radio, 32.9 percent use a mobile phone, while landline and internet access at home accounts for less than 10 percent.²⁵

19 United Nations, Report of the open-ended intergovernmental expert working group on indicators and terminology relating to disaster risk reduction, 1 December 2016.

20 Ministry of Immigration and Population, The 2014 Myanmar Population and Housing Census: Highlights of the Main Results, May 2015 (Census, 2014)

21 Ibid.

22 Ibid.

23 Ministry of Environmental Conservation and Forestry, Myanmar's National Adaptation Programme of Action to Climate Change, 2012.

24 Census, 2014

25 Ibid.

1.4

Legislative and Institutional Arrangements for Disaster Risk Management

The legislative and institutional setup for disaster risk management is evolving in Myanmar. The country enacted the Disaster Management Law and Rules in 2013 and 2015 respectively. The Law provides legal basis to set up disaster management bodies based on various roles. It also defines its roles and responsibilities and creation of funds for disaster management. These provisions empower disaster management bodies to smoothly discharge their duties and define areas of accountability. The Disaster Management Rules, 2015 detail out provisions of the law towards its implementation.

1.4.1 Government's National and Sub-National Disaster Risk Management Arrangements

The National Disaster Management Committee (NDMC) under the chair of the Vice President (2) is the apex body for Disaster Risk Management (DRM). 12 work committees related to specific areas of disaster risk management and an advisory committee have been set-up under the NDMC. The organogram is reflected in Figure 1.1. Refer Annex A for details.

Figure 1.1. Organogram of Disaster Management Bodies in Myanmar



At the regional/state, self-administered zone, district, township, ward and village tract levels, disaster management bodies are being constituted, according to provisions of the Disaster Management Law, 2013.

Relief and Resettlement Department (RRD) is the nodal department for Myanmar's disaster risk management and focal point for the ASEAN Committee on Disaster Management. RRD has established a Disaster Management Training Centre, an institute dedicated to training, education and research on risk reduction. Other ministries and departments such as Ministry of Construction; Ministry of Agriculture, Livestock and Irrigation; Ministry of Health and Sports; Ministry of Planning and Finance; Department of Meteorology and Hydrology; General Administration Department and Fire Services Department play an important role in disaster risk management. Some of the departments have also created disaster risk management focal points /sections.

1.4.2 Disaster Risk Reduction Networks

Disaster Risk Reduction Working Group (DRR Working Group): The DRR Working Group was established in 2008 to support recovery and reconstruction efforts of Cyclone Nargis. It serves as a platform for information sharing and strengthened coordination among development partners working on disaster risk reduction issues. Working groups have been also set-up at the sub-national level in selected regions and states, including in Mon State, Kayin State and Rakhine State. The groups also coordinate sub-national risk reduction activities. UNDP is the chair of the DRR Working Group at the national level, while the Swiss Development Cooperation (SDC), the Community Development Association and the International Organisation for Migration (IOM) head the DRR Working Groups of Chin State, Kayin State and Rakhine State respectively.

Myanmar Humanitarian Country Team (HCT)²⁶: It is a strategic humanitarian coordination and decision-making body that seeks to optimize the collective efforts of the UN, other international and national organizations, non-governmental organizations and the Red Cross Movement. It is convened under the leadership of the Humanitarian Coordinator (RC/HC). The UN Office for the Coordination of Humanitarian Affairs (OCHA) serves as its Secretariat. It oversees the development of sector/cluster response plans and provides oversight and advice to the cluster/sector leads and humanitarian-focused geographic and subsidiary groups. It also leads decision making on inter-agency coordination in regards to assessments, joint monitoring and evaluation missions.

Non-government Organizations (NGOs): Several international and local non-government organizations, community based organizations, professional societies such as Myanmar Engineering Society, Myanmar Geosciences Society and Red Cross system are working on disaster risk management, including community level disaster preparedness.

1.4.3 Private Sector

The private sector role in disaster management especially risk reduction is evolving. It played an important role in the response and recovery efforts of Cyclone Nargis in 2008 and the floods and landslides of 2015. The Union of Myanmar Federation of Chamber of Commerce and Industries (UMFCCI), in partnership with UNDP and UNOCHA, have established the Myanmar Private Sector Disaster Management Network (MPD-Network)²⁷ to:

- Establish and maintain a coordination structure, which would serve as a clear entry point for the private sector in the broader national coordination, led by the government.
- Strengthen the capacity of businesses and business associations in Myanmar and increase its resilience to return to normalcy as soon as possible after disasters.

The MPD-Network is at a nascent stage but has started to engage at the global, regional and national levels; it has been a member of the Task Force on the MAPDRR 2017; and of the Disaster Management Sub-sector Coordination Group under Development Assistance Coordination Unit (DACU).

²⁶ Myanmar Humanitarian Country Team (HCT), Terms of Reference-Revised, February 2017.

²⁷ Myanmar Private Sector Disaster Management Network, Draft Terms of Reference.

1.5

Overview of MAPDRR 2012 and its Achievements

The Government of Myanmar drafted and implemented the Myanmar Action Plan on Disaster Risk Reduction (MAPDRR) 2012. An Inter-Agency Task Force, chaired by the RRD Director-General, comprising of 25 agencies from 12 ministries, seven development partners with an ASEAN representative as an observer, prepared the action plan. The overarching goal was *'To make Myanmar Safer and more Resilient against Natural Hazards, thus Protecting Lives, Livelihood and Developmental Gains.'* It identified 65 priority projects under seven components:

Table: 1.3 Number of Projects under MAPDRR 2012

S/N	Component	No. of Projects
1	Component 1: Policy, institutional arrangements and further institutional development	4
2	Component 2: Hazard, vulnerability and risk assessment	8
3	Component 3: Multi-hazard early warning systems	10
4	Component 4: Preparedness and response programmes at the national, region/state, district and township levels	10
5	Component 5: Mainstreaming of disaster risk reduction into development	13
6	Component 6: Community-based disaster preparedness and risk reduction	9
7	Component 7: Public awareness, education and training	11
	Total	65

This action plan provided a national framework and guided the government and development partners in formulating and implementing risk reduction interventions. The National Comprehensive Development Plan (NCDP) identified risk reduction and building resilience as a priority and mentioned MAPDRR 2012 as a tool to achieve it. Some of the key achievements include the Disaster Management Law and Rules, National Building Code, upgrading of Early Warning Systems, setting up a National Emergency Operation Centre, Capacity Development related to DRR, mass awareness, including International Day for Disaster Reduction celebrations and the National Disaster Management Training Center.

Visioning Disaster Resilient Myanmar:

Vision, Principles and Targets

MAP
DRR
2017



2.1

Rationale for MAPDRR 2017

DRR landscape of Myanmar has significantly changed since 2008, creating a need for a new action plan. It is important to build on the momentum generated by MAPDRR 2012 for long-term risk reduction, that is a vital component for sustainable development.

- **Myanmar's commitment to new global and regional Development and the DRR framework:** In recent years, Myanmar has endorsed and committed to a number of new global and regional frameworks, plans and agreements related to disaster, climate and development. It includes the Sustainable Development Goals (SDGs), Sendai Framework for Disaster Risk Reduction, the Paris Agreement on Climate Change, the Asia Regional Plan for Implementation of the Sendai Framework for Disaster Risk Reduction and the AADMER Work Programme 2016-2020. These commitments call for time-bound outcomes based on disaster risk reduction interventions.
- **Protecting development gains of Myanmar:** The 12-point economic policy of Myanmar has called for holistic development, which requires a long-term systematic approach to include DRR into its development agenda. The sectorial policies and plans related to social protection and climate change, also calls for an integrated approach.
- **Build on MAPDRR 2012 for long-term risk reduction:** A joint study²⁸ by government and development partners on the implementation of MAPDRR found that the action plan served as an important DRR framework for key government departments, non-government agencies and donors. Over the years, it helped ministries to prioritize and implement key objectives identified in the action plan. It laid out the strategic road map for long term DRR measures while also contributing to the Hyogo Framework for Action and AADMER implementation. There is an opportunity to build on this momentum for long-term risk reduction especially addressing drivers of disaster risk.
- **Changes in institutional arrangements for DRR:** In 2016, ministries and departments were reorganised, which affected Myanmar's DRR mandate. Myanmar also enacted new legislations such as the Disaster Management Law, 2013 and the Disaster Management Rules, 2015, which led to significant changes in the overall institutional arrangements related to disaster management. The National Disaster Management Committee under the Vice President (2), the apex body for disaster management along with 12 work committees were constituted.
- **Changes in risk profile:** The risk profile of Myanmar has been changing due to various factors including climate change and rapid skewed development. In recent years, the country has witnessed cases of severe floods, landslides, strong wind, lightning and river erosion, among others.

28 Ministry of Social Welfare, Relief and Resettlement, UNDP and DRR Working Group, Report on Myanmar Action Plan on Disaster Risk Reduction 2009-2015: Accomplishments, Lessons learnt and Way forward, 2017

2.2

MAPDRR 2017 Formulation Process

Steps toward MAPDRR 2017 development was initiated following a stock-taking exercise on the implementation of MAPDRR 2012. A series of consultations were held to draw key lessons and recommendations for MAPDRR 2017. A 36-member Task Force drawn from line departments, city development committees, sub-national disaster management bodies, UN agencies, I/NGOs, CSOs and the private sector were set-up in October 2016. The Task Force led by the Relief and Resettlement Department steered the process, while the NDMC provided oversight in the formulation.

Four technical working groups, each comprising more than 25 departments and partners under the head of a department, was set-up to draft four pillars of the MAPDRR 2017.

Table 2.1: MAPDRR 2017 Technical Working Groups

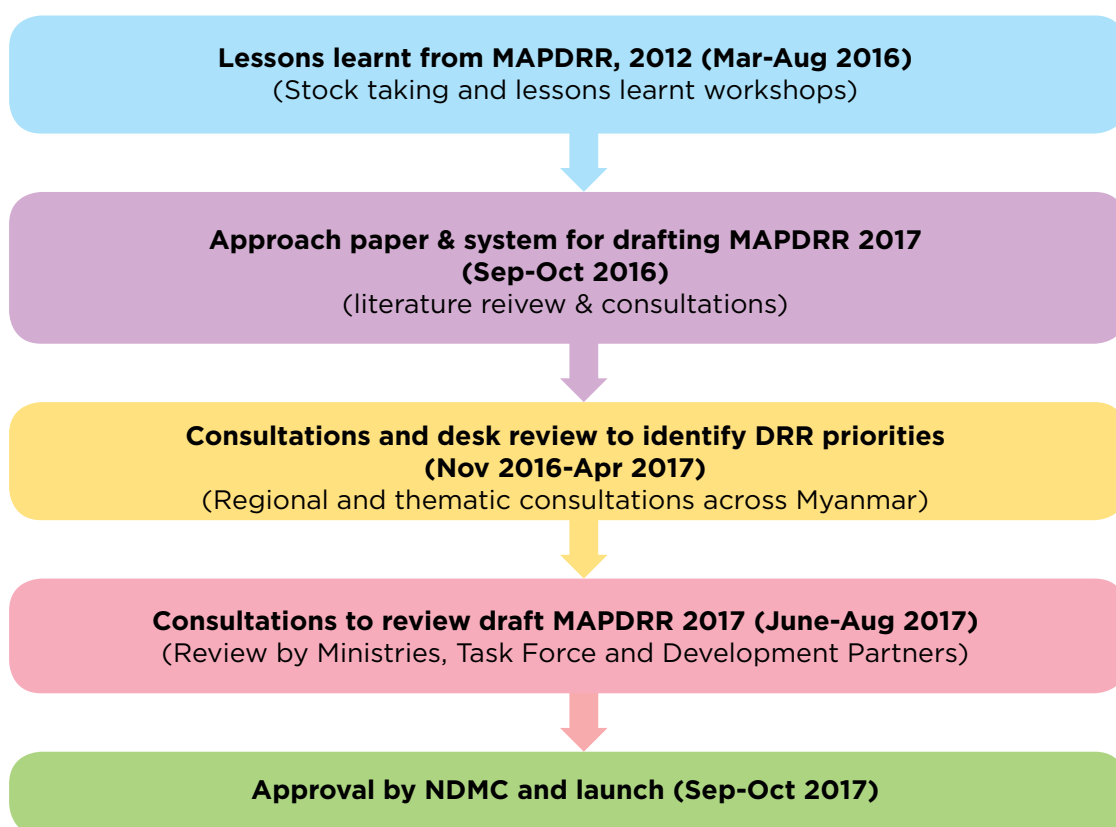
Title	Lead and Co-lead
TWG1: Assessing disaster risk including extreme events and creating public awareness on DRR in Myanmar	<i>Lead:</i> Department of Meteorology and Hydrology, Ministry of Transport and Communications <i>Co-lead:</i> Relief and Resettlement Department, Ministry of Social Welfare, Relief and Resettlement
TWG2: Strengthening disaster risk governance to reduce and manage risk	<i>Lead:</i> General Administration Department, Ministry of Home Affairs <i>Co-lead :</i> Relief and Resettlement Department, Ministry of Social Welfare, Relief and Resettlement
TWG3: Mainstreaming disaster risk reduction for resilient development in Myanmar	<i>Lead:</i> Planning Department, Ministry of Planning and Finance <i>Co-lead:</i> Relief and Resettlement Department, Ministry of Social Welfare, Relief and Resettlement
TWG4: Enhancing disaster preparedness for effective response and resilient rehabilitation and reconstruction in Myanmar	<i>Lead:</i> Department of Highways, Ministry of Construction <i>Co-lead:</i> Relief and Resettlement Department, Ministry of Social Welfare, Relief and Resettlement

The Task Force and the Technical Working Groups held three and eight meetings respectively, over a six-month period within October 2016 to April 2017 to identify priority actions towards risk reduction. Regional consultations were organised in Ayeyarwady and Mandalay Regions and Chin and Mon States to understand

the risk reduction needs at the ground level. Thematic consultations with the private sector, vulnerable groups and the agriculture sector were also organised to analyse disaster risk issues in the context of the national Action Plan. A series of consultations were held with development partners, including discussions within the DRR Working Group, to seek inputs on the drafting process and priority actions. The global, regional and national disaster risk reduction, climate change and development frameworks, agreements, strategies, laws and rules were reviewed to inform and input the MAPDRR 2017 content.

A desk review also contributed to identify priority actions of the MAPDRR 2017. These actions were detailed in consultation with the TWGs and the draft MAPDRR 2017 was prepared under the guidance of the Task Force. A series of consultations were subsequently held in June 2017 to review the draft MAPDRR 2017. A revised version was reviewed and endorsed by the Task Force, in its 5th meeting. As a next step, it was circulated to ministries and departments and after incorporating comments and was approved.

Figure 2.1 **Key steps in developing MAPDRR (2017)**



2.3

Defining MAPDRR 2017

MAPDRR is a comprehensive and unified action plan for risk reduction and management with prioritized interventions across Myanmar until 2020. With a long-term vision and considering deep-rooted underlying drivers of disaster risk, it has set overall targets for 2030. It aims to provide a base for mobilizing and leveraging, national and external resources and and define indicators for result oriented outcomes.

It has three phases:

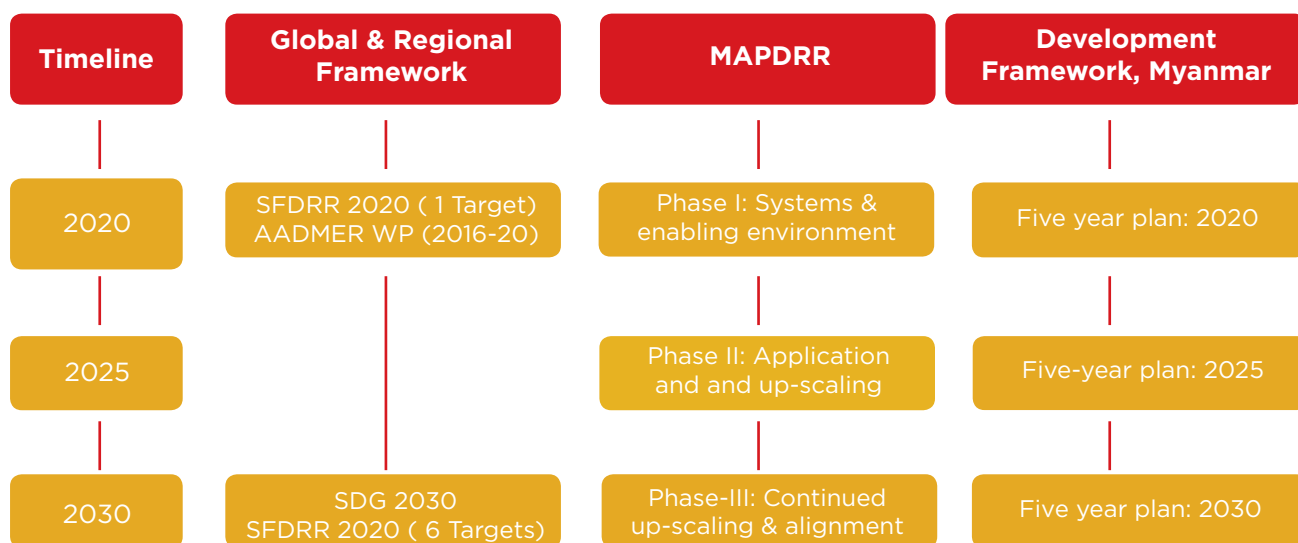
Phase-I until 2020 aims to create and strengthen systems and generate disaster risk information for undertaking risk reduction programmes. It will also include setting up systems and drafting policies and procedures related to disaster risk management, undertaking some pilot projects and ensuring continuity of the actions from the last action plan. The priorities identified under Phase-I has been grouped under four themes: risk assessment, risk governance, mainstreaming DRR into development and preparedness for response and recovery.

