



Yangon Region Earthquake Preparedness and Response Plan



2019



Yangon Region

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FORWARD

The Yangon Region is prone to natural disasters, including floods, storms, fires, earthquakes, and disease epidemics that have caused the most damage and threat to investment in the Yangon Region. Yangon City is located about 30 kilometres west of the Sagaing fault, and according to the historical records, the earthquakes have had grim consequences on lives, social assets, and physical systems in the region.

While urbanization has rapidly increased, earthquake resistance design in the construction of critical infrastructure is limited. Due to this limited capacity and a limited early warning system, the region is vulnerable to huge loss and damages, affecting lives and properties, should a severe earthquake occur.



In consultation with the Yangon Region Disaster Management Work Committee members, relevant government departments and stakeholders guided by the Ministry of Social Welfare, Relief and Resettlement, and the Yangon Regional Government, the “Yangon Region Earthquake Preparedness and Response Plan” is therefore designed to respond to the specific needs for earthquake preparedness and address how to effectively respond when an earthquake strikes. The plan describes preparedness measures that can reduce earthquake-related risks, as well as emergency response activities and how to coordinate for them in collaboration with relevant government departments and other stakeholders in the region. In line with the Myanmar National Earthquake Preparedness and Response Plan, the Yangon Region Earthquake Preparedness and Response Plan is being developed under the project on ‘Building Resilience in Earthquake prone areas in Myanmar through better Preparedness and Response’ in collaboration with the Department of Disaster Management and UNDP with funding support from the European Union Civil Protection and Humanitarian Aid.

H.E. U Phyo Min Thein
Chief Minister
Yangon Regional Government

EXECUTIVE SUMMARY

Vision

To minimize damage to property, reduce injury and lives lost, and normalize the lives of those affected in a timely manner in the case of a damaging earthquake in the region.

Mission

The plan aims to practice the preparedness measures and response functions that need to be coordinated among the Yangon Region Disaster Management Work Committees and relevant departments and organizations to reduce earthquake-related risk. In addition, the plan is developed in reference to the National Earthquake Preparedness and Response Plan.

The plan has two main parts: preparedness and response. The first part includes the preparedness measures that can be practically implemented in collaboration with the relevant government departments and community in the Yangon Region. The latter part includes response functions for the Yangon Region Disaster Management Committee and its work committees for within 24 hours, 24-48 hours, 48-72 hours, and 72 hours to 7 days in the case of damaging earthquake in Yangon Region.

The lesson learnt and experience implementing the plan will be reviewed and revised as necessary by the Yangon Region Disaster Management Committee. The revised plan will be submitted to the National Disaster Management Committee (NDMC) and shared with the Regional Disaster Management Work Committees.



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ABBREVIATIONS

ADPC	Asian Disaster Preparedness Centre
ASEAN	Association of Southeast Asian Nations
CBOs	Community Based Organizations
CEFR	Central Emergency Response Fund
CSOs	Civil Society Organizations
DDM	Department of Disaster Management
DMC	Disaster Management Committee
DMH	Department of Meteorology and hydrology
DRR WG	Disaster Risk Reduction Working Group
HCT	Humanitarian Country Team
MAPDRR	Myanmar Action Plan for Disaster Risk Reduction
NDMC	National Disaster Management Committee
UNDP	United Nations Development Programme





1. Introduction

The Yangon Region is prone to natural disasters, including floods, storms, fires, earthquakes, and disease epidemics. Of all these natural disasters, floods, storms, and earthquakes are the most damaging and threaten investment in the Yangon Region. Among these natural disasters, all but earthquakes are able to receive early warnings for preparedness measures. Earthquakes are classified as the most destructive, due to limited capacity, exposure of the population, physical and economic assets, and the unreliable early warning systems currently in place to enhance early action.

The country is exposed to earthquakes due to its geographical location within the Alpide Belt, which is noted to be the most seismically active zone in the world with multiple damaging earthquakes and volcanic eruptions having occurred there. The country itself is besieged by a series of faults, of which the Sagaing fault is the longest, trending north to south across the central part of the country. Yangon City is about 30 kilometres west of the Sagaing fault. History suggests that earthquakes have had grim consequences on lives, social assets, and physical systems in the region.

Despite the relocation of the capital in 2005 to Nay Pyi Taw, Yangon City remains the major economic hub of the country. There is still a constant movement of population into the region in search of jobs, putting pressure on basic services including water, electricity, healthcare, schools, and housing, among others. Occupancy in slum areas is increasing, and such areas are susceptible to liquefaction during ground shaking. The infrastructure is ill-informed by earthquake risk, and a building maintenance culture is non-existent, even as the threat persists.

General building typology is brick noggin, concrete, steel, masonry, and wood, with the majority being concrete. Brick noggin and masonry also take up a significant portion of the building stock in the region. The majority of the buildings in the city are four to five-story masonry buildings, and a few are eight-story concrete buildings.

Most of the public buildings are of a colonial type with limited or no maintenance to ensure their structural integrity, and hence, an increased level of vulnerability to seismic events. The region is home to the main international airport that serves as the entrance and exit for all international airlines. The region has cultural heritage, including pagodas, and basic services such as schools, hospital, water and energy.

The provisional census¹ results indicate that the 10,889,348 households in Myanmar have an average of 4.4 people living in each household, with high population growth in urban centres, including Yangon city. The region has four districts and 46 townships and contributes to an urban population of 29.4 percent of the total population, with a 2.9 percent annual growth rate of urbanization. Such growth is not consistent with the development of infrastructure in urban centres, especially with the demand for basic services such as schools, hospitals, energy, and water.

The location of all these facilities attracting population movement makes it a priority for the government to institute necessary measures to reduce the impact of earthquakes on the population and their assets and to protect physical property. As is always the case, every disaster is characterized by its socio-economic impact on the wellbeing of the society, individual lives, livelihoods, the economy, and infrastructure. When the destruction affects the infrastructure, it often takes years or decades to recover from the impact. With the current population growth and high demand for rapid infrastructure development, including housing-stock, more casualties and injuries are expected if an earthquake of magnitude 7.0 or more (Richter Scale) should occur in the region.

1 The 2014 Myanmar Population and Housing Census, 2014

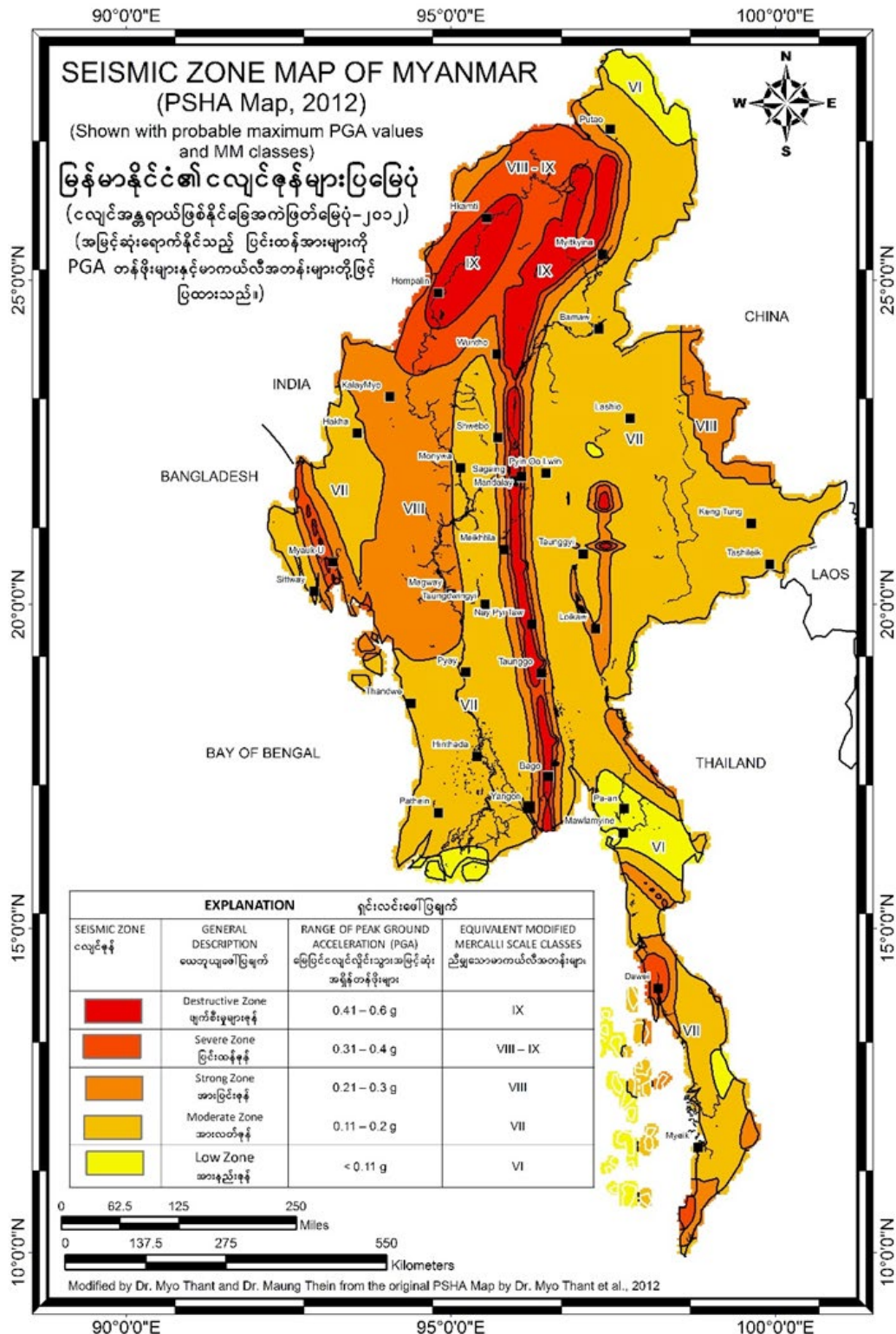
1.1 Earthquake Threat

Based on the Peak Ground Acceleration (PGA) values and past records, the cities are classified as Low Zone, Moderate Zone, Strong Zone, Severe Zone and Destructive Zone. Figure (1) shows that the area with the highest earthquake risk is classified as Zone 5 (Destructive Zone) and its equivalent to Mercalli Scale (9). Yangon and Nay Pyi Taw are located in Zone 2 (Moderate Zone), and Mandalay and Bago are located in Zone 3 (Strong Zone) and Zone 4 (Severe Zone), respectively. Those cities have a high risk of earthquake. The zones are described in Figure (1), Seismic Zone Map of Myanmar.

The magnitude of earthquake is presented by Richter Scale, however the intensity will be varied according to the epicentre. The intensity will be more if the epicentre is close to the affected area and the intensity will be less if the epicentre is far from the affected area. The intensity is described as Modified Mercalli Intensity based on the level of damaged. The following table shows the Modified Mercalli Intensity with the possible damaged due to earthquake.

