

Standing Order on Natural Disaster Management in Myanmar

Introduction

1. Currently in Myanmar, the domestic insurgencies and instability that appeared with the gaining of independence have been overcome and nation-building activities are being implemented with a momentum that is unprecedented in history toward the emergence of a peaceful, modern and developed new nation. At a time like this, it is imperative that any and all issues that have the potential to affect this momentum be addressed, including natural disasters. Thus, short and long term plans need to be developed to ensure preparedness in the face of unexpected natural disasters in order to minimise losses. The "Standing Order for Natural Disaster Management in Myanmar" is issued with the aim of ensuring that once disaster strikes, emergency relief and rehabilitation work is carried out according to the prepared plan and that the people are mobilised at the national level for participation in such efforts.

Considerations for Natural Disaster Preparedness

2. **The scale or level of impact.** Natural disasters have immediate impacts including loss of life or injuries, and loss of property, crops, means of livelihood, or animals such as cattle, in addition to longer term impacts including disruption or damage to livelihood infrastructure, services such as health and education, roads, bridges and communication infrastructure, damage to the soil and sources of drinking water and the spread of infectious diseases. An analysis of the impact of disasters reveals that the extent of damage and losses mainly depends on the following three factors:

- (a) **Vulnerability of the disaster-affected area and population density.** Exposed geographical location and environment (e.g. location of villages on the banks of rivers and streams and in lower ground, in open fields without wind breakers, in earthquake zones with building construction that fails to take the risks of earthquakes into consideration, etc.); population density
- (b) **Preparedness.** Management processes for protection against natural disasters and people's awareness of their role; their level of alertness regarding protection against natural disasters; the level of preparedness or drills for anticipated natural disasters.
- (c) **Type of natural disasters and their severity.** The extent of loss and damage also depends on the type of natural disasters and their severity.

3. **Mitigation of damage and loss caused by natural disasters and recovery in the shortest possible time.** Of the above-mentioned 3 factors, the third is beyond our control. Consideration will mainly be given to the first and second factors as appropriate measures can be taken in those areas. In carrying out those preparedness activities, best practices during natural disasters in our country and in the world as well as natural disaster management in various countries should be studied and the experience and lessons that are appropriate to our country and to our local contexts should be incorporated systematically.

Hazards

4. Adverse weather, floods and storms

- (a) Tropical cyclones, high seas and storm surges
- (b) Flooding in and along rivers
- (c) Continuous torrential rains causing floods and rising river waters, flooding caused by rains at high tide
- (d) Flooding caused by reservoir failure
- (e) Disaster caused by extreme drought

5. Geographical changes

- (a) Earthquakes
- (b) Tsunamis
- (c) Volcanic eruptions

6. Biological hazards

- (a) Human and animal epidemics
- (b) Pests and locusts causing extensive damage to crops

7. Chemical, industrial and nuclear hazards

- (a) Fire or explosion at chemical factories causing contamination through release of toxic gases and hazardous chemicals
- (b) Environmental contamination caused by substances used in industry, such as mercury, lead and cyanides; hazards caused by extensive contamination of waterways, streams and rivers
- (c) Radioactive hazard of a global fallout caused by radioactive particles in the airstreams as a result of detonation of nuclear bombs outside the country or explosion at a nuclear power plant

8. Fire hazards

- (a) Smoke and ashes from widespread forest fires severely affecting towns and villages, forcing evacuation of people, closure of schools and factories and disruption of work
- (b) Widespread fires in urban areas or forest fires spreading into urban areas causing loss of life, destruction of property and damage to economic infrastructure

9. **Major natural disasters around the world and in Myanmar** are listed in Appendix A and Appendix B.

Area-wise Natural Hazards

10. Natural disaster preparedness activities require substantial human resources, financial resources, equipment and time. Consequently, natural hazards, vulnerable areas and the extent of the disaster risks need to be anticipated in order to plan the optimal utilization of

available resources. An area-wise analysis reveals vulnerability to the following types of natural disasters:

- (a) **Cyclones** in Rakhine State, Ayeyarwady Division, Yangon Division, Mon State and Tanintharyi Division
- (b) **Tsunami** in Rakhine State, Ayeyarwady Division, Yangon Division, Mon State and Tanintharyi Division
- (c) **Flooding** along the Ayeyarwady, Chindwin and Sittaung Rivers and in some areas along the Thanlwin River
- (d) **Fires** across the country, especially in the Dry Zone (Mandalay, Magway and Sagaing Divisions), and densely populated areas (Yangon, Mandalay and Ayeyarwady Divisions)
- (e) **Earthquakes** in all States and Divisions except Tanintharyi Division

Risks related to Different Types of Natural Disasters and Risk Reduction Measures

11. Storms: causes, risk of destruction, predictability, risk reduction, damage assessment and relief are shown in Appendix C-1.
12. Tsunamis: causes, potential for destruction, predictability, risk reduction, damage assessment and relief are shown in Appendix C-2.
13. Earthquake: causes, potential for destruction, predictability, risk reduction, damage assessment and relief are shown in Appendix C-3.
14. Floods: causes, potential for destruction, predictability, risk reduction, damage assessment and relief are shown in Appendix C-4.
15. Drought: causes, potential for destruction, predictability, risk reduction, damage assessment and relief are shown in Appendix C-5.
16. Fires: causes, potential for destruction, predictability, risk reduction, damage assessment and relief are shown in Appendix C-6.
17. Landslides: causes, potential for destruction, predictability, risk reduction, damage assessment and relief are shown in Appendix C-7.
18. Prioritizing tropical storms, floods, tsunamis and earthquakes.

Considering the geographical features of our country such as the length of the coastline, population density along the coastline, and the location of lowlands and valleys along the coastline, the first priority among the various natural disasters is tropical storms; the second, annual flooding; the third, tsunamis and earthquakes with their potential for greater loss of life and property. Recently Cyclone Nargis of May 2008 caused strong winds and a storm surge that led to heavy losses of life, property and economic and social infrastructure in Ayeyarwady and Yangon Division. This experience and the lessons learnt from it should inform future preparedness activities. Some of the key findings are as follows:

(a) Early warning required for timely evacuation of low-lying areas.

1. The delta area is densely populated and plays a vital role in the national economy. It consists mainly of low-lying areas with a large number of streams

and rivers, making road transportations fairly challenging. Timely evacuation is possible only with an early warning system for storms, floods and tsunamis. The meteorology department should be equipped with measuring equipment and means of communication with other meteorology departments and warning systems to enable it to make forecasts of storms, floods and tsunamis. It should also be equipped with backup systems to be prepared for unexpected equipment failures or disruptions in the electricity supply. Measures should also be in place to transmit timely information to the entire area through radio and television, by messenger from one village to another and from one locality to another, through the use of flag signals, traditional bamboo or wood signalling devices, fire or other means of communication. Moreover, safe evacuation routes should be selected and awareness activities and evacuation drills should be carried out at the individual and village level. Individuals and/or organizations need to be designated to provide assistance and protection to children, the elderly and the sick, and those with sight, hearing or speech impairments or physical handicaps during an evacuation.

2. **Communication requirement in the delta area.** Advance measures need to be in place in the delta area to provide timely information and warning of imminent natural disasters to the population engaged in farming on scattered silt islands, fishing in creeks, rivers, ponds and lakes or on the open sea.
3. **Measures for the coastal areas.** As the areas around the estuary of the Sittaung River, as well as the Rakhine and the Tanintharyi coastline consist of low-lying strips of land, silt islands and mud plains, planning and preparations are required as in the delta.
 - (b) **Shelter mounds for areas with no easy evacuation routes.** In some plains, where the position of the rivers, creeks, ponds and lakes makes transportation difficult and no easy evacuation routes can be found, 40-foot mounds should be created near villages for use as shelters in times of flooding.
 - (c) **Preserving coastal swamp forests and planting coconuts and fast-growing large trees in rows and in large numbers along the shoreline and around the village.** Coastal swamp forests, coconuts and other trees break the storm surge and slow its retreat. During Cyclone Nargis and the subsequent floods, people, animals and buildings were washed away first by the storm surge and then by its sudden retreat. But in areas with large numbers of big trees along the coast or around the villages, the storm surge and its retreat were slowed, reducing casualties considerably. The lessons learned indicate that the conservation of swamp forests is an imperative, as is the planting of large numbers of trees in rows along the coastline and fast-growing trees around villages as wind breakers.
 - (d) **Preventing the loss of boats, ships and fishing vessels.** During Nargis, a large number of boats, ships and fishing vessels were lost, with the result that difficulties were encountered in the aftermath of the storm for transportation, provision of assistance and livelihood activities. Precautionary measures need to be taken to prevent similar losses in the storm seasons.

- (e) **Identifying and mapping disaster-prone and vulnerable areas according to the type of natural disasters and vulnerability status.** Creating maps that show which areas are prone to which natural disasters at what times will provide the local population with the information necessary to take precautionary measures. The maps should indicate the extent of the potential vulnerability and the precautionary measures that should be taken. Thus, the scale of the hazard can be gauged and the necessary preparations carried out.
- (f) **Obtaining assistance from the Armed Forces during emergency relief and protection activities.** Emergency relief and protection activities need to be carried out during and after a natural disaster and the assistance from the Armed Forces in the form of aircraft and helicopters from the Air Force, vessels from the Navy, and widespread field support from the Army can expedite the rescue, protection and support activities. With their good organization, strict compliance with orders, self-sacrifice in the face of difficulties and hardships, and access to communication equipment and medical staff, the Armed Forces have a great deal to contribute to the rescue efforts. Internationally, the capabilities of the Armed Forces have been a major contributing factor in the success of relief activities during emergencies caused by natural disasters. Thus, measures should be in place to make use of the assistance provided by the Armed Forces in addition to that provided by local volunteers and volunteers from other areas.
- (g) **Requesting assistance from neighbouring countries, international volunteer organizations and donor countries depending on the scale of loss and destruction caused by the natural disaster.** Faced with widespread damage and heavy losses caused by natural disasters, the medicine, food supplies, water purifiers, hospital equipment, and shelter supplies that are on hand may prove insufficient while timely purchase is also not feasible. By requesting assistance from the above-mentioned sources, stockpiled supplies from other areas can be accessed so that emergency rescue and protection activities can go forward with momentum. Medicine, medical supplies and emergency supplies may also be purchased in those countries through the Myanmar embassies and delivered by commercial and chartered flights to contribute to the speedy implementation of emergency rescue and protection activities. Preparations and precautions against hazards are necessary.

Two Scenarios of Natural Disaster Response

19. By their very nature, natural disasters occur unexpectedly. Depending on the geographical area affected and the scale of losses, the following two scenarios of natural disaster response will apply:

- (a) **Scenario 1:** The respective States and Divisions are able to take a central role in addressing the impact of the natural disaster, with the central authorities only needing to provide support and assistance.
- (b) **Scenario 2:** Large-scale impact and heavy losses caused by the natural disaster make it necessary for the central authorities to play a central role in the management and supervision of relief activities with the respective States and Divisions providing support and assistance.

20. In anticipation of both scenarios, the various sub-committees of the National Committee on the Natural Disaster Management, ministries and departments, States and Divisions, Townships, Ward/Village and grassroots level organizations should prepare and issue their own action plans and standing orders.

Sector-wise measures

21. Practical and comprehensive action plans should be prepared for the following situations and types of activities to ensure effective implementation in times of emergency:

- (a) **Mitigating natural disaster risks.** This includes measures to prevent loss of life and property during natural disasters (such as the construction of modulating lakes and reservoirs to prevent disasters caused by heavy rainfall and flooding in rivers, construction of sufficient fire breaks to prevent forest fires from spreading into urban areas) as well as precautionary and mitigating measures (such as planting trees as wind breakers and breakwaters, planting rows of trees and groves to reduce damage, using fire-proof materials as much as possible in construction to reduce fire hazards, and using earthquake resistant designs to reduce damage caused by earthquakes). In planning mitigating measures, the type of disasters that can affect the disaster-prone areas, the their scale (large or small) and the population density (densely populated or sparsely populated) should first be studied and the disaster risk reduction measures prioritized according to the potential damage identified.
- (b) **Preparedness.** Natural disaster preparedness should include planning based on the characteristics of natural disasters, preparedness to overcome them and where it is not possible to overcome them, making preparations for evacuation and shelter. The following steps are generally involved:
 1. Early Warning systems. Setting up systems for horizontal and vertical communications.
 2. Providing management, and conducting rehearsals and drills for the Inter-Department Relief Team to enable it to provide assistance during natural disasters from the nearest location in the field.
 3. Providing training from the grassroots level organizations to the Township/Division/State to ensure preparedness for emergency activities during natural disasters; brainstorming possible solutions for different scenarios during training.
 4. Including natural disaster management and preparedness activities for the individuals, groups, households, wards or neighbourhoods in the school curriculum, newspaper/journals in order to raise awareness for everyone and issuing further warnings especially in disaster-prone times of the year.
 5. Building safe shelters, artificial mounds and high embankments for use in times of emergency, and making evacuation plans and conducting drills.
 6. Stockpiling food, water, clothing, supplies, construction materials, shelter and ready-made tents, tools, etc. that will be necessary during emergencies or arranging access to them and designating transportation routes.

7. Forming emergency supervisory teams and conducting rehearsals.
 8. Identifying vulnerable areas for each type of natural disasters and conducting awareness-raising activities, identifying and communicating do's and don'ts and precautionary measures that should be taken for each type of natural disasters.
- (c) **Preparing and conducting drills for measures to be taken during disasters and in the post-disaster period.** Activities to be conducted during disasters include emergency relief, preliminary care and protection, emergency medical treatment, and evacuation to safe locations. Activities to be conducted in the post-disaster period include provision of health care, water, food, clothing, and shelter. As planning is required for these activities, projects should be in place for the provision of education and training to the grassroots level.
- (d) **Rehabilitation.** As it is necessary to know the type and scale of loss or damage in order to carry out rehabilitation activities, a form should be prepared for use in systematic information-gathering and reporting at the grassroots levels; and practice in filling in the form and understanding what information is required should be provided. Livelihood, education, health, social and economic life can return to normal conditions speedily only if action plans are implemented systematically without delay. The action plans should include organizations that will be involved in each task, individuals in the organizations who will carry out the implementation work and their individual duties, the communication system to be used, the assignment of administrative and logistic responsibilities, the name, position and contact details such as telephone numbers, addresses and office locations of responsible persons with supervisory duties. They should also contain provisions for occasional team practice.

Important Factors in Natural Disaster Risk Reduction

22. The following measures should be included in natural disaster risk reduction:
- (a) Natural disaster risk reduction should be a priority both at the national and local levels and appropriate measures should be taken.
 1. Policies and legislation that contribute to natural disaster risk reduction should be laid down.
 2. A strong coordination body for natural disaster risk reduction should be formed at the national level.
 3. Natural disaster risk reduction should be incorporated in the national development policies and projects.
 4. Natural disaster risk reduction activities should be funded by the State and provided with human resources.
 - (b) Ensuring that natural disaster management activities become incorporated at the State/Division level and lower level organizations.
 1. Delegation of responsibilities and giving mandate, provision of input such as allocation of funds and supplies for natural disaster risk reduction

2. Provision of support and assistance to lower level organizations for implementation of natural disaster risk reduction.
- (c) Improving the systems for monitoring natural disasters and providing early warning
1. Identifying areas prone to natural disasters and associated risks both at the national and local level as well as at the grassroots ward/village level
 2. Setting up a data collection and utilization system for natural disaster management activities.
 3. Setting up early warning systems for various natural disasters.
 4. Keeping in touch with regional and international natural disaster risk reduction activities and working together.
- (d) Cultivating intellectual innovation, and using the education system to foster a habit of taking safety and security into consideration and build resilience.
1. Enabling an exchange of information on natural disasters and building an information network for natural disaster prevention.
 2. Organizing and promoting educational and training programmes on natural disaster risk reduction.
 3. Obtaining the necessary technologies for natural disaster risk reduction, conducting research required and making use of innovations.
 4. Conducting educational activities for awareness-raising and mobilizing the public for natural disaster risk reduction.
- (e) Ensuring that natural disaster risk reduction is incorporated in the policies and programmes of various ministries concerned.
1. Making efforts to incorporate natural disaster risk reduction in environmental conservation activities.
 2. Supporting programmes to develop resilience against natural disasters and ensure food security in various localities.
 3. Coordinating to incorporate natural disaster risk reduction in health sector activities.
 4. Supporting the implementation of appropriate measures at the grassroots level and higher levels in order to mitigate natural disaster risks.
 5. Ensuring that natural disaster risk reduction is incorporated in the urban land utilization measures and technical matters.
- (f) Reinforcing preparedness activities at every level to ensure an effective natural disaster response.
1. Capacity-building at the National and State/Division levels for natural disaster preparedness and systematic disaster response.

2. Coordinating and collaborating with countries within the region as well as local and international donor organizations to meet emergency requirements in case those requirements exceed the capacity of the State in times of emergency.
3. Updating natural disaster preparedness and emergency action plans on a regular basis.
4. Setting up emergency funds.

Standing Order

23. Natural disaster management is to be implemented in the following two stages.
 - (a) National level measures
 - (b) State/Division level measures

National Level Measures

24. At the national level, the following bodies are to be formed.
 - (a) National Committee for Natural Disaster Management
 - (b) Inter-Ministerial Coordination Committee for Disaster Management
 - (c) Advisory Committee for Natural Disaster Management
 - (d) Order for the Formation of the Myanmar Natural Disaster Preparedness Committee (Appendix D)

National Committee for Natural Disaster Management

25. The National Committee for Natural Disaster Management is chaired by the Prime Minister, with ministers, representatives of the Armed Forces (Army, Navy and Air Force), and the deputy ministers of relevant ministries serving as members. The Committee is to meet at least twice a year. The responsibilities of the Committee are as follows:

- (a) Formulate policy regarding Disaster Management and issue guidelines in line with the policy;
- (b) Examine the recommendations of the Inter-Ministerial Disaster Management Coordination Committee (IMDMCC) and National Disaster Management Advisory Committee (NDMAC) and issue directives for their implementation, make arrangements for the promulgation of necessary legislation, and provide financial and other support;
- (c) Scrutinize and approve the Standing Orders on Disasters and National Disaster Management plans;
- (d) Ensure coordination among Armed Forces, civil administration and the NGOs in the planning process of disaster management;
- (e) Evaluate the precautionary and preparedness measures, scrutinize and approve the signalling system, warning signals and the communication system regarding disasters;
- (f) Prepare guidelines for distribution of relief materials and prioritize measures to be taken during pre-disaster, disaster and post-disaster periods;

- (g) Consider and make decisions on other related important issues.

Inter-Ministerial Coordination Committee for Disaster Management

26. This Committee is chaired by the Minister for Social Welfare, Relief and Resettlement, with deputy ministers of relevant ministries, designated Staff Officers of the Armed Forces (Army, Navy and Air Force), Chief of Division responsible for the supervision of the NGOs, Director-General of the Fire Services Department, Director-General of the Department of Social Welfare, Director-General of Relief and Resettlement Department, Chairman of the Myanmar Red Cross Society, Representative of the Union of Myanmar Federation of Chambers of Commerce and Industries, as well as professionals from trade associations, Departments, academic institutions and faculties being invited to the meetings as required. The responsibilities of the Committee are as follows:

- (a) Implement the policy and decisions of the National Committee for Disaster Management. To monitor the implementation of disaster related plans for prevention, mitigation, preparedness, emergency assistance and relief, and rehabilitation and to keep the National Committee for Disaster Management informed of the findings and the required support;
- (b) Coordinate the activities of the government agencies concerned with disaster management, evaluate the activities of the Departments responsible for close supervision of disaster management activities and provide necessary support and assistance;
- (c) Review the disaster preparedness status of different ministries and agencies every six months;
- (d) Coordinate operations in the post-disaster emergency rescue and relief period;
- (e) Issue guidelines and recommendations for natural disaster management and other related issues;
- (f) Responsibilities regarding disaster prevention and natural disaster risk mitigation.
 - 1. Submit recommendations to the National Committee for Disaster Management on the inclusion and prioritization of disaster prevention/mitigation in the national level projects;
 - 2. Coordinate preparation and implementation of disaster prevention/mitigation projects and programmes and submit proposals for the policy framework, priority setting and the distribution of inputs to different projects and activities;
 - 3. Monitor all levels of disaster management activities and promote the development of basic capabilities;
 - 4. Evaluate the disaster risks and their mitigation activities according to priorities in the national policy and to report their progress to the National Committee for Disaster Management.
- (g) Responsibilities regarding disaster preparedness.
 - 1. Carry out a detailed review of the disaster forecasts and warning procedure, designate tasks to be performed by different organizations and coordinate among them;

2. Review the activities and action plans of all disaster related organizations and ensure compliance with the policies and procedures that have been laid down; carry out coordination work;
 3. Review the warning systems at the grassroots level and ensure their appropriateness and practicality in the local context;
 4. Coordinate among different organizations responsible for educating the public concerning disasters preparedness to ensure that they are able to carry out their tasks and fulfil requirements;
 5. Ensure coordination among NGOs and government departments undertaking training on disaster management in order that the training is practical and effective;
 6. Send communication equipment to areas where telecommunication has been disrupted on account of a natural disaster so that requests for supplies and messages can be transmitted;
 7. Make plans to ensure a quick assessment of damage and loss due to the natural disaster and the proper quality of reconstruction work;
- (h) Responsibilities during the natural disaster alert/warning stage. The various means of mobilization for natural disaster preparedness should include mobilization through all levels of responsible persons concerned, as well as through the radio, television, news and periodicals, advertising billboards, school curricula, talks, essay contests, art competitions and other mass education programmes. This should include various systems to send out an alert promptly as soon as information on an imminent natural disaster is received
- (i) Responsibilities during the natural disaster stage.
1. Supervise the delivery of additional manpower and supplies to administrative bodies in disaster affected areas;
 2. Request assistance from the Armed Forces to coordinate to launch search and rescue operations, re-establish communication lines, provide health care and other essential services;
 3. Prioritize and issue instructions regarding relief materials, funds and transport requirements.