Phase-II until 2025 will primarily focus on the application of risk information for risk reduction and it will build on the pilot interventions of phase-I. It will primarily include disaster and climate risk information in development planning and implementation and large-scale DRR targeted investments.

Phase-III until 2030 will draw lessons from risk reduction interventions of phase-I & II based on the development trajectory, including underlying risk drivers. It will further institutionalize the actions and undertake additional measures towards enhancing resilience.

The three-phased approach will help better align DRR priorities with development priorities especially with medium-term development policies and plans such as five-year development/sectorial plans. DRR is a long-term process that needs to be implemented systematically. Comprehensive policies and strategies, effective DRM institutions, disaster risk knowledge base, financing mechanism and tools developed for risk reduction are important before launching large-scale risk reduction intervention. This phased approach will help in systematic adjustments and allow the government to better manage uncertainties.

Figure 2.2 Phased Approach to Disaster Resilient Myanmar



2.4

Vision and Guiding Principles

**“ Vision:
Protect lives, economy, heritage and environment,
through an inclusive approach towards sustainable
development in Myanmar ”**

The guiding principles for implementation of MAPDDR are :

- The Government of Myanmar will be the prime driver of disaster risk reduction interventions; however it calls for all-of-society, including private sector, engagement and partnership.
- The identification, implementation, monitoring and evaluation of priority actions will be ‘inclusive’ and address the special needs of women, children, people with disabilities and the elderly population.
- The priority actions will ensure ‘flexibility’ to meet special needs at the ground level and emerging needs due to the changing risk environment.
- The priority actions will be at a national level, however the focus will be to build resilience at the community level. Regional/state and self-administered zone governments will be key in reducing and managing risk.
- The action plan will be result oriented and measure changes in addressing risk through tracking disaster impacts.
- The priority actions will use a multi-hazard approach.
- The identification and prioritization of actions will be based on disaster risk and the impact of interventions.
- The priority action will be implemented to prevent new emerging risks; an unplanned development such as the construction of a building, bridge, etc. without following standard codes, can increase existing risks, reduce existing and manage residual one which is the disaster risk that remains even when effective disaster risk reduction measures are in place, and for which emergency response and recovery capacities must be maintained.

2.5

Scope

The scope covers the entire country and its most frequent hazards. It has identified 32 actions under four pillars:

Table 2.2 **Number of Priority Actions in each Pillar**

Pillar		Number of priority actions
1.	Assessing Disaster Risk including extreme weather events and creating public awareness on DRR in Myanmar	8
2.	Strengthening disaster risk governance to reduce and manage risk	6
3.	Mainstreaming disaster risk reduction for resilient development in Myanmar	9
4.	Enhancing disaster preparedness for effective response and resilient rehabilitation and reconstruction in Myanmar	9
Total		32

2.6

MAPDRR 2020 Milestones and 2030 Targets

2.6.1 MAPDRR Targets and Indicators

The identified targets and milestones of the MAPDRR are aligned with the targets and indicators of global and regional documents to ensure compatibility in the monitoring and reporting process. Targets for 2030 aims to measure changes in disaster impact. These long-term targets, which are primarily outcome and impact oriented, are likely to be achieved after implementation of all three phases of the MAPDRR.

Table 2.3 Targets and Indicators

Target	Indicators
Target 1 (T1): Substantially reduce disaster mortality in Myanmar by 2030	T1.1: No. of missing persons /100,000 T1.2: No. of deaths /100,000
Target 2(T2): Substantially reduce the number of people directly affected by disasters in Myanmar by 2030	T2.1: No. of injured or ill people/100,000 T2.2: No. of people whose dwellings were damaged T2.3: No. of people whose dwellings were destroyed T2.4: No. of people whose livelihoods were disrupted/destroyed
Target 3 (T3): Reduce direct disaster economic loss in relation to gross domestic product of Myanmar by 2030	T3.1: Agricultural (crops, livestock, fisheries, apiculture, aquaculture and forest sectors)(Associated facilities and infrastructure) T3.2: Damaged or destroyed productive assets (economic, services) T3.3: Housing (damaged or destroyed) T3.4: Critical infrastructure (damaged or destroyed) T3.5: Cultural heritage (damaged or destroyed)
Target 4 (T4): Substantially reduce damage caused by disasters to critical infrastructure and basic services, including health and education facilities in Myanmar by 2030	T4.1: No. of destroyed or damaged health facilities T4.2: No. of destroyed or damaged educational facilities T4.3: No. of other destroyed or damaged critical facilities T4.4: No. of disruptions to educational services T4.5: No. of disruptions to health services T4.6: No. of disruptions to other basic services

Target 5 (T5): Substantially increase access to multi-hazard early warning systems and improve local disaster preparedness in Myanmar by 2020	T5.1: Multi-hazard monitoring and forecasting systems in Myanmar
	T5.2: No. of people/100,000 that are covered by early warning information through local governments or through national dissemination mechanisms
	T5.3: % of regional/state and townships with DRM plans including section/plans to act on early warnings
	T5.4: Accessible, understandable, usable and relevant disaster risk information & assessment available to people at the national, regional/state and township levels
	T5.5: % of population exposed or at risk from disasters protected through pre-emptive evacuation following early warning
Target 6 (T6): Substantially increased investment (government and development partners) on DRR in Myanmar by 2030	T6.1: DRR investment by government compared to GDP.
	T6.2: DRR investment by development partners

2.6.2 Milestones 2020

The first phase of the MAPDRR identified priority actions for 2020, will support progress against all targets of 2030. Target 5 needs to be achieved by 2020; hence the first phase of the action plan will contribute significantly to it. This action plan is primarily towards creating and strengthening systems, creating risk profiles and implementing pilot projects on disaster risk reduction. Therefore, it will be a major milestone for target 2030.

The following should be achieved by 2020:

- Disaster response, relief, rehabilitation and reconstruction strategy/ guidelines/procedures in place.
- Regulatory frameworks (planning, implementation and monitoring guidelines) to include DRR into development (union, regional/state and local development planning) prepared and practiced.
- National, sectorial, regional/state, self-administered zones, township and ward/village tract disaster risk management plan prepared and implemented.
- Disaster management bodies at regional/state, self-administered zone, district, township and ward/village tract fully functional.
- Coordination mechanism for multi-hazard disaster risk assessment is established and operational, at the national level, under the leadership of the government.
- Significant improvement in end-to-end early warning systems (monitoring, forecast, dissemination, evacuation, etc.) across sectors and in all regions/states and self-administered zones.
- System to track DRR investments by government and development partners created and strengthened.
- System/database for recording data on disaster damage and loss is fully operational and annual report on disaster impact and trend prepared and shared.

2.7

MAPDRR linkage with SDGs, Paris Agreement on Climate Change

The period between 2015 to 2030 will witness the implementation of a number of global and regional development and disaster risk reduction frameworks, declarations, action plans and work programmes at the national level. There have been strong linkages between these global and regional commitments. They are also reflected in targets and indicators.

There are 25 targets related to disaster risk reduction in 10 of the 17 Sustainable Development Goals.²⁹ The targets have strong linkages with those of the Sendai Framework for Disaster Risk Reduction. For example, the selected SDGs and targets³⁰ with direct linkage to DRR are:

- **Goal 1:** End poverty in all its forms everywhere; Target 1.5: 'By 2030, build the resilience of the poor and those in vulnerable situations and reduce their exposure and vulnerability to climate-related extreme events and other economic, social and environmental shocks and disasters'.
- **Goal 2:** End hunger, achieve food security and improved nutrition and promote sustainable agriculture; Target 2.4: By 2030, ensure sustainable food production systems and implement resilient agricultural practices that increase productivity and production. Help maintain ecosystems, that strengthen capacity for adaptation to climate change, extreme weather, drought, flooding and other disasters and that progressively improve land and soil quality.
- **Goal 11:** Make cities inclusive, safe, resilient and sustainable; Target 11.b: By 2020, substantially increase the number of cities and human settlements adopting and implementing integrated policies and plans towards inclusion, resource efficiency, mitigation and adaptation to climate change, resilience to disasters, and develop and implement, in line with the Sendai Framework for Disaster Risk Reduction 2015-2030, holistic disaster risk management at all levels.
- **Goal 13:** Take urgent action to combat climate change and its impacts; Target 13.1: Strengthen resilience and adaptive capacity to climate-related hazards and natural disasters in all countries.

The Paris Agreement³¹ on climate change has identified many areas of cooperation and facilitation to enhance understanding, action and support, which include early warning systems, emergency preparedness, comprehensive risk assessment and management, risk insurance and resilience of communities, livelihoods and ecosystems. The agreement calls for monitoring and evaluation of plans, policies, programmes and actions.

29 UN Office for Disaster Risk Reduction, Disaster Risk Reduction and Resilience in the 2030 Agenda for Sustainable Development, October 2015

30 United Nations, Transform Our World: The 2030 Agenda for Sustainable Development, A/RES/70/1.

31 United Nations Framework Convention on Climate Change, Adoption of the Paris Agreement, 12 December 2015

An analysis of linkages between the pillars of the MAPDRR vis-à-vis various policy documents is reflected in Table 2.4.

Table 2.4 Linkages between MAPDRR 2017 Pillars and other policy documents

Policy documents	Pillars of MAPDRR 2017			
	1	2	3	4
Sendai Framework for DRR	Priority 1	Priority 2	Priority 3	Priority 4
Sustainable Development Goals	Goal 1, 3 and 13	Goal 1 and 11	Goal 1, 2, 3, 4, 6,9,11, 13 and 15	Goal 1, 3, 11 and 13
Paris Agreement on Climate Change	Annex, Article 8		Annex, Article 8	Annex, Article 8
New Urban Agenda: Quito Declaration on Sustainable Cities and Humans (Habitat-III)	Environmentally sustainable and resilient urban development	Environmentally sustainable and resilient urban development	Environmentally sustainable and resilient urban development	Environmentally sustainable and resilient urban development
One humanity: shared responsibility (World Humanitarian Summit)	Core Responsibility 4	Core Responsibility 4	Core Responsibility 4& 5	Core Responsibility 4& 5
AADMER WP 2016-2020	Component 1	Component 3, 6 & 7	Component 2 & 4	Component 3, 5 & 6
Economic Policy of the Republic of the Union of Myanmar			Policy: Number 6 & 9	
Myanmar National Framework for Community Disaster Resilience		Social protection	<ul style="list-style-type: none"> Rural livelihoods and village infrastructure Urban development 	Disaster preparedness
Myanmar Climate Change Strategy and Action Plan ³²	Sector 5	Sector 5	Sector 1 & 5	Sector 5
Myanmar Financial Inclusion Roadmap 2014-2020			Output 2.1: Improved financial access to agriculture	

³² Ministry of Natural Resources and Environmental Conservation, the Republic of the Union of Myanmar, Myanmar Climate Change Strategy and Action Plan 2016-2030 (draft 19 January 2017), 2017.

Pillars of Disaster Resilient Myanmar:

Priority Actions

3

MAP
DRR
2017



3.1

Overview of MAPDRR Pillars

The Myanmar Action Plan on Disaster Risk Reduction has four pillars and each pillar has six to nine priority actions. The four pillars are aligned with four priority actions of the Sendai Framework for Disaster Risk Reduction.

Each priority action has several indicative activities. One lead department, or in some cases more than one, has been identified for each priority action. The cost of priority actions/projects has been estimated. The indicated cost estimates are preliminary, as some of the activities in priority actions require further detailing such as location, coverage, etc. In addition, some of the priority actions require high-level technical inputs and time to estimate cost due to complexities and technicalities involved in the priority action.

The list of priority actions, along with its lead department, is in Table 3.1.

Table 3.1 **Priority Actions and Lead Ministry/Department**

Priority Action		Lead Ministry/Department
Pillar 1: Assessing disaster risk including extreme weather events and creating public awareness on DRR in Myanmar		
1.1	Central coordination mechanism and repository of disaster risk information in Myanmar	• Department of Meteorology and Hydrology
1.2	National comprehensive multi-hazard probabilistic risk assessment of Myanmar	• Department of Meteorology and Hydrology
1.3	Disaster risk profile of industries, fire, forest fire and accidents in Myanmar	• Ministry of Industry (industries) • Forest Department (forest fire) • Myanmar Police Force (accident) • Fire Services Department (fire) • Department of Fisheries (boat accident)

1.4 Assessment of dam safety and reservoir, critical infrastructure and vital government and lifeline buildings in Myanmar	<ul style="list-style-type: none"> • Irrigation and Water Utilization Management Department (dam safety and reservoir) • Ministry of Construction (critical infrastructure and vital government and lifeline buildings)
1.5 Tsunami, floods, cyclone and storm surge risk assessment of Ayeyarwady Region and Rakhine State	<ul style="list-style-type: none"> • Department of Meteorology and Hydrology: Lead • Relief and Resettlement Department: Co-lead
1.6 Landslide risk assessment of Chin State	<ul style="list-style-type: none"> • Department of Meteorology and Hydrology: Lead • Relief and Resettlement Department: Co-lead
1.7. Earthquake risk assessment along Sagaing fault	<ul style="list-style-type: none"> • Department of Meteorology and Hydrology: Lead • Relief and Resettlement Department: Co-lead
1.8 Nation-wide disaster awareness programme with focus on people at most risk	<ul style="list-style-type: none"> • Department of Social Welfare: Lead for PWD • Relief and Resettlement Department: Lead for nation-wide awareness
Pillar 2: Strengthening disaster risk governance to reduce and manage risk	
2.1 Myanmar Disaster Risk Management Policy	<ul style="list-style-type: none"> • Relief and Resettlement Department
2.2 Myanmar Disaster Relief Guideline	<ul style="list-style-type: none"> • Relief and Resettlement Department
2.3 Myanmar Disaster Rehabilitation and Reconstruction Framework/Strategy using Build Back Better	<ul style="list-style-type: none"> • Ministry of Construction
2.4 Strengthening Disaster Management Systems at National and sub-national levels in line with Disaster Management Law, 2013 and Rules, 2015	<ul style="list-style-type: none"> • Relief and Resettlement Department: Lead for DM Focal section in each department • General Administration Department: Lead for sub-national Disaster Management Bodies
2.5 Strengthening fire risk management systems in Myanmar	<ul style="list-style-type: none"> • Fire Services Department
2.6 Strategy for improving disaster risk financing in Myanmar	<ul style="list-style-type: none"> • Ministry of Planning and Finance
Pillar 3: Mainstreaming disaster risk reduction for resilient development	
3.1 Mainstreaming DRR/CCA into national and regional / state and development planning, project appraisal and monitoring and evaluation processes	<ul style="list-style-type: none"> • Ministry of Social Welfare, Relief and Resettlement
3.2 Disaster and climate risk consideration into private sector investment guideline	<ul style="list-style-type: none"> • Directorate of Investment and Company Administration
3.3 Promotion and integration of disaster and climate risk management approaches in to the tourism sector of Myanmar	<ul style="list-style-type: none"> • Ministry of Hotels and Tourism
3.4 Mainstreaming disaster and climate risk considerations into village development planning and implementation including infrastructure, livelihoods, agriculture and environment	<ul style="list-style-type: none"> • Department of Rural Development
3.5 Promoting Sustainable Development in vulnerable hilly regions by reducing landslide risks and related risks	<ul style="list-style-type: none"> • Forest Department