Table (1) Classification of Intensity of earthquake

Modified Mercalli Intensity	I	II	III	IV	V	VI	VII	VIII	IX	X	XI	XII
Potential damage	NA	NA	NA	NA	Very light	Light	Moderate	Moderate to heavy	Heavy	Very heavy	Very heavy	Very heavy
Perceived Shaking	NA	weak	weak	light	moderate	Strong	Very strong	Severe	Violent	Extreme	Extreme	Extreme



Probabilistic Seismic Hazard Assessment Map (PSHA Map) of Myanmar showing expected peak ground acceleration (PGA) values with 100% probability in 500 years. (Note: 0.21 - 0.3 g zone in the northern part of Shan State is taken from the Seismic Zone Map of Myanmar by Dr. Maung Thein et al., 2005)

Figure 1, Seismic Zone Map of Myanmar (2012); Courtesy: Myanmar Earthquake Committee

The Table (2) describes the magnitude of earthquake and the possible damaged on buildings and human beings. However, the possible damage depends on the depth of epicentre, the distance between the cities and epicentre, population density and building typology etc.

Table (2) Comparison of magnitude of earthquake and the observation

Magnitude	Observation
<2	No effect
2-4	Noticed only by sensitive people
4-4.9	Felt by most of the people
5-5.9	Less damaged even in strong buildings
6-6.9	Significant damaged in strong buildings
7-7.9	Serious damaged in strong buildings
>8	Severe and destructive damaged

On 5 May 1930, an earthquake in Bago caused 500 casualties and great destruction in the city and the Yangon region. Fifty deaths were reported, and some physical structures had considerable damage. The same year, a second quake on 3 December 1930, moment magnitude (M_w) 7.3, struck Bago, causing damage to houses. Railroad tracks were twisted, affecting transportation systems. Notwithstanding its low to medium seismicity, Yangon's population, infrastructure development, and the nucleus of its economic hub have made it the most vulnerable region in the country.

The beginning of 2018 was met with a series of earthquakes, occurring more frequently than in previous years. Figure 2, below, shows the Peak Ground Acceleration (PGA) figures of potentially damaging earthquakes for a return period of 475 years. The PGA map is useful in the design of earthquake resistant buildings.

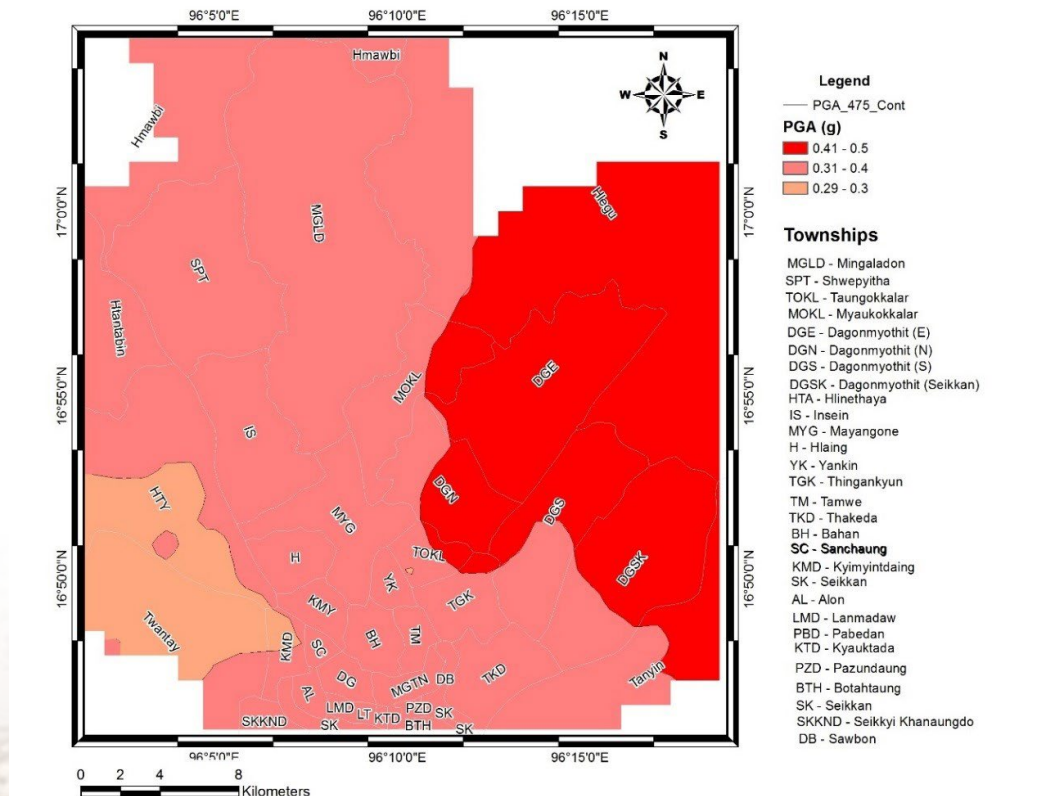


Figure 2, PGA values of earthquakes in the Yangon region;
Courtesy: Myanmar Earthquake Committee, 2018

1.2 Policy Frameworks on Disaster Risk Reduction

Building resilience to natural hazards and climate change related risks is imperative to sustaining development gains and has become a priority for the government of Myanmar. Over the last decade, the Government has taken proactive measures to strengthen the legal, institutional, and policy frameworks for building disaster resilience in collaboration and partnership with various stakeholders. The policies include, but are not limited to: enactment of the Myanmar National Disaster Management Law (2013) and the Disaster Management Rules (2015), the Myanmar National Building Code (2016) provisional, the Myanmar National Framework for Community Disaster Resilience (2016), and the Myanmar Action Plan on Disaster Risk Reduction (MAPDRR) (2017). The Earthquake Preparedness and Response Plan shall define the ways for the initial preparedness measures and guide the response functions. For the implementation of the plan, coordination among the relevant institutions, development partners, government departments, and the private sector is crucial.

1.3 Purpose, Mission and Vision

Purpose

Since the Yangon Region is located along the active faults, the economic hub of the region, Yangon City, has a high earthquake risk. A severe earthquake could cause huge loss, mass injuries, and damage to residential buildings, transportation systems, and basic services. Thus, in order to reduce those risks, preparedness measures and efficient response functions shall be described for severe earthquakes in the Yangon Region.

- (1) To define measures to be taken prior to, during, and immediately following a major earthquake event in the region
- (2) To reduce the loss and damage of lives and properties

Mission

The plan aims to practice the preparedness measures and response functions that need to be coordinated among the Yangon Region Disaster Management Work Committees and relevant departments and organizations to reduce earthquake-related risk. In addition, the plan is developed in reference to the National Earthquake Preparedness and Response Plan.

Vision

To minimize damage to property, reduce injury and lives lost, and normalize the lives of those affected in a timely manner in the case of a damaging earthquake in the region.

1.4 Critical Assumptions

The Yangon Region Earthquake Preparedness and Response plan is informed by the National Earthquake Preparedness and Response Plan. Actions noted in this plan will specifically be referred to the region. Nonetheless, given the cross-border nature of disasters, especially earthquake impact, it is expected that

the plan will foster coordination within its state/regional borders in relation to sharing of resources for effective response during an earthquake. Its operation shall require regional and institutional collaboration, both horizontal and vertical, cooperation and contribution from development partners, as well as civil society and private sector support in realizing its objectives.

The vision of the plan is designed in anticipation that a major earthquake will result in the following, requiring massive coordination of efforts to respond to the needs of those affected:

- Disruption of the country's development due to the impact of earthquakes
- Limited understanding of the region's high, moderate and low earthquake risk areas by planners and development partners
- Impact on basic services and migration from rural to urban areas due to job opportunities
- Limited consideration of earthquake hazard in basic infrastructure development programmes
- Limited knowledge of community awareness of earthquakes
- Limited earthquake-resistant design for building designs and construction



2. EXECUTION

In line with the National Earthquake Preparedness and Response Plan, Yangon Region's plan provides the opportunity for the regional government, development partners, the private sector, and CSOs alike that have an interest in investing in earthquake risk reduction in the region to prepare for and to minimize the impact of any damaging earthquake in the region. It further provides the opportunity to strengthen coordination efforts in advance to effectively respond to any damaging earthquakes that require a high level of humanitarian assistance. The plan is split into two components: preparedness and response.

Preparedness: This component is fundamental in earthquake hazard abatement and requires actionable measures that will enable regional government departments, development partners, the private sector, CSOs, NGOs/CBOs, and other stakeholders to prepare for a catastrophic earthquake. The actions required are vast, including an assessment of the physical vulnerability of infrastructure and the retrofitting of those that indicate cost-benefits, delineating and protecting open spaces to serve as shelter hubs during an earthquake, improving land use planning and enforcement of land use plans, identifying safe havens and areas susceptible to liquefaction and/or ground subsidence, enacting bylaws to enhance resilience, training and equipping, conducting simulation exercises to test plans, and evaluating and taking corrective actions. These and a myriad of activities, in coordination with stakeholders, will be critical in preparing the region for any damaging earthquake.

Response : The mandates of the work committees, as outlined in the Myanmar Disaster Management Law (2013), shall play a key role jointly with the Yangon Region Disaster Management Committee. Immediately after a severe earthquake, within 0-24 hours, 24-48 hours, 48-72 hours, and 72 hours to 7 days after the event, deployment of rescue operations and resource mobilizations will follow the disaster. In this regard, the component will depend on coordination mechanisms as well as roles and responsibilities of all stakeholders (government, HCT, CSOs, private sector, ASEAN countries, and bilateral communities) in fostering emergency responses. The details of the functions of the Yangon Region Disaster Management Work Committees are described in Annex (B).

Limitations: Earthquake preparedness requires the involvement of various stakeholders in the region to provide an understanding of how to reduce seismic impact. Nonetheless, the actions needed for preparedness herein will not detail engineering or geological components but only mention the preparedness measures that can be collaborated on among stakeholders and the community.



3. PREPAREDNESS

3.1 Preparedness Measures

Earthquakes have unreliable early warning for early action, and, in the absence of thorough preparation, the impact on lives, community assets and physical systems could potentially be devastating, with recovery possibly taking decades. The capacity to design and construct earthquake resistant buildings to a certain degree of tolerance is limited; there is also limited capacity to monitor structural development and to enforce land-use plans and building regulations.

In order to prepare for earthquake hazard, the emergency managers and other responsible persons shall encourage the community to collaborate for the implementation of preparedness activities for earthquakes. Moreover, activities such as earthquake simulations, collecting necessary response equipment, activity monitoring and evaluation, and necessary amendments shall be implemented.

3.1.1 Understanding the geohazard condition of the region

- Compile all research on earthquake risk in the region to help understand gaps and propose possible research areas to complement existing knowledge.
- Conduct detailed study of earthquake scenarios that outline the most vulnerable areas.
- Delineate areas susceptible to liquefaction and landslides, and educate developers on measures to reduce earthquake impact.

3.1.2 Understanding the physical environment

- Catalogue physical environment (residential areas, offices, etc.).
- Catalogue critical facilities such as schools and healthcare centres separately due to their important role during emergencies.
- Catalogue all bodies of water in the region and ensure that maintenance and response plans are in place for the safety of those who reside around the area and to respond appropriately when they fail.
- Assess the level of vulnerability of all buildings and recommend possible retrofitting measures.
- Check whether an office or home is located close to a dam, hill, slum, or swampy area.
- Assess and share evacuation places and routes with public.