Advisory Committee for Natural Disaster Management

27. This Committee is chaired by a specialist designated by the Prime Minister, with representatives from States/Divisions vulnerable to natural disasters, specialists from government departments and universities, representatives from NGOs and the Department of Meteorology and Hydrology, specialists on storms, floods and earthquakes and representatives from the Myanmar Red Cross Society, Union of Myanmar Federation of Chambers of Commerce and Industries, bankers, and representatives from insurance enterprises and companies serving as members. The Committee meets at least twice a year. Sub committees may be formed for various disciplines as needed to ensure people's

participation in different fields such as storm warning, flood forecasts, earthquake preparedness. The overall responsibilities of the Committee are as follows:

- (a) Compile information, study and submit recommendations on technical management, disaster prevention/mitigation, preparedness, emergency response system and activities for recovery and rehabilitation to the National Committee for Disaster Management, Inter-Ministerial Coordination Committee for Disaster Management, Ministry for Social Welfare, Relief and Resettlement;
- (b) Ensure widespread awareness of disaster risks and mitigation possibilities while promoting workshops, trainings and research activities;
- (c) Create opportunities for cooperation in finding solutions to disaster management problems and organize a discussion forum for experts on new methodologies;
- (d) Seek solutions to problems identified by the Ministry of Social Welfare, Relief and Resettlement and submit recommendations;
- (e) Prepare and propose long-term rehabilitation plans for areas affected by natural disasters;
- (f) Evaluate disaster preparedness programmes, carry out periodic reviews of their implementation and submit comments and recommendations.

State and Division Natural Disaster Management Committees

Formation and Functions

28. **Formation.** Management Committees, Work Committees and relevant Sub-Committees are to be formed at the State and Division level systematically to address natural disasters.

29. **The importance of the State and Division level and the lower levels.** Different areas in States and Divisions are vulnerable to different types of natural disasters and the extent of disaster risks also varies from area to area. Factors such as geographical features, population density, location, local vegetation and other environmental conditions, communication and road conditions, planted forests and plantations, dams and reservoirs, preparedness including early warning systems, knowledge and alertness of the local population, affect the impact of natural disasters.

30. Thus, natural disaster preparedness activities at the State/Division level need to be determined by the local context, just as practical plans, preparations and implementations at the level of townships and villages are shaped by local conditions.

31. Tasks for the State/Division and Grassroots Levels

State/Division Peace and Development Councils will work with respective ministries and departments, States and Divisions concerned and organizations for successful and effective planning, preparedness, implementation of natural disaster management activities, in addition to providing directions, supervision, assistance for horizontal coordination, and fulfilment of requirements for the lower levels in districts, townships and village tracts for effective implementation on a continuous basis. Period tasks and responsibilities are as follows:

- (a) Implement natural disaster preparedness management activities, viz. disaster risk mitigation, prevention, relief and support during disasters, recovery and reconstruction activities, in line with the policies, directives and procedures laid down by the National Committee for Natural Disaster Management, and the Inter-Ministerial Coordination Committee for Disaster Management;
- (b) Submit reports on the work of the State/Division Natural Disaster Preparedness Work Committee in real time to the National Committee for Natural Disaster Management, Inter-Ministerial Coordination Committee for Disaster Management and its 10 Sub-Committees;
- (c) Provide supervision to district, township and village/ward level natural disaster preparedness management work committees in line with the policies and guidelines issued by the National Committee for Natural Disaster Management, Inter-Ministerial Coordination Committee for Disaster Management and its 10 Sub-Committees;
- (d) Receive and manage the assistance for relief and rehabilitation activities provided by the well-wishers and organizations from within the country and abroad with the supervision and in accordance with the guidelines of the National Committee for Natural Disaster Management, Inter-Ministerial Coordination Committee for Disaster Management;
- (e) Oversee and coordinate the activities of the various Sub-Committees under the supervision of the State/Division Natural Disaster Preparedness Work Committee;
- (f) Assign tasks to and ensure coordination among the departments and organizations working with different Sub-Committees;
- (g) Particular attention should be paid to the following activities in the delta and coastal areas which are prone to storms and floods.
 - a. Plant rows of trees to serve as breakwaters and wind breakers;
 - b. Construct embankments, flood gates and shelters to reduce the impact of disasters;
 - c. Select natural high ground areas in flood plains and low-lying plains as safe locations; construct artificial mounds in the absence of natural high grounds;
 - d. Plant rows of coconuts and other palms along the coastline and in inland areas;
 - e. Organize the local population in flood-prone areas to plant systematically coconut, banana, bamboo and trees that can be used to make rafts;
 - f. Identify and prioritize disaster-prone areas to enable effective implementation of search and rescue activities designated by the Central Committee and the local authorities;
 - g. Conduct information and organizing campaigns and drills to mitigate the impact of natural disasters through early warning systems, provision of sufficiently advance warnings, real-time dissemination of information from early warning systems to the public, systematic compliance with educational

activities and drills, identification and remedy of weaknesses through drills and alertness of the public;

- h. Institute separate programmes for off-shore islands based on their distinct characteristics, and include provisions for rafts, shelters, stockpiling of food and drinking water supplies, etc.

32. Sub-Committees should be formed as needed under the State/Division Natural Disaster Preparedness Work Committee as they are under the National Committee for Natural Disaster Management and Inter-Ministerial Coordination Committee for Disaster Management.

Disaster Preparedness

33. **Floods.** The following preparedness measures should be carried out.

- (a) Present flood preparedness measures to the National Committee for Natural Disaster Management and Inter-Ministerial Coordination Committee for Disaster Management and implement them;
- (b) Build regulating ponds, construct dams, diversion ditches and canals in flood-prone townships;
- (c) Conduct radio and television broadcasts to educate the public for flood preparedness with the approval of the Inter-Ministerial Coordination Committee for Disaster Management; carry out educational activities through newspapers, journals and magazines and issue weather news to the public in real time;
- (d) Install an emergency direct communications system (telephone, mobile phone and communication devices) in flood-prone areas;
- (e) Make necessary arrangements to ensure that local, domestic and international communications systems for use by NGOs, international organizations and INGOs operating with the permission of the State are adequate and functional;
- (f) Make arrangements to ensure access to helicopters, motor boats, etc. and form search and rescue teams to carry out search and rescue activities during disasters;
- (g) Put in place measures to provide drinking water and health protection measures at shelters after evacuation during floods;
- (h) Update household and census lists of townships, villages and wards in flood-prone areas for submission to the National Committee for Natural Disaster Management and Inter-Ministerial Coordination Committee for Disaster Management;
- (i) Request security forces from the Armed Forces and the Myanmar Police Force through the ministries concerned to put in place adequate security and protection measures in flood-prone areas;
- (j) Responsible persons from the Irrigation Department should inspect and direct the maintenance of reservoirs, dams and diversion dams constructed by the Ministry of Agriculture and Irrigation.
- (k) Carry out widespread awareness-raising activities through the media for prevention and preparedness of flood risk.

- (l) Ministry of Transport should direct annual surveys for the maintenance of waterways in rivers and creeks.
 - (m) Ministry of Forestry should carry out environmental conservation measures, taking into consideration the views and comments of the local authorities.
 - (n) Form emergency rescue teams, conduct training courses required for flood preparedness and stockpile equipment required for flood preparedness in the rainy season;
 - (o) Display clear markings for dangerous water levels in rivers, creeks, dams and canals;
 - (p) Select higher ground areas in flood-prone localities and organize advance evacuations if required;
 - (q) Work with the Department of Meteorology and Hydrology to send advance warning to township, ward and village levels in vulnerable areas through local authorities, on receiving special weather information;
 - (r) Identify and map flood plains based on the records of severe floods in the past and recent floods and disseminate this information among the public;
 - (s) Issue and enforce strictly the required directives and orders for the management of flood plains;
 - (t) Take the following measures during the flood-prone rainy and storm season;
 - 1. Prohibit travel, tours and camping in the flood plains;
 - 2. Identify higher ground areas and shelters and plan evacuation from the flood plains to them;
 - 3. Identify easy evacuation routes;
 - 4. Form emergency relief teams, and stockpile relief supplies and equipment, water, medicine, food, vehicles and fuel;
 - (u) Take precautions to prevent casualties and disruption or destruction of main communication lines and bridges caused by dam failure due to storm-induced heavy rains and consequent torrential water flows;
 - (v) Supervise measurements and surveys of river channels in the Ayeyarwady River as required to prevent breakage of riverside embankments due to erosion caused by shifts in river channels after flooding;
34. **Storms.** The following preparedness activities should be carried out.
- (a) Take steps to follow weather reports continuously and forward the information as severe cyclones, gusts and tornadoes may strike in the pre-rainy season period;
 - (b) Plan evacuation routes and methods for inhabitants of low-lying coastal areas and islands that are prone to storm surges;
 - (c) Carry out educational activities for evacuating disaster-affected areas for safe shelters;

- (d) Oversee and guide the formation of storm preparedness teams at all levels to carry out storm preparedness and protection activities at the division, district, township, ward/village levels under the supervision of the local authorities;
- (e) The storm preparedness team should monitor the weather news constantly in the rainy season and issue instructions as an advance warning of at least a week can usually be given before a storm strikes although some types of tornados and gusts may strike without warning.
- (f) Issue instructions for the temporary closure of public buildings, schools, markets and factories and for the suspension of travel by car, rail, ship, or boat when a storm warning is received for a particular division, district and township;
- (g) Evacuate people living in structures built with bamboo, *nipa* palm (*dhani*) or thatch and those living in riverside areas to areas that are considered safe when a storm warning is received;

35. **Fires.** The following preparedness measures should be taken.

- (a) Present fire preparedness measures to the National Committee for Natural Disaster Management and Inter-Ministerial Coordination Committee for Disaster Management and implement them;
- (b) Conduct radio and television broadcasts to educate the public for fire preparedness with the approval of the Inter-Ministerial Coordination Committee for Disaster Management; carry out educational activities through newspapers, journals, magazines, pamphlets and billboards;
- (c) Request the mobilization of firefighting teams with members of the fire brigade, auxiliary members of the fire brigade and well-equipped fire engines before the dry season;
- (d) Ensure that respective ministries have practical fire safety and prevention plans for department-owned buildings, factories, warehouses and paddy and grain purchasing centres and carry out fire safety and fire prevention;
- (e) Ensure systematic urban planning in fire-prone areas to allow for easy access by fire engines and fire trucks and sufficient water supply;
- (f) Present to the respective ministries and make arrangements to provide basic fire fighting training for rural areas, preliminary basic fire fighting training, and advanced life-saving training to members of the fire brigade, auxiliary members of the fire brigade at the central fire services institute;
- (g) Ensure that respective ministries carry out inspection and supervision of state-owned and privately owned factories, workshops and enterprises that are prone to fire hazards on a continuous basis;
- (h) Coordinate with respective ministries to ensure that the Ministry of Construction and local administrative and management bodies work together to have fire safety and fire prevention measures, emergency exits and ladders integrated in the expansion of new towns, urbanization for higher living standards, construction of public buildings, such as advanced hospitals, schools and markets, factories,

cinemas, hotels, motels, factories set up with foreign investment, factories under various projects, workshops, and fire-prone enterprises;

- (i) Present to the Ministry of Home Affairs, Ministry of Energy, etc. and to take measures for the prevention of illegal transportation, transfer, storage and sale of various inflammable fuels such as kerosene, gasoline, methanol, diesel, natural gas;
- (j) Arrange with the Myanmar Insurance Enterprise for the widespread promotion of fire insurance in coordination with the Ministry of Finance and Revenue;
- (k) Take measures such as alerting the public to take precautionary measures for the prevention of fires, carrying out inspections, making recommendations and issuing instructions;
- (l) Prepare fire prevention plans and conduct fire fighting drills and rehearsals for staff;
- (m) Work with the Myanmar Police Force and the local authorities at all levels to prevent and take action against illegal transportation, transfer, storage and sale of various fuels such as kerosene, gasoline, methanol, diesel, natural gas;
- (n) Ensure that fire prevention measures are integrated in the construction of high-rise buildings in cities, public buildings, such as hospitals, schools and markets, factories, cinemas, hotels, motels, factories set up with foreign investment, factories under various projects, workshops, and fire-prone enterprises;
- (o) Ensure access to modern fire engines that can be used in fighting fires on the upper levels of high-rise buildings in cities;
- (p) Require passenger vehicles and fuel bowsers to carry foams or emergency fire extinguishers to guard against fire hazards;
- (q) Work with the Myanmar Electricity Enterprise to arrange inspections for potential fire hazards caused by tapping into power lines through various means to steal electricity and the use of illegal power lines set up by corrupt employees during times of insufficient electricity supply;
- (r) Work with the Township Fire Brigade to have a ward by ward list of streets put together that cannot provide easy access to fire engines, and coordinate with local authorities if necessary to have the streets widened;
- (s) Ensure the construction of fire hydrants and firefighting reservoirs by City Development Committee with the participation of the local population to supply sufficient water for firefighting;
- (t) Prepare fire prevention plans for each division, district, township, ward and village.

36. **Earthquakes.** The following preparedness measures should be taken.

- (a) Present earthquake preparedness measures to the National Committee for Natural Disaster Management and Inter-Ministerial Coordination Committee for Disaster Management and implement them;
- (b) Conduct radio and television broadcasts to educate the public for fire preparedness with the approval of the Inter-Ministerial Coordination Committee for Disaster

Management; carry out educational activities through newspapers, journals, magazines, pamphlets and billboards;

- (c) Ensure that information on earth quakes issued by the seismic measurement centres under the Ministry of Transport are transmitted to the public in real time.
- (d) Work with the Public Works Enterprise to ensure that earthquake resistance measures are integrated in the construction of ministry buildings, factories, workshops and warehouses, private buildings, and public buildings, such as hospitals, schools, cinemas, hotels, motels and markets in earthquake-prone areas through inspection and supervision;
- (e) Provide search and rescue training with the help of the ministries concerned and obtain advanced search and rescue vehicles and equipment under the arrangement of the ministries concerned to be able to launch search and rescue operations in the aftermath of earthquakes;
- (f) Provide inspection and supervision in the construction of storage facilities for inflammable and volatile materials such as fuel, gas or chemicals, factories and workshops to ensure that they are located away from the fault lines;
- (g) Work under the supervision and guidelines of the Coordination Committee for the prevention of flood and fire hazards in the aftermath of earthquakes;

Tasks to be performed during disasters

37. **Floods.** The following tasks should be performed during floods.

- (a) Report floods immediately to the National Committee for Natural Disaster Management and Inter-Ministerial Coordination Committee for Disaster Management;
- (b) Present to the Inter-Ministerial Coordination Committee for Disaster Management and the Sub-Committees concerned and carry out prompt evacuation to predetermined safe areas during floods;
- (c) Coordinate with departments, local and international NGOs to carry out emergency relief and advanced rescue operations in flood-affected areas;
- (d) Coordinate with departments and NGOs to set up flood-relief camps and provide victims with temporary accommodation, meals, health care and security in real time;
- (e) Provide prevention and health care services under the supervision and guidance of the Health Sub-Committee to prevent the outbreak of infectious diseases in flood-affected areas;
- (f) Work with the ministries concerned to compile lists on the loss of life, animals and property during floods;
- (g) Issue press releases through the radio, television, newspapers and journals and organize press conferences periodically to prevent the spread of undesirable rumours during floods;

- (h) Work with departments and NGOs for the prompt dissemination to the grassroots levels of the daily news reports issued by the Department of Meteorology and Hydrology during floods;
 - (i) Obtain expert appraisal of water inflows into the flood-affected areas and organize timely evacuation of people, animals and food supplies from low-lying areas to safe areas;
 - (j) Organize relief operations during floods, involving members of the fire brigade, Red Cross members and specialists;
 - (k) Assign security forces led by the Myanmar Police Force to evacuated areas to prevent looting of buildings and property by unscrupulous elements;
 - (l) Assign flood patrols to rivers, embankments, dams and irrigation ditches to monitor the potential for disaster continuously;
 - (m) Ensure access to necessary materials, equipment and machinery as well as manpower for emergency construction, reinforcement, repair and raising of embankments;
 - (n) Arrange for the temporary settlement of flood victims in predetermined shelter camps and provide meals, health care and security services.
38. **Storms.** The following tasks should be performed during storms.
- (a) Issue orders to ensure that the storm preparedness plan is implemented as soon as a storm warning is received;
 - (b) Ensure that the storm warnings issued on the radio and on television during storms reach the public;
 - (c) Organize emergency rescue teams to rescue victims from collapsed buildings and from boats and ships along the coast;
 - (d) Issue instructions to switch off the electricity supply during storms if necessary;
 - (e) Supervise the clearing of roads blocked with fallen trees by departments concerned using machinery and equipment to prevent disruption of transport;
 - (f) Make arrangements for the search and rescue of persons injured by fallen trees and collapsed buildings, provision of first aid and hospitalization;
 - (g) Make arrangements with security forces to prevent the looting of State-owned buildings, warehouses and privately owned businesses by unscrupulous elements.
39. **Fires.** The following tasks should be performed during fires.
- (a) Report the situation of the fire immediately to the National Committee for Natural Disaster Management and the Inter-Ministerial Coordination Committee for Disaster Management;
 - (b) Ensure coordination among the Department of Fire Services, other ministries and organizations concerned to extinguish the fire as quickly as possible;
 - (c) Carry out emergency rescue operations for people trapped in the buildings on fire;
 - (d) Carry out evacuation to safe areas as quickly as possible;

- (e) Take steps to prevent the spread of fire to adjacent towns, villages, wards and houses;
- (f) Work with the ministries concerned to collect data on loss and damage caused by fire and the victims made homeless with breakdowns according to age and households;
- (g) Work with departments concerned and NGOs to set up emergency shelters for fire victims and provide temporary accommodation, meals, health care and security services in real time;
- (h) Issue press releases through the radio, television, newspapers and journals periodically and organize press conferences when required to prevent the spread of undesirable rumours about the fire;
- (i) Report any fires immediately to the nearest fire station, various levels of Peace and Development Councils, Police Force and the Electricity Supply Department so that the electricity supply can be cut off immediately according to plan;
- (j) Take measures to prevent the spread of fire to other wards and houses;
- (k) Enforce security measures systematically to prevent looting and sabotage by unscrupulous elements;
- (l) Make arrangements to access fire engines from nearby townships when the locally available fire engines prove insufficient.

40. **Earthquakes.** The following tasks should be performed during earthquakes.

- (a) Report the situation of the earthquake immediately to the National Committee for Natural Disaster Management and the Inter-Ministerial Coordination Committee for Disaster Management;
- (b) Present immediately to the Inter-Ministerial Coordination Committee for Disaster Management and the Sub-Committees concerned and carry out search and rescue operations;
- (c) Take steps to conduct further rescue operations in case of flooding, fire and other hazards that often follow in the immediate aftermath of earthquakes;
- (d) Work with departments concerned and NGOs for prompt evacuation to safe areas as earthquakes are often followed by aftershocks;
- (e) Work with departments concerned and NGOs to set up emergency shelters for earthquake victims and provide temporary accommodation, meals, health care and security services in real time;
- (f) Work with the ministries concerned to collect data on loss and damage caused by the earthquake and the victims made homeless with breakdowns according to age and households;

Recovery and Rehabilitation Operations

41. **Floods.** The following tasks should be performed after floods.

- (a) Work with the ministries concerned to collect accurate data on the loss of life, loss of animals, damage and destruction to houses, State-owned and privately owned buildings and property, and other losses in flood-affected areas for submission to the National Committee for Natural Disaster Management and Inter-Ministerial Coordination Committee for Disaster Management;
- (b) Coordinate with the ministries concerned to provide survivors in flood-affected areas with the required accommodation, meals, health care, education and livelihood assistance;
- (c) Coordinate with the ministries and NGOs concerned for prompt repairs of communication systems, department buildings, public buildings such as markets, schools, hospitals, roads and bridges and religious buildings damaged by flooding as a priority;
- (d) Coordinate with the ministries and NGOs concerned to set up Homes for the protection of flood victims such as the elderly and the children who lost their homes;
- (e) Present to the Inter-Ministerial Coordination Committee for Disaster Management regarding the food supplies, water, medicine, consumer goods, clothing and funds donated by social welfare organizations, local and international NGOs, receive the donations and distribute them to affected families systematically;
- (f) Present to the Inter-Ministerial Coordination Committee for Disaster Management and its Sub-Committees and coordinate broadly with departments and NGOs to raise the morale of the people in flood-affected areas;
- (g) Work with the ministries concerned to reconstruct wells, ponds and lakes, reservoirs, dams and canals destroyed by floods and ensure an adequate supply of drinking water;
- (h) Work with the ministries concerned to enable the planting of suitable substitute crops for those destroyed by floods;
- (i) Coordinate with the Department of Basic Education to ensure continued education for school children from schools destroyed by floods;
- (j) Collect accurate data systematically on the acreage of crops destroyed by flooding and prepare a substitute crop plan for implementation;
- (k) Provide the required staff, supply of medicine and spray equipment to carry out the health care programmes for the flood-affected areas.

42. **Storms.** The following tasks should be performed after storms.