3.6 Building Urban Resilience to address disaster and climate risks in selected urban centres of Myanmar	<ul style="list-style-type: none"> City Development Committee and regional/state government of selected urban centres
3.7 Integration of disaster risk reduction in health facilities and other infrastructure	<ul style="list-style-type: none"> Ministry of Construction: Lead Ministry of Health and Sports: Co-lead
3.8 Drought risk management programme for improving disaster and climate resilience in the agriculture sector	<ul style="list-style-type: none"> Department of Agriculture
3.9 Myanmar Comprehensive School Safety Programme	<ul style="list-style-type: none"> Ministry of Education
Pillar 4: Enhancing disaster preparedness for effective response and resilient rehabilitation and reconstruction	
4.1 Updating/ developing multi-hazard disaster risk management plan of all regional/state, self-administered zones, districts, townships and wards/village tracts	<ul style="list-style-type: none"> State and Region Governments General Administration Department
4.2 Improved disaster response system in Myanmar	<ul style="list-style-type: none"> Relief and Resettlement Department
4.3 Capacity development on disaster resilience in a systematic, effective and sustainable manner and strengthening Disaster Management Training Centre (DMTC)	<ul style="list-style-type: none"> Relief and Resettlement Department (Disaster Management Training Centre) Union Civil Service Board (Civil services training) General Administration Department (GAD training course)
4.4 Construction and maintenance of multi-purpose community safe facilities based on risk profiles	<ul style="list-style-type: none"> Ministry of Construction: Lead Relief and Resettlement Department: Co-lead
4.5 Improving end-to-end early warning systems through strengthening of communication networks and early warning dissemination procedures and protocols	<ul style="list-style-type: none"> Post and Telecommunications Department
4.6 Improved community level disaster resilience through Community based preparedness, Volunteerism, Civil Society Organizations and Foundations	<ul style="list-style-type: none"> Relief and Resettlement Department
4.7 Health sector preparedness for response and recovery through disaster risk management plans, including epidemic and disease control, mass casualty management system and psychosocial support	<ul style="list-style-type: none"> Ministry of Health & Sports
4.8 Comprehensive flood risk management through improved forecasting, monitoring, preparedness and mitigation in priority river basin areas of Myanmar	<ul style="list-style-type: none"> Irrigation and Water Utilisation Management Department: Lead Relief and Resettlement Department: Co-lead
4.9 Disaster and climate risk management of historical monuments and archaeological heritage in Myanmar	<ul style="list-style-type: none"> Ministry of Religious Affairs and Culture

3.2

Pillar 1:

Assessing Disaster Risk, including Extreme Weather Events and Creating Public Awareness on Disaster Risk Reduction in Myanmar



3.2.1 Introduction

During disaster risk situations, including extreme weather events, information is the foundation for decision-making processes. Information is key to analyse the interaction of hazards, exposure and vulnerability and evaluate the magnitude and likelihood of potential losses, causes and impact of those losses. Disaster risk is dynamic and it changes spatially and temporally due to change in hazards, exposure and vulnerability or to the inherent interaction among them. The changes in hazards can occur due to natural variability or human interventions, which is driven in large part by climate change, while development processes including disaster rehabilitation and reconstruction drive the changes in vulnerability and exposure. United Nations Framework Convention for Climate Change (UNFCCC) defined climate change as 'a change of climate which is attributed directly or indirectly to human activity that alters the composition of the global atmosphere and which is in addition to natural climate variability observed over comparable time periods'.

Improved understanding of the components of disaster risk including vulnerability, access to state-of-the-art risk assessment tools and availability of new data sets are important for comprehensive disaster risk information. Disaster risk information should be accessible and of usable scale especially for township and sub-township level development planning and are required to be updated periodically as the development landscape and risk profile of Myanmar change.

The communication of disaster risk to all stakeholders especially national, regional/state and township level decision makers, private sector and communities is vital, as it shapes perceptions of disaster risk and influences their subsequent actions.

3.2.2 Approach and Objectives

Pillar 1: Assessing disaster risk, including extreme weather events and creating public awareness on disaster risk reduction in Myanmar has the following objectives:

- To create a system for coordinated multi-hazard disaster risk assessment, dissemination, usage and updated information.
- To support disaster risk management related policy decisions through the development of a comprehensive disaster risk profile of Myanmar
- To influence disaster risk planning and interventions at the sub-national level, including township and village tract levels, through location and hazard-specific risk information

The overall emphasis of actions identified under this pillar is towards creating systems for multi-hazard disaster risk assessment and dissemination. The creation of a national risk profile along with location and hazard specific high-resolution risk information, is also a focus.

The risk assessment will be conducted under the guidance of the proposed Disaster Risk Assessment Committee and will rely on geospatial and space-based technology, indigenous and local knowledge and existing databases related to disasters, such as the Myanmar Disaster Loss and Damage Database. Dissemination and usage of disaster risk information will be strengthened with a special focus on the needs of people most at risk, including women, children, people with disabilities and the elderly. To further address emerging threats in both the health and agriculture sectors, attention will also be given to the systematic assessment of risks from national and/or trans-boundary animal and plant pests and diseases for agriculture and human health, including change patterns caused by the impacts of climate change.

3.2.3 Priority Actions: Pillar 1

Table 3.2 Priority Actions: Assessing Disaster Risk, Including Extreme Weather Events and Creating Public Awareness on Disaster Risk Reduction

1.1	Priority Action: Central coordination mechanism and repository of disaster risk information in Myanmar	
	Objective: <ul style="list-style-type: none"> - To create a central repository of all disaster risk information and related data in Myanmar - To catalogue disaster risk assessment methodologies and increase compatibility of data/outputs - To promote wider dissemination and usage of disaster risk information 	Indicative Activities: <ul style="list-style-type: none"> - Set up a disaster risk assessment committee / group and its working mechanism - Standard disaster risk assessment methodologies catalogued for enhancing compatibility of data and risk assessment outputs - Capacity building on disaster risk assessment, especially updating existing risk information - A database/repository of disaster risk assessment outputs and data - System for easy access of disaster risk information and exchange of data among departments - Steps towards wider usage of disaster risk information
	Expected output: <ul style="list-style-type: none"> - Central repository of disaster risk information and data - Risk assessment methodologies catalogued - Disaster Risk assessment is well-coordinated and usage improved in Myanmar 	
	Duration: Two years	Estimated cost (USD): To be estimated
	Lead Department: <ul style="list-style-type: none"> - DMH 	Other department and partners: RRD, Forest Dept., DSW, Department of Agriculture, FSD, Ministry of Industries, Ministry of Education, MoHS, IWUMD, Universities, MoC, ECD, GAD, PD, Dept. of Fisheries, PTD, MCDC, YCDC, NPT CDC, MIMU, MES, MGS, MEC, YU, YTU
	Need: <ul style="list-style-type: none"> - Disaster risk assessment outputs need to be compatible with each other for updating and analysis - Cases of overlaps - Limited usage 	
	Challenges: <ul style="list-style-type: none"> - Number of agencies involved - Various models for risk assessment using probabilistic and deterministic approaches 	
1.2	Priority Action: National comprehensive multi-hazard probabilistic risk assessment of Myanmar	
	Objective: <ul style="list-style-type: none"> - To assist decision makers in understanding multi-hazard risks in Myanmar - To understand in monetary terms the amount of losses the country suffers 	Indicative Activities: <ul style="list-style-type: none"> - Identify suitable methodology and scale for comprehensive multi-hazard probabilistic risk assessment in consultation with the Central coordination committee on risk assessment (Refer Action 1.1) - Develop risk maps of appropriate scales, which can assist in policy decisions including resource allocation for response/relief and recovery

	Expected outcome: <ul style="list-style-type: none"> - Comprehensive multi-hazard probabilistic risk assessment of Myanmar - Policy decisions, including resource allocation use risk information 	<ul style="list-style-type: none"> - Risk assessment should consider climate change projections - Wider dissemination of risk information - Periodic updating of the risk assessment
	Duration: Three years	Estimated Cost (USD): To be estimated
	Lead Department: <ul style="list-style-type: none"> - DMH 	Other department and partners: RRD, MoALI, FSD, MoC, MoHS, GAD, ECD
	Need: <ul style="list-style-type: none"> - Myanmar lacks comprehensive risk assessment at the national level, which is important for policy-level decision-making and prioritization - National level risk assessment has application in resource allocation for response/relief and recovery 	
	Challenges: <ul style="list-style-type: none"> - Limited data 	
1.3	Priority Action: Disaster risk profile of industries, fire, forest fire and accidents in Myanmar	
	Objective: <ul style="list-style-type: none"> - To create a risk profile of hazardous industries, fire, forest fire and other accidents - To analyze causes and influence policy and regulatory changes related to risk governance in industries and surrounding areas, road safety, forest, waterways and other relevant sectors 	Indicative Activities: <ul style="list-style-type: none"> - Develop a framework enabling individual industries to develop their own organizational risk profile and risks for surrounding areas - Relevant departments to collect data for fire, forest fire, road accident and boat sinking - Prepare a list of industries and respective associated disaster risks beyond traditional analysis of historical data, using a proactive, risk-based approach. Industrial waste will be considered under risk
	Expected outcome: <ul style="list-style-type: none"> - Risk profile of industries, fire, forest fire, road accident and boat sinking - Set of measures for addressing these disaster risks 	<ul style="list-style-type: none"> - Identify exposure of industrial areas, analyzing possible risk scenario - Identify list of industries in very high-risk zones or potential to cause disasters - Identify hot spots related to fire, forest fire, road accidents and boat sinking - Formulate key recommendations to address the potential disaster risks, including disaster and climate risk informed SIA/EIA and awareness generation measures - Develop measures for periodic updating of the assessment - RRD's Myanmar Disaster Loss and Damage Database (MDLD) should be promoted - Hazard profile of Myanmar report will be updated based on additional information, including the MDLD
	Duration: Two years	Estimated Cost (USD): 506,000
	Lead Department: <ul style="list-style-type: none"> - Ministry of Industry (industries) - Forest Department (forest fire) - Myanmar Police Force (accident) - Fire Services Department (fires) - Department of Fisheries (fishing boats and vessels) 	Other department and partners: DMH, RRD, UMFCCL, Ministry of Commerce, ECD, GAD, Department of Marine Administration, MoC, MDCD, YCDC, NPT CDC, Union of Myanmar Economic Holdings Limited

	<p>Need:</p> <ul style="list-style-type: none"> - Disaster and climate risk is considered as a major threat to industries - Extensive risks such as fire, forest fire, road accidents and boat sinking are causing major loss of lives and properties over time and need to be profiled and addressed - Further develop Myanmar's industrial sector <p>Challenges:</p> <ul style="list-style-type: none"> - Coordination, as it involves multiple agencies - Limited experience
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1.4	Priority Action: Assessment of dam safety and reservoir, critical infrastructure and vital government and lifeline buildings in Myanmar	
	<p>Objective:</p> <ul style="list-style-type: none"> - To assess the safety of dams and reservoirs in Myanmar, and identify critical areas of improvement - To assess vulnerability and exposure of critical infrastructure, government and lifeline buildings from disasters and climate change risk <p>Expected outcome:</p> <ul style="list-style-type: none"> - Report on dam and reservoir safety, critical infrastructure and vital government buildings in Myanmar 	<p>Indicative Activities:</p> <ul style="list-style-type: none"> - Prepare format/ checklist and approaches for dam safety and reservoir assessments, other critical infrastructure, government and lifeline buildings - Assess safety on identified parameters in a phased manner - The parameters for dams and reservoirs will include characteristics of the reservoir and dam sites, flood regime for the river, geological conditions at the site, dam design and present condition and its downstream impact, in case of dam failure - Identify key measures for improving the safety of dams and reservoirs including dam safety manuals/ handbooks - The format for assessment of vulnerable buildings can be informed of existing format and training packages - Based on an assessment, prioritize critical infrastructure and government and lifeline buildings, which need to be retrofitted and take appropriate measures - Create a database/system for periodic updating of the assessment - The assessment will accommodate the change in frequency & intensity of rainfall due to climate change
	Duration: Two years	Estimated Cost (USD): 3,700,000
	<p>Lead Department:</p> <ul style="list-style-type: none"> - IWUMD (Dam safety and reservoir) - MoC (critical infrastructure and vital government and lifeline buildings) 	<p>Other department and partners:</p> <p>Department of Hydro Power Irrigation, DMH, GAD, MoHS, Ministry of Education, YCDC, MCDC, NPTCDC, MES, YU, YTU, Committee for Quality Control of High Rise Building Construction Projects (CQHP), FSD, Ministry of Culture and relevant Universities</p>
	<p>Need:</p> <ul style="list-style-type: none"> - Dam failure can lead to major disaster - Functioning of gov't offices is key to response delivery <p>Challenges:</p> <ul style="list-style-type: none"> - Technical expertise and number of staff - Infrastructure, lifeline buildings and vital government buildings are spread across Myanmar - Availability of data related to building, especially older structures 	

1.5	Priority Action: Tsunami, Floods, Cyclone and Storm Surge risk assessment of Ayeyarwady Region and Rakhine State	
	Objective: <ul style="list-style-type: none"> - To determine tsunami, floods, cyclone and storm surge risk in Ayeyarwady Region and Rakhine State at usable scale for decision making - To assess vulnerability of communities, infrastructure and the economy in relation to different categories of cyclones and associated storm surges, floods and tsunamis - Assessment should include impact of climate change on cyclones, storm surges and floods 	Indicative Activities: <ul style="list-style-type: none"> - Review existing floods, cyclone, storm surge and tsunami hazard/risk assessment studies related to Ayeyarwady Region and Rakhine State - Conduct cyclone hazard characterization, including frequency, intensity, etc. as well as impact of climate change. - Ayeyarwady will be priority for cyclone and storm surge assessment. - Conduct tsunami hazard analysis, which will include run-up, depth, speed of current, inundation area, return period, etc. - The priority location for tsunami risk assessment: Priority location: 1. Sittwe and 2. Kyaukphyu - Vulnerability and capacity assessment should include vulnerable groups, infrastructure, economy, livelihoods, government buildings, social vulnerability, response capacity, distance from safe location and runway network, etc.
	Expected outcome: <ul style="list-style-type: none"> - Floods, tsunami, cyclone and storm surge risk maps of Ayeyarwady Region and Rakhine State - Capacity building of stakeholders on usage of risk information in development planning and investments 	<ul style="list-style-type: none"> - Develop composite cyclone and storm surge, tsunami and floods risk maps of usable-scale and high-resolution maps for urban centres - Develop sector and township specific guidance notes - Capacity building of government on usage of risk maps in development planning and investment
	Duration: Three years	Estimated Cost (USD): 17,000,000
	Lead Department: <ul style="list-style-type: none"> - DMH: Lead - RRD: Co-lead 	Other department and partners: DSW, GAD, Ministry of Border Affairs, Myanmar Police Force, MoHS, Ministry of Education, MoC, DWIR, Ayeyarwady Regional Government, Rakhine State Government, Myanmar Port Authority, Myanmar Navy Hydrographic Centre, MoALI, Universities, IWUMD, Myanmar Survey Department, Department of Fisheries, MIMU, SERVIR-Mekong, YU, YTU
	Need: <ul style="list-style-type: none"> - Ayeyarwady Region and Rakhine State are prone to tsunamis, floods, cyclones and storm surges. Climate change is increasing the existing cyclone and flood risk - Need to build on past data and develop floods, tsunami, cyclone and storm surge risk maps of usable scale - Build capacity of government on usage of risk maps 	
	Challenges: <ul style="list-style-type: none"> - Vulnerability data is limited - Application of risk information in development decisions 	

1.6	Priority Action: Landslide risk assessment of Chin State	
	<p>Objective:</p> <ul style="list-style-type: none"> - To conduct landslide risk assessment of usable scale for development projects - To build capacity of line agencies on application of landslide risk information, including incorporating landslide risk management into development interventions <p>Expected outcome:</p> <ul style="list-style-type: none"> - Landslide risk map - 1:10,000/5,000 scale landslide risk maps of three urban centers and high-risk sites - Department/ Township specific landslide risk maps 	<p>Indicative Activities:</p> <ul style="list-style-type: none"> - Identify lead agencies and key partners from Myanmar to conduct landslide risk assessment in the Chin State - Conduct landslide risk assessment of Chin State - Conduct landslide risk assessment of high resolution (1:10,000/5,000) for three urban centres and high-risk sites - Assessment shows landslide potential together with the expected losses in terms of casualties, infrastructure, economic losses - Develop short landslide risk assessment notes specific to key departments, townships - Build capacity of line agencies in usage of information in development planning and response plans - Changes in rainfall pattern due to climate change will be considered in the landslide risk assessment. The map will have both scenarios i.e. the current rainfall pattern and extreme events - Trigger factors should include rainfall, earthquake and human interventions
	Duration: Three years	Estimated Cost (USD): To be estimated
	<p>Lead Department:</p> <ul style="list-style-type: none"> - DMH: Lead - RRD: Co-lead 	<p>Other department and partners:</p> <p>Forest Department, DSW, Department of Agriculture, MoC, GAD, PD, Survey Department, Department of Fisheries, Department of Mines, MIMU, MGS, YU, YTU, MU, Universities</p>
	<p>Need:</p> <ul style="list-style-type: none"> - Landslide risk information is missing and the Chin State faced major landslides in 2015 - Climate Change models project more intense rainfall in Myanmar, thus landslide risk is high - Future investments should be informed of landslide risks <p>Challenges:</p> <ul style="list-style-type: none"> - Limited data - Accessibility 	
1.7	Priority Action: Earthquake risk assessment along Sagaing Fault	
	<p>Objective:</p> <ul style="list-style-type: none"> - To prepare earthquake risk assessment maps of usable scale, for development projects, along the Sagaing Fault - To assist in increased preparedness and earthquake risk informed development along the Sagaing Fault <p>Expected outcome:</p> <ul style="list-style-type: none"> - Earthquake risk maps generated for Sagaing Fault on scale of 1:10,000 for regional planning - Earthquake risks for urban centers along Sagaing Fault at scale of 1:5,000 for micro level planning 	<p>Indicative Activities:</p> <ul style="list-style-type: none"> - Identify suitable methodology for earthquake risk assessment in consultation with the Central coordination committee on risk assessment (Refer project 1) - Soil amplification to be considered - Develop earthquake risk maps of appropriate scales, which can assist in decision making for development projects - Naypyitaw-Tharzi segment and Bago segment should be prioritised - Develop short notes using earthquake risk maps specific to townships and departments in lucid language - Conduct training of government officers on the usage of earthquake risk information in development and disaster risk planning