3.1.3 Ensuring effective planning and enforcement

- Ensure that all new development in the region follows current land-use plans and is informed by earthquake risks.
- Ensure approval of building permits in the city is rigorous, ensuring that all design parameters are met for seismic safety designs.
- Educate the public through public awareness and incentives to develop a culture of maintenance, especially for physical structures.
- Develop contingency plans as expected for the following functions (details are attached in Annex A).

- ☐ Search and rescue
- ☐ Security
- ☐ Information
- ☐ Health care
- ☐ Logistics
- ☐ Communication
- ☐ Relief item support
- ☐ Loss and damage data collection
- ☐ Fire fighting
- Develop the contingency plans with possible scenario and resource (capacity and financial) requirements.

3.1.4 Training and Practicing

- Promote an annual earthquake forum that shares earthquake risk reduction research and preparedness activities.
- Regularly train staff in government offices in the region to upgrade their skills and knowledge on earthquake disaster resilience.
- Conduct regular training and talks in townships, villages, wards and schools for the dissemination of knowledge on earthquakes.
- Explore opportunities around the region for south-south exchange experiences for knowledge sharing with counterparts in other countries and partnership building on resources for response (human, financial, equipment, etc.) during an earthquake event.
- Arrange special trainings for engineers to ensure that they have the skills to conduct rapid assessment of damaged buildings/infrastructure following an earthquake event.
- Conduct regular drills and table top simulations to assess performance and improve the plans.
- Distribute IEC materials through radio, TV, schools, markets and other public areas, and disseminate information about dos and don'ts of earthquake hazard through billboards.

3.1.5 Identify emergency needs and develop understanding of assessing those needs

- Identify needs with service providers, heavy duty equipment, etc..
- Have an agreement signed in advance with those service providers and private sectors to ensure timely deployment of needs.
- Advocate for emergency management plans within government offices, hotels, schools, etc.
- List all NGOs, development partners, etc., their capacity in the region, contact details, and planned activities for the year on earthquake risk reduction initiatives.

3.1.6 Home, office, and individual preparedness

- Anchor non-structural elements to prevent them from toppling or falling during an earthquake.
- Clear doorways for easy exit and entry.
- Clearly mark all evacuation routes and assembly points.
- Conduct earthquake drills and table top exercises annually to raise awareness and correct lapses in the plan.
- Regularly check and update first aid kits.

3.2 Coordination

Coordination is essential to effectively implement earthquake preparedness activities to reduce earthquake risk. Depending on the area of intervention, planned activities to be implemented in the region by development partners (DRR WG) shall be shared with relevant government sectors for coordination each year. These planned activities shall be informed by the region's development agenda on earthquake preparedness.

3.2.1 Yangon Region

Coordination meetings of the Yangon Region Disaster Management Committee on earthquake preparedness shall organize at least twice a year, chaired by the Chief Minister or designee. Such meetings shall provide updates on ongoing activities and suggest areas for improvement. This will also allow monitoring of planned activities and re-direct investment to the most vulnerable communities in the region. All departments shall be encouraged to share capacity and resources through the meetings.

3.2.2 Union and Yangon Region

The departments in the Yangon Region shall share planned activities with their respective ministries at the union level and keep them updated on implementation of these activities. They shall liaise with their respective ministries to ensure that financial resources are allocated for earthquake disaster preparedness, including simulation exercises. NDMC shall monitor and evaluate planned activities for necessary support.

At the beginning of each year, the departments from national level shall prepare and share the list of resources available with their respective departments in the Yangon Region. These shall include, but are not limited to: earthquake awareness materials, review of land-use plans, contingency plans, update on heavy equipment, and new seismic networks.

3.2.3 Yangon Region and other states/regions

At the state and regional levels, Yangon Region Disaster Management Committee shall coordinate with the other states/regions through meetings and sharing of earthquake information, among others. Additionally, earthquake evacuation plans and emergency response plans of states and regions that share a border with Yangon shall be presented. The list of available resources from other states and regions shall be shared with the Yangon Region if resources are limited for emergency response.



3.2.4 Yangon Region and Private Sector

A private sector network group interested in earthquake preparedness shall update the implementation of the preparedness activities. A functional, private sector network shall make lists of available equipment, such as heavy duty equipment, to the Yangon Region Disaster Management Committee. The prior agreement shall be done in advance to avoid delays during earthquake disasters. Areas where the private sector could contribute include but are not limited to:

- Participating in identification of preparedness and response activities within region/district/township/ward/village tract
- Participating in earthquake risk reduction awareness-raising programmes by relevant departments
- Supporting relevant departments for dissemination of information to communities at risk
- Coordinating with relevant departments in developing evacuation plans and performing regular simulation exercises for the private sector

3.2.5 Yangon Region and Civil Society Organizations/ Non-Government Organizations

The CSO and NGO network shall coordinate with relevant departments at the region/district/township levels on planned activities that relate to earthquake preparedness. The organizations shall present their annual plans to relevant departments prior to implementation to allow effective coordination and monitoring of activities. The organization shall also share lists of their technical expertise, such as mapping, research work, and resources, to the Yangon Region Disaster Management Committee. They shall coordinate with the relevant departments in the region on actions relating to earthquake preparedness. They shall also have a list of communities that they are working with and update as necessary.

3.2.6 Civil Military Coordination

To guarantee effective response to earthquake disasters, involving the military is fundamental to ensuring that it is part of some of the earthquake planning programs, such as the simulation exercises. This provides the opportunity to strengthen the military-civilian relationship, to understand resources accessible from both sides, and to know how to assess those resources in times of an earthquake. Thus, to ensure fruitful working relationships in preparedness, the military shall:

- Appoint a focal department in the region to coordinate with the military for earthquake preparedness activities
- Participate in civil training programmes on earthquake risk reduction, including simulation exercises
- Continue to update the regional government on their capability in terms of heavy equipment, sniffer dogs, etc., and share with the Yangon Region Disaster Management Committee
- Coordinate with relevant departments to conduct awareness raising programmes for military personnel, such as the dos and don'ts of earthquakes

3.2.7 Yangon Region and DRR WG, ASEAN Region, Bilateral Agencies and Donors

These organizations usually deal directly with the union level of coordination in relation to earthquake risk reduction activities. DDM in the Yangon Region shall continue to liaise with their respective counterparts at the union level to benefit such activities. Given the need, DDM could share their areas of requirement for earthquake resilience-building with the union level to solicit resources to address such needs.

3.3 Resource mapping for preparedness programmes

Resource mapping at the beginning of the year shall be essential to avoid duplication of activities and to maximize resources. At the beginning of each fiscal year, the Yangon Region Disaster Management Committee shall request programmes that focus on earthquake preparedness in all the region and share with NDMC. This shall also include programmes being implemented by development partners. This will enable NDMC to monitor investment that goes into earthquake preparedness and to determine impact in areas of implementation. Such resource mapping shall be discussed in the annual meetings chaired by the Chief Minister, Chairman of the Yangon Region Disaster Management Committee.



4. RESPONSE

Structural damages from ground shaking, thousands of injuries and deaths, disruption of basic services such as health care, communication, water supply and power supply, and secondary hazards such as fire, landslides, and aftershocks will occur after a major earthquake. With those situations, the Yangon Region Disaster Management Work Committees shall operate response activities in affected areas in coordination with stakeholders.

4.1 Response Activities

Emergency search and rescue shall be operated for people trapped in buildings, people with difficulties evacuating, and people injured by glass and other damaged materials. In addition, safe evacuation places and shelters shall be operated for affected people, such as those who need medical assistance. An alternate transportation system shall be in place if the injured should be relocated to another hospital for better medical treatment. The necessary resources for debris removal shall be received as per prior discussion. Fire fighting equipment shall be prepared in case of fire as the quake could trigger immediate, simultaneous ignition of fire.

4.2 Coordination

A major earthquake disaster that triggers disaster declaration shall necessitate coordination with government from the region, union level, other states and regions, districts, townships, military, HCT, CSOs, the private sector, and the ASEAN region to address the needs of the affected persons. Assistance will be necessary to fill the gap of the region's resources. Aid resources may be available from other states and regions or from humanitarian partners. At each level of the response, coordination is critical to avoid duplication, facilitate rapid response, and to ensure specific targeting of needs.

4.2.1 Yangon Region

The region's DMC shall commence the response activities under the guidance of the Chief Minister until the outreach team arrives. Situation reports shall be prepared by each department from the Yangon Region Disaster Management Work Committees and shall be shared to NDMC through the Yangon Region Disaster Management Committee. The resources shall be provided in coordination with the relevant work committee.

4.2.2 Union and Yangon Region

Immediately following a major earthquake that is declared as a disaster or otherwise, the outreach teams and the Yangon Region Disaster Management Work Committees shall coordinate to carry out their response functions in the region. The Yangon Region Disaster Management Committee shall share updated information with NDMC. In addition, the Yangon Region Disaster Management Committee shall coordinate with NDMC Work Committee to request support and identify priority activities.

4.2.3 Yangon Region and Other States and Regions

Any damaging earthquake will usually require external support. Where such need is required, the Yangon Region Disaster Management Committee shall coordinate with other states and regional disaster management committees to support the response. For example, human resources for search and rescue, security, health care, shelters, and injuries that require relocation, as well as vehicles to carry relief items shall be requested from neighbouring states and regions.

4.2.4 Yangon Region and Private Sector

There are several private companies in the region that own and operate many of the critical services in the country that can facilitate responses. These include airlines, media stations, and heavy-duty equipment. Airlines can be used to transport responders and victims. Media stations could be used to broadcast appropriate information to the public and numbers for hotlines. Heavy equipment can be used for clearing debris or demolishing. Where such opportunity exists, the Yangon Region Disaster Management Committee shall request support from the private sector already identified at the preparedness phase. The agreement reached during the preparedness phase on the use of the equipment shall come into force. Where such agreement does not exist and if there is the need, an agreement shall be made during the response phase. Operational costs shall be requested to NDMC Work Committee through the respective work committee.

4.2.5 Yangon Region, Civil Society and Non-Government Organizations

CSOs and NGOs shall assign a focal person and that person shall liaise closely for approval by NDMC in their areas of interest, such as search and rescue, health care, and cleaning debris. Upon approval, the response on the ground shall be channelled through the relevant work committees in the affected areas.

4.2.6 Civil Military Coordination

The region disaster management committee shall coordinate with the military to support their heavy-duty equipment, such as bulldozers, cranes, etc., usually suitable for debris clearance. The region disaster management committee will also make use of their expertise in handling such equipment and the use of sniffer dogs, construction, medicine, and first aid. The military shall work together with the respective work committees in affected areas throughout the responses.

4.2.7 Yangon Region and DRRWG, ASEAN, and Bilateral Agencies

In responding to any given disaster, coordination with those organizations and agencies shall be required for necessary support through NDMC Work Committees. For entry visa and security for response volunteers, volunteers shall coordinate with the International Relation Work Committee and conduct response activities. International assistance shall be provided to affected areas in coordination with relevant work committees through the International Relation Work Committee. Such assistance shall be recorded and shared with NDMC through the Yangon Region Disaster Management Committee.