- (a) Collect data on the households and families affected by flooding and the number of people made homeless and submit a preliminary report to the Department of Relief and Resettlement as soon as possible;
- (b) Notify the public when the danger of the storm has passed and request machinery and equipment assistance from ministries concerned to clear the debris and carry out search and rescue operations;

- (c) Provide first aid to the injured persons and hospitalize them for medical treatment; carry out sanitation and sterilization for sources of drinking water wells and ponds;
 - (d) The protection committees that have been formed beforehand should provide supervision according to the action plan.
 - (e) Resettle storm victims in their homes and provide the necessary assistance for the repair of damaged homes;
 - (f) Seek the guidance of higher authorities regarding offers of funds and supplies to be donated from abroad and proceed in accordance with procedures;
43. **Fires.** The following tasks should be performed after fires.
- (a) Work with the ministries concerned to collect accurate data on the damage and loss caused by fire for submission to the Inter-Ministerial Coordination Committee for Disaster Management;
 - (b) Work with departments concerned and NGOs to set up emergency shelters for fire victims and provide meals, health care and security services;
 - (c) Coordinate with the ministries concerned to obtain supplies provided by the State for fire victims;
 - (d) Coordinate with the ministries concerned for resettlement and reconstruction of fire victims according to a town plan;
 - (e) Receive funds and supplies to be donated for fire victims by well-wishers within the country and abroad and distribute them systematically to fire victims;
 - (f) Coordinate with division authorities and organizations, ministries and NGOs for rapid recovery of fire victims;
 - (g) Make a rapid preliminary assessment of the fire hazard together with the loss and damage sustained for immediate submission to higher authorities;
 - (h) Set up shelter camps for fire victims in appropriate locations.
44. **Earthquakes.** The following tasks should be performed after earthquakes.
- (a) Work with the ministries concerned to collect accurate data on the loss and damage caused by the earthquake for submission to the National Committee for Natural Disaster Management and Inter-Ministerial Coordination Committee for Disaster Management;
 - (b) Work with ministries and NGOs to set up emergency shelters for earthquake victims and provide meals, health care and security services to affected households;
 - (c) Coordinate with the ministries concerned and NGOs to clear the earthquake-damaged or collapsed buildings, trees, lampposts, telephone lines and other debris;
 - (d) Coordinate with the ministries concerned and NGOs to restore electricity supply, communications and transportations;
 - (e) Present to the Inter-Ministerial Coordination Committee for Disaster Management and receive funds, foodstuff and supplies donated for earthquake victims by well-wishers from within the country and abroad and distribute them systematically;

- (f) Coordinate with the ministries concerned to ensure earthquake resistance in the resettlement of earthquake victims outside earthquake zones and in reconstruction work;
- (g) Set up advanced communication systems and news outlets in earthquake-affected areas for information dissemination in real time to prevent further loss or damage in the recovery and reconstruction phase as earthquakes are often followed by aftershocks;
- (h) Work to prevent the spread of undesirable rumours in earthquake-affected areas by helping news agencies to issue accurate news stories, set up earthquake warning systems, broadcast news on search and rescue and resettlement activities, support and donations, health care and security measures in real time for the information of earthquake victims;
- (i) Work to raise the morale of such earthquake victims as unaccompanied children, elderly persons and persons who became disabled due to injuries and set up Homes for them.

Administration

45. State/Division Natural Disaster Preparedness Management Committee should deploy special supervisory teams and People's Strength Teams to disaster-affected area if required to provide supervision for relief, support, resettlement and rehabilitation activities.

46. Natural Disaster Preparedness Management Committee and its Sub-Committees as well as various District and Township Committees should formulate preparedness plans for different types of disasters and conduct coordination, rehearsals and drills for the successful implementation of the plans.

47. Transport arrangements should be made to send relief teams together with relief supplies to all disaster-affected areas. (See Appendix F for the form to be used in requesting emergency assistance from central authorities and the departments concerned.)

48. The amount of fuel required for use in vehicles, equipment and machinery during natural disasters, in the post-disaster resettlement phase and in the search and rescue and support phase during natural disasters should be estimated and obtained beforehand and arrangements should be made for the transfer of the fuel to areas where it is needed.

49. Relief supplies for different types of the natural disasters should be stockpiled in dedicated warehouses to enable the distribution of food supplies, medicine and aid supplies to victims in a short period of time. (See for Appendix G for the Damage Assessment Form to be filled in and submitted to the central authorities so that the requirements can be fulfilled.)

50. Plans should be made for the evacuation of disaster victims to safe areas, for the provision of effective emergency medical treatment and for the transfer of patients in critical condition to hospitals. (A separate document has been submitted regarding the setting up of relief camps.)

Communications

51. The following measures should be carried out using the communication systems in normal use and the systems installed by the Emergency Communication Systems Installation Sub-Committee in normal times and during disasters.

- (a) Use telephones and facsimile machines for all communications among members of the State/Division Natural Disaster Preparedness Management Committee, the Sub-Committees, departments and NGOs;
- (b) Use communication devices and written communications for all communications among State/Division Natural Disaster Preparedness Management Committee and the District/Township Natural Disaster Preparedness Management Committees;
- (c) Conduct public education campaigns and disaster warnings through the use of loudspeakers, billboards and pamphlet distribution in districts, townships and villages; (Signalling flags to be flown in villages are shown in Appendix E.)
- (d) Designate equipment teams, terminology and emergency frequencies and arrange auxiliary communication equipment to ensure smooth communications from State/Division to District/Township using various communication equipment;
- (e) Make arrangements for communication by telephone in townships and villages where telephone communications are available and by messenger in areas without telephone communications;
- (f) Coordinate with Myanmar Communications Department to install emergency communication systems for use by members of the State/Division Natural Disaster Preparedness Management Committee and its Sub-Committees, departments and NGOs in addition to those for use in normal times.

Ministerial Management Committees

Ministry of Defence

Normal Times

52. **Ministry of Defence.** The following should be undertaken.

- (a) Designate a disaster communication focal point and notify all military units through division military commands;
- (b) Ensure that focal persons from the National Committee for Natural Disaster Management and those from the Ministry of Defence maintain contact and work together;
- (c) Form natural disaster protection committees at all the headquarters.
- (d) In areas vulnerable to cyclones, floods, tsunami and dam failure due to earthquakes, draw up appropriate plans before the disaster season for the transportation of people and properties using vehicles owned by the respective military units if evacuation becomes necessary for their safety.

- (e) Coordinate with the combat units of the Armed Forces (Army, Navy and Air Force) for early warning, evacuation to safe areas and relief and rehabilitation and form coordination teams in military units for effective coordination;
- (f) Organize and obtain the necessary equipment for public safety and search and rescue and inspect the preparedness of military units under the Ministry of Defence continually;
- (g) Ensure awareness of and knowledge on natural disaster management and natural disasters such as floods, river erosion, earthquakes and storms;
- (h) Conduct rehearsals and drills in the Armed Forces for natural disaster protection and management;
- (i) Allocate and disburse funds systematically for natural disaster response based on the decision of the Natural Disaster Preparedness Central Committee;
- (j) Include protection against natural disasters as a subject taught at the training institutes of the Armed Forces (Army, Navy and Air Force);
- (k) Identify areas vulnerable to natural disasters such as floods, river erosion, earthquakes and storms, and supervise the construction of disaster-resistant buildings, shelters and accommodation for families of military personnel in case of dam failure due to earthquake;

53. **The Armed Forces (Army)** should undertake the following:

- (a) Earmark transport vehicles from the logistics and other units under the Division Command Headquarters for sustained relief operations and projects;
- (b) Provide training on natural disaster management to officers and personnel at all training institutes;
- (c) Conduct drills for natural disaster preparedness and response;
- (d) Work together with the National Disaster Preparedness Central Committee and the Department of Meteorology and Hydrology;
- (e) Put in place the infrastructure necessary for protection against natural disaster and relief operations;
- (f) Prepare a plan of action for protection against natural disasters;
- (g) Form natural disaster protection committees at Division Command Headquarters;
- (h) Keep the necessary equipment for search and rescue operations in readiness;
- (i) Hold discussion sessions in military units for awareness-raising of military personnel's families on natural disasters.

54. **The Armed Forces (Navy)** should undertake the following:

- (a) Ensure that naval bases coordinate with the Department of Meteorology and Hydrology, Ministry of Defence, Office of the Commander-in-Chief (Army) and Office of the Commander-in-Chief (Navy) to receive storm and tsunami warning signals and indications and programmes;

- (b) Put in place a water transport system that can be used for relief and rehabilitation operations in case of floods, destruction and losses caused by storms and tsunami;
- (c) Provide training and educate officers and personnel for relief and rehabilitation operations;
- (d) Prepare a plan to cope with the impact of natural disasters taking into consideration the safety of naval vessels and installed equipment, officers and personnel;
- (e) Ensure that naval bases have contingency plans and practical action plans for different types of natural disasters prioritizing vulnerable areas, review the plans and make improvements, and provide training if required;
- (f) Secure vessels in groups during storms and tsunami to prevent losses and damage and carry out regular inspection and replacement of docking ropes and anchor chains;
- (g) Designate emergency anchor points and ensure systematic waterway traffic through inspection groups for waterways supervision;
- (h) Make necessary preparations in disaster-prone areas for the evacuation people including families of military personnel to safe areas, for search and rescue, and for recovery and rehabilitation.

55. **The Armed Forces (Air Force)** should undertake the following:

- (a) Ensure that Air Bases and Air Force Units conduct a regular collection of data on natural disasters and report findings;
- (b) Map the disaster impact situation together with the latest updates and compile information on airfields and helipads;
- (c) Make prior arrangements for the collection of weather news from various departments through various means;
- (d) Prepare action plans for protection of aircraft, helicopters, equipment, machinery, and buildings against natural disasters;
- (e) Ensure that air-to-air and air-to-ground communication systems and backup systems are in good working order;
- (f) Make plans to make effective use of flexibility and mobility, the special characteristics of the Air Force;

Alert and Warning Stage

56. **The Ministry of Defence** should undertake the following.

- (a) Set up round-the-clock control centres at the Division Command Headquarters to provide supervision;
- (b) Issue hourly updates on warnings to the military unit level;
- (c) Ensure that families of military personnel have access to natural disaster news carried by national daily newspapers, television and radio;

- (d) Collect news and information on natural disasters from the Department of Meteorology and Hydrology and disseminate it throughout the Armed Forces;
- (e) Prepare an action plan for surface and air transport to enable evacuation of people and priority items from disaster-affected areas;
- (f) Assist the public in evacuations;
- (g) Ensure that the Navy, Air Force and Division Command Headquarters have prepared disaster calendar, hazard maps, risk maps for each storm and disaster season;

57. **The Armed Forces (Army)** should undertake the following:

- (a) Issue disaster warnings to all commands that are affected, issue orders for rapid mobilization of armed forces personnel, and carry out evacuation of armed forces personnel's families and provision of shelter in safe areas;
- (b) Serve as a supervisory body for natural disasters and form working groups in organizations with representatives from the infantry, communication corps, engineering corps, medical corps, military police, Directorate of Resettlement, Directorate of Public Relations and Psychological Warfare, and the Directorate of Supply and Transport;
- (c) The Directorate of Communications should set up communication outposts and take measures to prevent disruptions of communications;
- (d) The Directorate of Medical Corps should form medical teams consisting of doctors and nurses, medical supplies and medicine.
- (e) Military units under the Directorate of Public Relations and Psychological Warfare should educate the people and the armed forces personnel by distributing pamphlets and broadcasting educational programmes on television;
- (f) The Directorate of Engineering Corps should form engineering units and supply them with equipment required for search and rescue operations as well as construction equipment and machinery;
- (g) Keep vehicles, drivers and fuel in readiness for transport duty;
- (h) Form backup teams and deploy them to different areas as required;
- (i) Evacuate families of military personnel, the public and the priority items from disaster-prone areas to safe locations in a timely manner.

58. **The Armed Forces (Navy)** should undertake the following:

- (a) Issue warning orders to all Naval Bases;
- (b) Set up natural disaster management centres at Naval Bases and designate duty officers for liaison with the Ministry of Defence, Office of the Commander-in-Chief (Army) and Office of the Commander-in-Chief (Navy);
- (c) Take necessary measures for the safety of naval vessels and installed equipment, officers and personnel in disaster-prone areas;
- (d) Set up an effective information dissemination network for natural disasters;

- (e) Move vessels that have their own power to safe locations outside the vulnerable area and dock or beach those that are not sufficiently robust;
- (f) Evacuate the military personnel's families and the public to safe areas beforehand.

59. **The Armed Forces (Air Force)** should undertake the following:

- (a) Issue early warning and directives to Air Base and Air Force Units as weather news and news and information on natural disasters are received;
- (b) Set up natural disaster management centres at Air Bases and designate duty officers for liaison with the Ministry of Defence, Office of the Commander-in-Chief (Army) and Office of the Commander-in-Chief (Navy);
- (c) Evacuate the military personnel's families, the public and priority items from disaster-affected areas to safe locations beforehand;
- (d) Take necessary measures for the safety of aircraft, helicopters and installed equipment, officers and personnel in disaster-prone areas;
- (e) Move aircraft and helicopters from disaster-prone areas to safer locations;
- (f) Assign duties and keep aircraft and helicopters on standby for transport of priority equipment and machinery and personnel;
- (g) Exchange information with other departments;

During Natural Disasters

60. **The Ministry of Defence** should undertake the following.

- (a) Monitor the natural disaster situation continuously;
- (b) Assign relief and rehabilitation duties to Military Command Headquarters depending on the natural disaster situation;
- (c) Take measures to enable the transmission of guidance and messages among the Office of the Commander-in-Chief (Army, Navy, Air Force), Military Command Headquarters and local authorities during natural disasters;
- (d) Inspect the formation of committees in headquarters and the natural disaster protection activities of the committees and provide guidance;
- (e) Provide coordination for local authorities depending on the situation of disaster-prone areas.

61. **The Armed Forces (Army)** should undertake the following:

- (a) Forward the news and information on the weather obtained by the Division Command Headquarters to the Office of the Commander-in-Chief (Army) to supplement the informations available to the Department of Meteorology and Hydrology;
- (b) Send relief teams to disaster-affected areas depending on the type of the disaster in coordination with the Natural Disaster Preparedness Central Committee, Ministry of Social Welfare, Relief and Resettlement, Ministry of Defence and Ministry of Home Affairs;

- (c) Assist in search and rescue operations in disaster-affected areas;
- (d) Keep members of the supervisory office for natural disasters on 24-hour stand-by at military units and the headquarters;
- (e) Deploy trained search and rescue teams to disaster-affected areas;
- (f) Assist local authorities with search and rescue activities in disaster-affected areas

62. **The Armed Forces (Navy)** should undertake the following:

- (a) Assign officers and personnel as required to natural disaster management centres at Naval Bases;
- (b) Launch search and rescue operations without delay;
- (c) Take all possible security measures in coordination with local authorities;
- (d) Deploy vessels to disaster-affected areas and carry out relief operations when weather conditions improve and transport becomes possible as directed by the Office of the Commander-in-Chief (Navy);
- (e) Provide assistance to the local authorities and the public as directed by the Naval Bases;
- (f) Submit regular work reports to the Office of the Commander-in-Chief (Navy) and the Office of the Commander-in-Chief (Army);

63. **The Armed Forces (Air Force)** should undertake the following:

- (a) Monitor the natural disaster situation continuously;
- (b) Keep the aircraft/helicopters at the ready for an assessment of the natural disaster impact and the rapid launch of relief operations;
- (c) Expedite rescue operations as directed by the Ministry of Defence;
- (d) Assign officers and personnel as required to natural disaster management centres at Air Bases;
- (e) Launch search and rescue operations without delay;
- (f) Take all possible security measures in coordination with local authorities;
- (g) Deploy aircraft and helicopters to disaster-affected areas and carry out relief operations when weather conditions improve and transport becomes possible as directed by the Office of the Commander-in-Chief (Air Force);
- (h) Provide assistance to the local authorities and the public as directed by the Office of the Commander-in-Chief (Air Force);
- (i) Submit regular work reports to the Office of the Commander-in-Chief (Air Force) and the Office of the Commander-in-Chief (Army).

Relief and Rehabilitation Stage

64. The Ministry of Defence should undertake the following.

- (a) Take measures for recovery of military personnel's families in terms of food and accommodation;

- (b) Conduct field assessments in disaster-affected areas to identify requirements for relief and rehabilitation;
 - (c) Provide assistance in removing dead bodies and debris in affected areas and improving the environment;
 - (d) Assist local administration for ensuring arrangement of pure drinking water;
 - (e) Set up field hospitals, if required;
 - (f) Assist the disaster victims with the construction of temporary shelters;
 - (g) Document the disaster and prepare a case analysis;
 - (h) Assist in setting up relief camps and providing immediate access to shelter, food, water, clothing and essential services as a priority to ensure survival;
65. The Armed Forces (Army) should undertake the following:
- (a) Provide medical services to villages and remote areas through the specialist teams, mobile medical teams and hospital ships arranged by the Directorate of Medical Corps;
 - (b) Carry out sanitation of wells and ponds, addition of anti-septics, installation of water purifiers, and spraying insecticide against mosquitoes and flies to prevent infectious diseases such as diarrhea, dysentery, haemorrhagic dengue fever, malaria;
 - (c) Ensure systematic sewage and waste disposal, and raise awareness on health matters with the participation of the public;
 - (d) Coordinate with military units under the Directorate of Communications and the ministry concerned to remove fallen trees, collapsed lampposts, power lines, telephone cables and wires from roads after a storm;
 - (e) Ensure that local area commanders take recovery and rehabilitation measures and provide supervision and support for rehabilitation of livelihood activities such as farming, livestock-breeding and fisheries;
 - (f) Ensure that military units provide sufficient food supplies and meal allowances to military and police personnel;
 - (g) Provide assistance and participate in conducting a survey of the loss and destruction and the requirements for relief and rehabilitation in disaster-affected areas;
 - (h) Assist the local authorities in providing disaster victims with access to food supplies and clean drinking water;
 - (i) Participate in relief and rehabilitation activities if requested by the township administrative bodies;
 - (j) Designate a liaison officer to ensure friendly cooperation among military units and other organizations taking part in relief operations and participate in the relief operations if required.

66. The Armed Forces (Navy) should undertake the following:
- (a) Take measures for recovery of naval personnel's families in terms of food and accommodation;
 - (b) Provide all possible assistance to the authorities concerned for relief and rehabilitation programmes in disaster-affected areas;
 - (c) Provide assistance to the authorities concerned for the distribution of relief supplies in disaster-affected areas.
67. The Armed Forces (Air Force) should undertake the following:
- (a) Take aerial photographs of the disaster-affected area for impact assessment and conduct aerial patrols as directed by the Ministry of Defence;
 - (b) Deploy aircraft/helicopters for search and rescue of disaster victims and removal and evacuation of patients to safe locations;
 - (c) Deploy aircraft/helicopters to transport responsible persons, journalists, diplomats and persons from other organizations for field tours;
 - (d) Deliver relief supplies, medicines, food supplies and relief teams to the disaster-affected areas;
 - (e) Designate liaison officers for crew of aircraft carrying relief teams from friendly countries;
 - (f) Deploy officers and personnel from the Air Force to disaster-affected areas for rehabilitation work;
 - (g) Perform other functions as directed by the Ministry of Defence;
 - (h) Keep detailed records of disaster protection activities and review them to learn lessons;
 - (i) Take measures for recovery of military personnel's families in terms of food and accommodation.

Ministry of Social Welfare, Relief and Resettlement

Ministerial Committee for Natural Disaster Management

68. **Formation.** The Ministerial Committee for Natural Disaster Management is chaired by the Minister and the heads of departments concerned serve as members.

69. **Functions.** The Ministry of Social Welfare, Relief and Resettlement is the focal ministry of the government for matters related to natural disasters. The Ministry serves as a source of required information and data in normal times, at the alert and warning stage and during natural disasters, submits news and information to the National Disaster Preparedness Central Committee and National Disaster Preparedness Management Working Committee and assists in decision-making. It also provides supervision to departments participating directly or indirectly in emergency relief operations.

70. **Functions and Responsibilities during normal times.** The Minister, Deputy Minister and the departmental heads of the Ministry of Social Welfare, Relief and Resettlement have the following functions and responsibilities during normal times.

(j) Minister

- a. Submit recommendations to the Government concerning tasks for protection against the impact of natural disasters;
- b. Liaise and Coordinate with other Governmental Organizations, aid organizations, NGOs and volunteer organizations;
- c. Organize meetings to enable the National Disaster Preparedness Central Committee and National Disaster Preparedness Management Working Committee to review the natural disaster preparedness work carried out by ministries, organizations, local bodies, NGOs, INGOs;
- d. Issue and distribute standing orders related to the relevant directives of the National Disaster Preparedness Central Committee;
- e. Propose, prepare, modify or adapt disaster-related legislation and issue directives;
- f. Set up an emergency centre that utilizes advanced communication technologies to share information with other GOs and NGOs at the national level;
- g. Present plans for reduction in the potential loss of life and property during disasters and their implementation as well as disaster response and mitigation of disaster impact to the National Disaster Preparedness Central Committee so that unnecessary obstacles can be removed;
- h. Work with the Ministry of Education to incorporate topics on natural disasters into the curricula of schools and colleges;
- i. Supervise the preparation and implementation of natural disaster management at the local and national level;
- j. Relax provisions that cause delays in relief operations and the distribution of supplies in the interests of the public.