	Duration: Three years	Estimated Cost (USD): 9,000,000
	Lead Department: - DMH: Lead - RRD: Co-lead	Other department and partners: DSW, Ministry of Industries, MoC, Ministry of Education, MoHS GAD, PD, Department of Archaeology and National Museum, MEC, MGS, YTU, MTU, YU, MU, YCDC, MCDC, NPT CDC, UN Habitat
	Need: - Sagaing Fault is active and major earthquakes have been observed in recent years. Also, several urban centres are located along the Sagaing Fault. - Central Myanmar is likely to witness major development and it is important to have disaster risk, including earthquake risk informed development Challenges: - Limited vulnerability data	
1.8	Priority Action: Nation-wide disaster awareness programme with focus on people at most risk	
	Objective: - To create mass awareness on do's and don'ts related to disasters, including lighting, in concerned regions and states of Myanmar - To equip care givers of PWDs on the do's and don'ts related to disasters - To create mass awareness on do's and don'ts related to disasters among communities with focus on people at most risk, including PWDs, their family members and neighbors Expected outcome: - Increased public awareness on basics of disasters including lighting and tsunami including among PWDs - Standard package on Do's and Don'ts related to disasters for PWDs developed and Care givers trained	Indicative Activities: - Organize tsunami awareness day on 5 November and IDDR on 13 October at the national, regional and state level - In coordination with the DRR Working Group, prepare an event calendar in advance and activities can include: seminar/ workshop, Special Meeting of the NDMC, DM bodies at sub-national levels, activities in school, display of do's and don'ts at public places, radio and TV, newspaper, etc. - International Disaster Risk Reduction Day will focus on sub-national level and local hazards, especially lightning in vulnerable regions and states - Youth volunteers of Myanmar should be engaged in undertaking mass awareness activities at the local level - Develop training packages on do's and don'ts related to various disasters specific to type of disability - Conduct training for care givers from government and NGOs to train on usage of the package - Create mass awareness on do's and don'ts related to disasters among communities, with a focus on people at most risk including PWDs, their family and neighbors - Prioritize townships with large populations of PWDs and at who are at high risk
	Duration: One year (Annual event)	Estimated Cost (USD): To be estimated
	Lead Department: - DSW: Lead for PWD - RRD: Lead for nation-wide awareness	Other department and partners: GAD, DMH, Ministry of Education, Ministry of Hotel and Tourism, Ministry of Border Affairs, Region/ State governments, MRTV, MoHS, FSD, MES, MEC, Media, Universities, UNV
	Need: - Need for increased awareness on the do's and don'ts of disasters at sub-national levels, especially at community level - Tsunami and lightning awareness is limited at all levels - A training package on DRR related to disability Challenges: - Medium and long term community outreach strategy and youth volunteers - Limited capacity on DRR at the sub-national levels	

3.3

Pillar 2:

Strengthening Disaster Risk Governance to Reduce and Manage Risk



3.3.1 Introduction

Disaster risk governance³³ has been defined as ‘the system of institutions, mechanisms, policy and legal frameworks and other arrangements to guide, coordinate and oversee disaster risk reduction and related areas of policy’. It is an extremely important component for assuring a coordinated, effective and sustained disaster risk reduction in all its phases. The governance of disaster risk cannot be separated from the governance of other, risks arising from climate change (CC), environmental degradation, and overall development. Therefore, coordination is essential.

The strengthening of disaster risk governance calls for a clear vision, plans, competencies, guidance and harmonization within and across sectors and at all levels, especially at sub-national one. At the regional/state, self-administered zone, district, township and ward/village tract level requires unambiguous policy, guidelines and plans and well-defined roles and responsibilities of stakeholders and their capacity building are crucial. Disaster risk governance is an integral part of the overall governance. Since it is a long-term process, a phased approach is necessary for creating an effective and efficient system.

3.3.2 Approach and Objectives

The overall objective of Pillar 2 of the MAPDRR 2017 is to create/strengthen systems approach to disaster risk mitigation, preparedness, response and recovery that spans multiple disciplines and includes all relevant stakeholders.

It calls for a long-term phased approach. In its first phase, until 2020, the objectives are:

- To put in place public policies, frameworks, guidelines and other administrative tools aimed at improving disaster risk mitigation, preparedness, response and recovery, including relocation
- To strengthen coordination and delivery mechanisms within and between governments and other stakeholders at all levels, through clearly defined roles and responsibilities of key actors
- To improve disaster response, recovery, preparedness and recovery by drafting/revising and practicing at all levels in a phased manner. Adopt comprehensive disaster risk management plans at all levels in a phased manner
- To improve disaster response systems by creating special response teams, strengthening fire services and improving allocation of resources

³³ United Nations, Open-ended intergovernmental expert working group on indicators and terminology relating to disaster risk reduction, December 2016.

Policies, frameworks, guidelines, plans and other documents, which will be drafted or updated for strengthening disaster risk governance, will be in line with the Disaster Management Law, 2013 of Myanmar. The planned disaster risk reduction policy instruments will be informed of the National Climate Change Policy (draft), National Environmental Policy and other relevant instruments of Myanmar. It will be prepared in a transparent and wider consultative mode to ensure that the needs of different groups are addressed, especially people at most risk.

3.3.3 Priority Actions: Pillar 2

Table 3.3 Priority Actions: Strengthening Disaster Risk Governance to Reduce and Manage Risk

2.1	Priority Action: Myanmar Disaster Risk Management Policy	
	Objective: <ul style="list-style-type: none"> - To provide overarching edifice for a comprehensive disaster risk reduction approach for Myanmar that seeks to achieve the judicious balance of mitigation, preparedness, response and rehabilitation and reconstruction 	Indicative Activities: <ul style="list-style-type: none"> - Constitute a drafting group to lead drafting of the Myanmar DRR Policy - Consult with line departments, region/state and development partners to identify needs and approaches for DRR in Myanmar - Stock take of DRM policies of different countries - Draft Myanmar DRR Policy covering all four phases: mitigation, preparedness, response and rehabilitation and reconstruction - Policy will cover issues related to relocation in the context of imminent disasters, relief distribution, needs of vulnerable groups, human trafficking, DRR funding, engagement of external partners, environmental issues and DRR, urbanization in context of DRR, resilient development, etc. - DRR Policy will be an integrated policy and will have links with the 12-point economic policy, NCDP, Myanmar climate change strategy and action plan, Myanmar's social protection strategic plan and Myanmar's financial inclusion roadmap, etc. - Enactment of Myanmar DRR Policy and its wider dissemination
	Duration: Two years	Estimated Cost (USD): 12,000
	Lead Department: <ul style="list-style-type: none"> - RRD 	Other department and partners: <p>All departments, UNDP, UN OCHA</p>
	Need: <ul style="list-style-type: none"> - Risk profile of Myanmar is changing and it is important to approach development from a resilience lens - DRR is key to resilience and it requires a comprehensive approach (thematic areas, engagement of partners, etc.) Challenges: <ul style="list-style-type: none"> - Policy need to be backed up by actionable instruments 	

2.2	Priority Action: Myanmar Disaster Relief Guideline	
	Objective: <ul style="list-style-type: none"> - To ensure timely disaster relief to affected communities by outlining procedures and standards of relief items - To back-up disaster risk management plan/SOP along with allocation of resources on a regular basis 	Indicative Activities: <ul style="list-style-type: none"> - The scope of the guidelines covers relief, provided by the government. Guidelines will briefly mention about international assistance (quality of assistance, visa, custom, etc.) and medical relief, however, it will not be its primary focus - Formation of a drafting group/ committee to lead drafting of the Myanmar Disaster Relief Guideline - Identify key elements of relief outlined in DM Law, 2013; DM Rules, 2015; Myanmar Social protection strategic plan; state/ regional DM Law/ Order
	Expected output: <ul style="list-style-type: none"> - Timely, transparent and accountable relief distribution in the aftermath of a disaster 	<ul style="list-style-type: none"> - Analysis of relief codes, manuals, procedures, etc. of different countries in region, international good practices, SPHERE, etc. - Development of the Myanmar Disaster Relief Guideline (Relief items, procedure for identification of beneficiary, relief distribution, documentation, formats, etc.) in consultative mode - Enactment of the guidelines through relevant administrative orders - Capacity building of regional/state, self-administered zones, districts and township -level officials on relief guidelines - Address the special needs of those 'most at risk' during disaster relief
	Duration: Two years	Estimated Cost (USD): 12,000
	Lead Department: <ul style="list-style-type: none"> - RRD 	Other department and partners: GAD, Ministry of Border Affairs, Budget Dept., DSW, Planning Dept., 14 regional/state DM Bodies, Self-administered zone, CDCs, University, UNDP, UN OCHA
	Need: <ul style="list-style-type: none"> - Speedy relief distribution in the aftermath of a disaster is vital for affected communities - Sub-national officials require well set procedures for decision making in the context relief distribution - Disaster Management Plans /SOP requires well set relief procedures for its effectiveness in response Challenges: <ul style="list-style-type: none"> - Defining minimum quality and quantity for relief vis-à-vis need 	
2.3	Priority Action: Myanmar's disaster rehabilitation and reconstruction framework/ strategy using build back better	
	Objective: <ul style="list-style-type: none"> - To identify approach, broad steps, institutional arrangements, etc. for undertaking future rehabilitation and reconstruction with build-back-better principles 	Indicative Activities: <ul style="list-style-type: none"> - Assess existing rehabilitation and reconstruction policies, procedures, etc. including Disaster Management Law, 2013 and roles and responsibilities of NDMC Work Committee on rehabilitation and reconstruction - Identify key elements of rehabilitation and reconstruction for Myanmar using the ASEAN Recovery Reference Guide, Myanmar Social Protection Strategic Plan and other related documents
	Expected output: <ul style="list-style-type: none"> - Myanmar rehabilitation and reconstruction framework/ strategy developed 	<ul style="list-style-type: none"> - Draft rehabilitation and reconstruction framework/ strategy incorporating institutional arrangements, assessments, planning, funding, implementation. Issue related to vulnerable groups, human trafficking, M&E and linkages with long-term development - Approval of the framework /strategy by NDMC - Development of a training module on rehabilitation and reconstruction framework/strategy, which will be linked with recovery training course offered by DMTC capacity building module

	Duration: Two years	Estimated Cost (USD): To be estimated
	Lead Department: - MoC	Other department and partners: GAD, CDCs, RRD, Ministry of Border Affairs, PD, Budget Department, MoHS, Ministry of Education, DSW, MoALI, UNDP
	Need: <ul style="list-style-type: none"> - Rehabilitation and reconstruction offer a window of opportunity for risk reduction and Myanmar has undertaken several programmes in the recent past - ASEAN Recovery Reference Guide has been recently developed under the leadership of Myanmar and Indonesia with support from ASEAN Secretariat and UNDP. It is important to use the country context learning Challenges: <ul style="list-style-type: none"> - Rehabilitation and reconstruction is complex 	
2.4	Priority Action: Strengthening disaster management systems at national and sub-national levels in line with DM Law, 2013 and Rules, 2015	
	Objective: <ul style="list-style-type: none"> - To strengthen disaster management bodies at the regional/state level, self-administered zone, district, township and ward/village tract levels - To improve coordination and further enhance capacity of line departments in discharging disaster management related functions Expected output: <ul style="list-style-type: none"> - Create a DRR/CCA focal section in each department - Improved coordination on disaster management at national and sub-national level - DM system, including mainstreaming DRR in development is strengthened 	Indicative Activities: <ul style="list-style-type: none"> - Create DRR focal sections in each department - Draft terms of reference of the DRR focal section and include it in the job description of related officers - DRR information management will be part of section - Develop multi-hazard Disaster Risk Management Plan - Review rules and regulations of departments in line with DM rules and laws - Disaster management bodies at regional /state, self-administered zone, township and ward/village tract meet at least bi-annually and proceedings are documented - DM focal sections of departments and DM bodies work closely with planning department and other departments at national and sub-national levels respectively to ensure DRR/CCA considerations in department/development projects under annual budget - DM body members are oriented on its roles and responsibilities as per the DM rules and laws. Ward/village tract Clerk should be trained on DRR as she/he can create awareness at community level - Mock drills/table top exercises conducted to improve preparedness, including for 'most at risk' at national and sub-national levels - Vertical and horizontal inter-agency coordination reviewed and strengthened. It should also include civil-military cooperation - Budget for functioning of the DM focal sections and DM bodies
	Duration: Four years (Phased approach: annually)	Estimated Cost (USD): 614,000
	Lead Department: - GAD (sub-national DM bodies) - RRD (DM focal section in each department)	Other department and partners: All line departments, UN OCHA
	Need: <ul style="list-style-type: none"> - Myanmar has enacted DM Law, 2013 and it is important to update department rules and regulations in line with the law and rules - Sub-national DM bodies are most important in disaster response and risk reduction Challenges: <ul style="list-style-type: none"> - Limited capacity at local level - Strengthening DM committees at VT requires a phased approach, hence prioritisation 	

2.5	Priority Action: Strengthening Fire Risk Management Systems in Myanmar	
	Objective: <ul style="list-style-type: none">- To strengthen fire services capacity for managing disaster response at the operational level	Indicative Activities: <ul style="list-style-type: none">- Assess existing fire services capacities and functions, including disaster response in case of fire and other disasters. It should intersect with other response agencies such as health, police, GAD, MRCS, auxiliary fire brigade, CSOs, etc.- Review training courses and engage fire services based on the current risk profile of Myanmar- Analyze any gaps or overlaps in the delivery response related services during fire and other disasters- Formulate recommendations on strengthening fire services to respond to fire and other disasters at the operational level. Coordinate with other agencies, intervening during response, regarding institutional arrangements, manpower, equipment, etc. Implementation will be in a phased manner- Pilot testing of new arrangements in one CDC and 20 townships across five regions/states- Increase awareness on civic duties (such as giving way to fire tender, ambulances, informing FSD about fire at the earliest, etc.).
	Expected output: <ul style="list-style-type: none">- Myanmar fire services strengthening for effective and efficient disaster response- Manpower rationalized, equipment procured and coordination arrangements set-up	
	Duration: Five years and beyond	Estimated Cost (USD): 254,000
	Lead Department: <ul style="list-style-type: none">- Fire Services Department	Other department and partners: GAD, RRD, PD, Ministry of Border Affairs, Myanmar Police Force, Budget Department, MOHS, YCDC, MCDC, Department of Industries
	Need: <ul style="list-style-type: none">- Risk profile of Myanmar is changing, and so is role of fire services in disaster response- Fire services capacity, functions, etc. need to be assessed, in light of DM Law, 2013, the risk profile of Myanmar and future trends	
	Challenges: <ul style="list-style-type: none">- Budget intensive- Restructuring existing arrangements is a challenge and is a long-term process	
2.6	Priority Action: Strategy for Improving Disaster Risk Financing in Myanmar	
	Objective: <ul style="list-style-type: none">- To study existing disaster risk financing, including insurance mechanisms- To identify a set of options for disaster risk financing, including insurance products, for disaster risks based on feasibility, demands and effectiveness	Indicative Activities: <ul style="list-style-type: none">- Create a system, including methodology for tracking existing DRM (relief, rehabilitation and reconstruction and mitigation separately) funding in Myanmar to gauge effectiveness of mitigation and preparedness measures and allocation of funds for disaster response- It will build on pilot projects undertaken by RRD to understand DRR investments in Myanmar- It will track union and regional/local budgets on DRR and will assist MoPF and RRD in allocation for relief, mitigation and preparedness resources- Develop a status report on existing DRM financing options including develop insurance products based on the status report, risk profile and models, DRM financing mechanism in ASEAN and other countries and other considerations, the strategy for DRM financing will be formulated and developed- Strategy will include various DRM financing options and products based on a feasibility demand- The DRM financing options will be identified based on feasibility, demand and effectiveness. It will also lay out a roadmap for implementation.- Identify types of risk transfers/ insurance products and recommendations for its easy access and affordability
	Expected output: <ul style="list-style-type: none">- Identify disaster risk financing, insurance options and insurance products- Create a system for tracking DRR investments and use it for DRR allocation	

	Duration: Three years	Estimated Cost (USD): To be estimated
	Lead Department: - MoPF	Other department and partners: RRD, GAD, Ministry of Border Affairs, CDCs, Myanmar Insurance, UMFCCI
	Need: <ul style="list-style-type: none"> - Innovative disaster risk financing options have been developed and it is important to explore options for effective and efficient DRM financing - Effective allocation of budget for disaster response/relief, mitigation and preparedness requires systematic tracking of investments Challenges: <ul style="list-style-type: none"> - DRR investment tracking is complex and an emerging topic - Disaster risk insurance market is at an early stage 	

3.4

Pillar 3:

Mainstreaming Disaster Risk Reduction for Resilient Development in Myanmar



3.4.1 Introduction

Myanmar has set a course for high growth, which will enable it to surpass a middle-income country status by 2030, and lift millions of people out of poverty.³⁴ It is important to note that development is never disaster neutral; it can create, exacerbate or reduce risk.³⁵ Disasters impact all aspects of development; they can cause loss of lives, livelihoods and infrastructure. Indirectly, they can generate diversion of funds from development to response, relief, rehabilitation and reconstruction. A World Bank study has estimated that the annual expected economic losses, as a percentage of the national GDP for Myanmar is 0.9, which is the highest among all ASEAN member states.³⁶ This means disasters have the potential of derailing Myanmar's economic ambitions and its intention to lift millions out of poverty.