4.3. Monitoring and Evaluation

From the onset of the earthquake disaster, a monitoring programme shall be put in place to avoid duplications for response activities and to ensure that all affected community needs are addressed as soon as possible. Each work committee shall work closely with the other work committees to address their specific areas of need. There shall be a daily meeting where the chair of each committee shall present a brief overview of their work, highlighting gaps and areas that need urgent attention. In addition, response activities shall be shared with the chairman of NDMC.

Once the emergency phase is over, usually after 72 hours, an evaluation shall be conducted following a detailed assessment. The assessment shall be led by the chair of each work committee. Each work committee shall have an assessment tool ready to be used during an earthquake. The findings shall be shared with NDMC through the chairman of the Yangon Region Disaster Management Committee.



5. INFORMATION MANAGEMENT

Information management following an earthquake shall include data gathering, analysis, and updates to the public on the situation. Such a system will require an arrangement which allows bottom-up and top-down communication prior to the event. A data-gathering methodology and guidelines for information sharing and data protection shall be put in place and understood by all actors who have a stake in the response.

5.1 Information

Immediately following an earthquake, critical requirements shall include, but are not limited to:

- 1) Declaration of national level response activities
- 2) Location of affected areas, response capacity, and number of response personnel
- 3) Maps related to Probabilistic Seismic Hazard Assessment
- 4) Demographics (including individuals displaced, self-evacuees, injured persons, missing persons, and deceased) and information on populations with special needs
- 5) Evacuation plans, timelines, and instructions (including the evacuation of critical facilities such as hospitals and nursing homes)
- 6) Requests and/or needs for national, state, and regional assistance including equipment, commodities, and personnel
- 7) Identification of national and state/regional level priorities
- 8) Anticipated secondary hazards, such as fires, burst dams, landslides, etc.
- 9) Damage to and status of critical facilities, such as airfields, government buildings, hospitals, bridges, etc.
- 10) Potential chemical, physical, and natural hazards that may affect the safety and health of response and recovery workers
- 11) Status of shelters, open spaces, and inventory of supplies
- 12) Information on damage to residential dwellings, temporary housing plans, the timeline for power restoration, food delivery, and relief provisions (e.g. water, clothes)
- 13) Damaged systems or structures that can have significant economic implications

5.2 Data Gathering and Information Sharing

The NDMC shall prepare one common tool for the rapid assessment to inform the extent of the damage. The assessment tool shall include questions that relate to response activities. The assessment shall be conducted by the Initial Need Assessment and Damage and Loss Verification Work Committee in coordination with relevant work committees from affected areas. Data collected will be analysed based on sectors by each work committee under NDMC. Based on the field assessment, the secretarial department of NDMC shall prepare a situation report for the chair of the NDMC. The situation report shall be a combined report that shall inform the chair of the NDMC of the extent of the damage and areas that

require the greatest attention. Official information for the public shall be released by the News and Information Work Committee, once cleared by the president. While responses are ongoing, public education on aftershocks shall be constantly broadcast through the various communication channels by the News and Information Work Committee. If necessary, awareness raising programmes shall be organized for the community.

Local researchers or specialists shall support the identification of needs and provide the data to all work committees. To avoid discrepancies on information sharing, all communication to the public shall be the mandate of the News and Information Work Committee. Any individual who shares information that has not been cleared by the chair of the News and Information Work Committee shall be an offender and will be held accountable for his or her actions.



6. ADMINISTRATION, RESOURCES, AND FUNDING

An effective management system shall be put in place for the implementation of preparedness and response functions for earthquakes. The allocation of the resources and funding, including human resources, shall be used by the Disaster Management Committees from affected areas and NDMC Work Committees guided by the chair of NDMC.

6.1 Administration

The respective departments within the Yangon Region shall prepare disaster management plans, including earthquake, and submit them to the NDMC for approval through relevant work committees under the Yangon Region Disaster Management Committee and the chair of the Yangon Region Disaster Management Committee. The disaster management plans shall cover institutional arrangements for earthquake disaster management, lists of available resources and capacity for preparedness and response activities, roles and responsibilities for implementation of the activities, simulation exercises, review, evaluation and revising the plan. In addition, budget allocation for the plan shall also be included in the plan. The plan shall be reviewed and revised as necessary at least once every two years.

6.2 Resources

The list of the necessary resources for preparedness and response activities for earthquakes shall be prepared and submitted to NDMC for approval through the Yangon Region Disaster Management Work Committees and the chair of the Yangon Region Disaster Management Committee. That list shall be reviewed and revised as necessary and submitted to NDMC. The resources shall include human resources, equipment and funding, and others for the following functions:

- (1) **Search and Rescue:** Human resources for fire fighting and search and rescue, temporary shelters, vehicles, equipment, materials and other required resources for search and rescue purposes
- (2) **Security:** Security task forces for affected people and response teams
- (3) **Transportation:** Vehicles, ambulances, fuel, airports, and heliports for emergency response teams, evacuees, relocation of injured persons, support medicine and emergency relief items, heavy machinery for debris disposal, and people who can handle the heavy machinery
- (4) **Health care:** Public and private hospitals, clinics and health care organizations such as the Red Cross, emergency life-saving kits, medical doctors, and psychosocial counsellors
- (5) **Basic services:** Alternate systems for power supply (e.g. solar power systems), mechanics who will maintain the emergency communication system, electricity and water supply systems for emergency response activities in affected areas
- (6) **Preparedness activities:** Human resources, including volunteers who will conduct the awareness-raising programmes for earthquake hazards, simulation exercises, teach materials, procure funding, and carry out emergency plans

- (7) **General:** Qualified engineers who will conduct building assessment for existing and damaged buildings, and places and staff for disposal of debris, dead bodies, and other resources

The available resources for preparedness and response functions shall be requested through NDMC Work Committees in coordination with international/local institutions and the private sector if resources are not enough.

6.3 Funding

For the preparedness and response functions, the following various sources of funding and plans shall be available within government and other relevant organizations. If funding is not enough, budget allocation shall be done through union level funding or donors from international/local or Civil Society Organizations and NGOs through NDMC.

6.3.1 Disaster Management Fund

The National Disaster Management Law (2013) mandates that the NDMC institutionalize a disaster management fund to support disaster management activities, including disaster responses. The fund shall constitute allocations from the union budget, donations from foreign countries, international organizations, and external regional organizations, as well as loans from local, foreign, and other sources. The funding shall be used in coordination with the Finance and Financial Management Work Committee with the approval of NDMC.

6.3.2 Central Emergency Response Fund (CERF)

Such funds are made available upon submission of a request proposal, which is informed by the rapid assessment. These resources are meant for life-saving interventions (i.e. provisions of water, food, protection, and debris clearance). Additionally, there are funds made available through UNDP to support assessment and coordination. Such funds are allocated through a proposal submitted to the Crises Response Unit of the UNDP Head Office.

6.3.3 Annual Contingency Plan

The contingency plan, although this has no cost, mostly looks into what would be needed in case of a disaster. Many HCT agencies have some contingency stocks to support the government, but usually, these are not sufficient and additional resources will need to be mobilized in a major disaster, such as an earthquake. That support shall be used for emergency response in affected areas through NDMC.

6.3.4 Donation from International Organizations and Donors

Donors would prefer to be informed about the needs of the affected areas. The NDMC Work Committees shall prepare reports that include cost estimates based on the assessments, support from the government up to the time of the presentation, and aid from other partners, including gaps where assistance is required. In collaboration with the International Relation Work Committee and News and Information Work committee, with the approval of the NDMC, the press releases shall be organized to the donors and the bilateral agencies on the impact of the earthquake and support needs. The Yangon Region Disaster Management Committee shall use the funding from those organizations and donors through NDMC.

6.3.5 Private Sector

Donors would prefer to be informed about the needs of the affected areas. The NDMC Work Committees shall prepare reports that include cost estimates based on the assessments, support from the government up to the time of the presentation, and aid from other partners, including gaps where assistance is required. In collaboration with the International Relation Work Committee and News and Information Work committee, with the approval of the NDMC, the press releases shall be organized to the donors and the bilateral agencies on the impact of the earthquake and support needs. The Yangon Region Disaster Management Committee shall use the funding from those organizations and donors through NDMC.



7. TRANSITION INTO RECOVERY

The immediate response to a major earthquake shall focus on saving lives, providing resources to sustain affected residents, and stabilizing the situation. At some point, however, those operations must stand down, i.e. transition to a phase in which recovery operations take precedence. Given the level of damage to housing, business, and infrastructure, the direct impact on the population, and the effect on the regional economy, full recovery from a major earthquake will take years, if not longer. Nonetheless, rapid initiation of recovery operations is critical to restoring confidence within the community.

Triggers for transition from response to recovery shall include the following conditions:

- 1) Evacuations have ceased.
- 2) Mutual aid response resources are being released.
- 3) Care and shelter operations have stabilized, and shelter population is decreasing daily.
- 4) Aftershocks have diminished, and stabilization of the built environment has minimized the risk of aftershocks to life and property.
- 5) Restoration of utilities and lifelines is underway.
- 6) Local assistance centres are in operation.

At this point, 72 hours to 7 days following an earthquake, the staff shall be scaling back to partial levels or transition to a full recovery operation. The chair of the NDMC shall officially declare, as outlined in the disaster management law, deactivation of immediate response into a recovery phase. Led by the Rehabilitation and Recovery Work Committee under NDMC, the recovery operation shall be led by the Yangon Region Disaster Management Committee in coordination with work committees and other stakeholders.



Annex (A) Emergency Management Functions

- (1) **Search and Rescue:** Life-saving assistance for injuries, transfer of injured persons for health care service, search and rescue operations for those trapped in collapsed buildings
- (2) **Security:** Provide security for emergency response, victims from affected areas, victims' properties. Prevent re-entry into dangerous buildings and assembly that is disruptive to response activities
- (3) **Information:** Continuously reports about emergency and response activities to relevant international and national personnel, and disseminate safety information to the public through multi-channels
- (4) **Health care:** Provide emergency health care service for injuries, coordinating with relevant personnel for those who need to relocate to other hospitals, systematically dispose of dead bodies, coordinating with private clinics and hospitals if health care equipment and medicine are not enough, and provide psychosocial support
- (5) **Logistics:** Monitor the condition of transportation system, road, and bridge damage, identify alternate systems and routes, manage transportation by means of air, water and land, and coordinate for the reconstruction of damaged transportation systems
- (6) **Communication:** Coordinate to replace disrupted communication systems, provide necessary information for those operating the response activities (e.g. needs of victims, location of those who need special care, and relief item distribution)
- (7) **Relief item support:** Support necessary relief items such as food for victims, equipment and fuel for response operations, and arrangement of emergency shelters for victims and health care camps
- (8) **Loss and damage data collection:** Collect data of loss and damage of critical infrastructure and basic services, check and share with NDMC and their work committees, and analyse and amend the work committee plans for effective response
- (9) **Fire fighting:** Ensure the availability of fire fighting equipment and auxiliary fire brigades for the secondary hazard of household and industrial fires



Annex (B) Roles and responsibilities of the Yangon Region Disaster Management Work Committee for Earthquake Response

Committee	Roles and responsibility
1. Region Disaster Management Committee	<p>Within 24 hours following a damaging earthquake</p> <ol style="list-style-type: none"> 1.1. Immediately following a damaging earthquake, the chair shall inform the NDMC of the event and of the preliminary extent of damage and loss. 1.2. The chief minister shall immediately call for a meeting of the Regional Disaster Management Committee to discuss the situation and make strategic decisions about the responses. 1.3. Set up an emergency operation centre (in anticipation of DMC Outreach Team support) for the coordination of all responses. 1.4. The chair or designee of the Region Disaster Management Committee and Chairs of Work Committees shall reside at the EMC and manage the operation. 1.5. Region DMC shall manage response activities under the supervision of NDMC. 1.6. Collect the initial assessment data on the damage and loss and provide an initial briefing to the NDMC. 1.7. Prepare a situation report and share the report with the NDMC and EMC. 1.8. On receipt of such information, the chair shall further discuss it with the committee to verify the results. The final report will be shared immediately with the chair of the NDMC. 1.9. The summary of the report shall be prepared by the committee and endorsed News and by the chair, the chief minister, before it is shared with the News and Information Work Committee, who will then share it with the media. 1.10. Immediately following an earthquake, the Committee shall visit some of the most affected areas and meet with the administrative body, to better understand the level of damage and the need for emergency assistance. 1.11. Regional transport administration shall coordinate with the Health Care Work Committee and Search and Rescue Work Committee to refer the injured to temporary health care centers or hospitals. 1.12. The priority for response activities shall be decided based on the findings for visit by Region DMC. 1.13. The drinking water supply, water and sanitation service shall be provided for affected people from temporary shelter and temporary health care center.