(k) Deputy Minister

- a. Conduct a quarterly review of the Ministry's disaster management work for submission to the Minister;
- b. Identify disaster-prone areas, vulnerable areas and the population likely to be affected by the disaster;
- c. Maintain an updated list of foreign and private organizations willing to participate in the disaster preparedness, emergency response and rehabilitation programmes;
- d. Compile information and data on food supplies, relief materials and transports for submission to the Minister in order that they can be utilized during disasters;

- e. Ensure the availability of Standing Orders at State/Division, District, Township and Village levels;
 - f. Make arrangements for communications among the Ministry, States/Divisions and Districts;
 - g. Organize educational activities to raise awareness of people, government employees and other actors and mitigate the impact of disasters;
 - h. Work with government employees, other ministries, organizations, local authorities, training teams and NGOs to conduct natural disaster management courses;
 - i. Distribute publications, maps and other information related to natural disasters to National Disaster Preparedness Management Working Sub-Committees and organizations involved in disaster preparedness;
 - j. Make a list of shelters against natural disasters and buildings on higher ground including ownership and location details for submission to the Minister;
 - k. Coordinate and discuss the activities of NGOs;
 - l. Include public awareness programmes in the radio and television programming;
 - m. Disseminate weather warnings to the public;
 - n. Organize national level meetings, seminars and workshops for greater public awareness of natural disasters;
 - o. Conduct research on natural disaster preparedness.
- (l) Director General: The Director Generals should undertake the following:
- a. Action plans should be put in place to be prepared for future disasters even though currently there is no threat of natural disasters;
 - b. Present the natural disaster action plans to the Minister's Office and revise as necessary;
 - c. Supervise the preparation and implementation of concrete plans in coordination with ministries regarding actions to be taken during disasters;
 - d. Study international disaster preparedness activities and formulate plans well suited to our country;
 - e. Take preparedness and prevention measures before natural disasters strike in coordination with ministries with the Minister's approval and provide supervision;
 - f. Make prior arrangements with organizations willing to participate in carrying out the tasks set by the National Disaster Preparedness Central Committee;
 - g. Make arrangements to educate the public on disaster preparedness, provide training and conduct rehearsals and drills if required;
 - h. Make systematic arrangements to stockpile and distribute relief supplies as part of natural disaster preparedness;

- i. Coordinate with international organizations for access to training on national natural disaster preparedness, management, prevention and mitigation conducted by them, as such training provides participants with good experience;
- j. Organize preparedness activities continuously in disaster-prone areas;
- k. Identify shelters and safe locations and prepare evacuation plans with local authorities;
- l. Conduct educational activities such as seminars, meetings, posters, pamphlets, films and plays to raise public awareness on natural disaster risks with the approval of the National Disaster Preparedness Central Committee;
- m. Make arrangements to issue timely weather forecasts in coordination with the Department of Meteorology and Hydrology;
- n. Obtain approval from the National Disaster Preparedness Central Committee through the Minister's Office to designate officials in charge of natural disasters in States/Divisions
- o. Take measures to involve the the public, government employees and other actors in impact mitigation during natural disasters;
- p. Issue and distribute Standing Orders related to the national programme for natural disaster preparedness and other relevant guidelines;
- q. Assist in the preparation and implementation of national natural disaster management activities;
- r. Obtain the cooperation of government employees, NGOs and local authorities to conduct training on natural disaster management;
- s. Provide coordination and supervision for NGO activities;
- t. Conduct research programmes on natural disaster management;
- u. Undertake relief activities during natural disasters, reporting to the Ministry of Social Welfare, Relief and Resettlement;
- v. Conduct practice sessions and drills for life-saving and prompt clearing of debris and blockages in order to minimize losses;
- w. Make arrangements for the systematic and timely delivery of aid supplies and relief supplies to victims;
- x. Form joint teams for search and rescue activities consisting of core and auxiliary members of the fire brigade and other organizations in all areas in coordination with authorities concerned;
- y. Issue instructions to training schools/small departments under the Department of Social Welfare to ensure strict compliance with the orders and directives of the ministries and departments concerned on natural disaster preparedness;
- z. Take necessary steps to ensure protection for children, the elderly, women and the disabled.

Functions and Responsibilities at the Alert/Warning Stage

71. The Minister, Deputy Minister and the departmental heads of the Ministry of Social Welfare, Relief and Resettlement have the following functions and responsibilities at the Alert/Warning Stage.

(a) Minister

1. Keep the emergency centre open day and night;
2. Designate a focal person at the Ministry and make his or her position and telephone number known to all concerned;
3. Issue orders to deliver relief supplies to affected areas and keep means of transport at the ready;
4. Issue orders for direct contact with the Department of Meteorology and Hydrology and compilation of the necessary warnings;
5. Report to the Chairman of the National Disaster Preparedness Central Committee, Prime Minister and the Chairman of the National Disaster Preparedness Management Working Committee, Secretary 1 on the natural disaster situation and the disaster response;
6. Make arrangements to have helicopters, transport aircraft, ships for inland water transport and motor vehicles at the ready for impact surveillance and rescue operations;
7. Issue instructions for evacuation to safe locations;
8. Organize meetings of the National Disaster Preparedness Central Committee and the National Disaster Preparedness Management Working Committee;
9. Coordinate with the Ministry of Home Affairs to issue instructions to the local administrative bodies for evacuation of people from disaster-prone areas to safe locations in consultation with the Department of Meteorology and Hydrology;
10. Instruct the local authorities to request emergency assistance when required as described in Appendix F;
11. Make arrangements for repeated broadcasts of disaster warnings and weather news on Voice of Myanmar, Radio and Television;
12. Coordinate daily press releases during disasters for the international media;
13. Ensure that the Ministry of Social Welfare, Relief and Resettlement is able to provide assistance in disaster-affected areas through the strength of various organizations and local organizations;
14. Coordinate with other organizations to ensure effectiveness of the emergency centre;
15. Supervise the conduct of State/Division Disaster Preparedness Committee meetings.

(b) Deputy Minister

1. Inspect compliance with the warnings and directives on natural disasters on behalf of the Minister;
2. Present to the Minister and fulfil requirements for relief and aid operations in coordination with local authorities in disaster-prone areas;
3. Take further steps on behalf of the Minister in disaster-prone areas after the warning or directive has been issued;
4. Take steps to reduce the loss of life and property in coordination with other ministries after disaster warnings and alerts have been issued;
5. Inspect and supervise to ensure that relief supplies are delivered to disaster-prone areas in sufficient quantities;
6. Present to the Minister to enable the formation of a natural disaster office;
7. Present to the Minister the participation of the ministries, NGOs and international organizations under the arrangement of the National Disaster Preparedness Central Committee after the alert/warning order has been issued;
8. Present to the Minister a detailed list of helicopters, ships, motor vehicles and other support materials required for relief operations.

(c) Director Generals should undertake the following tasks.

1. Keep the relief operations central committee office open round the clock;
2. Coordinate with ministries to deliver relief supplies to affected areas and keep means of transport at the ready;
3. Compile the news and warnings released by the Department of Meteorology and Hydrology and issue the required orders;
4. Ensure that vessels from the Armed Forces and Inland Water Transport are at the ready for relief operations;
5. Coordinate with the local authorities for the means of transport required for relief operations;
6. Make arrangements for access to relief supplies required for disaster-prone areas;
7. Provide assistance to volunteer groups and other NGOs;
8. Ensure that preparedness and prevention activities, educational activities are carried out continually in areas vulnerable to fire hazards;
9. Ensure that information and data on other potential natural disasters are collected in coordination with the organizations concerned and that all areas are alerted;
10. Organize the core and auxiliary members of the fire brigade and carry out evacuation and removal of people and property, cattle and animals to safe locations, in addition to alerting the population;

11. Organize volunteers for the evacuation of previously identified groups needing protection such as unaccompanied and separated children, elderly persons, the disabled and women;
12. Coordinate and cooperate with the local authorities concerned as well as with UN agencies, international NGOs and NGOs for emergency operations in accordance with the permissions given.

72. **Functions and Responsibilities during natural disasters.** The Minister, Deputy Minister and the departmental heads of the Ministry of Social Welfare, Relief and Resettlement have the following functions and responsibilities during natural disasters.

(a) Minister

1. Carry out field work and direct the subordinate departments to carry out field work depending on the extent of the loss and damage in disaster-affected areas;
2. Make arrangements to have helicopters, aircraft, ships and motor vehicles at the ready in order to carry out storm damage assessment and begin relief operations as soon as the weather conditions permit;
3. Coordinate with NGOs for relief operations and enable the participation of the Armed Forces and the Myanmar Police Force;
4. Organize meetings of the National Disaster Preparedness Central Committee and the National Disaster Preparedness Management Working Committee;
5. Undertake fund-raising and supply replenishment for relief and resettlement operations;
6. Provide supervision for prompt collection, systematic reception and rapid distribution of funds and relief supplies donated by well-wishers from within the country and abroad.

(b) Deputy Minister

1. Travel to the field in disaster-affected areas and provide close supervision for relief and resettlement operations;
2. Form teams to carry out preliminary assessment of loss and damage and present the findings to the Minister;
3. Monitor the progress of relief and resettlement operations and identify issues and requirements, obtaining the commitment of the organizations concerned;
4. Share the information required by economic organizations, the Ministry of Information, foreign organizations and NGOs;
5. Inspect and supervise to ensure that relief supplies are available in disaster-prone areas in sufficient quantities;
6. Obtain approval to have the Armed Forces vehicles at the ready to identify the loss and damage caused by the natural disaster and carry out relief operations;
7. Coordinate with local authorities to provide assistance to the members of the Armed Forces involved in relief operations;

8. Cooperate with NGOs for relief operations;
9. Organize meetings to ensure coordination and cooperation among the National Disaster Preparedness Central Committee, Work Committees and the ministries;
10. Collect information on the loss and damage sustained;
11. Submit recommendations to the Minister concerning additional funds and supplies required for relief and resettlement operations;
12. Raise donations and relief supplies speedily from within the country and abroad.

(c) Director Generals should undertake the following.

1. Set up an intra-departmental supervisory office for emergency operations. Submit Appendix F emergency requests from towns and villages to the Central Committee immediately and perform the required coordination;
2. Implement planned relief operations in disaster-affected areas;
3. Request relief supplies with Appendix F and work with ministries and NGOs for their timely delivery;
4. Made recommendations on moving the population to shelters after an evacuation order has been issued and provide assistance in the evacuation;
5. Manage funds donated for emergency relief in accordance with the guidance of the Ministerial Management Committee;
6. Ensure the security of donated materials;
7. Work with the ministries concerned for the clearance at the airport or harbour of donated items from the international community;
8. Undertake implementation work in the assigned area as a member of the natural disaster management committee;
9. Organize life-saving rescue for victims and removal of vulnerable buildings with minimum loss or damage;
10. Ensure the timely delivery of food, clothing and other aid supplies to victims;
11. Coordinate with authorities to set up disaster camps as soon as possible;
12. Ensure timely collection and submission of data on victims, families, loss and damage sustained, deaths and injuries;
13. Carry out disaster response from beginning to end, making the best possible efforts;
14. Ensure the evacuation of groups in need of protection and provision of the required assistance through social welfare and volunteer groups previously formed by Department of Social Welfare;

15. Work with the local authorities concerned for the participation of the Department of Social Welfare in relief operations and provision of immediate requirements;
16. Work with the National Disaster Preparedness Central Committee and other organizations to provide and receive technical recommendations.

73. **Functions and Responsibilities at the rehabilitation stage.** The Minister, Deputy Minister and the departmental heads of the Ministry of Social Welfare, Relief and Resettlement have the following functions and responsibilities at the rehabilitation stage.

(a) Minister

1. Take steps for rehabilitation and reconstruction of housing, relief from mental distress, provision of food supplies and livelihood rehabilitation;
2. Work with the ministries and NGOs for emergency rehabilitation of disaster-affected areas restoring normal conditions;
3. Identify and utilize means for future disaster risk reduction in carrying out rehabilitation programmes;
4. Coordinate to raise funds and obtain aid supplies for relief operations;
5. Select areas outside disaster zones for construction of housing, arranging relocation where required;
6. Select areas outside disaster zones and relocate buildings with the support of well-wishers from within the country and abroad;
7. Plan for future disaster preparedness and safety in the reconstruction of buildings;
8. Ensure livelihood recovery for people in disaster-affected areas as soon as possible;
9. Work to complete rehabilitation efforts in the shortest possible time.

(b) Deputy Minister

1. Work for rehabilitation of housing, education, health services and livelihood;
2. Continue emergency rehabilitation activities in disaster-affected areas until normal conditions are restored;
3. Cooperate with other ministries, companies and organizations to implement rehabilitation programmes;
4. Obtain cooperation from domestic business persons and professionals for rehabilitation work;
5. Share information and data on disaster preparedness in rehabilitation programmes with the authorities concerned;
6. Present to the Minister and carry out a review of management steps in emergency disaster response, prepare reports based on the experience and knowledge gained for publication and make necessary revisions for future policy, programmes and training activities;

(c) Director Generals should undertake the following.

1. Perform rehabilitation activities in disaster-affected areas until normal conditions are restored;
2. Ensure rapid delivery of construction materials, relief supplies and other supplies using the delegated authority;
3. Continue resettlement work, which is of vital importance;
4. Work with the respective ministries for health, education and construction activities;
5. Work with the engineering teams to obtain designs and calculations for rehabilitation;
6. Form teams and implement roads, bridges and infrastructure restoration depending on priority to prevent disruptions in transportation;
7. Work for the selection of appropriate locations and the construction of safe shelters for use during future natural disasters such as storms;
8. Ensure the systematic supply of water, food and medicine as described in the project;
9. Conduct awareness training, discussions and distribution of pamphlets for health matters for the disaster-affected population in cooperation with the local authorities and local health department;
10. Stockpile tents, medicines and emergency food supplies in warehouses for relief supplies in disaster-prone areas;
11. Participate in the relief and rehabilitation projects as formulated by the National Disaster Preparedness Central Committee;
12. Participate in activities to provide moral support to victims in disaster-affected areas, such as talks, discussions and encouragement;
13. Provide assistance and support in reconstruction so that the weaknesses of disaster-affected areas can be turned into strengths;
14. Coordinate with local authorities for a quick removal of debris and dead bodies in affected areas;
15. Ensure that assistance is provided to reunite missing and separated persons with their parents.
16. Provide necessary assistance to enable children in disaster-affected areas to return to school and work with the social welfare organizations to enable orphaned children to continue their education.

Ministry of Health

Ministerial Committee for Natural Disaster Management

74. **Formation.** The Ministerial Committee for Natural Disaster Management is chaired by the Minister and the heads of departments concerned serve as members.

75. Structures for disaster preparedness and response are formed at the following levels.

(a) Health Sub-Committee (Central Level)

(b) State/Division Level

(c) District/Township Level

76. At each level mentioned above, there is a chronological division into the alert/warning stage, disaster stage and relief and resettlement stage.

(a) Health Sub-Committee (Central Level) disaster preparedness and response

1. Alert/Warning Stage

(aa) Perform implementation work in line with the guidance of the National Disaster Preparedness Central Committee;

(bb) Ensure that departments under the Ministry of Health provide guidance and policies for central, State/Division, township level implementation;

(cc) Lay down policies and provide guidance to transfer human resources from other states and divisions and deploy them to disaster-affected areas during disasters;

(dd) Calculate estimates of medicine needed for treatment and disease prevention in disaster-prone areas, materials needed for the construction of clinics, other requirements such as canvas tents, life jackets, laboratory equipment, X-ray equipment, generators, etc.; manage their stockpiling, and providing guidance for their warehousing and distribution;

(ee) Coordinate with UN agencies, NGOs and mobilize resources for required operations;

(ff) Receive diplomats, UN agencies, NGOs and foreign organizations and report to higher authorities;

(gg) Ensure inter-departmental coordination where required;

(hh) Coordinate with and receive guidance from the Ministry for access to Armed Forces helicopters, vessels and motor vehicles for search and rescue operations for survivors in the immediate post-disaster period;

(ii) Coordinate with the Myanmar Red Cross Society and provide guidance for cooperation;

(jj) Provide guidance and technical expertise to State/Division levels for the identification of disaster-prone areas;

(kk) Conduct training on and manage disaster preparedness and response in States/Divisions, townships and villages;

- (ll) Conduct workshops natural disasters with partner organizations for an exchange of experience;
- (mm) Maintain an updated database of human resources for natural disaster response (treatment, public health, management);
- (nn) Educate the public through mass media and other communication channels;
- (oo) Calculate and present estimates for motor vehicle and communication equipment (such as mobile phones) requirements during natural disasters;
- (pp) Prepare and produce guidelines and forms for use during natural disasters;
- (qq) Provide guidance for field work in States/Divisions and Townships;

2. Disaster Stage

- (aa) Prepare an appropriate venue for the Flood Supervisory Office of the Health Sub-Committee and keep the natural disaster supervisory office operating round the clock;
- (bb) Designate a senior official as a focal person to implement the guidance of the Chairman and Secretary of the Health Sub-Committee;
- (cc) Designate State/Division level focal persons for information sharing and submission to higher authorities;
- (dd) Create a communications network for use by the National Disaster Preparedness Central Committee and the State/Division, District, Township level Disaster Preparedness and Health Care Committees;
- (ee) Obtain regular updates on storms and floods from the Department of Meteorology and Hydrology and share information on weather conditions with the States/Divisions and Townships concerned if required;
- (ff) Give instructions for the formation of medical teams with the required health staff and medical supplies, coordinate for the advance delivery of medical supplies to some areas and make arrangements to send staff and medical supplies to affected areas as soon as possible;
- (gg) Collect data on the damage sustained at the hospitals, clinics and rural health centres from the townships and submit to the centre, with monthly updates on completed repairs and those that remains to be completed;
- (hh) Make arrangements and give instructions for the collection of daily surveillance information on infectious diseases from the townships and for appropriate response;
- (ii) Ensure coordination to carry out laboratory tests for confirmation of infectious diseases;
- (jj) Supervise and coordinate technical cooperation among domestic NGOs;
- (kk) Supervise to ensure compliance with the instructions from the central authority on the storage and utilization of medical supplies in townships;

- (ll) Ensure coordination to enable the transfer of patients in critical condition to more advanced hospitals;
 - (mm) Coordinate with local authorities for smooth administrative procedures concerning clinics operated by international medical teams;
 - (nn) Provide coordination, support, supervision and guidance to normalize health care services;
 - (oo) Compile daily updates on the occurrence of diseases in different township, unusual developments and the responses made for submission to the central authority; and submit weekly consolidated data according to epidemiological week on the occurrence of designated infectious diseases and deaths in addition to daily records;
 - (pp) Maintain records of reports for each State/Division.
- (c) District/Township Level disaster preparedness and response

1. Alert/Warning Stage

- (aa) Set up "Natural Disaster Preparedness Health Care Committee" (district and township level) for natural disaster response and management, prepare a detailed action plan and conduct rehearsals and drills;
- (bb) Compile a chronological record of previous natural disasters and identify disaster-prone areas (villages) with the technical support from the Central and State/Division levels;
- (cc) Perform regular inspections on the robustness of the hospitals, clinics and rural health centres and arrange repairs or maintenance as required;
- (dd) Prop up or move or fell trees that may collapse onto hospitals and clinics;
- (ee) Plant rows of windbreakers next to hospitals and clinics to reduce exposure to strong winds;
- (ff) Construct sturdy tanks for drinking water and rain water reservoirs for emergency use, and install covers and lids to prevent mosquito breeding;
- (gg) Ensure mobility of medical services during natural disasters by designating coverage areas in consultation with local authorities concerned;
- (hh) Identify health issues and draw up an action plan to prevent or reduce the loss of important records and data during natural disasters, mentioning the priority status for each, and including water and moisture proofing measures for important equipment such as X-rays equipment and generators;
- (ii) Conduct training in townships and villages on disaster preparedness and response, to be able to address potential health issues;
- (jj) Calculate the type and number of health staff required for different natural disasters for inclusion in the action plan;

- (kk) Estimate the requirements of essential drugs and present to the central level through the State/Division level;
- (ll) Request temporary tents from the central level to set up hospitals and clinics in the post-disaster period if required and provide training and practice in setting up the tents;
- (mm) Conduct exchanges of experience with partner organizations within the townships and workshops and seminars on natural disasters;
- (nn) Monitor special weather reports and carry out the necessary management work;
- (oo) Receive and implement the guidance of the local authorities;
- (pp) Manage, assign duties and inspect the completion of duties concerning the sturdiness of hospital buildings and measures to safeguard important equipment and records against damage caused by exposure to moisture or water;
- (qq) Make arrangements to admit and provide treatment to large numbers of patients at the hospitals;
- (rr) Meet staff individually and assign individual and team duties;
- (ss) Designate and prepare safe locations for the evacuation of patients and hospital equipment if required in consultation with the authorities;
- (tt) Obtain assistance from social welfare organizations for evacuations of patients;
- (uu) Prevent wastage of medical supplies, request necessary medical supplies from the State/Division and Central levels and maintain systematic records on the supplies received and utilized;
- (vv) Designate a focal person to liaise with Central, State/Division levels; report unusual developments and requirements in real time and receive guidance;
- (ww) Stockpile drinking water and fuel;
- (xx) Choose a location to build a canvas tent if required to serve as the temporary treatment ward for patients and have the materials for the tent at the ready;
- (yy) Arrange proper maintenance of the generators;
- (zz) Carry out appropriate measures from among the above-mentioned activities at the rural health centres and branch centres;
- (aaa) Designate locations in accordance with the guidance of the local authorities to set up relief camps if required and stockpile drinking water supplies;

- (bbb) Make arrangements for systematic admission of storm and flood victims at relief camps through consultations among local authorities, social welfare organizations, volunteers and the health department;
- (ccc) Perform the above-mentioned activities under the guidance of the Health Sub-Committee (Central Level) and State/Division Health Department and the supervision of the local authorities;