Hence, it is essential that disaster risk reduction is made a central component of the future development agenda of Myanmar, so that disasters do not derail its development. Furthermore, rehabilitation and reconstruction should be used as an opportunity for risk reduction by adhering to the principle of 'build-back-better'. In a nutshell, disaster risk reduction is a key development issue.

3.4.2 Approach and Objectives

The overall objective of Pillar 3 of the MAPDRR 2017 is to mainstream disaster risk reduction into the development agenda of Myanmar, considering national, regional and local development planning and implementation. It also includes development and investments by private sector.

It has the following objectives:

- To integrate disaster and climate risk considerations into national, regional/state and local development planning
- To mainstream disaster and climate risk considerations into the tourism sector, private investment guidelines and infrastructure sector
- To undertake comprehensive risk reduction and preparedness measures in priority sectors, like health, education and agriculture
- To support enforcement of building codes and implement location-specific risk reduction programmes in hilly regions and urban centres

³⁴ Ministry of National Planning and Economic Development, Government of Myanmar, National Comprehensive Development Plan, 2014.

³⁵ UNDP and et al. Disaster risk reduction makes development sustainable, a call for action.

³⁶ World Bank, Advancing disaster risk financing and insurance in ASEAN member states: framework and options for implementation, volume-I, 2012.

The overall approach under this pillar is to build on the development framework of Myanmar with a special focus on national, regional and local development planning, implementation, monitoring and evaluation. It will use an evidence-based approach and analyze the impact of past disasters on overall development and across sectors, which development planning will rely on. It will approach priority sectors and regions in a phased manner to implement priority programmes and draw lessons for up-scaling. The risk reduction considerations will use multi-hazard risk assessment information and climate change projections. The long-term risk reduction will focus on reducing social and environmental vulnerability (including built environment) and other drivers of disaster risk.

3.4.3 Priority Actions: Pillar 3

Table 3.4 Priority Actions: Mainstreaming Disaster Risk Reduction for Resilient Development

3.1	Priority Action: Mainstreaming DRR/CCA into national, regional/ state level development planning, project appraisal and monitoring and evaluation processes	
	Objective: <ul style="list-style-type: none"> - To ensure integration of DRR /CCA elements in project appraisal processes, monitoring and evaluation of national sectoral planning and regional/state development planning and budgeting 	Indicative Activities: <ul style="list-style-type: none"> - Analyze the impact of disasters and climate change on development sectors and identify the most affected ones - Formulate DRR/CCA related Indicators and guidelines in selected sectors to be included in the planning, appraisal and monitoring and evaluation processes of development plans and projects - Pilot test of indicators and guidelines, and incorporate them into the planning, appraisal and monitoring and evaluation processes in selected sectors - Build capacity of personnel concerned on application of the indicators and guidelines - Endorse and apply the indicators and guidelines in the systems of selected sectors - Review the usefulness, effectiveness and gaps and improve the systems, and replicate in the remaining sectors.
	Expected output: <ul style="list-style-type: none"> - Mechanisms for systematic integration of disaster and climate risks in the planning, appraisal and monitoring evaluation processes of development sectors established. 	
	Duration: Three years	Estimated Cost (USD): To be estimated
	Lead Department: <ul style="list-style-type: none"> - MSWRR 	Other department and partners: Project Appraisal and Project Reporting Department, PD, Budget Department, RRD, ECD, DMH
	Need: <ul style="list-style-type: none"> - Comprehensive data to analyze the impact of disasters and climate change on development sectors will be required - Political will, coordination among the concerned departments and the dedicated technical expertise of each selected sector are critical to achieve results - It has linkages with Myanmar climate change strategy and action plan and requires close coordination with ECD Challenges: <ul style="list-style-type: none"> - Development planning and budget in early stage - Limited evidence / reference on DRR /CCA inclusive planning approval and M&E process - Limited climate data at the sub-national level 	
3.2	Priority Action: Disaster and climate risk consideration into private sector investment guidelines	
	Objective: <ul style="list-style-type: none"> - To review and incorporate disaster and climate risk considerations into private sector investment guideline, procedures and approval process 	Indicative Activities: <ul style="list-style-type: none"> - Compile private investment related strategy, guidelines, procedures, checklist, etc. - Create disaster/climate risk profile of Myanmar vis-à-vis private sector - Identify gaps and entry points for DRR/CCA into the relevant documents

	Expected output: <ul style="list-style-type: none"> - Private sector investment is informed of disaster and climate risks 	<ul style="list-style-type: none"> - Develop a set of guidelines / indicators to be incorporated into private sector investment related documents - EIA/SIA studies conducted by the private sector before setting up facilities to include DRR/CCA elements. - It has linkages with Myanmar Climate Change Strategy and Action Plan and requires close coordination with ECD - Capacity building of concerned government officials on application of the guidelines/indicators. (Refer priority action 1.3)
	Duration: Two years	Estimated Cost (USD): 64,000
	Lead Department: <ul style="list-style-type: none"> - DICA 	Other department and partners: GAD, DMH, RRD, ECD, Ministry of Commerce, UMFCCL, YCDC, MCD, NPT CDC, CSO
	Need: <ul style="list-style-type: none"> - Disaster and climate risk is considered a major threat to industries - Complex disasters are increasing - Myanmar industrial sector is developing, hence important to develop resilience Challenges: <ul style="list-style-type: none"> - Limited reference/ experience exists globally - Need to coordinate with ECD and to align to the Myanmar Climate Change Strategy and Action Plan 	
3.3	Priority Action: Promotion and integration of disaster and climate risk management approaches in the tourism sector of Myanmar	
	Objective: <ul style="list-style-type: none"> - To enhance resilience of the tourism sector from disaster and climate risk and contribute to development 	Indicative Activities: <ul style="list-style-type: none"> - Review tourism sector policy or related documents and identify disaster and climate risk management entry points - Measure safe construction practices, disaster risk management plans, evacuation plans, mock drills, check lists, etc. to be included in the tourism sector guidelines - Annual mock drill in relevant tourism sectors - It will include earthquakes, landslides, tsunamis, floods, fire, etc. - Construction standards related to tourism sector to include DRR/CCA features - Annual self-risk compliance report using standard check list through UMFCCL
	Expected output: <ul style="list-style-type: none"> - Disaster resilient tourism sector of Myanmar 	
	Duration: Three years	Estimated Cost (USD): 66,000
	Lead Department: <ul style="list-style-type: none"> - Ministry of Hotels and Tourism: Lead - Forest Department: Co-lead 	Other department and partners: GAD, RRD, Ministry of Border Affairs, MoC, ECD, Department of immigration, UMFCCL
	Need: <ul style="list-style-type: none"> - Tourism is vital to the economy of Myanmar and any disruption has multiple impacts on diverse sectors - Myanmar coastline is prone to tsunamis, cyclones, floods while many other tourist locations are prone to earthquakes, floods and landslides Challenges: <ul style="list-style-type: none"> - Disaster risk reduction is relatively new to the tourism industry 	

3.4	Priority Action: Mainstreaming disaster and climate risk considerations into village development planning and implementation including, infrastructure, livelihoods, agriculture and environment	
	Objective: <ul style="list-style-type: none"> - To include DRR/ CCA into small village development plans, considering community infrastructure, livelihoods and agriculture - To undertake ecosystem-based disaster risk reduction measures 	Indicative Activities: <ul style="list-style-type: none"> - Include DRR/CCA considerations into village development planning process, including small community level infrastructure projects (refer Myanmar National Framework for Community Disaster Resilience) - Capacity building on the use of risk information - Community level activities for risk reduction, such as revive/ conserve water bodies (lake, ponds, etc.), creation of water conservation/ storage facilities, small scale forest areas creation and surplus from sales, awareness generation on natural resource management, crop diversification and improving usage of flood and drought resistant crops, livestock diversification and alternate livelihoods, reducing shifting agriculture, community level infrastructure and livelihoods activities - Small projects, i.e. roads linking villages to cyclone shelters
	Expected output: <ul style="list-style-type: none"> - Village development plan and community-level infrastructure is informed of disaster and climate risk 	
	Duration: Three years	Estimated Cost (USD): 7,500,000
	Lead Department: <ul style="list-style-type: none"> - Department of Rural Development 	Other department and partners: PD, GAD, RRD, ECD, DMH, Forest dept., Dep't of Agriculture, Progress of Border Areas and National Races Development
	Need: <ul style="list-style-type: none"> - Myanmar has developed the Myanmar National Framework for Community Disaster Resilience, which requires resilience as a core component of community development 	
	Challenges: <ul style="list-style-type: none"> - Development planning and budget in early stage - Limited climate data at the sub-national level. 	
3.5	Priority Action: Promoting Sustainable Development in vulnerable hilly regions by reducing landslide risks and related risks	
	Objective: <ul style="list-style-type: none"> - To support sustainable development in targeted hilly regions by addressing underlying causes of landslides 	Indicative Activities: <ul style="list-style-type: none"> - Carry out studies in targeted areas on population, natural resources, agricultural practices, watershed management, income generation activities, etc. - Carry out assessments on landslide, land degradation and soil erosion problems - Conduct public awareness activities to educate the community on sustainable practices, do's and don'ts related to landslides and other risks. Educate on relevant laws and regulations with regard to the misuse of agriculture land, shifting cultivation, unauthorized felling and cutting of trees, wildlife hunting in protected forests. - Identify a sustainable mountain farming systems and conduct demonstrations for application of such practices - Effect of climate change will be part of this priority intervention - Lessons learnt from projects will be used in other regions
	Expected output: <ul style="list-style-type: none"> - Promote application of sustainable agricultural practices - Communities living in mountainous areas are aware of proper laws and regulations with regard to natural resource management - Communities living in target hilly areas are capable of sustainable land and natural resource management 	
	Duration: Two years	Estimated Cost (USD): To be estimated
	Lead Department: <ul style="list-style-type: none"> - Forest Department 	Other department and partners: Region/State DM Body, DMH, GAD, ECD, MGS

	<p>Need:</p> <ul style="list-style-type: none"> - Landslide and land degradation is a major risk to lives and livelihoods in hilly regions - Climate change will worsen the situation - Hilly region of Myanmar has substantial population engaged in agriculture and allied activities <p>Challenges:</p> <ul style="list-style-type: none"> - Land degradation, is a development issues and requires a long-term approach to be addressed successfully 	
3.6	Priority Action: Building urban resilience to address disaster and climate risk in selected urban centres of Myanmar	
	<p>Objective:</p> <ul style="list-style-type: none"> - To improve resilience in selected urban centres of Myanmar to ensure continuity of urban centres without any limited interruption in the event of an external shock 	<p>Indicative Activities:</p> <ul style="list-style-type: none"> - Develop/update disaster and climate risk profile of selected 3-4 urban centres, which will include hazards such as earthquakes, floods, cyclones, landslides, lightning, fire, industrial and technological hazards, etc. It will also include vulnerability and exposure, especially people who are at most risk, in relation to housing and infrastructure
	<p>Expected output:</p> <ul style="list-style-type: none"> - Urban centres (selected) are resilient to disaster and climate risk 	<ul style="list-style-type: none"> - Develop disaster risk management plan at city/municipal and ward levels - Land use plan and urban development plan to incorporate disaster and climate risk considerations - Strengthening of exiting services such as power, transport, communication, etc. to withstand disaster risk - Strengthen systems to implement building codes and its monitoring - Engagement of Builders Association through UMFCCI on multi-hazard resistant safety features - Promote engagement of masons trained on multi-hazard construction under the capacity building programme of MoC - Improve design of infrastructure such as roads, flyovers, drainage, power line, etc. considering floods, earthquakes, cyclone risks, etc. - Protect water bodies, trees and promote eco- system based solutions - Create awareness on do's and don'ts related to disasters and causes of disasters and climate change - Engage housing associations on low carbon solutions. Improve DRR coordination within sectorial agencies of urban bodies, unions and regional/state departments for effective and swift response
	Duration: Four years	Estimated Cost (USD): To be estimated
	<p>Lead Department:</p> <ul style="list-style-type: none"> - City Development Committees and regional/ state governments of selected urban centres 	<p>Other department and partners:</p> <p>MoC, MoHS, DMH, GAD, ECD, RRD, UMFCCI, YU, YTU, MU, MTU, Other universities, UN Habitat</p>
	<p>Need:</p> <ul style="list-style-type: none"> - Myanmar's economic growth is on a high trajectory and urban centres are key. Yangon is expected to become a mega city of 10 million people by 2040. The urban centres such as Yangon, Mandalay, Bago, Sagaing, etc. are exposed to multiple risks - The urban centres are likely to attract huge investments and it is important to have inbuilt resilience in these investments <p>Challenges:</p> <ul style="list-style-type: none"> - Limited capacity and resources at the local level 	

3.7	Priority Action: Integration of Disaster Risk Reduction in health facilities and other infrastructure	
	Objective: <ul style="list-style-type: none"> - To ensure multi-hazard resistant design and construction of health facilities and other infrastructure 	Indicative Activities: <ul style="list-style-type: none"> - Develop guidelines on integration of hazard specific structural considerations in health facilities and other infrastructure - Other infrastructure will be defined and it will include roads, bridges, markets, communication facilities, government buildings, etc. - Develop multi-hazard resistant hospital and infrastructure designs and prototypes - Widely promote usage of the guidelines - Set-up monitoring and evaluation mechanisms to ensure compliance of guidelines - Engage construction companies engaged in development of infrastructure and health facilities on DRR features in design and construction through UMFCCI
	Expected output: <ul style="list-style-type: none"> - Resilient hospitals and infrastructure 	
	Duration: Four years	Estimated Cost (USD): To be estimated
	Lead Department: <ul style="list-style-type: none"> - MoC: Lead - MoHS: Co-lead 	Other department and partners: MoALI, Ministry of Education, MOHS, GAD, RRD, FSD, Department of Culture, DMH, Forest Department, WRUD, Regional / State DM bodies, UMFCCI
	Need: <ul style="list-style-type: none"> - Myanmar is witnessing a high rate of development and the trend is likely to continue. It is important that future developments are informed of disaster and climate risk 	
	Challenges: <ul style="list-style-type: none"> - Disaster and climate risk inclusive infrastructure requires technical as well as financial implications 	
3.8	Priority Action: Drought risk management programme for improving disaster and climate resilience in the agriculture sector	
	Objective: <ul style="list-style-type: none"> - To reduce drought risk by promoting early warning and early action against drought and related hazards - To strengthen drought-related climate/weather data sets and decision-support systems to enhance early warning and early action for long-term drought impacts and risks - To increase capacities, at different levels, on the various aspects of drought risk management 	Indicative Activities: <ul style="list-style-type: none"> - Identification of priority drought risk areas based on risk/vulnerability assessments and long-term climate projections - Analyze drought-related risks, hazards and impacts such as increased pest infestations, increased fish kills, increased livestock mortality, forest fires and development/dissemination of comprehensive guidelines to reduce negative impacts; assess linkages of drought impacts to other sectors; analysis will be done at different levels using a combination of top-down and bottom-up approaches and model-based (e.g. crop water stress simulation) tools; - Development of drought-related climate and weather datasets at different temporal and spatial scales (including sub-national level) - Utilization of complementary data sources for drought risk management, including remote-sensing-based tools or systems or hybrids ie the Agriculture Stress Index (ASI) system - Development of an agricultural drought monitoring system within MoALI in close partnership with DMH - Establishment of protocols and procedures for drought early warning and early action, mitigation and response, and rehabilitation - Capacity building on drought risk management at sub-national level - Drought risk mitigation measures such as usage of drought and saline resistant crops by engaging community and CSOs through agriculture extension workers and deployment of suitable drought management equipment
	Expected output: <ul style="list-style-type: none"> - Report on drought impacts and risks, based on analysis of past damage and lost data - Agriculture (crop, livestock, and fisheries) activities are guided by drought risk and vulnerability information and good/risk-reducing practices for drought management - Drought monitoring system utilizing a combination of field-derived, model-based and remotely sensed information - Protocols for Early Warning and Early Action, response and rehabilitation - Methodology on drought analysis and declaration 	