Committee	Roles and responsibility
	<p>Within 24-48 hours</p> <p>1.14. A situation report with satellite imagery shall be endorsed by the chair of the committee, detailing the extent of damage, loss, and shelter camps. Needs: relief, skills, labor.</p> <p>1.15. A map showing accessible and non-accessible areas, including roads, railways and ports, and communities worse affected, shall be produced to guide the operations.</p> <p>1.16. The committee will regularly visit the site to discuss the needs of the work committees and allocate resources. The committee shall also discuss with the teams about having a roster system in place for rescuers to access.</p> <p>1.17. The committee shall also visit shelter camps and hospitals to ensure victims of the regional government full support on their recovery.</p> <p>Within 48-72 hours</p> <p>1.18. The committee shall continue to have updates from the field, review reports, and share information with NDMC.</p> <p>1.19. The committee shall continue to receive relief from donors and allocate such relief to the appropriate committees.</p> <p>1.20. The committee shall, in coordination with family members, arrange for identification and proper disposal of dead bodies.</p> <p>Within 72 hours and 7 days</p> <p>1.21. The committee shall prepare a detailed report on damage and loss, shelter camps, and needs. The committee will share this with the chair of the NDMC.</p> <p>1.22. The chair shall continue to liaise with the chair of NDMC on relief items and other donations. The distribution will be discussed with the chairs of the various committees and distributed accordingly.</p> <p>1.23. The chair shall provide a detailed briefing to the chair of the NDMC on the next steps, including when to conclude the rescue operations and move into a reconstruction phase.</p>
<p>2. Search and Rescue Work Committee</p>	<p>Within 24 hours following a damaging earthquake</p> <p>2.1 The chair and members shall visit the affected areas, coordinate and manage the rescue activities with government departments and other organizations, and report to the Yangon Region Disaster Management Committee and EMC.</p> <p>2.2. The Work Committee shall coordinate with Yangon City Development Committee, Transport, and Communication Committee, including the Yangon Region Transport Authority, for road clearance for rescue activities.</p>

Committee	Roles and responsibility
	<p>2.3. Coordinate with the Security Work Committee to provide security to the rescue operators.</p> <p>2.4. Coordinate with fire brigades in case of a fire outbreak becoming a secondary hazard of the earthquake.</p> <p>2.5. Dispatch teams, each with a team leader, to the affected area, as was previously planned.</p> <p>2.6. A focal person from each of the groups shall be appointed to liaise with other teams for the necessary support and to report to the chair of the committee on their needs.</p> <p>2.7. The teams shall remove rubble/debris according to the regulations in order to get to those who are trapped and dead bodies (death is confirmed by the Health Care Work Committee).</p> <p>2.8. Gather all information on people rescued, injured, or dead and share the information with the News and Information Work Committee.</p> <p>2.9. Disconnect electrical wiring and fragile systems that may pose a threat and install temporary electrical wiring to facilitate rescue operations.</p> <p>2.10. In collaboration with the health team and regional transport administration, support transportation of the injured to the temporary shelter camps or hospitals.</p> <p>Within 24-48 hours</p> <p>2.11. Continue to provide close supervision and removal of trapped people under the rubble and move them to save heavens.</p> <p>2.12. Continue to help people move out of dangerous buildings.</p> <p>2.13. Monitor safe areas where rescued people are to ensure that they are not affected by aftershocks or other secondary hazards such as fire, floods, and landslides.</p> <p>2.14. Continue to update the chair of the DMC on the rescue operations and needs.</p> <p>2.15. Ensure the safety of team members on the operations.</p> <p>Within 48 – 72 hours</p> <p>2.16. Access skills of the team and equipment and coordinate with volunteers offering support to the rescue operation through the chair of the DMC.</p> <p>2.17. Continue to provide details on the operation to the chair of DMC.</p> <p>Within 72 hours – 7days</p> <p>2.18. Continue to coordinate with the external support team members on the operations.</p> <p>2.19. Prepare a detailed report on the operations and the next steps and share with the chair of DMC.</p> <p>2.20. Discuss next steps for the search and rescue plan with local search and rescue team members for them to take over the operations.</p>

Committee	Roles and responsibility
3. Initial Needs Assessment & Damage & Loss Verification Work Committee	<p>Within 24 hours following a damaging earthquake</p> <ul style="list-style-type: none"> 3.1. The chair and committee members shall visit the affected area immediately, coordinate with the respective organizations, and collect the loss and damage data in the agreed format. (e.g. using satellite images) 3.2. Report the loss and damage information to the Yangon Region Disaster Management Committee and EMC. 3.3. Assign team leaders per sector (building, road and bridge, casualties, water and electricity, etc.) and assign focal persons to liaise and coordinate with other organizations. 3.4. Report to the Yangon Region Disaster Management Committee and EMC to identify the prioritized areas such as hospitals, schools, and densely populated areas. 3.5. The Initial Need Assessment, Damage and Loss Verification, and Need Identification Work Committee shall collect loss and damage data and analyze and share information with the Yangon Region DMC. <p>Within 24-48 hours</p> <ul style="list-style-type: none"> 3.6. The committee shall continue to oversee operations of the teams on the site through to team leaders. 3.7. The committee shall periodically provide a list of needs and the ongoing operations (victims list, damaged infrastructure, capacity, etc.) to the chair of DMC in the briefing meetings. 3.8. Based on advice from the team leaders, the committee shall re-prioritize the operation by re-assigning teams to more urgent sites. 3.9. The committee shall continue to monitor the operations. <p>Within 48 hours to 72 hours</p> <ul style="list-style-type: none"> 3.10. The chair shall continue to oversee the operations in areas of high priority. 3.11. The chair shall prepare the progress in coordination with other work committee and report to NDMC.
4. Transportation and Communication Work Committee	<p>Within 24 hours following a damaging earthquake</p> <ul style="list-style-type: none"> 4.1. If telephone lines are interrupted, set up alternative communication systems which do not require electricity and telecommunications (walkie-talkies, icon, messenger, etc.) to support communication between the Yangon Region DMC, EMC, and work committees. 4.2. The chair and members of the committee shall visit affected areas to ascertain disruption to the communication systems, damage to roads, airports, and water transport, and update the Yangon Region DMC and EMC by means of the alternative communication systems.

Committee	Roles and responsibility
	<p>4.3. The chair (or) secretary and the team shall visit and Identify safe routes and provide support ,according to what is needed.</p> <p>4.4. Coordinate with the regional transport administration for necessary logistic arrangements.</p> <p>4.5. Ensure the preparedness measure in case of building collaspect due to after-shock.</p> <p>Within 24-48 hours</p> <p>4.6. Coordinate with relevant city development committee or search and rescue work committee to clear the debris for rescue operations, set up a temporary bridge if needed, or open new routes.</p> <p>4.7. Clean the debris in coordination with relevant work committees, local development committee if the building need to be demolished.</p> <p>4.8. Continue to clean all blocked roads and assess if they are safe to use. Round ways and railway tracks may also be affected. These will need to be repaired immediately. Submit estimated budget and needs to the chair of the DMC for approval.</p> <p>4.9. In liaison with the teams assigned to the various sites, provide an updated report to the chair of NDMC.</p> <p>4.10. The committee shall ensure that information on the routes is made available to the public relations team, who shall relay such information to the public.</p> <p>4.11. Inspected bridges that are deemed impassable shall be marked with yellow tape.</p> <p>4.12. Record the collapsed (or) denolished building and shave to relevant work committee</p> <p>Within 48-72 hours</p> <p>4.13. Continue to assess all transportation corridors and update the Yangon Region DMC.</p> <p>4.14. Monitor all damaged roads and those temporarily repaired.</p> <p>Within 72 hours to 7 days</p> <p>4.15. Conduct a detailed assessment on transportation routes and evaluate the cost for repairs. Submit a budget to the Yangon Region DMC for approval.</p> <p>4.16. Continue to monitor the reconstruction of all emergency routes and update the Yangon Region DMC.</p>

Committee	Roles and responsibility
5. News and Information Work Committee	<p>Within 24 hours following a damaging earthquake</p> <p>5.1. The chair and members of the committee shall visit the affected area(s), liaise with the other work committees, and collect the necessary loss and damage information. Share the timely information with the Yangon Region DMC and EMC to support the necessary data collection.</p> <p>5.2. The committee shall share the timely information with the public when the Yangon Region DMC shares the information.</p> <p>5.3. The committee shall share the loss and damage and dos and don'ts information, which will be circulated by the Yangon Region DMC to the media, as necessary.</p> <p>5.4. The chair shall share information about the entire operation, aftershocks, and hotlines to other work committees. This shall also include a potential tsunami, if warranted.</p> <p>5.5. The committee shall work with the Health Care Work Committee to support identification of those deceased and keep photos, a list of casualties, and a list of their relatives.</p> <p>5.6. A focal person shall be assigned to communicate with each work committee and record the necessary information.</p> <p>Within 24 to 48 hours</p> <p>5.7. The chair of the committee shall ensure that all records of damages, responses, and the situation on the ground are reviewed and edited. This can now be shared through newspapers, TV, radio stations, and social media, as well as internationally.</p> <p>5.8. Hotline numbers shall be provided to the media to broadcast to the public.</p> <p>Within 48 to 72 hours</p> <p>5.9. Continue to share information with the public as per the prepared guidelines.</p> <p>5.10. Keep the public informed about aftershocks and other risks, such as disease outbreaks, landslides, tsunamis, and liquefaction.</p> <p>5.11. The chair shall respond to any query on information released to the public.</p> <p>5.12. Continue to update the media on the operations.</p> <p>Within 72 hours to 7days</p> <p>5.13. Review all reports on the operation from all committees and provide a summary to the chair of the DMC.</p> <p>5.14. The summary of the information shall be shared with domestic and international news agencies.</p>