2. Disaster Stage

- (aa) Provide prompt, systematic and effective treatment to patients admitted to hospital to ensure their survival;
- (bb) Prepare the patients in critical condition for transfer when conditions allow and report to higher levels;
- (cc) Arrange for dressing of patients' wounds and provision of consolation and encouragement at the hospital with the help of members of the Red Cross and social welfare organizations;
- (dd) Make arrangements for systematic placement of dead bodies at the hospital and perform autopsies systematically with detailed records;
- (ee) Submit daily reports to the higher authorities and obtain information from lower levels as much as possible;

3. Relief and Resettlement Stage

- (aa) Inspect the physical condition of the hospital building after the disaster and make temporary repairs where possible;
- (bb) Form teams for admission and placement of patients, prompt attention to the patients and setting priority level, provision of treatment, dressing of wounds and systematic supply of drugs;
- (cc) Obtain required support from support sections (laboratory, X-rays), clean and sterilize operating rooms if required, fumigate and sterilize further if necessary;
- (dd) Maintain systematic records of patient data and use of drugs and additional medical supplies delivered from the central level;
- (ee) Provide treatment to patients in consultation with the medical teams from the central, state and division levels;
- (ff) Make arrangements to enable care-givers to accompany patients needing transfer to higher levels and coordinate the transfer with the higher levels beforehand;
- (gg) Make arrangements to obtain food and drinking water for patients and care-givers through contacts with well-wishers or from the local authorities; receive the guidance and supervision of the local authority to conduct regular weekly coordinations meetings for cooperation with partner organizations within the township; draw up project plans if necessary, detailing which organization will operate in which areas to

prevent overlap of activities and geographical coverage (to prevent project overlap in the same villages);

- (hh) Form separate public health teams with the number of teams and the number of members in each team being determined by the capacity of the relief camp and the manpower available;
- (ii) Ensure that flood victims at relief camps have access to clean water by adding chlorine daily into the water supply; enforce systematic use of latrines and build more latrines where necessary; provide for systematic garbage disposal; carry out educational activities focusing on potential health issues and how to address them, and the importance of washing hands, including a demonstration of how to wash hands;
- (jj) Transfer patients in critical condition from the relief camp to hospitals for treatment and involve general practitioners, members of the Red Cross and social welfare organizations in performing field work at relief camps;
- (kk) Perform regular inspections of sanitary conditions; educate the storm victims and encourage participation in sanitation work and assign sanitation duties;
- (ll) Provide vaccinations for children under 15 years, de-worming drugs and B-1 drugs and pregnancy care at relief camps;
- (mm) Transfer pregnancies with potential complications from the relief camp to hospitals and make arrangements for full-term deliveries;
- (nn) Coordinate with authorities, other departments concerned and social welfare organizations to ensure adequate access to water supplies at relief camps;
- (oo) Perform educational activities for cleanliness at every stage of food preparation where meals are prepared in one place, together with supervision and inspections; educate people to avoid eating left-overs;
- (pp) Ensure that public health teams and field medical teams from the Central, State/Division level perform treatment, prevention, disease elimination and health education activities in villages and wards, and that the district or township health staff officer makes daily reports in real time of the work performed and unusual events to State/Division and Central levels;
- (qq) Designate a district or township public health staff as a focal person and compile daily and weekly records of selected infectious diseases to be sent to the Central, State/Division level with the assistance of public health teams from the Central, State/Division level in order that infectious diseases do not grow to become epidemics;
- (rr) Monitor the rate of infection and casualty from infectious diseases in selected vulnerable villages;

- (ss) Ensure that the district or township health staff officer reviews the above records and manages a disease prevention response or leads the field work personally if required;
- (tt) Arrange to perform field work in villages in the immediate aftermath of a natural disaster and where necessary provide the necessary health care, dress wounds, show how to make Oral Rehydration Salt solution, treat diarrhea and the common cold, provide health education, add chemicals to the water supply and provide basic medical care;
- (uu) Manage the regular daily addition of chemicals to the water supply; implement a communication to send messages quickly to the Department of Health when infectious diseases grow into epidemic proportions; choose some of the activities that can or should be carried out from among those mentioned above for implementation in rural health centres and branches; and make a list of damaged health centres and conduct repairs with the guidance and support of the State/Division and Central levels;
- (vv) Stress that township disease prevention teams (for tuberculosis, leprosy) track patients on a treatment regime and ensure that the patients receive a full course of treatment, have regular access to medication and if necessary perform field work to trace old patients who have not completed a treatment regime to continue treatment;
- (ww) Coordinate with the (local and foreign) organizations providing health care services in Districts or Townships;
- (xx) Make daily reports of treatment at the hospital and in the field, public health activities and unusual developments to the State/Division and Central levels, maintain records of storm relief activities in all stages and receive guidance and support from local authorities;
- (yy) Make systematic records of medicines and medical supplies donated directly to district and township for disaster relief, with copies of the records being sent to the Central level;
- (zz) Report to the authorities concerned about the cleaning of sewage and garbage from the camp site after the closure of relief camps as they are a potential cause of disease for townspeople and the local population around the camp site;
- (aaa) Identify inaccessible villages as a priority and perform field work to provide vaccination and health care; provide health care to newly reconstructed villages during and after the reconstruction period;
- (bbb) Coordinate with other organizations for the reclamation of water resources and removal of debris from wells and ponds.

Ministry of Information

Ministerial Committee for Natural Disaster Management

77. **Formation.** The Ministerial Committee for Natural Disaster Management is chaired by the Minister and the heads of departments concerned serve as members.

Activities to be Undertaken

78. The following two types of activities will be undertaken.

(d) Natural Disaster Preparedness Activities of the Ministry

(e) Activities of the News and Information Sub-Committee

79. **Natural Disaster Preparedness Activities of the Ministry.** The Minister's Office of the Ministry of Information and the Departments and Enterprises under the Ministry should prepare action plans to be undertaken before, during and after natural disasters to cope with them and minimize loss and damage. Educational and practice activities should be conducted and other requirements fulfilled to ensure smooth implementation of the action plans.

80. **Activities of the News and Information Sub-Committee.** The News and Information Sub-Committee for Natural Disaster Management should be formed with the following tasks and functions.

(a) **Tasks and Functions.** The Ministry of Information should undertake the following news and information activities concerning natural disasters such as fires, tsunami, floods, earthquakes and droughts.

1. Contact the ministries and organizations concerned to obtain information and data;
2. Broadcast or publish educational articles, interviews, slogans, cartoons, programmes, songs, broadcast plays, and films for disaster preparedness;
3. Obtain approval from the higher authorities in real time and broadcast or publish the news and information as quickly as possible;
4. Broadcast or publish in normal times programmes for public awareness of natural disasters, and for disaster prevention and preparedness;
5. Place particular emphasis on raising public awareness in the run-up to the usual season for different types of natural disasters (for example, fire hazards in the summer, storm and flood hazards in the rainy season);
6. Designate an emergency period after receiving early warning of a natural disaster and make frequently repeated broadcasts disaster warnings;
7. Carry out natural disaster news and educational programmes through Information and Public Relations Offices such as distributing wall posters, and pamphlets, and conducting discussion sessions, setting up billboards in townships in coordination with township authorities and NGOs and ensuring participation in educational activities;
8. Issue updates on the disaster situation, injuries, losses and damage, and relief operations;

9. Issue daily reports on relief, aid and rehabilitation activities after the disaster as well as breaking news depending on the situation;
 10. Broadcast educational programmes reviewing the lessons learned during the disaster in coordination with the ministries concerned;
 11. Broadcast news on long-term disaster preparedness activities.
- (b) **Methodologies.** The Ministry of Information should undertake the news and information activities for disaster preparedness using the following methodologies.
1. Publish in the daily newspapers;
 2. Make radio and television broadcasts;
 3. Include news and educational programmes on natural disasters and disaster warnings in cinemas and mobile theatres;
 4. Air drop disaster warnings from aircraft or helicopters during emergencies if required;
 5. Ensure that information and educational field activities are carried out by Information and Public Relations Departments in districts and townships;
 6. Publish in journals and magazines;
 7. Ensure that Information and Public Relations Departments in districts and townships distribute wall posters, pamphlets, warning leaflets; operate mobile libraries and conduct talks;
 8. Deliver natural disaster alerts to villages concerned by messenger in emergencies;
 9. Use loudspeakers to convey natural disaster alerts;

81. **Responsibilities of Departments**

- (a) Normal Times: The News and Information Sub-Committee should carry out educational activities for different types of natural disasters in coordination with the ministries concerned and organizations to ensure public preparedness and enable the public to take precautionary measures when natural disasters strike.

(1) Myanmar Radio and Television

- (aa) Extend broadcast coverage of radio and television to the entire country including border areas;
- (bb) Broadcast educational activities, songs, radio plays, advertisements, slogans and interviews on natural disasters on television and on the radio;
- (cc) Broadcast daily and monthly weather reports. (The programme schedule of weather reports is included as Appendix H.)

(2) Information and Public Relations Department

- (aa) Perform organizing work to provide one television set in every village, one copy of the newspaper in every village, and one radio in every household, which is part of the mission of the Department;

- (bb) Carry out awareness activities on natural disasters through wall posters, mobile libraries, talks, pamphlets and advertisements;
- (cc) Cooperate with local authorities for disaster preparedness.

(3) Printing and Publications Enterprise

- (aa) Publish educational articles, cartoons and precautionary mottos related to natural disasters in journals and magazines;
- (bb) Coordinate with the Literature and Periodicals Association to conduct literary talks on disaster preparedness in the field with the participation of literary figures and authors;
- (cc) Distribute pamphlets and broadcast precautionary messages and interviews on natural disasters on television and radio if required.

(4) News and Periodicals Enterprise

- (aa) Publish in the newspapers articles, cartoons, interviews, publicity messages, mottos and poems related to natural disasters;
- (bb) Publish daily weather reports in the newspapers;
- (cc) Publish preparedness educational programmes for different types of natural disasters.

(5) Myanmar Film Enterprise

- (aa) Show educational programmes on natural disaster preparedness in cinemas;
- (bb) Include educational programmes on natural disaster preparedness in mobile film shows of mobile cinema teams.

82. **Activities to be performed during disasters.** The Departments and Enterprises under the Ministry of Information should undertake the following.

(a) Myanmar Radio and Television

1. Collect comprehensive news and information on natural disasters;
2. Broadcast early warnings and do's and don'ts on natural disasters on television and on the radio in a timely manner;
3. Broadcast disaster updates immediately and/or at frequent intervals depending on urgency;
4. monitor the regional weather news from other news outlets such as foreign news agencies and the Internet news sites and report unusual developments to the Minister immediately.

(b) Information and Public Relations Department

1. Deliver news and information by messenger or own staff throughout the areas;
2. Disseminate news and information widely using loudspeakers, telephones or wireless communications, if required.

(c) Printing and Publications Enterprise

1. Include information on natural disasters and do's and don'ts during disasters in journals published in the emergency period;
2. Print precautionary leaflets and pamphlets on natural disasters if required.

(d) News and Periodicals Enterprise

1. Monitor news and information on natural disasters released by foreign news agencies and submit to higher levels depending on urgency;
2. Coordinate with the ministries concerned to compile news and information related to natural disasters and the precautionary measures and issue news releases;
3. Deliver news on natural disasters to Myanmar Radio and Television immediately;
4. Issue detailed news releases mentioning the type of the natural disaster, vulnerable areas, estimated severity, time and duration of the disaster, preparedness plans to be made and precautionary measures to be taken by the local population.

83. **Activities to be undertaken during natural disasters.** As soon as natural disaster strikes a particular locality, news and frequent updates on the situation should be released on television, on the radio and in the newspapers. The news releases should include the following.

- (a) Type of the natural disaster, affected area, time of onset and developments;
- (b) Severity and scale of the natural disaster;
- (c) Scale of loss of life and damage to property and the estimated monetary value;
- (d) Cooperation among local authorities, NGOs and other organizations;
- (e) Updates on the natural disaster.

84. **Activities to be undertaken after natural disasters.** In the post-disaster period, the Departments and Enterprises should undertake the following.

(a) Myanmar Radio and Television

1. Prioritize the continual broadcast of television and radio programmes containing news and information on natural disasters;
2. Deploy news teams to affected areas and release news reports without delay for international and domestic distribution;
3. Distribute news on measures taken by the State in response to the natural disaster, press releases by the Central Committee, news on relief, aid and rehabilitation, news on natural disasters and breaking news when required;
4. Broadcast a radio message programme to help reunite families and relatives separated during the natural disaster;

(b) Information and Public Relations Department

1. Participate in the disaster relief and rehabilitation efforts organized by the authorities concerned and other organizations;
2. Carry out a correspondence programme in affected areas to help reunite families and relatives separated during the natural disaster with the cooperation of District/Township Information and Public Relations Offices;
3. Ensure that staff in affected areas transmit news on relief and rehabilitation to Minister's Office accurately and expeditiously.

(c) Printing and Publications Enterprise

Publish news on relief, aid and rehabilitation in journals and magazines.

(d) News and Periodicals Enterprise

1. Prioritize the continued publication of all the daily newspapers;
2. Deploy news teams to affected areas and release news reports without delay;
3. Distribute news on measures taken by the State in response to the natural disaster, press releases by the Central Committee, news on relief, aid and rehabilitation, news on natural disasters and breaking news when required;
4. Publish news reports and articles containing updates on the relief, aid and rehabilitation activities as well as lessons learned from the disaster response.

(e) Myanmar Film Enterprise

1. Report casualties and injuries among the staff and damage to buildings and equipment to local authorities and to higher departmental authorities;
2. Do organizing work to provide encouragement and moral support to the public in affected areas, if required.

Ministry of Agriculture and Irrigation

Ministerial Committee for Natural Disaster Management

85. **Formation.** The Ministerial Committee for Natural Disaster Management is chaired by the Minister and the heads of departments concerned serve as members.

86. The functions and responsibilities of the Ministerial Committee for Natural Disaster Management of the Ministry of Agriculture and Irrigation are as follows.

(a) **Normal Times**

1. Ensure that the Ministerial Disaster Preparedness Lead Team is formed with Heads of Departments and Enterprises, the Working Group is formed with General Managers/Directors of Departments and Enterprises, Department/Enterprise Natural Disaster Working Groups are formed with specialists and experts, and also ensure that these groups meet at least every quarter for necessary preparedness activities;

2. Identify disaster prone areas and maintain information on them such as crop production, a schedule of cultivation and harvest times, agricultural inputs, socio-economic conditions, dams and reservoirs and maps;
3. Carry out repairs and maintenance to ensure sturdiness and safety of dams and reservoirs, offices, buildings disaster-prone areas;
4. Collect information and data on natural disasters, carry out studies and monitor them;
5. Provide disaster response training to working groups and conduct rehearsals and drills for the rest of the staff;
6. Set up an emergency fund for natural disaster response;
7. Stockpile seeds, fertilizers, pesticides and farming implements for use after natural disasters;
8. Draw up plans for human safety, material security and fire prevention, with priorities set for personnel and materials;
9. Ensure that natural disaster teams carry out periodic inspection and supervision of the disaster preparedness of departments/enterprises;
10. Carry out research into and identify disaster-resistant strains of crops, agricultural techniques and anti-pesticide techniques;
11. Identify safe locations outside disaster zones and shelters;

(b) Alert/Warning Stage

1. Call an emergency meeting of natural disaster groups as soon as possible;
2. Make estimates of the vulnerable area and the associated risks;
3. Prepare relief and evacuation plans;
4. Assign duties to staff, form a supervisory office, set up an emergency communication system, and prepare a 24-hour duty roster for monitoring;
5. Carry out an appropriate information campaign;
6. Keep supplies required for emergency operations at the ready.

(c) During Disasters

1. Take immediate action to prevent or minimize loss or damage due to natural disasters;
2. Evacuate to designated areas;
3. Carry out emergency repairs immediately wherever possible;
4. Conduct constant surveillance of the ongoing disaster situation;
5. Report the natural disaster and the damage sustained to the Natural Disaster Lead Team of the Ministry through working groups at different levels, with the Lead Team reporting to the Natural Disaster Preparedness Central Committee;

6. Make preparations to fulfil manpower, equipment and supply requirements depending on the scale of the damage sustained;
7. Join the local authorities and the public in relief, evacuation and other activities.

(d) Post-Disaster Period

1. Estimate the scale of damage caused by the natural disaster;
2. Report the assistance that need to be provided, the scale of work necessary, the programme of work and the funding requirements;
3. Make arrangements for the cultivation of substitute crops in a timely manner where crops have sustained damage;
4. Ensure availability of seeds, ploughing and cultivating in a timely manner, supply of fertilizer and pesticides, technical assistance to carry out soil tests;
5. Inspect dams and reservoirs for damage and carry out repairs as soon as possible;
6. Take steps to provide access to natural disaster special loans from the Myanmar Agricultural Development Bank for the replanting of crops;
7. Arrange maintenance work where emergency repairs have been carried out;
8. Submit lessons, evaluations and recommendations for future disaster preparedness;
9. Provide assistance to other ministries, organizations and NGOs for rehabilitation work.

Ministry of Industry 1

Ministerial Committee for Natural Disaster Management

87. **Formation.** The Ministerial Committee for Natural Disaster Management is chaired by the Minister and the heads of departments concerned serve as members.

88. The functions and responsibilities of the Ministerial Committee for Natural Disaster Management are as follows.

- (a) Form the necessary structures to implement Natural Disaster Preparedness Management, lay down policies for priority activities, evaluate the progress of Natural Disaster Preparedness Management activities and provide guidance as required;
- (b) Formulate policy and guidelines for Departments/Industries to provide resources during natural disasters;
- (c) Form Disaster Preparedness Leading Committees, and Sub-Committees as required in various fields of work, in departments, factories and workshops to carry out disaster preparedness activities in real time;
- (d) Manage the resources of the Ministry and provide assistance where required;

- (e) Formulate policies for effective disaster preparedness activities without obstacles or hindrances and for immediate repair of disaster affected factories, workshops and Win Thuzar Shops and restoration to normal condition and operation;
- (f) Put in place disaster preparedness and response, and rehabilitation measures each area in the State/Division under the Departments and Industries;
- (g) Provide guidance on disaster preparedness criteria, practices, guidelines and bylaws to disaster preparedness committees at all levels under different departments and industries;
- (h) Establish disaster-resistance criteria for new and existing factories, workshops and industrial projects based on hazard maps of vulnerable areas, risk maps showing potential scale of disasters, and data on natural disasters and issue procedures and guidelines for compliance with regulations;
- (i) Issue guidelines for disaster preparedness, prevention and mitigation;
- (j) Communicate precautionary measures to factories, workshops, projects, plantations and Win Thuzar Shops in States/Divisions when weather forecasts and special disaster warnings are issued by the Department of Meteorology and Hydrology;
- (k) Monitor the storm updates of the Department of Meteorology and Hydrology, storm surge monitor, information exchange communication system and storm warning systems and provide guidance to the Working Committee;
- (l) Instruct Departments and Industries under the Ministry of Industry 1 to carry out evaluations of potential disaster risk;
- (m) Prepare guidelines to achieve recovery as soon as possible after a natural disaster and restore factories, workshops, projects, plantations and Win Thuzar Shops to the normal condition;
- (n) Prepare work plans for emergency rescue, relief and resettlement in case of natural disaster;
- (o) Conduct training, education, monthly forum discussions in departments and industries for natural disaster awareness and knowledge for all staff;
- (p) Conduct disaster preparedness training, and host or participate in training/workshop/seminars in cooperation with other organizations;
- (q) Comply with the guidance of the Natural Disaster Preparedness Central Committee for disaster risk mitigation.

89. **Disaster Management Working Committee.** The responsibilities of the Disaster Management Working Committee are as follows.

- (a) Form Disaster Management Working Committees at each department, industry, factory, and workshop;
- (b) Ensure that members of the Working Committees prepare detailed action plans for their factories, workshops, plantations, farms, new industrial projects and Win Thuzar Shops that are appropriate to the local context;

- (c) Implement fire prevention plans and preparedness plans for natural disasters such as storms, floods and earthquakes to prevent damage to factories, workshops, plantations, farms, industrial projects and Win Thuzar Shops, by building dams and embankments near rivers and creeks to prevent flood inflows and relocating from low-lying areas to higher ground;
- (d) Ensure that Management Committees and Disaster Preparedness Working Committees provide on-site inspection and supervision for disaster preparedness and precautionary measures at all factories, workshops, plantations, farms and Win Thuzar Shops during normal times;
- (e) Inspect and supervise the deployment and maintenance of fire hydrants, water hoses, fire engines, fire alarms and fire services staff;
- (f) Inspect and supervise the building of embankments as a means of flood prevention for factories and workshops located near rivers, planting of trees on the embankments, and the relocation of large-capacity warehouses in low-lying areas to higher ground;
- (g) Ensure that disaster preparedness working committees of department/industry (head office) carry out on-site inspections of the above measures in factories and have disaster preparedness action plans in place;
- (h) Assign individual and group duties, conduct rehearsals and drills, and ensure that responsible persons from the department/enterprise head office inspect and supervise disaster preparedness on site at factories;
- (i) Prepare and implement procedures and projects in line with Ministry policies and guidelines;
- (j) Conduct rehearsals and drills at normal times to be ready for an emergency response, including relief work for staff at factories and maintaining normal operations of the factory;
- (k) Make arrangements to forward the information to the grassroots levels when a disaster alert is issued by disaster forecast and early warning systems;
- (l) Assign duties to departments, industries, factories, workshops depending on the scale of the natural disaster;
- (m) Assign responsibility for particular activities to departments, designate activities and set up a reporting system;
- (n) Supervise, coordinate and make decisions on the work of the Sub-Committees.

