

**Asian Disaster Reduction Center Visiting Researcher
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Country Report of Myanmar 2022



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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 estimate) 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

The Disaster Management Law (2013) provides for the establishment of the National Disaster Management Committee (NDMC). 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.

Standing Order



The standing order 2009 was issued for natural disaster management based on experiences in the 2008 Nargis cyclonic storm. The "Standing Order for Natural Disaster Management in Myanmar" is issued with the aim of ensuring that once disaster strikes, emergency relief and rehabilitation work is carried out according to the prepared plan and that the people are mobilized at the national level for participation in such efforts.

Now, the order was revised in line with the management system and technological development. The standing order on natural disaster management for 2022 was drafted with remarks from relevant committees and the ministry. Work committees and management committees are to scrutinize natural disaster prevention plans in line with the 2022 standing order.

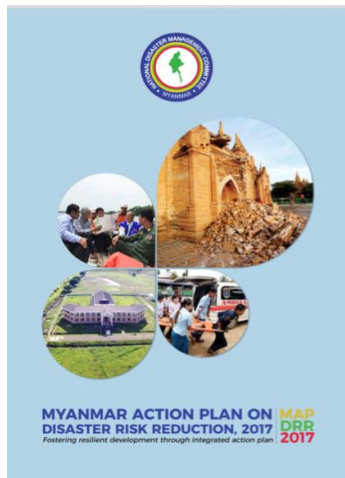
Disaster Risk Reduction Networks

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.

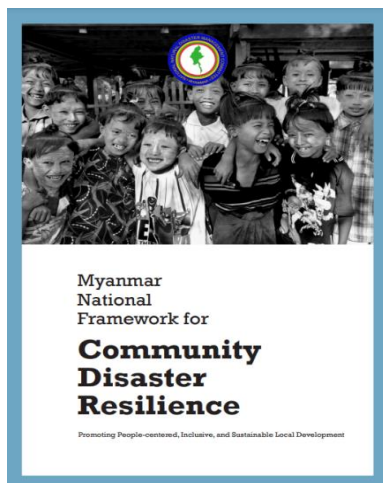
Myanmar Action Plan on Disaster Risk Reduction (MAPDRR 2017)



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.

Myanmar National Framework for Community Disaster Resilience



The Myanmar National Framework for Community Disaster Resilience has been developed to guide stakeholders in building resilience of Myanmar communities. The framework has been developed under the leadership of the Ministry of Social Welfare, Relief and Resettlement that is the secretariat of the National Disaster Management Committee (NDMC), and through extensive consultation with different ministries, development partners, and civil society organizations. The framework identifies actions to strengthen resilience so that communities are better prepared, can withstand the impacts of disasters, and are able

to recover quickly. These actions are community-based and span across key sectors such as rural and urban development, agriculture, environmental conservation and forestry, financial inclusion, social protection, and disaster preparedness. The implementation requires an inclusive approach, and leveraging partnerships and resource mobilization through the cooperation of government organizations, civil society organizations, the private sector, and development partners. Implementation of this framework is critical for building a resilient society, and for realizing our regional and global commitments and priorities related to the 2030 Sustainable Development Goals, the Paris Agreement on Climate Change, and the Sendai Framework for Disaster Risk Reduction (2015-2030).

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. Each department has specific disaster related duties. The Department of Disaster Management (DDM) was established with the objectives to provide emergency assistance for the victims of natural disasters for ensuring immediate relief and to conduct preventive measures to reduce the loss of lives and properties due to disasters. 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 (EOC)

Myanmar is vulnerable to natural disasters which have potential to impact large number of people and developmental gain in the country. Therefore, the government of Myanmar has prioritized preparedness and mitigation plans. In 2012, the country finalized the Myanmar Action Plan On Disaster Risk Reduction (MAPDRR) which identified the 65 priority projects. Emergency Operation Center (EOC) is one of the Prioritized projects in MAPDRR to manage emergency operations within the geological boundaries.

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 Centre (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
- Reporting the news acquired from affected area to the higher levels in emergency situation continuously and timely

Disaster Management Training Center (DMTC)



The government approved establishment of the Disaster Management Training Centre (DMTC) in order to build up the capacity of people implementing disaster management activities. The DMTC will build upon the existing pool of experts