Committee	Roles and responsibility
6. Health Care Work Committee	<p>Within 24 hours following a damaging earthquake</p> <ul style="list-style-type: none"> 6.1. The chair and members shall visit the affected area(s) and report the loss and damage information regarding hospitals and clinics to the chair of the Yangon Region DMC and EMC. 6.2. The chair and committee members shall coordinate with the Search and Rescue Work Committee, Logistic Work Committee, and Regional Transport Administration for health care support with temporary health care centres, medical staff, medical equipment, and medicine. 6.3. Coordinate with private hospitals for health care support for the emergency patients. 6.4. Assign a focal person for systematic health care support and assign team leaders for each camp/temporary health care centre. 6.5. The medical teams on site shall support rescue teams in prioritizing the victims evacuated using the tag procedures. 6.6. Assess damage, medical requirements, and external support, as needed. 6.7. The committee shall coordinate with the field medical teams to ensure that psychosocial services are available at all rescue sites and at the camps. 6.8. The chair shall provide updates about constraints to the chair of the DMC and EMC and request funds, medicine, and other necessary support. 6.9. If blood is needed, the committee shall prepare a list and request from other hospitals, blood donors, and associations within the country. 6.10. If necessary, mobile healthcare centres shall be established. 6.11. Report to the chair of the Yangon Region DMC and EMC after the referral and transportation of victims to the nearest hospitals, if necessary. <p>Within 24 to 48 hours</p> <ul style="list-style-type: none"> 6.12. Continue to work with the teams and provide medical care to those affected and at the camps. 6.13. Screen all those at the shelter camp for any contagious diseases. 6.14. Continue to monitor the outbreak of diarrhea and other disease at shelter camps in the region. 6.15. In coordination with team leaders in the field, provide an update to the chair of Yangon Region DMC on victims and any suspected diseases. 6.16. The regional health facilities may be overstretched. If so, call for assistance from other regions. <p>Within 48-72 hours</p> <ul style="list-style-type: none"> 6.17. Continue to treat patients and arrange for their discharge when it is deemed necessary. 6.18. Monitor shelters to ensure that there is no over-crowding or disease outbreak.

Committee	Roles and responsibility
	<p>6.19. Keep a log of the victims of the earthquake separate from those who died from illness unrelated to the quake.</p> <p>Within 72 hours to 7 days</p> <p>6.20. Continue to treat the affected victims.</p> <p>6.21. Increase surveillance of any waterborne diseases at the shelter camps and within the communities.</p> <p>6.22. Update the chair of Yangon Region DMC on medical needs and patient status.</p> <p>6.23. Discuss an exit plan with the district medical team and continue to support treatment of the victims.</p>
<p>7. Security Work Committee</p>	<p>Within 24 hours following a damaging earthquake</p> <p>7.1. The chair and members of the Security Work Committee shall visit the affected areas to carry out security measures and report to the chair of the Yangon Region DMC and EMC.</p> <p>7.2. Focal security persons shall be assigned to provide security in the affected areas.</p> <p>7.3. The focal security person shall assign team leaders for each rescue camp and health care centre within their respective areas.</p> <p>7.4. The committee shall declare dangerous areas as restricted areas.</p> <p>7.5. The chair and members will visit, as necessary, and report the updated situation of security measures by team leaders to the chair of Yangon Region DMC and EMC.</p> <p>7.6. Supervise the liaising and coordinating with relevant work committees for restricted areas, and ensure law and order in the affected areas.</p> <p>7.7. Provide updates about the necessary security forces and others required support to the chair of the Yangon Region DMC and EMC.</p> <p>Within 24 to 48 hours</p> <p>7.8. The chair shall continue to oversee operations of the teams and shall maintain a log of the operations.</p> <p>7.9. Attend all meetings organized by the Chair of the DMC and provide updates.</p> <p>7.10. Continue to coordinate with the chairs of other work committees for the provision of security.</p> <p>7.11. The committee shall ensure that security at shelter camps and in hospitals is strengthened.</p> <p>7.12. The chair, in collaboration with team leaders, shall issue a security report to the chair of the Yangon Region DMC.</p>

Committee	Roles and responsibility
	<p>Within 48 to 72 hours</p> <p>7.13. Continue to oversee security operations.</p> <p>7.14. The chair shall instruct the leaders to make sure people do not re-enter areas demarcated as unsafe until further notice and Yellow tape shall be used to block such unsafe areas.</p> <p>7.15. The committee shall also coordinate with the health committee in the identification of dead bodies and their disposal.</p> <p>Within 72 to 7 days</p> <p>7.16. The chair, through the team leaders, shall continue to provide security to the operating teams.</p> <p>7.17. The chair shall ensure that each team leader prepares a detailed report on team operations. A combined report on the security operations shall be shared during the Region's DMC briefings.</p> <p>7.18. A final report and exit plan shall be provided to the chair of the DMC. If there is need for further security, this shall be highlighted and local security personnel may be deployed to such areas.</p>
<p>8. Finance and Financial Management Work Committee</p>	<p>Within 48 -72 hours</p> <p>8.1. The chair shall participate in all meetings in the EMC from the onset of the disaster and support the operations in the field.</p> <p>8.2. Assign a focal person from the committee to each work committee to communicate and get updates on financial needs.</p> <p>8.3. Manage all financial disbursement according to the rules of the government financial management procedures.</p> <p>8.4. Funding needs for the respective committees and sources of funding shall be analyzed by the committee.</p> <p>8.5. The committee shall submit funding requests from committees to the chair of Yangon Region DMC (who is also the chair of the EMC) to get approval from NDMC.</p> <p>8.6. Monitor and keep track of financial disbursement according to the guidance of the Office of the Auditor General</p> <p>8.7. In coordination with the International Relation Work Committee, follow up on the release of financial pledges.</p> <p>8.8. Monitor financial expenditure and update the chair of the Yangon Region DMC.</p> <p>8.9. Keep all expenditure records, including receipts, vendors, names, etc., as per the Auditor General Rules.</p> <p>8.10. Ensure transfer of funds from NDMC to the relevant work committees.</p>

Committee	Roles and responsibility
	<p>Within 72 hours - 7days</p> <p>8.11. Continue to follow up on financial pledges and keep the chair of the Yangon Region DMC updated.</p> <p>8.12. Produce a comprehensive report on the financial expenditure and funds received, and present the report to the EMC meeting.</p> <p>8.13. Monitor and keep track of financial disbursement as per the guidance of the Office of the Auditor General.</p> <p>8.14. Keep all expenditure records, including receipts, vendors, names, etc., as per the Auditor General Rules.</p> <p>8.15. Monitor and direct funds meant for rehabilitation and recovery to the appropriate work committees.</p>
<p>9. International Relations Work Committee</p>	<p>International aids will begin to surface within three to four days of the quake. The chair of the committee would have already been working with the EMC team from the onset of the disaster and would have full understanding of the needs and those international bodies that made pledges.</p> <p>Within 48 -72 hours</p> <p>9.1. The committee shall participate in all meetings at the EMC.</p> <p>9.2. The chair shall appoint focal persons to work with the respective committees, determine their needs and facilitate integration of international personnel that are supporting the responses.</p> <p>9.3. In coordination with other committees according to request (financial, material, human, etc.) and endorsed by the chair of the Yangon Region DMC, submit a list of requests to the appropriate international bodies that express intent to support.</p> <p>9.4. Appoint a focal person to follow through all international relations within the period of response and recovery stages, and keep the chair of the committee updated.</p> <p>9.5. In coordination with the News and Information Work Committee, share relevant information on the impact and needs of the disaster with the embassies, regional bodies, and other relevant international bodies deemed necessary;</p> <p>9.6. Based on the requests and pledges, receive international aids.</p> <p>9.7. For specialized needs such as sniffer dogs, etc., appoint a focal person to liaise with and direct the international bodies if any clearance is required at possible ports of entry. Sniffer dogs may require liaising with the appropriate government agency in the country, such as the military, on how to handle their security.</p> <p>9.8. Provide visa entry support to persons who request to come into the country to help on the response operations in coordination with the International Relation Work Committee under the NDMC.</p>

Committee	Roles and responsibility
	<p>9.9. Prepare, sign, and distribute a document to all relevant units at all points of entry that allows relief goods to be exempted from taxes or duties. Ensure that all heads at the points of entry have received such documents and are ready to comply.</p> <p>9.10. Where item pledges are known in advance via list, share the tax exemption document with the donor to be shown at the port at the time of clearance.</p> <p>9.11. Liaise with the appropriate committee to ensure that items received are what have been requested and pledged by the donor.</p> <p>9.12. Liaise with the appropriate committee to ensure that items are checked at the point of entry before onward transfer to the appropriate location/area/community.</p> <p>9.13. Keep a list of persons who have come into the country to support the response.</p> <p>9.14. In coordination with the respective committees and particular donors, determine the location of the items that may be required and if a signatory of any paper work may be required as well.</p> <p>Within 72hours - 7days</p> <p>9.15. Continue to monitor, receive and direct donated items to the appropriate locations.</p> <p>9.16. Keep the country's diplomatic community and regional bodies updated on the status of the responses and gaps.</p> <p>9.17. Inform the diplomatic communities and regional bodies of a step-down from the response and a concrete plan for the rehabilitation and recovery phase.</p> <p>9.18. In consultation with the chair of the Yangon Region DMC and the chairs of the various committees, share a communiqué with all bilateral agencies, regional bodies and development partners alike who supported the response, expressing the government's profound gratitude for their support.</p> <p>9.19. Continue to liaise with the international community on pledges for the rehabilitation and recovery processes.</p> <p>9.20. In coordination with the Yangon RegionDMC, support the submission of a flash appeal within 5 to 7 days.</p> <p>9.21. Monitor and document all pledges made through the flash appeal. Liaise with the appropriate committee on the pledges received (financial, food, non-food items, construction materials, etc.).</p> <p>9.22. In coordination with the Finance and Financial Management Work Committee, continue to monitor the distribution and disbursement of funds, items, etc., and keep the Yangon Region DMC and donors updated.</p> <p>9.23. Continue to support committees on potential resource windows if they intend to solicit international support for the rehabilitation and recovery phase.</p>