90. **Flood Preparedness and Prevention.** Flood preparedness and prevention plans need to be formulated for factories, workshops and Win Thuzar Shops located in low-lying areas near rivers or creeks and in coastal regions. The following measures should be taken.

- (a) Formulate preparedness and prevention plans for factories, workshops, projects, plantations, farms, and Win Thuzar Shops located in different parts of Rakhine State, Sagaing Division, Bago Division, Mon State, Ayeyarwady Division and Tanintharyi Division that are prone to annual flooding;

- (b) Provide widespread awareness training and drills to staff as part of preparedness and prevention measures against flood hazard;
- (c) Ensure and supervise the provision of transportation and health care during floods, carry out inspections and fulfil requirements;
- (d) Plant rows of trees to serve as breakwaters and wind breakers in coastal areas; construct embankments inland and reinforce them with earth; raise the embankments to prevent sea-water inflows and plant trees on embankments;
- (e) Make prior arrangements for communications, transportation and health care during floods;
- (f) Make prior arrangements for evacuation to safe areas;
- (g) Select natural high ground areas in flood plains and low-lying plains as safe locations; construct artificial mounds in the absence of natural high grounds;
- (h) Report the disaster situation, loss of life and damage of property during floods, using communication equipment through responsible persons at all levels;
- (i) Build access roads around dams, install flood gates and construct shelters;
- (j) Build detention reservoirs and ponds for flood control.

91. **Activities to be undertaken during floods.** The following should be undertaken during floods.

- (a) Collect data on the flood situation and make a detailed list of the loss and damage at the factory and staff quarters, destruction of raw materials and finished products to report to the Minister's Office promptly;
- (b) Evacuate in a timely manner people, animals, raw materials and finished products from flood prone areas to safe locations with the help of members of the Union Solidarity and Development Association and auxiliary members of the Fire Brigade and other organizations;
- (c) Ensure access to emergency food supplies and drinking water, health services and security of the factories and workshops during floods with the arrangement and coordination of departments and industries;
- (d) Set up camps for flood victims in cooperation with local authorities in flood-affected state/division and provide accommodation, meals, health care and security;
- (e) Deploy security personnel and obtain assistance from local authorities during floods to prevent looting of factories, workshops, staff buildings, raw materials and finished products in evacuated areas by unscrupulous elements;
- (f) Make arrangements for the immediate delivery of purified drinking water, instant noodles, and biscuits from Myanmar Foodstuff Enterprise, medicine and medical supplies from Myanmar Pharmaceuticals and Household Items Enterprise, ready-made clothes, blankets, mosquito nets, etc., from Myanmar Textiles Enterprise to affected factories;

- (g) Report the disaster situation together with loss of life and damage to property to responsible persons using communication equipment;
- (h) Coordinate with departments concerned to provide emergency electricity supply to factories, workshops and staff housing and to maintain communications lines.

92. Storm Hazard Preparedness. Factories and workshops should take the following precautionary measures.

- (a) Make arrangements to monitor the weather news continuously and forward disaster warnings as cyclones, gusts and tornadoes may strike in the pre-rainy season period;
- (b) Set up barriers such as placing sandbags, building embankments and planting rows of trees around the factories and warehouses located in the low-lying coastal areas of Rakhine State, Mon State, Ayeyarwady Division, Tanintharyi Division in order to prevent the impact of storm surges;
- (c) Issue directives to put in place storm preparedness action plans at factories, workshops, projects, plantations, farms and Win Thuzar Shops located in areas vulnerable to storm hazards;
- (d) Construct life-saving shelter mounds and ponds at factories and workshops in Rakhine State, Tanintharyi Division, Ayeyarwady Division, which are vulnerable to storm surges;
- (e) Ensure that storm preparedness plans are in place at factories, workshops, plantations, farms, new industrial projects, plantations, farms and Win Thuzar Shops located in areas most vulnerable to storms in States and Divisions;
- (f) Clear trees and branches around power lines;
- (g) Make plans to avoid production downtime during electricity outages caused by falling lampposts and trees in the storm;
- (h) Put safety plans in place for the protection of factory staff and families against falling lampposts and trees in the storm;

93. **Activities to be carried out during storms.** The following should be undertaken during storms.

- (a) Report the storm situation and a detailed assessment of the damage to factories, staff buildings, raw materials and finished products and the estimated value of losses as soon as possible to the Minister's Office;
- (b) Evacuate in a timely manner people, animals, raw materials and finished products from areas vulnerable to storms to safe locations with the help of members of the Union Solidarity and Development Association and auxiliary members of the Fire Brigade and other organizations;
- (c) Work with the local authorities of affected areas in the State/Division for search and rescue, first aid and hospitalization as soon as possible of persons injured by falling trees and collapsing buildings;

- (d) Deploy security personnel to prevent looting of factories, workshops, plantations, farms and warehouses damaged in the storm by unscrupulous elements;
- (e) Make arrangements for the immediate delivery of purified drinking water, instant noodles, and biscuits from Myanmar Foodstuff Enterprise, medicine and medical supplies from Myanmar Pharmaceuticals and Household Items Enterprise, ready-made clothes, blankets, mosquito nets, etc., from Myanmar Textiles Enterprise to affected factories;
- (f) Coordinate with departments concerned to provide emergency electricity supply to factories, workshops and staff housing and to maintain communications lines.

94. **Earthquake Preparedness.** Factories and workshops in the earthquake zone of States/Divisions in Myanmar (along the Sagaing Fault) should undertake the following to cope with the earthquake hazard.

- (a) Put earthquake preparedness action plans in place at factories, workshops and Win Thuzar Shops located inside the earthquake zones in Bago, Mandalay and Sagaing Divisions;
- (b) Educate the staff on earthquakes;
- (c) Disseminate timely earthquake news to factories, workshops and projects located in vulnerable areas of States/Divisions;
- (d) Carry out studies on fires and floods that can occur in the post-earthquake period and put in place fire-fighting and flood relief programmes;

95. Activities to be undertaken during earthquakes. The following need to be undertaken during earthquakes.

- (a) Report the earthquake situation and a detailed assessment of the damage to factories, staff buildings, raw materials and finished products and the estimated value of losses as soon as possible to the Minister's Office;
- (b) Evacuate in a timely manner people, animals, raw materials and finished products from earthquake-prone areas to safe locations with the help of members of the Union Solidarity and Development Association and auxiliary members of the Fire Brigade and other organizations;
- (c) Disseminate earthquake news to factories, workshops and projects located in vulnerable areas in States/Divisions;
- (d) Deploy security personnel to prevent looting of factories, workshops, plantations, farms and warehouses damaged during the earthquake by unscrupulous elements;
- (e) Make arrangements for the immediate delivery of purified drinking water, instant noodles, and biscuits from Myanmar Foodstuff Enterprise, medicine and medical supplies from Myanmar Pharmaceuticals and Household Items Enterprise, ready-made clothes, blankets, mosquito nets, etc., from Myanmar Textiles Enterprise to affected factories;
- (f) Take steps to provide emergency electricity supply to factories, workshops and staff housing and to maintain communications lines while being prepared for fire-fighting and flood relief.

96. **Fire Prevention.** For fire prevention, factories, workshops, new industrial projects, plantations, farms and Win Thuzar Shops in States/Divisions should strictly comply with the following directives.

- (a) Ensure ready access to sufficient quantities of water buckets, sand buckets, hooks and flaps, water, sand and fire-extinguishers;
- (b) Put in place fire control measures to extinguish fires as soon as possible;
- (c) Inspect and service fire-extinguishers; conduct demonstrations and practice sessions so that all staff know how to use them;
- (d) Clear litter from around factories, projects, plantations or farms, Win Thuzar Shops, office buildings, staff housing, warehouses, fuel storage, parking spaces, kitchens and messes and create fire breaks of sufficient width;
- (e) Form inspection teams to check for damaged or broken insulation or flaws in electrical wires at factories, workshops and warehouses that are potentially dangerous; change wires immediately if necessary; switch off the electric mains to turn off electricity when not in use; install main switches where they are not installed and check whether the mains are correctly switch off the current;
- (f) Display fire prevention signs such as "No Smoking", "Beware of Fire", "Lighters or Matches Not Allowed" in public places;
- (g) Put in place fire breaks, water tanks for fire fighting and fire extinguishing systems;
- (h) Keep a fire engine at the ready for fire security around Ministry of Industry 1 building in Nay Pyi Taw; pay particular attention to the prevention of forest fires; install fire control measures with water reservoirs and pumps.

97. Activities to be undertaken during fires. In case of fire, the responsible persons from Departments/Industries should undertake the following.

- (a) Sound the fire alarm and contact the nearest fire station using the fastest method of communication; before the fire engines arrive, make efforts to extinguish the fire in cooperation with the local population and organizations;
- (b) Report the fire situation immediately to the Minister's Office, Departments/Industries concerned;
- (c) Report losses and damage in real time;
- (d) Take emergency rescue measures promptly where staff are trapped in the buildings on fire, provide first aid to the injured persons and send to the nearest hospital or clinic;
- (e) Move important documents from the affected factory or workshop to safe locations;
- (f) Ensure security in cooperation with the local responsible persons to prevent looting and sabotage by unscrupulous elements;
- (g) Make arrangements for the immediate delivery of purified drinking water, instant noodles, and biscuits from Myanmar Foodstuff Enterprise, medicine and medical supplies from Myanmar Pharmaceuticals and Household Items Enterprise, ready-

made clothes, blankets, mosquito nets, etc., from Myanmar Textiles Enterprise to affected factories;

- (h) Take steps to provide emergency electricity supply to factories, workshops and staff housing and to maintain communications lines in coordination with departments concerned.

98. **Disaster Stage.** The various committees should undertake the following to provide assistance in programmes for life-saving, evacuation and shelter, relief and rehabilitation and issue the necessary directives and orders during the above-mentioned disasters.

- (a) Ensure that responsible persons from Department/Industry concerned arrive in affected areas as soon as possible and provide necessary assistance in real time;
- (b) Take measures to report the disaster situation and information on damage sustained to the Ministry and head office; take prompt action and make effective use of own resources;
- (c) Carry out search, rescue and aid operations and take appropriate action during disasters as previously coordinated;
- (d) Evacuate people, animals, raw materials and finished products from disaster-affected areas to safe locations as soon as possible with the help of members of the Union Solidarity and Development Association and auxiliary members of the Fire Brigade and the Red Cross;
- (e) Ensure that all levels of responsible persons personally carry out field inspections in disaster-affected areas and submit detailed report on the disaster situation and the losses and damage sustained to the Ministry and Department/Industry (Head Office) in line with the guidance of the Disaster Preparedness Committee when natural disasters cause loss of life and damage to property at factories, workshops, new industrial projects, plantations, farms and Win Thuzar Shops;
- (f) Ensure that data on losses and damage, salvaged items and the measures taken to restore normal conditions can be reported to the Disaster Preparedness Committee promptly;
- (g) Obtain and utilize communication devices, such as GSM mobile phones, WCDMA phones, fax phones in order to report disaster situation to the Ministry and Department/Industry (Head Office) in real time;
- (h) Set up a frontline supervisory centre in the disaster-affected area under the leadership and with the guidance of the Disaster Preparedness Committee and arrange access to emergency food, clothing, medicine and supplies health care and security for affected staff and families;
- (i) Make arrangements for the immediate delivery of purified drinking water, instant noodles, and biscuits from Myanmar Foodstuff Enterprise, ready-made clothes, blankets, mosquito nets, etc., from Myanmar Textiles Enterprise to affected factories; operate the purified drinking water factories under the Myanmar Foodstuff Enterprise round the clock to ensure supply;

- (j) Ensure production and timely distribution of necessary medicine by the Myanmar Pharmaceuticals Industries, kitchenware and toiletware by the Myanmar Ceramics Enterprise, exercise books and H₂O₂ for cleaning of water tanks by Myanmar Paper and Chemicals Enterprise; steel kitchenware by the Myanmar General Industrial and Maintenance Services;

99. **Rehabilitation Stage.** The following should be undertaken.

- (a) Carry out salvage work at the disaster-affected factories, workshops, plantations, farms and Win Thuzar Shops;
- (b) Coordinate with Maintenance Works Factory under Myanmar General Industrial and Maintenance Services for repairs to disaster-affected factories, workshops, Win Thuzar Shops and staff housing under Departments and Industries;
- (c) Carry out repairs at disaster-affected factories to enable operations to resume as soon as possible and coordinate to obtain electricity supply;
- (d) Obtain access to manpower, equipment, funds, raw materials, fuel, natural gas and electricity to restore output from disaster-affected factories and workshops and make strenuous efforts to reach production targets;
- (e) Raise production by 20% from the previous targets at factories that are not affected by disaster;
- (f) Ensure that damage-assessment inspections are carried out at disaster-affected factories, workshops, plantations, farms and Win Thuzar Shops by Departments/Industries concerned and documentary photographs maintained;
- (g) Obtain approval of the Ministerial Management Committee Coordination Meeting for repair costs after careful scrutiny by Departments/Industries concerned; send copies to the Auditor-General's Office and the Division/District Audit Offices concerned and request fund allocations; carry out repairs and coordinate for electricity supply to resume operations.

Ministry of Industry 2

Functions and Responsibilities of the Natural Disaster Management Committees

100. **Formation.** The Ministerial Committee for Natural Disaster Management is chaired by the Minister and the heads of departments concerned serve as members.

101. **Normal Times.** During normal times, the Natural Disaster Preparedness Central Committee should be formed and the following should be undertaken at the headquarters and industrial areas to provide supervision.

- (a) Document and collect lessons from the previous experience with natural disasters and prepare action plans to provide more comprehensive protection and greater safety, while putting in place relief and rehabilitation programmes;
- (b) Take separate inventories of items that can be used in relief operations, those that need special protection and those that can be evacuated in advance at factories, workshops and offices;

- (c) Coordinate with local organizations to make a list of transport vehicles, civilian vehicles, motorized transport and local means of transport such as boats, carts, rafts, horses and mules;
- (d) Form rescue teams, transport teams, protection teams, etc. natural disaster preparedness at all localities; check the manpower and compile accurate data;
- (e) Form a documentation and research team to observe the local knowledge and techniques for disaster preparedness and developments in the global natural disaster situation, and make records in order to identify useful techniques, precautionary measures and measures to protect buildings and equipment;
- (f) Educate the staff and families at enterprises and factories on disaster preparedness measures;
- (g) Disseminate news to persons concerned and issue press releases as appropriate before, during and after natural disasters;
- (h) Forecast the probable location and situation of the hazard and share the forecast with the persons concerned;
- (i) Carry out educational activities on disaster preparedness and periodic evaluations for greater effectiveness;
- (j) Carry out inspections to ensure the effective of educational activities for the lower levels;
- (k) Submit recommendations to the Central Committee until the last minute regarding the best relief and resettlement techniques based on findings from regular inspections and inspections for information gathering;
- (l) Carry out the necessary inspections and make plans for the safety and disaster resistance of equipment and buildings;
- (m) Design factories and residential buildings for construction safety and resistance to earthquakes and storms;
- (n) Conduct proper soil tests before the construction starts.

102. **Alert/Warning Stage.** The following should be undertaken.

- (a) Ensure that the lower level staff and dependents have access to the disaster warnings, and information on potential impact and damage released by the Information Sub-Committee;
- (b) Communicate evacuation routes and transport programmes;
- (c) Keep manpower and equipment at the ready under Sub-Committees and maintain communications with the higher levels as well as horizontally;

103. **Disaster Stage.** The following should be undertaken during disasters.

- (a) Evaluate the potential impact as soon as reliable information on the disaster is received and evacuate people and animals, provide protection in secure local areas as the second stage, communicate core protection measures that can be taken individually and as a group as the third stage;

- (b) Obtain accurate information to identify areas causing the most casualties or injuries during disasters, and to deliver emergency assistance to priority areas effectively, spread out rescue operations to both inaccessible and accessible locations, give first priority to the survival period and rescue of survivors and ensure that rescue operations cover all victims and property;
- (c) Supervise the provision of skilled staff, persons who can provide assistance, equipment teams and emergency health care teams in real time depending on requirement and the type of rescue operation; Supervise the provision of information on the ground;
- (d) Carry out information collection on losses during the disaster, those who have received relief and relief requirements in the affected area to obtain thorough and accurate data until the completion of the relief operation;
- (e) Set up in a timely manner supervision camps, support sites and communication systems to provide coordination for information collection teams and on-the-ground rescue teams;
- (f) Designate relief areas and assign missions for teams from other areas that arrive to provide assistance;
- (g) Report the situation to the higher level continuously.

104. **Rehabilitation Stage**

- (a) Prepare and implement an action plan, assessing the rehabilitation requirements based on relief operations;
- (b) Identify and take measures to restore or improve on the normal conditions that existed before the natural disaster;
- (c) Prioritize protection measures such as obtaining access to meals, health care, clothing, security , access to shelter and accommodation in the time required to stabilize the situation;
- (d) Carry out an assessment for rehabilitation and ensure timely access to required materials, technology, funds, staff, and orders and directives in the last stages of the relief operation when people and animals are being rescued;
- (e) Prepare yearly plans for rehabilitation where required and provide long-term assistance, taking necessary measures to provide assistance free of charge in such areas as social welfare, education, and health care;
- (f) Set up mechanisms for provision of economic assistance for each family to improve their economic situation and for factories and workshops to resume operations.

105. **Transport and deployment of equipment and machinery.** Arrange suitable vehicles and equipment for other sub-committees and relief teams to ensure good communications.

Ministry of Commerce

Formation and Responsibilities of Committees

106. **Formation.** The Ministerial Committee for Natural Disaster Management consists of the Minister and the heads of departments and undertake the following.

- (a) Prepare and implement action plans at all levels to protect the staff and families of the Ministry of Commerce, Ministry offices, rice mills, oil mills, warehouses, buildings and assets as much as possible from loss and damage caused by natural disasters;
- (b) Prepare actions plans and conduct drills for pre-disaster preparedness, activities to be undertaken during disasters and post-disaster rescue at departments and sales/purchase centres;
- (c) Form Sub-Committees and expand them if required and deploy special supervisory teams to disaster-affected areas to oversee relief, supply, resettlement and rehabilitation activities;
- (d) Inspect the work of the Sub-Committees, provide assistance and make arrangements to deliver vehicles, machinery and equipment, fuel, supplies, medicine, and funds;
- (e) Report to the State authorities on the disaster situation and the measures taken by the Ministry of Commerce;
- (f) Present to National Disaster Preparedness management Working Committee for guidance and receive funds and relief supplies donated by individuals and organizations from within the country and abroad for large-scale disasters;
- (g) Deliver relief and aid supplies to victims;
- (h) Ensure communications for smooth running of disaster preparedness and relief operations;
- (i) Disseminate the required information and knowledge to the population and organizations in disaster-affected areas;
- (j) Coordinate with local authorities to meet fuel requirements in disaster-affected areas;
- (k) Form 3 emergency relief teams and assign duties to carry out relief operations in real time in disaster-affected areas;
- (l) Issue a Standing Order for disaster management;
- (m) Ensure that during disasters the directors and the director-general collect information and check for reliability for presentation to the Minister, assign duties to emergency relief teams, take steps to deploy them as soon as possible if required, arrange transport to the assigned areas without delay and issue instructions to committee members;
- (n) Ensure that team leaders are at the ready for immediate departure when disasters strike.

- (o) Ensure that the committee members are at the ready to carry out implementation work according to the guidelines of the Ministry.

107. **Structures at the State/Division level.** Search and rescue, rehabilitation, reconstruction and security committees should be formed systematically at the States/Division level Border Trade Centres and Myanmar Agricultural Produce Trading Offices under the Ministry of Commerce to undertake the following.

- (a) The following should be undertaken in towns with Border Trade Centres and/or State/Division Myanmar Agricultural Produce Trading Offices.
1. Prepare action plans to prevent damage and loss of Ministry buildings, Border Areas Department buildings and Agricultural Produce Trading Office buildings, factories, workshops, warehouses and fixed assets due to natural disasters;
 2. Ensure that Border Trade Centres, State/Division Myanmar Agricultural Produce Trading, and Township Offices prepare and implement action plans for relief, rehabilitation and security;
 3. Coordinate with disaster preparedness, relief and resettlement groups from the local areas to prevent the loss of life, destruction of property, crops and harvests, loss of cattle and animals and damage to State-owned factories, workshops and warehouses due to disasters, to clear debris, and to carry out relief and resettlement activities;
 4. Ensure that State/Division levels provide cooperation and supervision to the township teams;
 5. Provide coordination among State/Division and Township level teams when a disaster strikes various areas in States/Divisions simultaneously;
 6. Submit reports on disaster-related cooperation to higher level authorities;
 7. Coordinate with township work teams to carry out relief and rehabilitation measures and provide the assistance required;
 8. Submit reports to higher level authorities on the construction and assistance required for relief and resettlement, activities carried out and the progress achieved.

Ministry of National Planning and Economic Development

Ministerial Committee for Natural Disaster Management

108. **Formation.** The Ministerial Committee for Natural Disaster Management is chaired by the Minister and the heads of departments concerned serve as members. The Committee should undertake the designated tasks within the timeframe specified.

109. **Normal Times.** The following should be undertaken.

- (a) Ensure that action plans for different types of disasters are prepared by heads of departments, responsible persons at all levels of management, and State/Division in-charges;

- (b) Identify shelter locations such as high-rise buildings and high ground areas for floods, sturdy buildings for storms and open spaces for fires;
- (c) Organize manpower for State and national level disasters under the supervision of the head offices and release the manpower list as required;
- (d) Issue directives for the use of funds including emergency funds, for administrative matters and for statistics and accounts;
- (e) Ensure that **officials in charge of organizations and local areas** form field work teams with the experts and specialists at the central level as the basis, combined with manpower from the State/Division concerned, assign duties and prepare action plans for smooth implementation;

110. **Alert/Warning Stage.** The following should be undertaken.