	<ul style="list-style-type: none"> - Reduced drought impacts due to increased access to enhanced drought-risk information and risk-reducing practices and technologies in the agriculture and other sectors - Enhanced capacities for preparing to respond to the impact of droughts 	<ul style="list-style-type: none"> - Enhance access to DRR good practices and technologies across the agriculture value chain (from seed production, to crop production, and post-harvest, etc.). - Construction of drought mitigation infrastructure, where applicable
	Duration: Four years	Estimated Cost (USD): To be estimated
	Lead Department: <ul style="list-style-type: none"> - Department of Agriculture 	Other department and partners: IWUMD, DALMS, Department of Agricultural Research, DRD, DMH, ECD, GAD, RRD, MRTV, Dry Zone Greening Department, Universities
	Need: <ul style="list-style-type: none"> - Drought is a major hazard in Myanmar and its impacts are expected to increase in intensity due to climate change - There is a need for additional drought risk information especially for the agriculture (crop, livestock, fisheries) and forestry sectors since droughts (and related hazards and risks) could significantly affect key livelihoods in the country 	

3.9 Priority Action: Myanmar Comprehensive School Safety Programme		
	Objective: <ul style="list-style-type: none"> - To ensure construction of multi-hazard resistant construction of school buildings and other learning facilities in safe locations - To improve disaster preparedness in school thus, protecting children, teachers, and school authorities from disasters 	Indicative Activities: <ul style="list-style-type: none"> - Update designs of school buildings and related infrastructure with reference to Safe School Construction Guidelines - Strengthening systems for identification of safe site selection for schools - Include/update disaster risk and climate risk issues in syllabus - Capacity building for imparting chapters/ sections related to disaster /climate risk issues for teachers - Identify 10-15 schools each in all regions/states giving priority to Ayeyarwady, Chin, Magway, Mandalay, Rakhine, Sagaing, Bago and Thanintharyi - Train school teachers of identified schools on disaster preparedness - Drafting of individual school preparedness plans by trained teachers in consultation with students - Organise school activities, such as drawing competitions, debates, essay writing, on DRM themes - A disaster management club can be formed in schools along the lines of science club, nature club, etc. It is a body for creating awareness on DRR among students. The School DRM Committee will be overall in-charge for DRR in school. PTA to be part of School DM Plan and DRM Committee. - School DRM plan should be linked with the township's DRM Plan - Practice School DRM Plan through mock drills - Small mitigation activities will be undertaken as part of the project - Lessons learnt to be incorporated into next phase of School Disaster Preparedness Programme - All schools will be covered in a phased manner - Develop a set of indicators to track all aspects of school safety - These activities are in line with the Comprehensive School Safety Framework
	Expected output: <ul style="list-style-type: none"> - Construct safe school buildings and other learning facilities - Include disaster and climate risk issues in the educational curricula - School DRM Plan prepared, practised and prioritised schools. - Raise awareness on DRM among students, teachers and school authorities 	
	Duration: Three years and beyond	Estimated Cost (USD): 1,150,000

	Lead Department: - Ministry of Education	Other department and partners: GAD, MoC, FSD, Region/State DM Bodies, RRD, DSW, DMH, ECD, Universities
	Need: - Multi-hazard school buildings to ensure a safe learning environment - Students are highly vulnerable to disaster - Capacity building of students has multiple benefits over the short and long-term - Myanmar has initiated several school preparedness programmes and it can be up-scaled Challenges: - High number of schools in vulnerable areas	

3.5

Pillar 4:

Enhancing Disaster Preparedness for Effective Response and Resilient Rehabilitation and Reconstruction in Myanmar



3.5.1 Introduction

Disaster risk accumulated over decades and centuries of skewed development, as well as risks from unknown weather extremes can't be mitigated in few years. This residual risk,³⁷ which remains in unmanaged forms even when effective disaster risk reduction measures are in place, requires response and rehabilitation and reconstruction measures. As recognized in the Sendai Framework (SFDRR)³⁸, there is a need to strengthen disaster preparedness for response, take action in anticipation of events and capacitate stakeholders for an effective response.

Rehabilitation and reconstruction after the initial response is equally important for recovery of affected communities and long-term risk reduction, thereby contributing to sustainable development. Thus, preparedness for rehabilitation and reconstruction is now a widely accepted concept as it helps to plan ahead in a way that interventions are predictable and can be implemented without delay.³⁹

Preparedness for disaster is equally important. Speedy response and relief saves lives and assets. It also helps reduce and manage resources required for rehabilitation and reconstruction. The preparedness measures range from the establishment of end-to-end early warning systems and the creation of rapid response teams to draft disaster response plans, and create of facilities for response and relief.

3.5.2 Approach and Objectives

The overall objective of Pillar 4 is to manage residual risk effectively and efficiently by creating systems, including human resources, equipment, facilities and procedures for disaster response, rehabilitation and reconstruction.

It has the following objectives:

- To update/develop disaster risk management plans of all regional/state, self-administered zones, district townships and wards/village tracts in line with the Disaster Management Law, 2013 and Disaster Management Rules, 2015.
- To create an inventory of disaster response resources and set-up rapid response teams for effective disaster response.
- To improve capacity of stakeholders, including communities and vulnerable groups, through strengthening of institutions, curricula development and research.

³⁷ United Nations, Open-ended intergovernmental expert working group on indicators and terminology relating to disaster risk reduction, December 2016.

³⁸ United Nations, Sendai Framework for Disaster Risk Reduction 2015-2030, 2015.

³⁹ Ministry of Social Welfare, Relief and Resettlement, Myanmar and et al, ASEAN Disaster Recovery Reference Guide, 2016.

- To strengthen end-to-end early warning systems at sub-national and community levels.
- To undertake hazard specific and theme specific risk management measures targeted toward flood, drought, disease and pest risks, and historical monuments.
- To strengthen community-level preparedness through engagement of CSOs, foundations and volunteers in disaster preparedness efforts.

Disaster response is undertaken under high-pressure circumstances, therefore it is important to have in-built systems and procedures to address the needs of people most at risk.

3.5.3 Priority Actions: Pillar 4

Table 3.5 Priority Actions: Enhancing Disaster Preparedness for Effective Response and Resilient Rehabilitation and Reconstruction

4.1	Priority Action: Updating/ developing multi-hazard disaster risk management plans of all regions/ states, self-administered zones, districts townships and wards/ village tracts	
	Objective: <ul style="list-style-type: none"> - To update/develop disaster risk management plans of all regions /states, self-administered zones, districts, townships and wards/village tracts in line with the Disaster Management Law, 2013, Disaster Management Rules, 2015 and practice plan 	Indicative Activities: <ul style="list-style-type: none"> - Develop a short guidance notes along with disaster risk management plans to outline for regional/state, self-administered zone township and ward/village tract . It will take into account existing plans, guidelines and DM Law, 2013 and DM, Rules, 2015 - Guidelines on township disaster risk management plans shall be updated before the revision of the Township DRM Plan - Guidance on ward/village tract Disaster Risk Management Plan
	Expected output: <ul style="list-style-type: none"> - DRM Plan based on risk profile and in accordance with DM Law, 2013 and DM Rules, 2015 is prepared/updated for all regions/states, self-administered zone, district, townships and wards/village tracts 	<ul style="list-style-type: none"> - Capacity building of stakeholders on DRM plan development - Development/updating of DRM Plans in a phased manner; In the first year, all regional/state and self-administered zone DRM plans and 50 most vulnerable townships and its ward/village tract 150 vulnerable townships and its ward/village tract in 2nd year Rest all 150 townships and its village tracts/wards in 3rd year - DRM Plan will be based on the risk profile of the regions/ state, self-administered zone, district, township and ward/village tract. Vulnerability and effect of climate change will be a key aspect of the DRM Plan. The plan will also include elements of pre-disaster recovery planning - Develop guidelines on how to conduct mock drills - Mock drills to test DRM Plan and review/update plans based on findings of the mock drills
	Duration: Four years	Estimated Cost (USD): 235,000
	Lead Department: <ul style="list-style-type: none"> - Regional and State Government - General Administration Department 	Other department and partners: DMH, RRD, ECD, Ministry of Border Affairs, YU, YTU, Universities
	Need: <ul style="list-style-type: none"> - Myanmar has enacted DM Law, 2013 and it covers institutional arrangements and practices and it is important to update/develop DRM Plan at sub-national levels - DRM plans need to be practiced and institutionalized as Myanmar is vulnerable to multiple hazards Challenges: <ul style="list-style-type: none"> - Limited resources and capacity at sub-national levels to develop multi-hazard DRM plans 	

4.2	Priority Action: Improved disaster response system in Myanmar	
	Objective: <ul style="list-style-type: none"> - To create rapid disaster response teams at regional/ state for effective disaster response - To develop a web-based inventory of resources (equipment, facilities, manpower) - To develop an online system for management of the warehouse related to disaster response and recovery 	Indicative Activities: <i>Response Team</i> <ul style="list-style-type: none"> - Develop terms of reference for disaster rapid response teams: composition, roles and responsibilities, coordination mechanism, deployment, etc. - Identify personnel for teams based on the composition and functions of teams, which will include fire/rescue members, medics, para-medics, structural engineers, police, etc. - Capacity building of team members - Procurement/allocation of equipment (rescue, communication, etc.) and transportation facilities to the team - In first phase, team will be constituted at regional /state and self-administered zone level and based on learning's, it can be created at the district level
	Expected output: <ul style="list-style-type: none"> - Create and train disaster rapid response teams - Web-based disaster response resources inventory developed and institutionalized 	<i>Inventory of response facilities</i> <ul style="list-style-type: none"> - Develop data collection format of resources (manpower, equipment and facilities such as warehouse, safe shelters, hospitals, masons trained on multi-hazard construction under the capacity building program of MoC, etc.) - Develop online inventory & manuals, along with facilities for downloading/ updating data on standalone systems - Warehouse management can be linked with emergency logistics systems of ASEAN (DELSA) and World Food Programme (WFP) - Capacity building of officials on usage of the systems - Institutionalisation of systems in National EOC/ RRD and later in regional/ state EOCs - MRCS has Resource Management System (RMS) and explore its linkages with the National EOC
	Duration: Three years	Estimated Cost (USD): To be estimated
	Lead Department: <ul style="list-style-type: none"> - RRD 	Other department and partners: GAD, FSD, MoALI, Ministry of Border Affairs, Myanmar Police Force, MoC, MoHS, WFP, UN OCHA, MRCS
	Need: <ul style="list-style-type: none"> - Disaster response requires resources at short notice. A central database of such resources will be very helpful. - Decentralised Multi-function disaster response team is important for effective response. Challenges: <ul style="list-style-type: none"> - Disaster response, especially complex disasters require highly trained personnel and equipment - Access to inventory in remote locations - Updating of offline systems and data 	

4.3	Priority Action: Capacity development on disaster resilience in a systematic, effective and sustainable manner and strengthening Disaster Management Training Centre (DMTC)	
	Objective: <ul style="list-style-type: none"> - To improve research facility, course content, and delivery, outreach of DMTC, as a centre of excellence on DRM - To include disaster risk reduction and climate change adaptation in civil services training and GAD training courses - To develop online courses for increased access on the basics of disaster risk reduction, response and recovery and its linkages with climate change and sustainable development 	Indicative Activities: <i>DMTC:</i> <ul style="list-style-type: none"> - Prioritise actions to strengthen DMTC based on RRD's Capacity. Development Strategy for National DMTC - Priority: Research, outreach and capacity building on delivery, among other priorities. - Research topics should contribute to improved DRM policy, strategy and trainings in Myanmar and focus on application/ community aspects. It should be evidence based. - Conduct training in collaboration with universities, training institutions, etc. in other parts of Myanmar - Develop a roster of experts on different topics of DRM and engage experts, especially government officials, in experience sharing for practical aspects. <i>Initiating Online courses through DMTC:</i> <ul style="list-style-type: none"> - Through DMTC, undertake a feasibility study of online courses on disaster risk management - Based on the feasibility, an approach paper will be developed and it may consider the following issues: - The proposed online interactive self-paced course based on the needs assessment and stock taking of existing courses on DRR and CCA - Training tools to be interactive and include self-assessment as it progresses and at the conclusion - The course may include some type of assignment, which requires participants to do some work, when they return to their duty station - Course will include DRR, recovery and its linkages with climate change and sustainable development - Option of offline course will be offered in Myanmar's official languages - Based on lessons learnt and demand, it can be up-scaled to develop course specifics for the general public, children, youth and women in subsequent phases <i>DRR/CCA&M in existing training courses</i> <ul style="list-style-type: none"> - Develop courses including session plans, facilitator's guide, participants guide, etc. based on existing civil services training and GAD trainings. - Train existing trainers on DRR/CCA&M session - Civil servants range from senior administrators to junior level officials. The training courses should be group specific - DoPH has a similar course with focus on health issues
	Expected output: <ul style="list-style-type: none"> - DMTC strengthened and able to discharge its mandate effectively and efficiently - Government officers and other stakeholders have a basic understanding of components of risk and measures for addressing risk 	
	Duration: Three years	Estimated Cost (USD): 79,000
	Lead Department: <ul style="list-style-type: none"> - RRD (DMTC and online course) - Union Civil Service Board (Civil services training) - GAD (GAD training course) 	Other department and partners: FSD, MoHS, Myanmar Police Force, University, DMH, MoC, ECD, Ministry of Education, Forest Department, MES, YU, YTU, Universities, UN OCHA

	Need: <ul style="list-style-type: none"> - DRR is, primarily, a cross-cutting issue, hence all officials should be oriented - DMTC needs to be strengthened to cater to needs and expand its reach Challenges: <ul style="list-style-type: none"> - DMTC is very new and has limited human resources capacity - Updating of course work 	
4.4	Priority Action: Construction and maintenance of multi-purpose community safe facilities based on risk profile	
	Objective: <ul style="list-style-type: none"> - To offer safe-haven to communities in case of disasters and utilise shelters for other community purposes during regular times 	Indicative Activities: <ul style="list-style-type: none"> - Identify areas where community safe shelters need to be constructed. It should be based on a risk profile, access, land ownership and coverage. The locally available construction materials will be promoted and prioritized. Identify locations for construction of new shelters and redevelopment of existing structures for phased implementation
	Expected output: <ul style="list-style-type: none"> - Multi-purpose safe shelters for communities during disasters and other community purpose activities during regular times 	<ul style="list-style-type: none"> - Identify existing buildings, to be used as shelters and improve them. Identify sites where new shelters need to be constructed. - Community safe shelters will be multi-purpose facilities i.e. during regular times it will be used for community meetings/ functions, markets, etc. or any other community level activities - Safe community shelters are included in the local disaster risk management plan - Set-up a community level safe shelter maintenance groups - Route of community safe shelters will be properly displayed at public places - Community safe shelters should be designed considering features for people with disabilities, children, the elderly and other groups.
	Duration: Three years and beyond	Estimated Cost (USD): To be estimated
	Lead Department: <ul style="list-style-type: none"> - MoC 	Other department and partners: Ministry of Border Affairs, GAD, RRD, DRD, DUHD, MIMU
	Need: <ul style="list-style-type: none"> - In the aftermath of Cyclone Nargis, cyclone shelters have been constructed at several locations. However, there is a need for additional shelters - Community safe shelters can be used for multi-purpose usage Challenges: <ul style="list-style-type: none"> - Resource intensive - Needs in various parts of the country 	
4.5	Priority Action: Improving end-to-end multi-hazard early warning systems, through strengthening of communication networks and early warning dissemination procedures and protocols	
	Objective: <ul style="list-style-type: none"> - To reduce the negative impacts of disasters through the dissemination of early warning information and signals in a timely and effective manner to sub-national authorities and communities 	Indicative Activities: <ul style="list-style-type: none"> - Review existing communication networks and identify locations, which require strengthening of communication facilities - Offer incentives for private sector to provide communication services in locations, currently not covered or have limited coverage - Identify alternative communication network/all-weather communication and cover Myanmar in a phased manner

