

FY2020

Country Report of Myanmar

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Introduction

The Republic of the Union of Myanmar is geographically situated in southeast Asia between latitudes 90° 32' N & 28° 31' N and longitudes 92° and 10' E & 101° 11' E. It is surrounded by China in north and north east, Laos PDR and Thailand in east and south east.

Myanmar is one of the largest countries in South East Asia covering 261,228 square miles. It stretches for 582 miles from east to west and 1,275 miles from north to south. The population of Myanmar (2019) is 54.05 million. Myanmar is ethnically diverse with more than 135 ethnic groups represented within the total population. The largest city in Myanmar is Yangon and the capital of Myanmar is Naypyitaw. The predominately spoken language in Myanmar is Burmese and 89 percent of the population is Buddhist.

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 hazard. In recent years, the country is also witnessing a spate of localized 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. The 2015 floods caused damages and losses amounting to USD1.5 billion, while the 2008 Cyclone Nargis led to USD 4.1 billion.

In 2019 beginning of July, there were flooding and landslides in our country due to torrential rains. It caused the worst event of landslide in Mon State in August 2019. Combining of torrential rains and illegally excavation of soft soil by local people caused the mountain sliding to the Thae Phyu Kone village in Paung Township. 175 people were affected by landslide and about 75 people were dead and more than 40 were missing under the mud. On August 2020, widespread floods effected multiple regions in Myanmar due to overflow of the Ayeyarwady and the Thanlyin Rivers. At least 21,500 people were affected.

Table 1 Hazard Profile of Myanmar (MAPDRR 2017)

Hazard	Profile
Earthquake and Tsunami	Two main sources: Sagaing fault, and the Sunda subduction megathrust 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 modified mercalli intensity (MMI) 8, the Ayeyawady Delta and Taninthayi coasts fall in the Moderate Zone with MMI.

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.
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/StormSurge	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 hazard.

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. 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 study 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 4 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.

Legislative and Institutional Arrangements for Disaster Risk Management

Legislative and institutional arrangements for Disaster Risk Management is evolving in Myanmar. The country enacted the Disaster Management Law in 2013 and the Disaster Management Rules was prescribed in 2015. The Law was developed to be in line with Hyogo Framework for Action (2005-2015) and to comply with the AADMER. The Law does not include the concept of climate change adaption (CCA), and focuses on risk information, preparedness, awareness and early warning, and data management for early warning systems, together with the following objectives:

- to implement natural disaster management programmes systematically and expeditiously in order to reduce disaster risks;
- to form the National Committee and Local Bodies in order to implement natural disaster management programmes systematically and expeditiously;
- to coordinate with national and international government departments and organizations, social organizations, other non-government organizations or international organizations and regional organizations in carrying out natural disaster management activities;
- to conserve and restore the environment affected by natural disasters;
- to provide health, education, social and livelihood programmes in order to bring about better living conditions for victims.

The Law enables the formation of the National Disaster Management Committee (NDMC) with its duties and Powers.

National Disaster Management Committee

According to the Disaster Management Law, the National Disaster Management Committee (NDMC) chaired by the Vice-President 2 has formed. National Disaster Management Committee is the supreme agency on Disaster Risk Management (DRM) (policy level, decision making, formulating strategies, and overall supervision). The duties and functions of NDMC are as following:

- (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;

The twelve work committees related to the specific areas of disaster risk management and an advisory committee have been set-up under NDMC. State/Region-, District-, Township- and Village Tract-level Disaster Management Bodies had also been formed respectively. The organogram is reflected in the following figure .



The National Disaster Management Work Committee (NDMWC) chaired by the Union Minister for Ministry of Social Welfare, Relief and Resettlement was formed to supervise the implementation of the Disaster Risk Reduction (DRR) activities. Department of Disaster Management under Ministry of Social Welfare, Relief and Resettlement is the National Disaster Management Office for DRR and Line Ministries with related mandates on DRR.

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 Organization for Migration (IOM) head the DRR Working Groups of Chin State, Kayin State and Rakhine State respectively.

Myanmar Humanitarian Country Team (HCT): 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.