Committee	Roles and responsibility
10. Rehabilitation and Recovery Work Committee	<p>Within two to three days, rescue workers would have gained access to most of the damaged areas and have prioritized infrastructure and the recovery works that require agent attention for access to community assets.</p> <p>Within 24 -48 hours</p> <p>10.1. Set up drinking water and sanitation systems for the victims at the temporary shelter and temporary health care centres.</p> <p>10.2. Where the demolishing of buildings is required, the chair shall liaise with the appropriate committees for clearing the waste.</p> <p>10.3. Coordinate with the Transport and Communication Work Committee and the Security Work Committee for precautionary measures to clear the debris, as some of the buildings might have collapsed due to aftershocks.</p> <p>10.4. Ensure that property or assets recovered from collapsed or demolished buildings are properly kept for their owners.</p> <p>Within 48 -72 hours</p> <p>10.5. As member of the EMC, the chair shall participate in all meetings from the onset of the disaster and provide guidance to the field operation teams.</p> <p>10.6. Deploy teams with team leaders to coordinate with other work committee members in the operations of rehabilitation and recovery.</p> <p>10.7. In coordination with the other committee chairs and based on available information, produce a plan for assessment of damaged infrastructure (roads, bridges, public buildings, markets, etc.).</p> <p>10.8. Lead the assessment and share the report, including priorities and estimated costs, for discussion at the EMC and allocation of resources.</p> <p>10.9. In coordination with the Livelihood Work Committee, identify and use the appropriate skills of the affected families in the rehabilitation work to enable them to earn some money/food for their living.</p> <p>10.10. In coordination with the International Relation Work Committee, share the plan with embassies, development partners, and interested organizations to solicit resources (financial, material, human) for the rehabilitation work.</p> <p>Within 72 hours – 7 days</p> <p>10.11. Continue to coordinate with the chairs of the other committees, monitoring the situation and keeping the chair of the EMC updated on the ongoing rehabilitation efforts.</p> <p>10.12. Identify and use local resources where possible for the rehabilitation work.</p>
	<p>Within 7 days – 1 year</p> <p>10.13. In coordination with the other team members, conduct a detailed assessment on the damaged infrastructure and work to be carried out.</p>

Committee	Roles and responsibility
	<p>10.14. Identify sector areas for recovery and refer such activities to the appropriate department for inclusion in the development plans.</p> <p>10.15. In coordination with other relevant department, some of the rehabilitation programmes shall be continued for long term plan.</p>
11.Environmental Conservation Work Committee	<p>The impact of the earthquake is likely to cause sewage pipes to burst, chemical spillage, and gas pollution that will require cleaning to ensure community safety.</p> <p>Within 48 -72 hours</p> <p>11.1. The chair shall participate in all meetings from the onset of the disaster.</p> <p>11.2. With information from EMC on the impact of the quake, prioritize the areas for environmental improvement, such as slums, hospitals, chemical depots and factories, markets, etc.</p> <p>11.3. In coordination with committee members, especially with Health Care Work Committee and Yangon City Development Committee, deploy committee members with a team leader to specific sites for cleaning.</p> <p>11.4. Assess the affected area in accordance with compliance of the Environmental Conservation Law (2012).</p> <p>11.5. Evaluate the level of risks in relation to damaged sewage, chemical spillage, or leakage of any hazardous substances that could pose a health risk (radioactive elements, etc.).</p> <p>11.6. Where health risk is envisaged, share awareness materials to the public on how to stay safe, in coordination with the News and Information Work committee.</p> <p>11.7. In coordination with other work committees, use the best means of cleaning to restore a healthy environment.</p> <p>11.8. Keep the public updated on safety measures until the level of pollutants are within acceptable levels.</p> <p>11.9. Where landslides occur and affecting the communities, coordinate with the Yangon City Development Committee to clean up the area.</p> <p>11.10. Animals, such as those in the zoo, could get agitated and may escape from their confined areas. Assess and ensure that they are still confined or return them to the restricted areas.</p> <p>11.11. In coordination with the News and Information Committee, alert the public immediately about dangerous animals that are out of the confined areas.</p> <p>Within 72 hours - 7 days</p> <p>11.12. Continue to provide awareness materials and keep the public updated on safety precautions for any hazardous chemical leakages.</p> <p>11.13. Update the plan (if it exists) on how to deal with residual elements from radioactive leakages to restore clean environment. Where this does not exist, develop a plan on how to deal with such matters.</p>

Committee	Roles and responsibility
12. Livelihood Recovery Work Committee	<p>Depending on the magnitude of the earthquake, the livelihoods and assets of communities could be seriously interrupted. Affected communities will therefore require immediate assistance.</p> <p>Within 48 -72 hours</p> <ul style="list-style-type: none"> 12.1. The chair shall participate in all meetings in the EMC from the onset of the disaster and provide guidance to the field operation teams. 12.2. Deploy teams with team leaders to focus on salvaging some food and other items, such as clothes, household utensils, IDs, etc. 12.3. Assess the impact on the livelihoods and assets of the communities in collaboration with relevant work committees. 12.4. Compile all items and names of families and ensure that these are returned to them in the earliest possible time. 12.5. In coordination with the Security Work Committee, ensure protection of family properties from being looted. 12.6. Prioritize (immediate, medium, and long term) and determine the cost of livelihood requirements. 12.7. Assess and support reunification of family members. 12.8. In coordination with the beneficiary community, prioritize and provide necessary support that will contribute to improving living conditions. 12.9. In coordination with the Rehabilitation and Recovery Work Committee, restore damaged community markets. 12.10. Continue to monitor and assess other livelihood opportunities for consideration. 12.11. In coordination with the Rehabilitation and Recovery Work Committee, use skills from the affected communities that will enable them to earn some living. <p>Within 72 hours - 7 days</p> <ul style="list-style-type: none"> 12.12. Continue to monitor and introduce livelihood opportunities for the affected communities. 12.13. Assess longer-term livelihood opportunities that can be supported to improve the lives of the affected communities.

Annex (C): Functions of the Emergency Management Centre (EMC)

The EMC shall be organized to carry out five major functions: management, planning, operations, logistics, and finance, depending on the scale of the earthquake impact and requirements.

- **Management:** Responsible for overall response management.
- **Operations:** Responsible for coordinating all operations to support the emergency action plans.
- **Planning:** Responsible for collecting, evaluating, and disseminating information, as well as coordinating updates on the emergency action plans.
- **Logistics:** Responsible for procuring facilities, services, personnel, equipment and materials.
- **Finance/Administration:** Responsible for tracking incident costs, forecasts, and payment of responders, contractors, and claims.

The EMC shall be headed by the chair of the Yangon Region Disaster Management Committee or designee in coordination with the Regional Disaster Management Work Committees who understand their roles and responsibilities. The chairs of the various committees shall be supported by general staff from their respective work committees. This staff shall be responsible for overseeing the internal functioning of their committees, interacting with each other, the chair and other entities within the EMC to ensure effective functioning of the EMC. Where there is need, representatives from local response agencies, contractors, volunteer agencies and any other group with significant response roles that are considered essential in support of decision making will be identified. These representatives may also be asked to support the emergency response of the EMC.

Prior to activation of the EMC, its initial functions shall include, but are not limited to:

- 1) Establish EMC priorities, objectives and action plans.
- 2) Prepare the plan to request support from other States/Region if needed.
- 3) Act as the communications link between the national government and the affected population.
- 4) Ensure that specifically trained response individuals are available or are being mobilized in the event that their expertise becomes necessary.
- 5) Ensure that necessary equipment shall be made readily available on site.
- 6) Update relevant information on vendors, contractors, consultants, and other key resources. Monitor TV, radio, and wire services to determine the accuracy of public information, and recommend the most appropriate medium for information dissemination.
- 7) Ensure that employees and the community are adequately informed of the dos and don'ts of an earthquake by various media channels.
- 8) Ensure that the EMC facility is located away from a jurisdiction's vulnerable or high-risk areas. In the event of an emergency that requires the EMC to be moved, a pre-determined alternate site should be planned for.
- 9) Ensure that layout and equipment for the EMC is carefully planned and exercised well in advance of potential activation. A facility that can offer a variety of rooms and large open spaces, facilitate technological needs, and provide the necessary life support systems is ideal.

The EMC team (chair of the Yangon Region Disaster Management Committee (or) designee and the chairs of the work committees) must be thoroughly trained in the proper processes and procedures and understand specified roles and responsibilities for coordinating full-scale emergency response efforts. To ensure that the management of the EMC addresses its objectives, it shall regularly conduct simulation exercises to test its readiness for any given emergency.

Sector	Functions
Management	<p>The sector shall be responsible for overall response management, including the following:</p> <ol style="list-style-type: none"> 1) Responsible for overall emergency policy and coordination, public information and media relations as pertains in the Myanmar Disaster Management Law (2013), agency liaison, and proper risk management procedures, through the joint efforts of the various committees; 2) Ensures that up-to-date information is transferred with 24 hours, and that the materials, telecommunications, equipment, documents, and supplies required are enough for the emergency response; 3) Ensures an updated plan is in place for the transfer of staff responsibilities (e.g. shift changes) to allow time to rest, meals, etc. The shift should be no longer than 8-12 hours and should overlap by 15 minutes or so to prevent a staff position from being inadequately relieved. A transfer briefing should summarize the activities of the past shift, and if time permits, be accompanied by a short-written summary of the same information for later use during the operation or at a post-operation debriefing; 4) Responsible for the overall management of coordination between emergency response teams and supporting agencies in the EMC; 5) Ensures effective information exchange between local authorities and regional bodies/agencies for the response; 6) Where there is need to request additional human resources, the EMC shall contact the appropriate department/agency to request such support; 7) Ensures effective inter-sector coordination within the EMC; 8) Ensures regular daily briefings and conferences on activities at the EMC; 9) Ensures all emergency operation procedures are followed;
Operations	<p>This sector shall be responsible for coordinating all operations to support the emergency action plans:</p> <ol style="list-style-type: none"> 1) Coordinates all sector operations in support of the emergency response through implementation of committee roles and responsibilities; 2) Enacts order and instruction (e.g. for the case of persons who may unlawfully interfere with the response, failure to evacuate if required to do so, etc.) as required to guarantee effective response operations; 3) Consults and seeks advice from a legal team or person regarding any potential legal issues and recommends courses of action; 4) Analyses data from the field and produces reports for the NDMC; 5) Determines needs for extraordinary resources and / or outside assistance, which will be shared with NDMC; 6) Monitors the status of the emergency event by reviewing the EMC Situation Reports; 7) Determines the need for termination of the region's emergency operations and proposes next steps for transiting into the recovery phase;

Sector	Functions
Planning	<p>Responsible for collecting, evaluating, and disseminating information, the situational status in coordination with other functions, and maintaining all EMC documentation on planning issues.</p> <ol style="list-style-type: none"> 1) The planning sector shall consider the following primary steps in a sequential order to guarantee a comprehensive process: <ul style="list-style-type: none"> • Understand the current situation; • Establish priorities, objectives and strategies; • Develop an action plan for daily operation; • Evaluate the plan and obtain appropriate approval; • Anticipate / predict what will happen following implementation of the action plan. 2) Collect, analyze, and display situational information; 3) Prepare and share periodic situation reports; 4) Prepare and distribute the EMC action plan and facilitate the action planning process; 5) Provide technical support services to the various EMC sections and branches; 6) Coordinate sector activities, following drill procedures;
Logistics	<p>Responsible for providing facilities, services, personnel, equipment and materials with oversight by the Transport and Communication Work Committee.</p> <ol style="list-style-type: none"> 1) Ensures that logistic functions are carried out in support of the EMC. This function includes providing telecommunication services and information technology, locating or acquiring equipment, supplies, personnel, facilities, as well as arranging for food, lodging, and other support services as required by both the EMC and site conditions; 2) Ensures section objectives as stated in the EMC Action Plan are accomplished within the operational period or estimated time frame; 3) Keeps the work committees informed of all significant issues relating to the logistics section; 4) Requests necessary critical logistics resources;
Finance / Administration	<p>Responsible for all financial issues and administrative aspects with the oversight of the Finance & Financial Management Work Committee:</p> <ol style="list-style-type: none"> 1) Estimates the necessary budget based on the losses in affected areas; 2) Ensures that funds are received from work committees during the response phase; 3) Ensures that all financial records are maintained throughout the emergency operation period; 4) Ensures that Finance / Administration position logs and other necessary files are maintained; 5) Advises on spending for logistics, operations, and management staff; 6) Ensures that all travel and expense claims are processed within a reasonable time, given the nature of each situation; 7) Ensures that all documentation, disaster financial assistance, and human support paperwork is accurately maintained and submitted to the appropriate unit for audit purposes, if need be;