	Expected output: <ul style="list-style-type: none"> - Establish communication networks to expedite transmission of warnings - Early warning communicated in sign language, apart from regular modes of communication - Local authorities and communities able to take suitable action based on early warning signals 	<ul style="list-style-type: none"> - Develop early warning dissemination frameworks and institutionalised inter-agency arrangements and coordination mechanisms for better information flow - Early warning through MRTV to include sign language for people with disabilities - Formalize early warning dissemination arrangements at all levels - Capacity building of local authorities on understanding early warning signals and actions - Awareness generation on early warning and related actions, including evacuation efforts for communities
	Duration: Three years	Estimated Cost (USD): To be estimated
	Lead Department: <ul style="list-style-type: none"> - Post and Telecommunications Department 	Other department and partners: DMH, MRTV, GAD, Myanmar Police Force, RRD, UN Habitat, Private companies
	Need: <ul style="list-style-type: none"> - Early warning models have improved and there is significant lead time between warnings and disasters - Early warning can save lives and there is documented evidence to support it Challenges: <ul style="list-style-type: none"> - Alternative communication is resource intensive - End-to-end early warning is beyond technology as it involves behavioural change 	
4.6	Priority Action: Improved community-level disaster resilience through community-based preparedness, volunteerism, civil society organizations and foundations	
	Objective: <ul style="list-style-type: none"> - To increase the pool of DRR volunteers including youth volunteers and their active engagement in all phases of disaster risk management - Strengthen capacity of CSOs and foundations on disaster response, recovery and resilient development, using a community disaster resilience framework 	Indicative Activities: <ul style="list-style-type: none"> - Finalise the DRR volunteer strategy based on lessons learnt from previous implementations, clear institutionalised linkages, SOPs and network management - Develop approaches and processes for mobilizing volunteers including youth, CSOs and foundations in disaster preparedness and mitigation - Upscale the present pool of volunteers for DRR (including volunteers, CSOs and foundations) to five more townships in the previous pilot area and in three new regional/state (six townships in each). Build capacity of CSOs and foundations on contingency planning at the local level. Include risk reduction in local development interventions and post-disaster recovery for enhancing community resilience and volunteer management - Engage retired defence service personnel to tap their expertise - Form and train volunteer groups in pilot townships at township village tract level through CSOs and foundations - Create a database of CSOs, foundations and volunteers based on the area of operation, sectorial expertise and willingness where he/she can be deployed - CSOs, foundations and volunteers to be linked with respective township authorities for DRM activities. - Documentation of learning from volunteer programme - Upscale programmes in other townships in a phased manner
	Expected output: <ul style="list-style-type: none"> - Improved disaster response system at community level - Local development plans and activities are informed of DRR and recovery efforts - Spirit of volunteerism encouraged and resources tapped - Clear roles and responsibilities of stakeholders intervening at the community level – including CSOs, foundations and volunteers; and clear SOP 	
	Duration: Two years and beyond	Estimated Cost (USD): 8,000* (scoping)
	Lead Department: <ul style="list-style-type: none"> - RRD 	Other department and partners: DSW, GAD, DRD, FSD, MoHS, Ministry of Education, Ministry of Border Affairs, MoC, MRCS, UNV

	<p>Need:</p> <ul style="list-style-type: none"> - Myanmar is prone to multiple-hazards. It is important to recognize the role of volunteers and tap their spirit of volunteerism for risk reduction and to build-back-better. - CSOs/foundations are key stakeholders to reach the community - Some volunteers can bring expertise and it can help in DRR and recovery <p>Challenges:</p> <ul style="list-style-type: none"> - Sustainability of effort 	
4.7	<p>Priority Action: Health sector preparedness for response and recovery through disaster risk management plans including epidemics and disease control, mass casualty management system and psychosocial support</p>	
	<p>Objective:</p> <ul style="list-style-type: none"> - To improve response and recovery activities - To effectively improve preventive and control of communicable diseases in post disaster situations - To improve mass casualty management - To improve psychosocial support 	<p>Indicative Activities:</p> <ul style="list-style-type: none"> - Prepare a hospital level disaster risk management plan including updating of mass casualties - Prepare township health department's and disaster health management plans - Upgrade public health emergency operation centres and emergency call centres - Great System for prioritization of patients - Deliver relevant training to hospital staff, public health team members on EWARS, PHEOC management, hospital DRM planning, epidemic control, acquisition and deployment of resources, medicine and equipment stockpiling and deployment, etc.
	<p>Expected output:</p> <ul style="list-style-type: none"> - Reduce the impact of disasters due to improved health response and recovery, including epidemic control, improved mass casualty management and psychosocial support 	<ul style="list-style-type: none"> - Table top and simulation exercises - Training on community-based epidemic prone disease surveillance system - Improve awareness on water, sanitation and hygiene in disaster contexts - To prepare for psychosocial support, which includes development of psychosocial care toolkit, training of staff, CSO, etc., which can be utilised - On-the-job training on issues related to people with disabilities
	Duration: Two years	Estimated Cost (USD): To be estimated
	<p>Lead Department:</p> <ul style="list-style-type: none"> - Ministry of Health & Sports 	<p>Other department and partners:</p> <p>GAD, Department of Medical Services, Ministry of Border Affairs, RRD, Dep't of Immigration, MoALI</p>
	<p>Need:</p> <ul style="list-style-type: none"> - Myanmar, including densely populated urban centres, is prone to multiple hazards and medical response, including mass causality management - In post-disaster contexts, epidemics can occur and it can lead to several fatalities. - Psychosocial support to the affected communities is vital <p>Challenges:</p> <ul style="list-style-type: none"> - Limited capacity - Limited resources 	
4.8	<p>Priority Action: Comprehensive flood risk management through improved forecasting, monitoring, preparedness and mitigation in priority river basin areas of Myanmar</p>	
	<p>Objective:</p> <ul style="list-style-type: none"> - To enhance the flood monitoring and forecasting capacity at the sub-national level - To reduce flood risk in high risk areas 	<p>Indicative Activities:</p> <ul style="list-style-type: none"> - Identification of priority flood risk basins based on risk assessments analysis of the causes of floods, which can inform mitigation measures - Establish protocol and procedures for flood warning dissemination and coordination

	Expected output: <ul style="list-style-type: none"> - Flood risk mitigated in high flood prone areas and increased resilience to flood risk - Sub-national DM bodies can better interpret the technical forecast information for effective monitoring and coordination. 	<ul style="list-style-type: none"> - Include flood monitoring among regional/state and townships disaster management bodies roles and responsibilities - Capacity building on the usage of flood forecasts and management measures at sub-national level - Review of flood preparedness at regional /state, self-administered zone and township levels before the monsoon season - Cover the areas prone to flash floods - Analysis of flood-related risks, hazards and impacts, such as increased pest infestations, fish kills, livestock mortality and development /dissemination of comprehensive guidelines to reduce negative effects - Assess linkages of flood impacts to other sectors - Enhance access to good practices on agriculture water management such as flood risk mitigation measures, including use of flood and salinity resistance crops by engaging community and CSOs through agriculture extension workers - Construction of embankments for high priority basins, de-siltation/dredging of priority sites. Plantation along slopes, etc. will be undertaken - Construct and maintain drinking water ponds - Mass awareness on do's and don't of floods - Flood risk mitigation will use climate change projections, if available
	Duration: Three years	Estimated Cost (USD): To be estimated
	Lead Department: <ul style="list-style-type: none"> - IWUMD 	Other department and partners: GAD, DMH, RRD, DWIR, Ministry of Border Affairs, DRD, Forest Dep't., MoC, Concerned Region /State and Township DM bodies
	Need: <ul style="list-style-type: none"> - Flood risk is high in Myanmar and climate change will further increase the existing risk - Myanmar has a substantial population engaged in agriculture and floods continue to pose a major threat - Siltation is a major issue - Flood warning dissemination and coordination is an area of improvement for townships in Myanmar Challenges: <ul style="list-style-type: none"> - Flood risk mitigation measures are cost intensive 	
4.9	Priority Action: Disaster and climate risk management of historical monuments and archaeological heritage in Myanmar	
	Objective: <ul style="list-style-type: none"> - To support conservation efforts towards historical monuments and archaeological heritage sites in Myanmar by enhancing resilience - To set-up coordination mechanism for risk reduction of historical monuments and archaeological heritage for long-term intervention - To develop tools for enhancing resilience of monuments and archaeological heritage - To implement pilot projects and document good practices related to risk reduction of historical monuments and archaeological heritage sites 	Indicative Activities: <ul style="list-style-type: none"> - Set-up and operationalize a coordination mechanism on disaster resilience and heritage protection - Disaster risk profiling of historical monuments and archaeological heritage sites - Analysis of existing legislatures and technical guidelines on conservation of historical monuments and archaeological heritage sites to identify gaps and make key recommendations - Development of guidelines/tools for enhancing resilience of monuments and archaeological heritage during the disaster recovery phase and pre-disaster phase. It will also include guidance on integration/linkages with the development and disaster risk management plans - Guideline/tools for capacity building on resilience of historical monuments and archaeological heritage sites - Pilot projects to prepare disaster and climate risk management plans of Bagan heritage sites

	Expected output: <ul style="list-style-type: none"> - Coordination mechanisms on disaster resilience and heritage - Guidelines for enhancing resilience of monuments and archaeological heritages sites - Demonstrable projects implemented for enhancing resilience of monuments and archaeological heritage 	<ul style="list-style-type: none"> - Pilot projects on disaster risk management of historical monuments in urban settings, preferably Shwedagon Pagoda in Yangon - Documentation and sharing of good practices
	Duration: Three years	Estimated Cost (USD): 460,000
	Lead Department: <ul style="list-style-type: none"> - Ministry of Religious Affairs and Culture 	Other department and partners: Yangon Heritage Trust, YCDC, MCDC, MTU, YTU, RRD, DMH, ECD, GAD, YU
	Need: <ul style="list-style-type: none"> - The recent Chauk earthquake affected 389 monuments in Bagan and many more in surrounding areas. - Several historical monuments and Myanmar's archaeological heritage sites are located in urban centres and require special preservation and attention Challenges: <ul style="list-style-type: none"> - Limited knowledge and expertise 	

Marching Towards Disaster Resilient Myanmar:

Implementing the Action Plan

4

MAP
DRR
2017



4.1

Implementation Arrangements for MAPDRR 2017

Disaster risk reduction, mostly being a cross cutting issue, calls for the engagement of multitude of stakeholders, especially line departments. The identification of more than 10 ministries and departments as lead agencies and more than 30 ministries and departments as supporting agencies for 32 priority actions emphasizes that the success of this action plan lies across the board. It requires coordination of priority actions, as well as relatively independent implementation by identified lead ministries/departments.

Under the overall guidance of the National Disaster Management Committee (NDMC), the Disaster Management Work Committee chaired by the Union Minister for Social Welfare, Relief and Resettlement will provide overall direction for implementing MAPDRR 2017.

4.1.1 MAPDRR 2017 Steering Committee

To ensure effective leadership and coordination among inter-ministerial departments for MAPDRR implementation, a 12-15 member MAPDRR Steering Committee will be set-up, soon after the action plan is endorsed. The Union Minister for Social Welfare, Relief and Resettlement will chair the Steering Committee. The members will include Permanent Secretaries or Director Generals, who are from the lead ministries of 12 work committees under the NDMC.

The MAPDRR Steering Committee will:

- Coordinate with the lead ministries/departments for prioritizing MAPDRR projects and its implementation.
- Cooperate with the Ministry of Planning and Finance, and related ministries and departments in planning annual budget, planning 5-years budget and settling annual expenditure.
- Inform the needs and gaps identified for MAPDRR implementation, including the requirements of financial resources, to the Disaster Management Work Committee, so that it will be able to coordinate with the other work committees under NDMC to provide higher-level policy guidance and support for effective implementation.
- Cooperate with the Disaster Management Sub-sector Coordination Group, under the Social Protection and Disaster Management Sector Coordination Group of the Development Assistance Coordination Unit to mobilize development assistance for MAPDRR implementation.
- Facilitate among the related ministries, departments, agencies, states and regions for smooth implementation the MAPDRR projects.

- Propose solutions to address bottlenecks arising in the course of implementation of the MAPDRR that require actions by the NDMC.
- Keep track of the implementation of MAPDRR projects under the lead ministries/departments, development partners, monitor the progress and report to the NDMC through the NDMC's Disaster Management Work Committee.

A Secretariat for the MAPDRR Steering Committee will be hosted by the MSWRR, to undertake the office work relating to the functioning of the MAPDRR Steering Committee. The Secretariat will also support the MAPDRR Steering Committee to gather, review and summarize the implementation of the MAPDRR by lead ministries, departments, agencies, and states and regions.

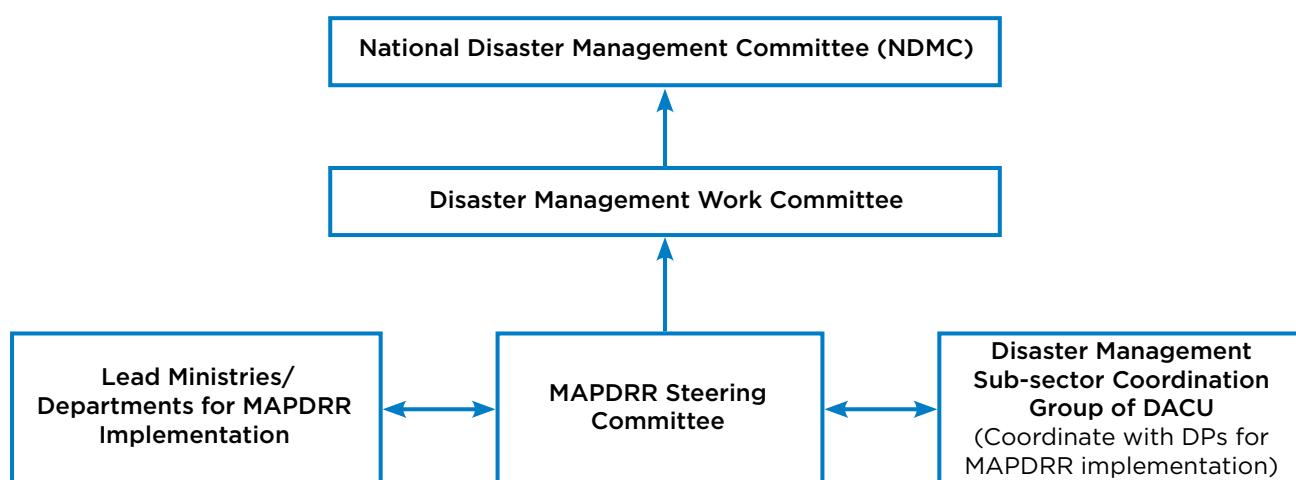
4.1.2 Lead Implementing Agencies

Lead ministries, departments, regional and state governments are responsible for implementing the priority projects, as mentioned against each project in Chapter 3 of the MAPDRR 2017. The identified lead ministry/department in consultation with concerned regional/state and self-administered zone government, line departments and other partners should start detailing its priority projects. The process will help in firming up implementation plan of priority projects by lead ministry/ department. The detailing of project will include identifying roles and responsibilities of lead ministry/department and support agencies, implementation area, engagement of development partners, technical know-how, funding, timeline and M&E including indicators. The process will also help in identification of source of fund including annual budget of lead department, regional/state budget and external funding. The activities of priority actions can be implemented as an independent activity or can be integrated with other activities of the lead department.

The lead implementing agencies will be responsible to;

- 1) Prepare the detail activity plan and budget for the respective projects under MAPDRR.
- 2) Propose/include the priority project(s) in the annual/five-year plan of the respective sector plan.
- 3) Implement the respective project(s).
- 4) Coordinate with the other key departments and stakeholders to mobilize the required resources including technical and financial resources.
- 5) Coordinate and inform MAPDRR Steering Committee on progress of the implementation, gaps including financial resources.
- 6) Share good practices and lessons learnt with other departments.
- 7) Cooperate with the MAPDRR Secretariat for periodic reporting on MAPDRR implementation.

Figure 4.1 Institutional Arrangements for Implementation of MAPDRR 2017



4.1.3 Other Implementing Partners for MAPDRR 2017

Development partners, UN agencies, international and local NGOs, the private sector can play an important role in supporting government- led implementation of the priority actions.

DRR Sub-sector Coordination Group: Ministry of Social Welfare, Relief and Resettlement is the Chair of Social Protection and Disaster Management Sector Coordination Group (SPDM SCG) which is one of the ten SCGs constituted under the Development Assistance Coordination Unit (DACU). DRR Sub-sector Coordination Group is formed under SPDM SCG with the participation of government departments, development partners, UN agencies and NGOs who are actively engaged in disaster risk reduction interventions in Myanmar. The purpose of SCGs is to facilitate effective and coordinated development assistance within designated sectors. MAPDRR 2017 is considered as the national DRR Sector Plan and the DRR Sub-SCG members will be informed of its priorities under the MAPDRR and the needs and gaps for implementation. DRR Sub-SCG will be able to facilitate the development partners' participation and effective aid coordination for MAPDRR implementation.