Myanmar Action Plan on Disaster Risk Reduction

The Myanmar Action Plan on Disaster Risk Reduction (MAPDRR), 2017 is a comprehensive and unified action plan for disaster risk reduction with prioritized interventions across Myanmar till 2020. The vision of MAPDRR is to protect lives, economy, heritage and environment through an inclusive approach towards sustainable development in Myanmar. With a long term vision and considering deep-rooted underlying drivers of disaster risk, it has set an 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 printed outcomes. The MAPDRR 2017 covers not only natural hazards but also man-made accidents focusing on managing risks rather than managing disaster.

The action plan identifies 32 priority actions under four pillars: risk information and awareness; risk governance; risk mitigation; and preparedness and response, rehabilitation and reconstruction. For each priority action, objectives, activities, outputs, duration, lead agencies, and supporting partners have been identified. The priority actions aim to strengthen the policy frameworks and systems for long-term risk reduction. Robust implementation, funding as well as monitoring and evaluation mechanisms have been identified for the MAPDRR 2017.

Ministry of Social Welfare, Relief and Resettlement

In Myanmar, Ministry of Social Welfare, Relief and Resettlement is the focal Ministry for disaster management. It also serves as the secretariat of NDMC. Under the Ministry, there are three Departments: Department of Social welfare, Department of Disaster Management and Rehabilitation Department. Department of Disaster Management (DDM) is responsible for conducting disaster management activities in accordance with the international norms and standards. Under the Department, there are Emergency Operation Center, Disaster Management Training Center(DMTC), Region/State offices ,District offices and Township offices. DDM is a focal point of the ASEAN Committee on Disaster Management (ACDM).

Emergency Operation Center: With the aim to provide the supports for emergency management, response and logistic through information sharing on network and quick decision making, the Ministry of Social Welfare, Relief and Resettlement plans to set up Emergency Operation Center(EOC).The functions of EOC will include;

- Monitoring / Watching weather related information and early warnings were received
- Developing research on disasters occurred in Myanmar
- Developing the response plans for each type of disaster
- Exchanging weather information with local/ international organizations
- Documentation of disaster information, Distribution and Coordination

Myanmar Disaster Loss and Damage Database: The Myanmar Disaster Loss and Damage Database has now been initiated by the Department of Disaster Management with the Objective to develop national capacities for monitoring and analyzing risks and vulnerabilities to support disaster risk reduction ,mitigation, preparedness, response and recovery. The National framework for the database has been finalized and the pilot data collection is now under-way. The database could be linked with the Regional and global networks in the near future.

Disaster Alert Notification (DAN) : DAN mobile app is intended to timely provide disaster related information, weather news and other updates on disaster risk reduction activities in Myanmar. It sends notifications about the early warning information on potential disaster situation to the users. It also provides facts on disaster preparedness before disaster, dos and don'ts for (8) types of the most likely disasters in Myanmar and other publications on disaster awareness. DAN is developed by the Department of Disaster Management, Ministry of Social Welfare, Relief and Resettlement in partnership with UNDP and Adaptation Fund to provide actionable disaster related information to communities in Myanmar to be able to better prepare for and respond to disaster events.

Myanmar Unified platform for Disaster Risk Application (MUDRA): Disasters can undermine socio-economic development and set back hard-earned development gains. Understanding current and future disasters and climate change associated risks is therefore important for sustainable development. To enable risk-informed strategic development planning, the Myanmar Unified platform for Disaster Risk Application (MUDRA) has been developed. MUDRA is an online interactive portal that provides disaster risk information for strategic planning. The current portal includes risk information riverine floods, coastal floods (storm surges) and cyclone winds. Several types of exposure data are included, such as population density, buildings, agriculture and critical infrastructure. It is possible add other hazards and exposure data in the future. The portal is intended to act as a common platform across agencies in Myanmar for developing, collaborating and sharing disaster risk information to promote risk-informed development and thereby contributing to the objectives of the Sendai Framework for Disaster Risk Reduction, the Paris Agreement and the Sustainable Development Goals.

Conclusion

Myanmar ranks third out of 184 countries most affected by climate change in the last 20 years in the 2019 Global Climate Risk Index. This is serious threat to Myanmar's sustainable development. Building disaster resilience in Myanmar becomes more important than ever, to be safe lives of Myanmar people, to protect investment and to ensure the sustainability of development gains.

Myanmar sustainable Development Goal cannot be achieved without Disaster Risk Management in Development plans. Myanmar needs to consider more about climate change and disaster risk in every development plan and to enhance preparedness activities for future disasters. Early warning systems need to be upgraded in order to issue more accurate and area-specific warnings.