- (a) Heads of departments and officials responsible for management should evacuate staff to safe locations;
- (b) The ranking official in the disaster-affected area should issue the order for the evacuation of families and core staff to safe locations. The expenses for the evacuation should be borne from the current expenses account or his or her own funds. These expenses should be reimbursed as quickly as possible by the department concerned.
- (c) If the ranking official in the disaster-affected area is part of the local authority, the directives of the local authorities should be complied with. The ranking official should be part of the last stage of evacuation.
- (d) When the alert/warning is received, the ranking official of Ministry in the local area shall become authorized to take necessary measures for the protection of department property (such as reinforcing buildings, evacuation of important documents to safe locations) and to incur expenses from a current expenses account or from his or her own funds.
- (e) When the alert/warning is received, the Director-General of the Planning Department should alert the State/Division in-charges closest to area under the disaster risk.
- (f) The State/Division in-charges closest to area should keep at the ready food supplies for 7 days, motor vehicles and funds.
- (g) When the alert/warning is received, the local in-charges of departments and organizations should inspect the disaster preparedness measures, issue alerts, mobilize preparedness plans, carry out safety arrangements and provide required support.

111. **Disaster Stage.** The following should be undertaken.

- (a) The State/Division in-charges closest to area should leave for the affected area together with the teams and in cooperation with the local authority engage in relief operations as required.

- (b) The Director-General, the local in-charges and State/Division Planning Staff Officers should be on stand-by, and keep human resources and vehicles at the ready to provide assistance to the Director-General of the Planning Department.
- (c) When State and national level natural disasters occur, survey and assessment teams should be deployed to the affected area as soon as possible.
- (d) Technical assistance should be provided to the Central Body.

112. **Post-Disaster Stage.** The following should be undertaken.

- (a) The State/Division in-charges concerned should report to the department head office and the Minister's Office through normal administrative channels.
- (b) The Director-Generals should carry out the relief and rehabilitation activities using the normal administrative channels.
- (c) The survey and assessment work teams should work with Division/District/Township authorities, make decisions in consultation, and cooperate with NGOs, the Fire Brigade, the Union Solidarity and Development Association and the Red Cross.

Ministry of Finance and Revenue

Formation, Functions and Responsibilities of the Ministerial Committee for Natural Disaster Management

113. **Formation.** The Ministerial Committee for Natural Disaster Management shall be formed at all levels and undertake the following responsibilities.

- (a) Normal Times
 1. During natural disasters, the Ministry of Finance and Revenue should provide effective support, ensuring coordination among departments and organizations under the Ministry as part of the disaster response of Government Organizations. The supervision work will be based at the Minister's Office, with the Head of Office as the focal person.
 2. The required funds for each decision made by the Natural Disaster Preparedness Central Committee should be submitted to the Prime Minister's Office and allocated in accordance with existing financial regulations.
- (b) Disaster Stage
 1. Take steps for the immediate release of allotted funds to relief teams and for emergency measures without allotted funding, apply for further allocation and release of funds in accordance with the decisions made by Natural Disaster Preparedness Central Committee, ensuring process expeditious processing;
 2. Provide supervision for compliance with financial rules and regulations concerning allotted funds and carry out audits with the recommendation and cooperation of the Auditor General;

3. Establish a special fund with a portion of the State revenue in Annual State Budgets for rehabilitation work for the public who experienced loss of live and damage to property;
4. Instruct the Department of Revenue for the soonest possible delivery to disaster-affected areas of relief supplies that are provided by the Government and donated from within the country and abroad;

(c) Rehabilitation Stage

1. Allow exemption from tax and duties imposed by the Ministry of Finance and Revenue for the import and delivery of relief and aid supplies from the Government and from sources within the country and abroad;
2. Transfer donated funds (in domestic and foreign currencies) to respective accounts without imposing any service charge or tax.

Ministry of Foreign Affairs

Ministerial Committee for Natural Disaster Management

114. **Formation.** The Ministerial Committee for Natural Disaster Management is chaired by the Minister and the heads of departments concerned serve as members.

115. **Activities to be Undertaken.** The Committee for Natural Disaster Management of the Ministry of Foreign Affairs should undertake the following.

- (a) Ensure immediate communication to Myanmar embassies, consulates, foreign embassies in Myanmar regarding natural disasters in Myanmar, issue press releases and requests for assistance;
- (b) Participate in international and regional cooperation programmes related to disaster preparedness;
- (c) Supervise disaster mitigation, preparedness, relief and rehabilitation, communication and coordination;
- (d) Work with regional, ASEAN, United Nations and international relief and aid organizations;
- (e) Coordinate for issuance of visas and permission for aircraft and ships to enter Myanmar territory and use ports;
- (f) Review the preparedness, education, rehabilitation and cooperation required for Myanmar through exchanges of experience on international and regional natural disaster response and submit recommendations on appropriate occasions;

116. The Director of Planning and Management Department is designated as the focal person of the Committee for Natural Disaster Management of Ministry of Foreign Affairs in normal times, in the pre-disaster stage, in the disaster stage and in the rehabilitation stage.

117. **Normal Times.** The following should be undertaken in normal times.

- (a) Natural disasters consist of floods, storms, earthquakes, and volcanic eruptions. The Department of Political Affairs is responsible for monitoring weather and

meteorological reports and forecasts issued by the Department of Meteorology and Hydrology, International Weather Association and other disaster forecasting organizations.

- (b) Contact details such as telephone numbers and a list of telefax numbers of the National Disaster Preparedness Central Committee and National Disaster Preparedness Management Working Committee should be compiled and distributed. The telephone numbers, website addresses and e-mail addresses of local and international organizations involved in disaster management, Myanmar embassies and consulates should also be compiled and distributed. The Planning and Management Department has the responsibility to compile and distribute the telephone and telefax numbers of domestic organizations and individuals for emergency contact during natural disasters.
- (c) The ASEAN Affairs Department is responsible for sending information on the natural disaster situation in Myanmar to the ASEAN Disaster Information Sharing and Communication Network with the approval of the central body.
- (d) The ASEAN Affairs Department is responsible for communications with the ASEAN Committee on Disaster Management, and for linkages with the countries and organizations that has established natural disaster early warning systems.
- (e) The ASEAN Affairs Department also has the responsibility to be involved in the process of establishing the regional natural disaster early warning system and to forward the information obtained as soon as possible to departments or organizations serving as the National Focal Point and carry out coordination work.
- (f) The Planning and Management Department has the responsibility to the prepare educational and precautionary activities based on the information and data gathered and present them to to the Central Committee.
- (g) The Training, Research and Foreign Languages Department is responsible for acquisition of modern technology and equipment, training and cultivation of experts, coordination with the organizations concerned for human resources development, coordination with organizations from within the country and abroad for the installation of required equipment and provision of training for their utilization.
- (h) The Training, Research and Foreign Languages Department is responsible for the study of public education on disaster preparedness in other countries and provision of support to initiate educational programmes appropriate to our country.
- (i) The Planning and Management Department has the responsibility to handle matters relating to emergency disaster response training.
- (j) The Political Affairs Department is responsible for the study of aid provision to disaster-affected countries, monitoring whether aid is accompanied by political interference and intervention in internal affairs.

118. **Pre-Disaster Period** (Alert/Warning Stage). The following should be undertaken in the pre-disaster period.

- (a) The Planning and Management Department has the responsibility to obtain disaster news and updates on conditions from within the country from Departments and organizations that are members of the Central Committee and Sub-Committees.
- (b) The Protocol Department is responsible for information on transportation to disaster areas, distance and travel time.
- (c) The ASEAN Affairs Department and the International Organizations and Economic Department is responsible for disaster preparedness, information exchange, establishment of an information network, and coordination with the organizations concerned and ASEAN, regional/international organizations.
- (d) The Planning and Management Department has the responsibility for the circulation of disaster information to friendly countries and appropriate international and regional organizations through Myanmar embassies, diplomatic missions and consulates.
- (e) The International Organizations and Economic Department has the responsibility to carry out a study on the participation of ASEAN, United Nations and the international community in relief and rehabilitation activities.
- (f) The International Organizations and Economic Department should undertake to maintain contact with ASEAN Committee on Disaster Management (ACDM), ASEAN Regional Programme on Disaster Management (ARPDM), Disaster Study and Protection Unit, ASEAN Humanitarian Assistance Coordination Group and other international disaster preparedness organizations and carry out studies and forecasts in order to take precautionary measures in the pre-disaster period.
- (g) The Planning and Management Department has the responsibility establish an Emergency Networking System with the National Disaster Preparedness Central Committee and its Sub-Committees.

119. **Post-Disaster Stage.** The following should be undertaken in the post-disaster stage.

- (a) The Planning and Management Department has the responsibility to obtain disaster news and updates on conditions from within the country from Departments and organizations that are members of the Central Committee and Sub-Committees.
- (b) The ASEAN Affairs Department is responsible for sending information on the natural disaster situation in Myanmar to the ASEAN Disaster Information Sharing and Communication Network with the approval of the central body.
- (c) The ASEAN Affairs Department is responsible for communications with the ASEAN Committee on Disaster Management.
- (d) The Consular and Legal Affairs Department is responsible for communications within the country for coordination with the Central Committee and Sub-Committees and for providing support to relief and rehabilitation activities.

- (e) The International Organizations and Economic Department has the responsibility to submit suggestions from regional and international organizations to the National Disaster Preparedness Central Committee and coordinate with Sub-Committees.
- (f) The Planning and Management Department has the responsibility to issue press releases on damage, destruction and losses caused by the disaster within the country together with accurate news through the embassies, diplomatic missions and consulates as soon as possible after obtainin approval from the Central Body.
- (g) The Consular and Legal Affairs Department is responsible to coordinate for visa applications and permission for aircraft and ships to enter Myanmar territory and use ports.
- (h) The ASEAN Affairs Department and the International Organizations and Economic Department is responsible for working with ASEAN Humanitarian Assistance Centre, United Nations High Commissioner Refugees (UNHCR), and international NGOs and requesting necessary assistance with the permission of the Central Body.
- (i) The ASEAN Affairs Department should undertake to circulate appropriate information to the ASEAN Committee on Disaster Management (ACDM) and disaster-related international organizations and request necessary assistance.

120. **Rehabilitation Stage.** The following should be undertaken at the rehabilitation stage.

- (a) The ASEAN Affairs Department and the International Organizations and Economic Department is responsible for working with regional and international organizations, ASEAN Humanitarian Assistance Centre, and NGOs such as the International Red Cross/Federation for post-disaster rehabilitation.
- (b) The International Organizations and Economic Department is responsible for obtaining assistance from relevant humanitarian organizations such as WFP, UNHCR, ECHO, ESCAP and NGOs in the post-disaster period with the permission of the Central Committee and coordinate with Myanmar embassies, diplomatic missions and consulates to receive and distribute relief supplies.
- (c) The ASEAN Affairs Department has the responsibility to coordinate with ASEAN Committee on Disaster Management (ACDM), ASEAN Regional Programme on Disaster Management and other disaster preparedness organizations to obtain the required support and emergency aid and to circulate damage updates.
- (d) The Consular and Legal Affairs Department has the responsibility to cooperate with regional, ASEAN, United Nations and international relief and aid organizations, apply for visas for representatives of relief organizations visiting Myanmar for relief operations and coordinate to obtain permission for overflight, passage and entry to port permissions for aircraft and ships.
- (e) The Consular and Legal Affairs Department has the responsibility to receive funds and supplies from foreign donors through the embassies and transfer them to parties concerned, obtain overflight and landing permission for foreign aircraft carrying relief supplies, issue visas for individuals wishing to donate cash and materials and provide administrative support.

- (f) The Planning and Management Department has the responsibility to release statistics on damage and destruction in the country due to disaster and updates on the disaster impact as soon as possible with the approval of the Central Body through embassies, diplomatic missions and consulates.
- (g) The Planning and Management Department has the responsibility to coordinate the delivery to parties concerned of aid supplies such as medicine, clothing, foodstuff and funds donated from all over the world through embassies, diplomatic missions and consulates as part of the disaster response.
- (h) The International Organizations and Economic Department and the Protocol Department has the responsibility to carry out coordination work to facilitate the donation of funds and supplies by foreign countries, United Nations Agencies and NGOs.
- (i) The Protocol Department has the responsibility to provide assistance and support to individuals from regional and international organizations visiting disaster-affected areas to carry out relief operations with the permission of the National Committee for Disaster Management.
- (j) The Planning and Management Department is responsible for sending appropriate messages of appreciation to respective governments through our embassies, diplomatic missions and consulates for donations from foreign governments, international donor organizations and other donors.

121. **Implementation.** The Disaster Management Committee of the Ministry of Foreign Affairs should coordinate with other Sub-Committee members and Ministries under the guidance of the National Disaster Management Central Committee.

122. For the effective implementation of this Standing Order, the Disaster Management Committee of the Ministry of Foreign Affairs may modify the membership of the Committee or form working groups as required.

Ministry of Forestry

Ministerial Committee for Natural Disaster Management

123. **Formation.** The Ministerial Committee for Natural Disaster Management is chaired by the Minister and the heads of departments concerned serve as members.

124. **Activities to be Undertaken at Normal Times.** The following should be undertaken.

- (a) At normal times the Forestry Department undertakes the conservation of forest land, supplementary planting, cultivation and preservation of forests in buffer areas and gap-fill planting in States/Divisions and issues permission for setting up private plantations and grant permission to the local population for agricultural activities.
- (b) Conservation of natural forests and tidal swamp forests as part of preparedness activities in States/Divisions, districts, townships and local areas in the pre-disaster period and replanting of natural forests and tidal swamp forests that have been destroyed by a number of causes should be carried out.

- (c) Training and study activities on emergency disaster preparedness and relief will be provided to staff teams assigned to various localities and to camps.
- (d) Information networks to disseminate early warning of natural disaster should be set up in designated camps and areas.
- (e) Small tidal swamp forest conservation teams should be set up in villages with the participation of the local village population.
- (f) Forest land buffers that can be used as shelters during natural disasters should be set up in designated areas.
- (g) Action plans should be prepared at all levels to reduce losses and damage for staff and for Ministry-owned infrastructure and disaster-related educational activities and rehearsals should be conducted.
- (h) In areas vulnerable to disaster, wind breakers and earth embankments should be build and existing embankments should be reinforced.
- (i) High-ground areas should be identified in surrounding areas and a route cleared for easy access day or night.
- (j) Preparedness talks and drills should be organized for staff families to be able to cope with storm and flood hazards and infectious diseases.
- (k) Vehicles should be earmarked for emergency evacuation.
- (l) Guidance and supervision should be provided for disaster preparedness activities at offices, workplaces, factories and workshops under the various State/Division level departments of Myanmar Timber Enterprise.
- (m) The formulation and implementation of disaster preparedness plans in different areas/ at saw mills under Myanmar Timber Enterprise should be inspected and guidance provided.
- (n) Prior arrangements should be made to have the manpower, vehicle and supplies for relief, security, health care and rehabilitation duties.
- (o) Prior arrangements should be made for support activities in other disaster-prone areas in States/Divisions.
- (p) The vehicles and machinery, equipment and tools should be prioritized and kept at the ready so that they can be assign duties at the shortest possible notice to clear the debris after the disaster, to clear blocked roads and to carry out relief and transport operations.
- (q) Emergency stocks of logs and timber essential for repair, reconstruction and rehabilitation after the natural disaster should be maintained without exceeding the lowest capacity for particular areas within the designated time-frame.
- (r) Progress of activities should be reported periodically to the Management Committee of the Ministry in the fastest and most effective way.
- (s) Reporting, coordination and cooperation and drills for disaster preparedness should be carried out in areas/saw mills/work sites in States/Divisions.

125. **Activities to be undertaken during disasters.** The disaster stage should be designated as an emergency period and the following should be undertaken.

- (a) Obtain disaster updates using various means and disseminate the information to lower levels in a timely manner;
- (b) Obtain constant input from lower level information gathering teams on the requirements in affected areas and provide support;
- (c) Deploy additional staff to States/Divisions, Districts and Townships as required;
- (d) Obtain information and data from the lower levels and report to the higher levels in real time;
- (e) Mobilize and provide guidance to responsible persons and staff to take preparedness measures in a coordinated manner for different types of natural disaster included in the disaster preparedness action plan;
- (f) Deploy support teams from nearby areas to disaster-affected areas for relief, transport and resettlement activities;
- (g) Minimize damage and loss in rescue, evacuation and settlement activities, prioritizing people and property;
- (h) Ensure compatibility with national level disaster preparedness measures;
- (i) Report to higher levels and receive guidance regarding evacuation to safe locations outside the disaster areas using all available means and requests for emergency assistance;
- (j) Ensure that support teams from nearby areas that are outside the disaster zones are deployed to affected localities to provide assistance and support;
- (k) Cooperate with the local organizations in accordance with the guidelines;
- (l) Safeguard State-owned assets from the threat of unscrupulous elements during and after natural disasters.

126. **Relief Operations.** The following should be undertaken.

- (a) Declare a state of emergency in States/Divisions, Districts and Townships in disaster-prone areas in accordance with the directive of the Ministry;
- (b) Ensure that relief teams and aid supplies reach disaster-affected areas;
- (c) Minimize damage and loss in rescue, evacuation and settlement activities, prioritizing people and property;
- (d) Issue guidelines in real time to States/Divisions, Districts and Townships;
- (e) Implement the measures in the action plan immediately in areas directly affected by disaster;
- (f) Report to higher levels and receive guidance regarding evacuation to safe locations outside the disaster areas using all available means and requests for emergency assistance;

- (g) Ensure that support teams from nearby areas that are outside the disaster zones are deployed to affected localities to provide assistance and support;
- (h) Cooperate with the local organizations for greater speed and effectiveness;
- (i) Safeguard Department-owned assets from the threat of unscrupulous elements during and after natural disasters.

127. **Rehabilitation Stage.** The following should be undertaken.

- (a) Form working groups at all levels to carry out rehabilitation tasks;
- (b) Collect data and documentation for each department to compile on the scale and value of losses and damage;
- (c) Prioritize and provide guidance as required to carry out repairs and rehabilitation as planned;
- (d) Compile data on the damage caused by the disaster in forest reserves/protected forests outside reserves, plantations, nurseries; prepare and implement a recovery and rehabilitation plan;
- (e) Obtain permission for production where forests or trees are flattened by the natural disaster;
- (f) Conduct a field surveys of the loss of forest resources involving the local forestry staff, research teams and specialist teams and report the findings to the higher levels;
- (g) Coordinate with local authorities, social organizations, departments concerned and international organizations;
- (h) Set up relief camps for disaster-affected staff, families and the general public;
- (i) Collect data and documentation for each department to compile on the scale and value of losses and damage;
- (j) Prioritize and provide guidance as required to carry out repairs and rehabilitation as planned;
- (k) Make arrangements and provide guidance to implement the measures in the action plan for supplying logs, timber and construction materials required for rehabilitation at short notice both for department-owned buildings and for public buildings;
- (l) Organize working groups, assign duties and provide supervision to carry out relief and rehabilitation tasks assigned from the State level;
- (m) Make contacts and negotiate to expedite timber production using contracts, taking into consideration the saw mills, work equipment, vehicles and machinery and staff strength available to timber production departments;
- (n) Coordinate to process logs from production areas depending on saw mill capacity and transport the timber to the required area or timber outlets;
- (o) Salvage, recycle and repair as much as possible from the department-owned property and buildings damaged during the natural disaster;

- (p) Participate in rehabilitation activities together with local authorities, social organizations and departments.

128. **Emergency Communication System.** The disaster stage is designated as an emergency and satellite telephones, coastal area radio telephones should be installed in the following conditions under the arrangement of the higher level departments.

- (a) Areas affected by natural disaster;
- (b) Disruption of communications using the auto exchange system;
- (c) Sabotage against the communication lines;
- (d) Damage to the communication network.

129. **Coordination and Cooperation.** Coordination and cooperation with departmental organizations and local authorities is necessary for speed, momentum and success of disaster preparedness activities, rapid implementation of rehabilitation activities and systematic implementation of resettlement activities.

Ministry of Construction

Ministerial Committee for Natural Disaster Management

130. **Formation.** The Ministerial Committee for Natural Disaster Management is chaired by the Minister and the heads of departments concerned serve as members.

Public Works

131. Public Works (Administration)

- (a) Disseminate the required news and information for different natural disasters; put in place preparedness measures/plans;
- (b) Form committees for each sector and assign duties;
- (c) During a disaster, the Ministry Committee should organize the Working Committees to carry out the tasks designated.
- (d) Provide access to construction materials at the rehabilitation stage;
- (e) Utilize a town plan to develop plots of land for resettlement for maximum safety from natural disasters;
- (f) Make efforts for a full recovery.