Disaster Risk Reduction Working Group: It includes UN agencies, international, local NGOs and professional organizations, the Red Cross and some donor agencies. DRR Working Group participated in the MAPDRR Task Force and contributed to the MAPDRR development process. Continued engagement of DRR Working Group in the MAPDRR implementation process will enhance coordination and mobilization of technical and financial resources from development partners for the MAPDRR implementation.

The MPD-Network: The MPD-Network is a platform of the private sector participation in disaster management. It aims to enhance private sector coordination and participation in disaster risk reduction led by the government. Since it is in the early stage of operationalization, its current engagement is mostly in disaster response and relief. Information sharing and facilitation with the MPD-Network on progress of MAPDRR will provide an entry point for the private sector's collaboration in MAPDRR implementation.

4.2

Financial Resources

Financial resources for the implementation of the MAPDRR are mobilized from multiple channels, in compliance with the Budget Law, Investment Law and other related legal documents. Financial resources include state budget (both national and local); international support; resources from private sector and community contributions

- **Annual Departmental Budget:** The annual planning process kicks off in October to prepare union and regional annual budgets for the next financial year starting from April 1 to March 31 (Union Government Office on 7th September 2017 approved to amend Myanmar Financial Year. Instead of 1st April to 31st March, it will run from 1st October to 30th September, starting from 2018 – 2019 financial year). The lead ministry and department after consultation with supporting agencies finalise the implementation plan and can include its MAPDRR priority actions in its departmental annual plan.
- **National Disaster Management Fund (NDMF):** As per the Disaster Management Law 2013, the National Disaster Management Fund is established in 2013. The Disaster Management Rules (2015) prescribes that the Fund shall be allocated and utilized for the following purposes:
 - (a) Implementation of national action plan on disaster risk reduction;
 - (b) Implementation of sector-wise disaster risk reduction plan;
 - (c) Implementation of disaster prevention and preparedness activities;
 - (d) Emergency response and search and rescue activities;
 - (e) Short and long-term reconstruction and rehabilitation activities.

Financing and Financial Management Work Committee under NDMC is chaired by the Union Minister for Social Welfare, Relief and Resettlement with the participation of key ministries with disaster management mandates. The allocation and approval of NDMF is discussed and agreed in the work committee and approved by the NDMC. The lead ministry and department for MAPDRR implementation can submit a project proposal of its prioritised actions to the Financing and Financial Management Work Committee under NDMC for funding MAPDRR projects/actions.

- **Regional/State Budget:** Myanmar is moving towards decentralised development planning and implementation and the provision of a regional/state budget has been created. Some of the MAPDRR actions/projects, especially small-scale local level projects, can be funded through the regional/state budgets.
- **Contingency Fund (erstwhile President's Reserve Fund):** The priority actions of high impact especially community level interventions can be funded through the contingency fund. The lead ministry and department can submit the project proposal to the Pyithu Hluttaw after endorsement of the regional/state government. The proposal should include the rational and impact at the community level.

- **Public-Private Partnership:** UMFCCI is a member of the Task Force on drafting MAPDRR 2017. During the drafting process, thematic consultation on private sector and disaster risk were also held. The private sector expressed keen interest in supporting MAPDRR actions through financial, technical and human resource assistance. The MPD-Network can help in organising consultations with the private sector to identify areas of support for specific priority actions of MAPDRR 2017.

In addition, the Global Environment Facility and the Green Climate Fund can be explored for funding projects linked with environment and climate change. Myanmar is in final stages of drafting the Myanmar Climate Change Strategy and Action Plan⁴⁰ and has identified six key economic sectors for action. There is alignment between these action plans, hence identified actions can be coordinated during implementation planning for leveraging resources, and maximization of impact.

40 Ministry of Natural Resources and Environmental Conservation, the Republic of the Union of Myanmar, Myanmar Climate Change Strategy and Action Plan 2016-2030 (draft 19th January 2017) MCCSAP, 2017

4.3

Communications Strategy

It is important to have a strong communication plan for a successful role out of the MAPDRR. Its implementation will heavily rely on all stakeholders including departments, development partners, donors, private sector and community participation. The engagement of these stakeholders over a long-term will be possible through regular communication regarding needs, achievements and most importantly impact of MAPDRR implementation.

The communication requires a multi-phased approach. In the first stage, the priority needs and intended outcome of the MAPDRR should be widely shared with policy makers, senior officers of departments, donors, private sector and development partners. It needs to be followed by sharing progress on implementation of priority actions and success stories from the ground. Under the guidance of the MAPDRR Steering Committee, the MAPDRR Secretariat will develop a communication plan and work closely with the Ministry of Information, the private media and communications networks.

Some of the tools and networks proposed for communicating MAPDRR include; a flyer on MAPDRR, a section on MAPDRR on the website of the Ministry of Social Welfare, Relief and Resettlement, which can provide a glimpse of progress as well as success stories, annual reports on progress; case studies and usage of such cases in DMTC courses, video clips, social media, among others. Periodic briefings to the media, including MRTV on MAPDRR implementation, especially impact stories will also help in creating awareness as well as interest.

The action plan and its progresses, should be widely shared in global and regional fora such as the Global Platform on DRR, the Asian Ministerial Conference on DRR, the ASEAN Disaster Management Committee, the Bay of Bengal Initiative for Multi-Sectoral Technical and Economic Cooperation (BIMSTEC), UN ESCAP Committee on Disaster Risk Reduction.

4.4

Monitoring and Evaluation

Key to achieve any goal or target is measurement and accountability. Progress of the MAPDRR implementation must be monitored, analyzed, documented and reported. The targets set under MAPDRR 2017 is aligned with targets of the Sendai Framework for Action on Disaster Risk Reduction and disaster risk reduction related indicators under the SDGs. The MAPDRR targets and indicators are also aligned with targets of the Asian Ministerial Conference Declaration, Delhi 2016.

The monitoring and evaluation of MAPDRR is aimed:

- To track progress of individual priority projects/actions and its activities for achieving the stated objectives.
- To track overall implementation of MAPDRR actions/projects, identify gaps and areas of improvement, coordination issues and successful case studies and to measure overall output of the MAPDRR, providing information for reporting to NDMC and inputs for Communication to other stakeholders.
- To measure outcome and impact of MAPDRR implementation, funding requirement and expenditure, policy support. It will help in global and regional reporting on disaster risk management. The monitoring and evaluation of the MAPDRR implementation will be attributed to lead ministries and departments identified under priority actions and the MAPDRR Steering Committee and will be undertaken at different time frames.
- The lead ministries and departments are responsible for developing indicators and tracking progress of its priority actions and activities.
- The MAPDRR Secretariat will collect information on progress of individual priority actions from ministries and departments. This apart, it will also be used to identify good practices and bottlenecks, especially inter-departmental issues, technical assistance, etc.
- The MAPDRR Secretariat will submit synthesized annual reports on implementation progress to the MAPDRR Steering Committee.
- MAPDRR Steering Committee will submit summary reports on key results and on challenges arising from the implementation will be sent to NDMC through its Disaster Management Work Committee.
- The MAPDRR Secretariat will develop management information systems to support MAPDRR implementation including tracking progress of the MAPDRR priorities. This system will be embedded in the website of the Ministry of Social welfare, Relief and Resettlement and will also have a menu to capture success stories.
- The MAPDRR Steering Committee will conduct a MAPDRR pillar level monitoring in late 2019 or early 2020.

- The MAPDRR 2017 implementation will be also shared in the DRR Sub-Sector Coordination Group under the Development Assistance Coordination Unit (DACU).
- The review will track progress against the milestones set for 2020 under this action plan and also on disaster risk reduction related indicators under the SDGs. Furthermore, it will report at Asian Ministerial Conference on Disaster Risk Reduction and ASEAN Committee on Disaster Management meetings.
- There will be an impact assessment after five-seven years of the MAPDRR implementation and the subsequent action plan by 2020. The lessons learnt from implementation of these plans will guide the strategy for the last phase of the MAPDRR i.e. plans for 2025-2030. It will document changes in disaster risk management practices in Myanmar. This impact assessment will also track progress on disaster risk reduction against the targets set for 2030.

4.5

Key Risks

The main risks envisaged in implementation of the MAPDRR and proposed remedial measures are:

- A national level disaster can lead to diversion of resources and manpower towards relief and recovery, causing delays in the implementation of the MAPDRR 2017 priorities. In that scenario, the implementation timeline and activities can be rescheduled, as relief and recovery needs to be prioritized. The MAPDRR priorities related to disaster-affected regions should be linked with recovery efforts as 'build-back-better' is an integral principle of recovery.
- The implementation of MAPDRR 2017 envisages funds from internal as well as external sources. NDMC, donors, Secretary for Natural Resource and Environment Committee, Pyithu Hluttaw and other stakeholders should be periodically briefed on progress of MAPDRR 2017 and its implementation, including success stories. This will help in ensuring that disaster risk reduction remains a priority and will provide opportunities for funding support
- The role of identified lead ministries/departments is critical in the implementation of MAPDRR 2017; this requires coordination. It is important to ensure that MAPDRR 2017 remains a priority of lead ministries/departments and in order to reach that, MAPDRR should be on the agenda of NDMC meetings. Annual reports on progress of MAPDRR should be prepared and shared. The regular meeting of the MAPDRR Steering Committee is extremely important to address coordination issues.
- The lack of interest of development partners and private sector in MAPDRR 2017 is another important risk, as implementation of the action plan requires an all-society approach. It is important to actively engage the DRR Working Group, the Disaster Management Sub-Sector Coordination Group of DACU, the MPD-Network and other relevant networks.
- Unexpected changes in the development trajectory of Myanmar, can have implications on disaster risk. It is important to periodically review the progress of the MAPDRR 2017 and adjust accordingly.
- MAPDRR has envisaged a three-phase approach and in the absence of any phase, optimum results can't be achieved. It is important that the discussion for phase-II should start between late 2019 and early 2020.

Annexes

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National Disaster Management Committee and Work Committees

Composition of National Disaster Management Committee

1	Vice President (2)	Chairman
2	Union Minister for Home Affairs	Vice Chair
3	Union Minister for Social Welfare, Relief and Resettlement	Vice Chair
4	Union Minister for State Counselor's Office Ministry	Member
5	Union Minister for President's Office	Member
6	Union Minister for Defense	Member
7	Union Minister for Border Affairs	Member
8	Union Minister for Information	Member
9	Union Minister for Religious Affairs and Culture	Member
10	Union Minister for Agriculture, Livestock and Irrigation	Member
11	Union Minister for Transport and Communication	Member
12	Union Minister for Natural Resources and Environmental Conservation	Member
13	Union Minister for Electric Power and Energy	Member
14	Union Minister for Labour, Immigration and Population	Member
15	Union Minister for Industry	Member
16	Union Minister for Commerce	Member
17	Union Minister for Education	Member
18	Union Minister for Health and Sports	Member
19	Union Minister for Planning and Finance	Member
20	Union Minister for Construction	Member
21	Union Minister for Hotel and Tourism	Member
22	Union Minister for Ethnic Affairs	Member
23	Chief Ministers (All States and Regions)	Member
24	Deputy Minister for Foreign Affairs	Member
25	Chief of Staff (Army)	Member
26	Chief of Staff (Navy)	Member
27	Chief of Staff (Air)	Member
28	Permanent Secretary for Social Welfare, Relief and Resettlement	Secretary
29	Director General of General Administration Department	Joint Secretary

Duties and Functions of NDMC

- a. To set up required organizations to implement the activities of the committee; to provide policies according to the priority of step by step activities; to review the progress of the work of the committee and give instructions as necessary.
- b. To provide guidance to use domestic resources as necessary in the face of natural disasters.
- c. To adopt basic principles on coordination for activities which are necessary to receive assistance external sources.
- d. To manage national finance and resources, and then to distribute them to required places.
- e. If necessary, to issue orders and instructions to carry out natural disaster management functions without hindrances, avoiding the misuse of rescue materials and prevail law and order in the community during and after the natural disasters.

Work Committees Under National Disaster Management Committee

S.N.	Name of Work Committee	Chair
1	Disaster Management Work Committee	Union Minister (MSWRR)
2	Financial and Financial Management WC	Union Minister (MSWRR)
3	Security WC	Union Minister (MoHA)
4	News and Information WC	Union Minister (MoI)
5	Health Care WC	Union Minister (MoHS)
6	Livelihood Restoration WC	Union Minister (MoALI)
7	International Relation WC	Deputy Minister (MoFA)
8	Search and Rescue WC	Union Minister (MoHA)
9	Logistic WC	Union Minister (MoTC)
10	Rehabilitation and Reconstruction WC	Union Minister (MoC)
11	Initial Need Assessment, Damage and Loss Verification and Need identification WC	Union Minister (MoPF)
12	Environmental Conservation WC	Union Minister (MoNREC)

List of Key Consultations During Drafting of MAPDRR 2017

S.N.	Title of Consultation	Date	Location	Number of participants
1	Lessons Learnt Workshop on Myanmar Action Plan on Disaster Risk Reduction Implementation, 2012	8 April 2016	Nay Pyi Taw	92
2	Towards a Safe and Resilient Myanmar-Translating the Global and Regional DRR and Resilience Frameworks into National Actions through a New MAPDRR	15 June 2016	Nay Pyi Taw	109
3	Formulation of the new Myanmar Action Plan on Disaster Risk Reduction	20 September 2016	Nay Pyi Taw	25
4	First Meeting of the Task Force on the new Myanmar Action Plan	27 October 2016	Nay Pyi Taw	45
5	Workshop on disaster risk reduction issues and priorities in Ayeyarwady region towards new MAPDRR	22-23 November 2016	Patheingyi, Ayeyarwady Region	87
6	First meeting of the new MAPDRR Technical Working Group One: Assessing disaster and extreme events risk and creating public awareness on DRR in Myanmar	30 November 2016	Nay Pyi Taw	34
7	First meeting of the new MAPDRR Technical Working Group Two: Strengthening disaster risk governance to reduce & manage risk	6 December 2016	Nay Pyi Taw	36
8	First meeting of the new MAPDRR Technical Working Group Three: Mainstreaming disaster risk reduction for resilient development in Myanmar	8 December 2016	Nay Pyi Taw	40
9	First meeting of the new MAPDRR Technical Working Group Four: Enhancing disaster preparedness for effective response and resilient rehabilitation and reconstruction in Myanmar	13 December 2016	Nay Pyi Taw	37
10	Workshop on disaster risk informed commerce and industries towards disaster resilient Myanmar	20 December 2016	Yangon	86
11	2nd Meeting of the Task Force on the new Myanmar Action Plan	10 January 2017	Nay Pyi Taw	53
12	Workshop on Disaster risk reduction priorities of central Myanmar towards the New Myanmar Action Plan on Disaster Risk Reduction	2-3 February 2017	Mandalay, Mandalay Region	88

13	Second meeting of the new MAPDRR Technical Working Group One: Assessing disaster and extreme events risk and creating public awareness on DRR in Myanmar	6 February 2017	Nay Pyi Taw	47
14	Second meeting of the new MAPDRR Technical Working Group Three: Mainstreaming disaster risk reduction for resilient development in Myanmar	8 February 2017	Nay Pyi Taw	48
15	Second meeting of the new MAPDRR Technical Working Group Four: Enhancing disaster preparedness for effective response and resilient rehabilitation and reconstruction in Myanmar	14 February 2017	Nay Pyi Taw	42
16	Disaster risk reduction priorities of Chin State towards the New Myanmar Action Plan on Disaster Risk Reduction	22-23 February 2017	Hakha, Chin State	46
17	Second meeting of the new MAPDRR Technical Working Group Two: Strengthening disaster risk governance to reduce & manage risk	28 February 2017	Nay Pyi Taw	41
18	Workshop on disaster risk reduction issues and priorities in Mon State towards new MAPDRR	21-22 March 2017	Mawlamyine, Mon State	33
19	Thematic consultation on MAPDRR and the People most at-risk "Leaving No One Behind"	27 March 2017	Naypyitaw	61
20	Third meeting of the Task Force on the new Myanmar Action Plan	11 April 2017	Nay Pyi Taw	39
21	Briefing to UN Agencies on MAPDRR	14 June 2017	Yangon	14
22	Joint Meeting of the new MAPDRR Technical Working Groups	16 June 2017	Nay Pyi Taw	80
23	Briefing to Development Partners on new MAPDRR	23 June 2017	Yangon	28
24	Fourth Meeting of the Task Force on the new Myanmar Action Plan	28 June 2017	Nay Pyi Taw	53
25	Fifth meeting of the Task Force on the new Myanmar Action Plan	17 August 2017	Nay Pyi Taw	37

* Apart from these key consultations, MAPDRR 2017 was discussed during the DRR Working Group monthly meetings, International Day for Disaster Reduction celebration on 13th October 2016, the Launch of the Myanmar National Framework for Community Disaster Resilience and the Training and Workshop on DRM and Stock taking of DRR and CCA in the agriculture sector.

MYANMAR ACTION PLAN ON DISASTER RISK REDUCTION, 2017

Fostering resilient development through integrated action plan

MAP
DRR
2017

Query and clarification:

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