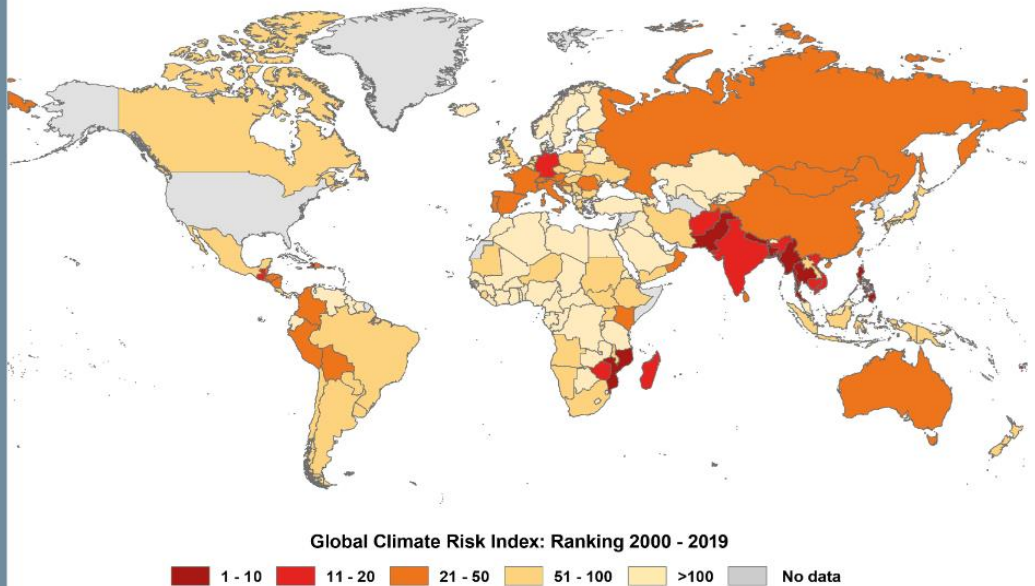
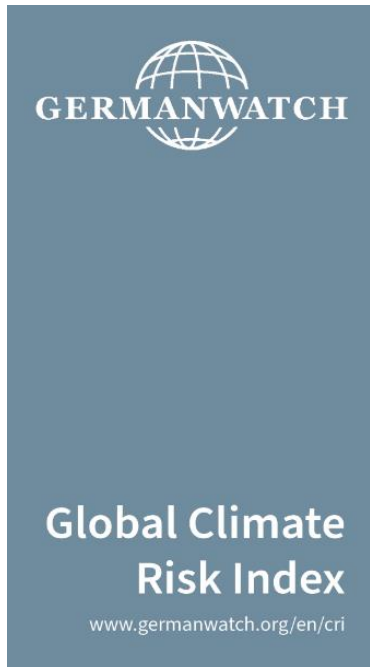
within the Relief and Resettlement Department and the existing Disaster Management Course, which has supported capacity development of officials from Government Departments and Social Organizations, since 1977. DMTC will be located in Hinthada Township in Ayeyarwaddy Region. The Ministry of Social Welfare, Relief and Resettlement is now undertaking the three-year plan (2013-2015) for establishment of DMTC. Under Phase 1 (2013-2014), construction of the three main buildings is now underway. The Ministry is collaborating with international and local partners to mobilize the technical and financial resources for:

- Human resource and institutional capacity development
- Infrastructure development
- Development of Curriculum and procurement of Teaching Aids
- Networking and partnership with International and Regional Training Institutes and Centers

Conclusion

The Global Climate Risk Index 2021 analyses to what extent countries and regions have been affected by impacts of weather-related loss events (storms, floods, heat waves etc.). Human impacts (fatalities) and direct economic losses were analyzed. The most recent data available — for 2019 and from 2000 to 2019 — were taken into account. Myanmar ranks second out of 184 countries most affected by climate change in the 2021 Global Climate Risk Index. This is serious threat to Myanmar's

sustainable development. 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. 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.



CRI 2000-2019 (1999-2018)	Country	CRI score	Fatalities	Fatalities per 100 000 inhabitants	Losses in million US\$ PPP	Losses per unit GDP in %	Number of events (2000-2019)
1 (1)	Puerto Rico	7.17	149.85	4.12	4 149.98	3.66	24
2 (2)	Myanmar	10.00	7 056.45	14.35	1 512.11	0.80	57
3 (3)	Haiti	13.67	274.05	2.78	392.54	2.30	80
4 (4)	Philippines	18.17	859.35	0.93	3 179.12	0.54	317
5 (14)	Mozambique	25.83	125.40	0.52	303.03	1.33	57
6 (20)	The Bahamas	27.67	5.35	1.56	426.88	3.81	13
7 (7)	Bangladesh	28.33	572.50	0.38	1 860.04	0.41	185
8 (5)	Pakistan	29.00	502.45	0.30	3 771.91	0.52	173
9 (8)	Thailand	29.83	137.75	0.21	7 719.15	0.82	146
10 (9)	Nepal	31.33	217.15	0.82	233.06	0.39	191

The 10 countries most affected from 2000 to 2019 (annual averages)

Reference

- Myanmar Action Plan on Disaster Risk Reduction 2017
- Myanmar National Framework for Community Disaster Resilience
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