Annex (D) Function of Yangon Region Disaster Management Work Committee for preparedness for earthquake hazard

Work Committees	Preparedness Actions
1) Region Disaster Management Committee	<p>1-1) Functional EMC with membership regularly updated. This needs to be linked to the national EOC to allow smooth integration during an emergency.</p> <p>1-2) Make sure to have an emergency response plan for the region, as well as request that the districts and townships have their own emergency plans.</p> <p>1-3) Assess the availability and accessibility of hazard and vulnerability maps of the region. Because earthquakes can trigger secondary events (e.g. floods, fire, tsunamis, landslides, liquefaction, and other related hazards), it is important to have a hazard map that covers the entire region in consultation with technical institutions, such as the Myanmar Engineering Society, Myanmar Earthquake Committee and Myanmar Geosciences Society.</p> <p>1-4) Assess the training needs of committees, train them, and prepare for response activities.</p> <p>1-5) Prepare inventory of emergency resources in collaboration with districts and regions/states, and prepare maps of transportation networks, including roads and bridges, air and sea ports, and railways services.</p> <p>1-6) Prepare a list of response activity materials to be stockpiled.</p> <p>1-7) Understand the secondary hazards of earthquake and prepare the hazard maps.</p> <p>1-8) Prepare the alternate system to operate the services if some of the services will be interrupted due to earthquake.</p>
2) Initial Need Assessment Damage, Loss & Verification Work Committee	<p>2-1) Conduct necessary trainings.</p> <p>2-2) Understand the region's built environment, especially in the urban centre. For example, use maps that show areas of high rise buildings, open spaces, water bodies, and geohazard areas.</p> <p>2-3) Define the procedures for assessing damages.</p> <p>2-4) Prepare a map of safe routes, time planning, evacuation sites and shelter sites in advance.</p> <p>2-5) Prepare forms to assess the damage and loss of data in coordination with work committees.</p>

Work Committees	Preparedness Actions
3) News and Information Work Committee	3-1) Have prior discussions and prepare a list of telephone operators and coverage in the region in case of a telecommunication system disruption. 3-2) Develop guidelines for information sharing, and practice regularly. 3-3) In order to disseminate relevant information, coordinate with the media station (conduct training and regular meetings). 3-4) Make sure to have an emergency hotline. The same number will be used by the whole country, and operation centers will be set up in each state and region.
4) Search and Rescue Work committee	4-1) The first 24 hours of any disaster are regarded as the “golden hours” or critical survival for entrapped people. The team will require special training to undertake their task. 4-2) Training shall include use of search cameras, sensitive listening devices, CO2 detectors, sniffer dogs, rescue equipment such as hydraulics, drills, saws, disc cutters, ropes and stretchers, and Tags (red, black, yellow, green and black). Operation should be checked regularly.
5) Health Care Work Committee	5-1) Develop guidelines for rescue operations, including the roster system. 5-2) Train for triage systems and prioritization of victims. 5-3) Coordinate with private hospitals, clinics, and blood donation organizations if blood is needed during an emergency.
6) Security Work Committee	6-1) Regular training including camp management, regular meetings and drills for security purposes during response. 6-2) Member list updates. 6-3) Maps of transportation networks, identified shelters, and security camps in the region, especially in cities. 6-4) Coordinate with relevant organizations for social protection.
7) Transportation and Communication Work Committee	7-1) List transport owners and quantities, and share this information with other work committees. 7-2) Create a detailed map of the road network in the region, and share with other work committees. 7-3) Develop and test a plan on how to coordinate transport services for emergencies. 7-4) List all logistic requirements from the various work committees and ensure no delay during emergency situations. 7-5) Check warehouses in the region and their capacity to fill needs. 7-6) Make adequate arrangements for the transportation of affected communities and their minimum belongings, including livestock. 7-7) Coordinate with the Myanmar Private Sector Disaster Management Network for the private sector’s support of logistic arrangements during emergency situations.

Work Committees	Preparedness Actions
8) Rehabilitation and Recovery Work Committee	<p>8-1) Understand the building stock and typology in the region. This shall also include all critical facilities.</p> <p>8-2) Identify the temporary shelters and health care centers in advanced for the affected people in each township.</p> <p>8-3) Identify the routes to those shelters and health care centers</p> <p>8-4) Prepare the resources for the temporary shelters and health care centers in coordination with relevant departments and organizations</p> <p>8-5) Identify, prepare the list of the drinking water and sanitation systems for the victims at the temporary shelter and temporary health care centres</p> <p>8-6) Prepare and document the list of heavy machinery and equipment for clearing the debris in collaboration with Yangon City Development Committee, other relevant departments and private sector.</p> <p>8-7) Discuss in advance with experts and other Work Committee as the buildings can be collapsed due to aftershocks</p>



Annex (E) : Loss and Damage assessment form

No.			
Township			
Time of occurrence			
Type of Disaster			
Affected Location			
Affected Household			
Affected	Peo- ple	Male	
		Female	
		Total	
		Livestock	
Death	Peo- ple	Male	
		Female	
		Total	
		Livestock	
Damaged		House	
		School	
		Monastery	
		Religious Building	
		Hospital	
		Clinic	
		Health Care Center	
		Government Office	
		Building/ Others	
		Dam	
		Bridge	
		Road	
		Farm Yard (Acre)	
		Fish/ Prawn Pond (Acre)	
Amount of Loss and Damaged (million kyats)			
Remarks			

Remarks : This form will be used for collecting the data to prepare the initial assessment report on loss and damage due to the earthquake.

Data Entry form For Disaster Loss And Damage

Serial Code	Department Name of Source Data					Reporting Date					
1. DISASTER INFORMATION	Disaster Events					Affected Location					
	Severity					State/Region	District	Township	Ward/Village Tract	Village	
	Disaster Date (day/month/year)		No of affected Villages								
Duration of Incident	Brief Description of Cause										
2. AFFECTED											
Count	Deaths	Missing	Injured	Victims	Affected	Evacuated	Relocated	Total			
Children Total											
Male											
Female											
Adults Total											
Male											
Female											
Grand Total											
Male											
Female											
				Families							
3. TRANSPORTATION					4. LIVESTOCK BREEDING						
Type	Unit	Destroyed/Damage		Type	Unit	Deaths/Damages	Value (Ks)				
		Qty.	Value(Ks)								
High Way Roads	Mile			Buffalos	No						
Urban Roads	Mile			Cows	No						
Rural Roads	Mile			Goats/Sheep	No						
Bridges	No			Pig	No						
Ports/Jetties	No			Chicken	No						
Railway Stations	No			Ducks	No						
Locomotive Engines	No			Farm Yards	No						
Carriages	No			Animal Feed							
Railway Lines	Mile			Veterinary Medicine and Medical Tools							
Air Transport/Airports											
5. HEALTH					6. EDUCATION						
Type	Unit	Destroyed		Damaged		Type	Destroyed		Damaged		
		Qty.	Value (Ks)	Qty.	Value (Ks)		Qty.	Value (Ks)	Qty.	Value (Ks)	
Hospitals	No					Universities					
Private Clinics	No					Colleges/Institute					
Health Centers	No					Research Centres					
Rural Health Centers	No					High Schools					
Sub-Rural Health Centers	No					Middle Schools					
Tools and Equipments						Primary Schools					
Medicine						Nursery Schools					
Total						Training Centers					
						Private Schools					
7. WATER SUPPLY AND SANITATION						8. FISHERY					
Type	Unit	Destroyed		Damaged		Type	Unit	Destroyed		Damaged	
		Qty.	Value (Ks)	Qty.	Value (Ks)			Qty.	Value (Ks)	Qty.	Value (Ks)
Wells	No					Fishing boats	No				
Ponds/Natural Lakes	No					Fishing Vessels	No				
Water Tanks(public use)	No					Fishing gear					
Major Water Pipelines	Ft					Salt Farms	Acre				
Sewerage	Ft					Fish Ponds	Acre				
						Prawn Ponds	Acre				

Data Entry form For Disaster Loss And Damage

9. RELIGIOUS BUILDINGS <input type="checkbox"/>						10. FOREST <input type="checkbox"/>					
Type	Unit	Destroyed		Damage		Type	Unit	Destroyed		Damaged	
		Qty.	Value (Ks)	Qty.	Value (Ks)			Qty.	Value (Ks)	Qty.	Value (Ks)
Pagodas	No					Forest Plantations	Ha				
Monasteries/Nunneries	No					Natural Forests	Ha				
Churches	No					Mangrove Forests	Ha				
Mosques	No										
Hindu Temples	No										
11. AGRICULTURE <input type="checkbox"/>						12. BUILDINGS <input type="checkbox"/>					
Type	Unit	Destroyed/Damage		Type	Unit	Destroyed		Damaged			
		Qty.	Value (Ks)			Qty.	Value (Ks)	Qty.	Value (Ks)		
Crops(Paddy)	Acre			Residential Buildings	No						
Crops(Others)	Acre			Offices	No						
Agricultural Lands(Paddy and Other Crops)	Acre			Factories/Workshops	No						
Agricultural Lands(Industrial Crops)	Acre			Warehouses	No						
Sluice Gates	No			Markets	No						
Dams/Reservoir	Ft			Hotels	No						
Embankments/Dykes	Ft			Resthouses	No						
Irrigation Channel Lines	Mile										
Seed/Grain in Barn											
Farm Tools											
13. COMMUNICATION <input type="checkbox"/>				14. ENERGY <input type="checkbox"/>							
Type	Unit	Qty.	Value (Ks)	Type	Unit	Qty.	Value (Ks)				
Fibre Cables	Km			Machines (pumps)	No						
Copper Cables	Km			Fuel Tanks	No						
Equipments & Materials including (Tower & Machines)				Pipelines	Km						
Machinery Buildings	No			Related Buildings	No						
Total				Total							
15. ELECTRICITY <input type="checkbox"/>				16. RELIEF <input type="checkbox"/>							
Type	Unit	Qty.	Value (Ks)	Type	Value (Ks)						
Poles	No				Government	Other					
66 kv Lines	mile			Food Items							
33kv Lines	mile			Non-Food Items							
11/3.3kv Lines	mile			Construction Item provided							
Machinery Buildings	No			In cash							
Total				Total							
Signature											
Reported By:											
Post Title											

Suggestions

Loss or Damage value is based on the value of the time of the event.

Query (if any disaster happens in Yangon Region)

Ministry of Social Welfare, Relief and Resettlement
Department of Disaster Management, Yangon Region Office
No. (5), Ward (3), Kyaik Waing Pagoda Road, Mayangon Township, Yangon
Phone: 01-661812, Fax: 01-521967
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