132. Public Works (Roads), Ministry of Construction,

- (a) Issue directives to Chief Engineers in States/Divisions and District Chief Engineers for the maintenance of roads; prepare and implement plans to ensure smooth road transportation;
- (b) Maintain roads to enable travel all year round;
- (c) Ensure that Chief Engineers in States/Divisions identify road networks for access to affected areas during natural disasters and map the routes;

- (d) Make arrangements to ensure robustness of roads and small bridges, embankments and ditches for resistance to storm surge and floods;
- (e) Carry out a review twice every year based on existing emergency plans and previous experience to reinforce disaster preparedness;
- (f) Set aside sufficient funds for repairs and maintenance after natural disasters;
- (g) Keep machinery in States/Divisions in good working order to be able to carry out emergency repairs;
- (h) Provide training to ensure that Chief Engineers in States/Divisions report unusual developments to the Roads Department during disasters using an accurate and effective communication and reporting system;
- (i) Forward reports of unusual developments received from affected areas during disasters to the Ministry of Defence (Army);
- (j) Arrange staff to take turns and carry out surveillance on important embankments and roads that are vulnerable to storms, tides and floods;
- (k) Take precautionary measures without delay to prevent disruption of road transports due to natural disasters;
- (l) Build detours if necessary for road transport;
- (m) Carry out road repairs immediately during the rehabilitation stage and construct alternative routes when roads become impassable;
- (n) Make available road construction workers, machinery, road construction materials and fuel as a priority;
- (o) Request the required funding for the repair of damaged roads and construction of new roads;
- (p) Ensure that Chief Engineers in States/Divisions and District Chief Engineers maintain contact with local authorities in affected areas and coordinate all activities;
- (q) Contribute technical support and supervision to rehabilitation efforts.

133. **Public Works (Bridges)**

- (a) Maintain roads and bridges in cooperation with local engineering groups to enable the evacuation of people and property to safe locations during natural disasters;
- (b) Ensure that Bridge Construction Special Project Teams work together with local disaster management supervisory committees during natural disasters;
- (c) Safeguard State-owned property and evacuate to safer locations if necessary;
- (d) Repair damaged roads and bridges quickly during rehabilitation and construct diversion bridges and roads;
- (e) Maintain the road network system to ensure smooth road transportation.

134. **Public Works (Buildings)**

- (a) Designate safe shelters for use during disasters beforehand;

- (b) Set up a Supervisory Centre during disasters and conduct evacuation to safe locations;
- (c) Provide assistance where required, including relief and resettlement assistance;
- (d) Launch rehabilitation efforts using supplies provided by the government and supplies from the local population.

135. **Public Works (Electricity)**

- (a) Form emergency teams of electricity technicians to carry out required tasks;
- (b) Provide generators where required for electricity supply;
- (c) Document losses and damage and report to higher levels in real time;
- (d) Comply with the directives of the local authorities and ministries during rehabilitation;
- (e) Work with organizations such as Myanmar Electricity Enterprise to ensure safety and access to electricity according to the priority level;
- (f) Provide material requirements, technical support and supervision for the installation of overhead lines and reconstruction work.

136. **Public Works (Engineering)**

- (a) Ensure mobility of all existing equipment, machinery and vehicles at all times at short notice;
- (b) Prepare plans and conduct drills for disaster response based on previous experience;
- (c) Ensure that departmental heads are on duty at their offices round the clock during the disaster from the time disaster strikes;
- (d) Comply in real time with the directives periodically issued from the higher levels;
- (e) Safeguard the lives of subordinate staff and provide protection from injuries;
- (f) Work with Armed Forces, Myanmar Police Force, authorities, and relief organizations such as the Fire Brigade, the Red Cross, etc. during disasters;
- (g) Make full use of department-owned equipment, vehicles and machinery for the relief and rehabilitation efforts at the rehabilitation stage;
- (h) Repair department-owned equipment, vehicles, machinery, buildings, instruments and warehouses as quickly as possible;
- (i) Participate in the relief and rehabilitation efforts in areas that sustained greater damage deploying equipment, vehicles, machinery and manpower, as required;

137. **Department of Human Settlement and Housing Development**

- (a) Make arrangements for the urban planning technical group to carry out Planning, Research and Development for disaster preparedness and rehabilitation human settlements;

- (b) Formulate disaster preparedness and impact mitigation plans based on geographical features and the local requirements;
- (c) Cooperate with the ministries concerned and formulate implementation plans in line with norms and criteria from the standpoint of urban planning and environmental conservation with regard to land use in different localities for protection against natural disasters, areas where embankments are required for protection against the storm surge, areas for tidal swamp forests and wind breaker rows of trees;
- (d) Designate locations for the construction of two or three-storey safe, secure and sturdy cyclone shelter buildings that are resistant to natural disasters such as storms and floods (with social, educational and health services) depending on local requirements; and provide assistance with the architectural design and construction;
- (e) Work with local organizations and carry out field surveys to produce maps showing locations of wells, dams and covered ponds that provide an adequate supply of water for the population for drinking and cleaning as well as route maps showing easy access to safe shelters and buildings;
- (f) Prepare plans and conduct pilot projects to implement the upgrading scheme for residential areas of vulnerable towns and villages, with the integrated development of road and drainage systems, water supply and sewage systems, electricity and fuel distribution systems, garbage disposal systems;
- (g) Formulate and implement plans for the use of disaster-resistant (sturdier) building materials, new production processes and less costly and longer-lasting housing designs while educating the public for their widespread adoption and ensuring access to them;
- (h) Form a working group at the alert/warning stage to coordinate with the ministries concerned for emergency disaster management;
- (i) Attend meetings conducted by the natural disaster management committee and participate in the relocation of human settlements to safer locations, planning, construction and repairs;
- (j) Inspect the structural strength of buildings under the supervision of the Department of Human Settlement and Housing Development and issue warnings to evacuate potentially dangerous buildings;
- (k) Form working groups at the disaster stage consisting of planning and project engineers to carry out immediate repairs and provide supervision for government buildings that sustained damage;
- (l) Work with private businesses and authorities to ensure timely and convenient delivery of required construction equipment to affected areas;
- (m) Deploy a mobile team of urban planners and project engineers to affected areas at the rehabilitation stage and obtain recommendations on repairing infrastructure damage and meeting housing requirements, contributing to the rehabilitation efforts.

Ministry of Cooperatives

Ministerial Committee for Natural Disaster Management

138. **Formation.** The Ministerial Committee for Natural Disaster Management is chaired by the Minister and the heads of departments concerned serve as members.

Normal Times

139. The Ministry of Cooperatives, Departments/Enterprises (Head Offices), State/Division and Township levels, the Central Cooperative and all levels of Cooperatives should undertake the following.

- (a) Designate a focal person for natural disaster management;
- (b) Raise emergency funds for speedy management of disaster preparedness activities;
 1. Carry out village development activities to contribute to a village cooperative fund in vulnerable areas through cooperation among the Central Cooperative Society, Cooperatives Bank Limited and State/Division Cooperatives Groups and Township level groups;
 2. Provide special training for members of cooperatives on agriculture and housing construction on a self-help and mutual assistance basis.

Alert/Warning Stage

140. For rapid evacuation to safe locations in the event of a natural disaster, all levels of Cooperatives should undertake the following.

- (a) Set up disaster management offices at lower level cooperative offices, township level cooperative offices and township departments and work with the National Disaster Preparedness Central Committee, State/Division Peace and Development Council, District Peace and Development Council, Township Peace and Development Council, Ward Peace and Development Council and other organizations for the implementation of post-disaster activities;
- (b) Contribute to relief and evacuation efforts, complying with the directives of the National Disaster Preparedness Central Committee and local Disaster Preparedness Committees;
- (c) Evacuate go-downs, warehouses, equipment and materials according to the disaster warnings from the National Disaster Preparedness Central Committee and the executives of the local Disaster Preparedness Committees;
- (d) Keep the required means of transport at the ready for timely evacuation to safe locations during disasters;
- (e) Stockpile one week's worth of water, food and medicine to ensure food security during disasters;
- (f) Prioritize evacuation for people and property, e.g. the elderly, children, women and men, etc.
- (g) Report activities in real time to higher level Departments and Cooperatives.

Disaster Stage

141. Concerning losses and damage sustained during the disaster, the department in-charges and Cooperatives at all levels should undertake the following.

- (a) Determine losses sustained by the Cooperatives and the members and provide loans after careful scrutiny of compliance with rules and regulations;
- (b) Determine the required supplies and delivery programmes and assist in obtaining them from various organizations;
- (c) Ensure that the township official concerned inspect the preparations concerning the production programmes of basic agricultural production cooperatives to supply other organizations; compile the loan requirements and submit them to higher levels for approval and release of loans expeditiously;
- (d) Make arrangements to provide loans requested by disaster-affected cooperatives;
- (e) Implement separate rehabilitation programmes for all the target groups and types of work;
- (f) Work for the successful implementation of separate programmes such as repairs in affected areas, reclamation of submerged wells, acquisition of equipment required for digging wells, etc.;
- (g) Implement plans to clear up losses and damage together with the public and NGOs;
- (h) Provide impetus to assistance programmes for disaster-affected farmers, such as distribution and planting of seedlings and agricultural production programmes;
- (i) Provide assistance to the grief-stricken people through cooperation among all levels of Cooperatives and NGOs such as the Union Solidarity and Development Association, Women's Affairs, Auxiliary Fire Brigade, War Veterans' Organization and the Red Cross Society; provide training and loans for income-generating activities and gainful employment, if required;
- (j) Ensure that all levels of Cooperatives work with the Disaster Preparedness Committees at the national and local level in all areas to meet the livelihood requirements in a timely manner.

Ministry of Home Affairs

Ministerial Committee for Natural Disaster Management

142. **Formation.** The Ministerial Committee for Natural Disaster Management is chaired by the Minister and the heads of departments concerned serve as members.

Functions and Responsibilities of the General Administration Department

143. The following should be undertaken for disaster preparedness.

(a) Normal Times

1. Formulate and distribute disaster preparedness plans, and conduct drills in all areas;

2. Provide training to local NGOs and People's Strength members on relief, life-saving, health care, sanitation, kitchen management, vaccination programmes and storm hazard preparedness programmes;
3. Ensure that the local population understand storm warning signals through films, pamphlets and meetings; (See Appendix E and H for weather news including storm news and warning flag signals.)
4. Make arrangements to be able to display warning signals in vulnerable areas of Wards/Village Tracts;
5. Produce maps of Wards/Village Tracts showing areas most vulnerable to storms, floods and other natural disasters;
6. Make a list of vehicles and motor boats that can be used for emergency work;
7. Compile a list of departments, NGOs, and members of People's Strength that will take part in relief operations in the pre-disaster, disaster and post-disaster periods and designate representatives for contact;
8. Issue orders and directives for disaster preparedness (e.g. local authority order prohibiting the illegal transport, storage and sales of fuels);
9. Enforce the orders and directives that have been issued;
10. Obtain beforehand the required relief and aid supplies;
11. Set up appropriate equipment and systems at local levels to issue early warnings; (See Appendix E for warning flag signals to be displayed in villages and wards.)
12. Form the necessary disaster preparedness committee and organizations;
13. Create shelters and safe locations for use during disasters depending on local conditions; (See Appendix I for Cyclone Shelters.)
14. Conduct educational talks on natural disasters and rehearsals periodically for the local community depending on local conditions;
15. Coordinate with departments concerned to form Auxiliary Fire Brigades and Red Cross Societies, and to provide organizing and training activities;
16. Carry out organizing work to involve other NGOs in disaster preparedness activities;
17. Gather socio-economic data systematically, including census figures and lists of cattle and animals.

(b) Alert/Warning Stage

1. Emphasize the dissemination of news obtained through early warning systems to the community in respective administrative areas during disasters; (See Appendix F for the *Emergency Assistance Request Form*.)
2. Assign duties to administrative bodies and NGOs to fly warning flags as part of the disaster preparedness programme in the vulnerable areas of the Ward/Village Tract;

3. Alert and mobilize the members of the Auxiliary Fire Brigade, the Red Cross Youth, members of People's Strength and NGOs;
4. Make the necessary arrangements to evacuate the public to safe locations (shelters) in a timely manner;
5. Increase security sentries as required;
6. Prepare temporary supervision camps and relief camps in advance;
7. Ensure that all levels of supervisors have all teams at the ready for assigned duties;
8. Keep the office operational 24 hours a day in the emergency period.

(c) Disaster Stage

1. Ensure vertical communications in real time through designated channels of supervision; (See Appendix F for the *Emergency Assistance Request Form*.)
2. Alert the community in areas the natural disaster is likely to strike;
3. Safeguard the road and water transport routes, keep relief and medical teams at the ready and arrange transport to affected areas at short notice;
4. Evacuate the community from vulnerable areas to safe locations or designated shelters as quickly as possible;
5. Operate relief camps and supervisory centres at designated shelters as quickly as possible;
6. Ensure that administrative personnel and NGOs in areas vulnerable to storms give disaster warnings door to door as a matter of urgency;
7. Deploy security personnel and arrange patrols as required;
8. Keep available relief and aid supplies at the ready to launch relief operations quickly and effectively;
9. Evacuate the public remaining in the area to designated safe locations;
10. Make arrangements to evacuate movable property including cattle to designated locations;
11. Disconnect or disassemble at-risk or fragile electronic or communication equipment beforehand;
12. Ensure the well-disciplined implementation of orders received from the National Disaster Preparedness Central Committee and Sub-Committees with the help of members of the Fire Brigade, Red Cross Youth members, members of People's Strength, social organizations and NGOs.

(d) Rehabilitation Stage

1. Conduct field inspections in affected areas as soon as possible and provide the necessary assistance and support;

2. Submit immediate preliminary reports with population figures, death and injury figures of cattle and animals, data on socio-economic losses, and carry out further systematic data collection; (See Appendix G for data formats.)
3. Ensure that local authorities provide the required support to send disaster victims from affected areas to relief camps;
4. Ensure that local authorities provide support to enforce discipline at relief camps;
5. Make arrangements to provide health care and social protection to disaster victims;
6. Clear collapsed buildings and trees as quickly as possible;
7. Prioritize the restoration of transportation, electricity and water supply and telephone and telegraph services as soon as possible;
8. Make arrangements as quickly as possible to reclaim contaminated wells and ponds for access to clean water and dig new wells for drinking water;
9. Make arrangements to remove saline water from roads and farmland (in the event of storms, storm surges, floods, and tsunami);
10. Provide the required assistance to disaster-affected people for house repairs and for temporary shelters;
11. Make arrangements to bury/cremate the remains of disaster casualties and animal carcasses;
12. Manage and systematically utilize disaster funds and supplies, as well as cash and supplies donated by well-wishers, social organizations and NGOs;
13. Coordinate with higher level departments and organizations, social organizations, well-wishers and donors for housing construction and for programmes to rehabilitate agriculture and livestock breeding and livelihoods in line with the policies;
14. Support the local population for the resumption and recovery of economic activities to previous conditions;
15. Take steps to avoid food shortages;
16. Implement moral support programmes for the affected population;
17. Make efforts to resume normal education for students;
18. Prioritize the prevention of infectious diseases in public health care;
19. Initiate rehabilitation activities as soon as possible and continue relief operations for as long as necessary;
20. Submit detailed reports on relief, aid, rehabilitation carried out by the Armed Forces, Myanmar Police Force, local authorities, departments, NGOs, members of People's Strength in coordination with Disaster Preparedness Committees;

144. Natural disasters encompass hazards such as fires, floods, storms and earthquakes. In the event of natural disasters in respective administrative areas, an effective and speedy response must be made with the guidance of the National Disaster Preparedness Central Committee to minimize losses and damage. The following emergency relief supplies should be stockpiled for respective areas.

- (a) rice, cooking oil, salt;
- (b) male/female sarongs, blankets, mosquito nets, towels;
- (c) woks, ceramic bowls;
- (d) construction materials

General Instructions

145. General Administration Departments at the State/Division, District, Township level should pay particular attention to the dissemination of the the following general instructions and ensure that they reach the the grassroots level public at the Ward/Village level.

- (a) Encourage the public to listen to special weather reports from the Voice of Myanmar, on the radio and on television;
- (b) Enable an exchange of weather-related news and information;
- (c) Display warning signals during emergencies caused by storms, floods and tsunami, advising boats, fishing boats and ships to remain close to the coastline and find shelter at safe locations and anchor themselves;
- (d) Advice the public to seek shelter at safe locations following the disaster news;
- (e) Advice the public not to heed the rumours spread by the underground media from within the country and abroad;
- (f) Work to provide assistance to victims and obtain access to accurate news at the disaster and post-disaster stage;
- (g) Ensure that the injured receive basic medical services from the health teams;
- (h) Provide recommendations on taking collective action to remove and bury casualties and animal remains;
- (i) Carry out organizing work with the social organizations, well-wishers, volunteers, and government organizations such as the Armed Forces and the Police Force to ensure systematic implementation of all programmes.

Ministry of Rail Transportation

Ministerial Committee for Natural Disaster Management

146. **Formation.** The Ministerial Committee for Natural Disaster Management is chaired by the Minister and the heads of departments concerned serve as members.

Standing Order for Disaster Management

147. The Myanmar Railways and Road Transport under the Ministry of Rail Transportation manage road transport matters, while the Transport Planning Department

issues commercial operator's licences to private motor vehicles and vessels used for passenger transport and freight transport. As the responsible department for transportation in State/Division authorities, the Transport Planning Department is charged with transportation-related responsibilities during disasters. The following should be undertaken to ensure the successful accomplishment of the functions and responsibilities of the Ministry at normal times, pre-disaster stage, disaster stage, post-disaster stage and relief and rehabilitation stage of the disaster response.

148. **Normal Times.** The following should be undertaken.

- (a) Undertaken necessary preparations in anticipation of the following scenarios during natural disasters;
 1. Destruction of railways, roads and bridges, damage to factories, workshops, stations, engines, carriages, equipment and loss of staff due to natural disaster;
 2. Transportation of food supplies, medicine, construction materials to States/Divisions affected by natural disaster using the resources under the Ministry under the management of the central authority;
 3. Transportation of supplies and transportation for the temporary evacuation of towns and villages from affected areas under the arrangement of States/Divisions;
- (b) Form no fewer than three Ministry-representative close supervisory work teams consisting of departmental heads under the Ministry, to ensure effectiveness in carrying out the above tasks and to provide necessary supplies and training;
- (c) Ensure that the Ministry staff in States/Divisions study the respective State/Division disaster management and projects and carry out management and coordination work as necessary;
- (d) Ensure that State/Division organizations under the Ministry inform their respective disaster response tasks to the head office and Ministry request support for their requirements;
- (e) Coordinate with the organizations concerned ro with ministries for foreseeable scenarios, for example, coordinate with ministries in advance for the delivery of food supplies, fuel, medicine, construction materials, machinery and other required items as soon as possible;
- (f) Assign tasks to Ministry staff at all levels individually and in groups for the disaster stage and provide training;

149. **Alert/Warning Stage.** The following should be undertaken.

- (a) Disseminate the disaster warning to Ministry staff at all levels and assign duty officials at each office 24 hours a day;
- (b) Ensure that the Ministry staff at all levels remain at the ready at their duty stations as planned together with their resources;
- (c) Order a temporary stop outside the path of the disaster or removal out of the disaster zone for the safety of regular transportation services by the Ministry;

- (d) Check updates on all locally available resources and mobilize them;
- (e) Carry out emergency evacuation to ensure safety or risk reduction of families of Ministry staff, assets, buildings, vehicles and trains;
- (f) Prioritize and organize programmes for the mitigation of disaster impact that can be carried out at short notice;
- (g) Coordinate with all levels of local authorities in States/Divisions and contribute to emergency rescue, evacuation and aid activities including those of the Ministry;
- (h) Assign duties to all levels of staff individually and in groups as planned;
- (i) Deploy security for all areas without any gaps;
- (j) Combine and coordinate Ministry resources and local resources in anticipation of the duties likely to be assigned by the Transportation and Route Clearing Sub-Committee in the event of large-scale disasters that require State-level management.

150. **Disaster Stage.** The following should be undertaken.

- (a) Carry out emergency rescue and protection activities;
- (b) Provide assistance and support where necessary;
- (c) Disseminate accurate news to counter rumours;
- (d) Set up alternative means of communication in addition to the regular communication system to cope with the emergency situation;
- (e) Provide health care and support;
- (f) Provide support and supplies to help restore stable conditions;
- (g) Arrange required security services and evacuations to cope with the ongoing disaster situation;
- (h) Prepare the Ministry-representative close supervisory working group for deployment to assigned areas;
- (i) Combine and prepare all available resources in anticipation of the duties likely to be assigned by the Transportation and Route Clearing Sub-Committee when national level disaster response is initiated depending on the destructive power and duration of the disaster.

151. **Post-Disaster Stage.** The following should be undertaken.

- (a) Pass on the news to lower levels after confirmation is received that the disaster has passed, together with a reminder of the potential after effects;
- (b) Launch health care services, provision of shelter and food and rehabilitation activities as planned;
- (c) Make arrangements for the resumption of regular rail, bus and air services suspended because of the natural disaster;
- (d) Provide full transport services to central level and State/Division programmes;

- (e) Deploy teams at the same time to collect data on losses and damage, to assess losses, and to collect data on salvaged items; submit reports in real time to the Ministry through the Ministry-representative close supervisory working group; requisition replacements, select usable items from those that have been salvaged and carry out repairs;
- (f) Clear potentially dangerous debris, clean up debris and wastes that can be harmful to health; prioritize and fulfil requirements to restore normal conditions as quickly as possible;
- (g) Combine resources to carry out duties assigned by the Transportation and Route Clearing Sub-Committee and other Sub-Committees and to provide services requested by local authorities in States/Divisions in the event of large-scale disasters that require State-level management;
- (h) Ensure that the Ministry-representative close supervisory working group coordinates with all levels of local authorities and serve dual duties as the close supervisory working group of the Transportation and Route Clearing Sub-Committee in addition to the relief, resettlement, transportation, health care and support activities of the Ministry when State-level disaster management is initiated;
- (i) Prepare action plans to enable departments under the Ministry that are located in disaster-affected areas to perform duties assigned by the Transportation and Route Clearing Sub-Committee in addition to those assigned by the Ministry, while providing services requested by all levels of local authorities in the State/Division;
- (j) Plan for alternative leadership and replacement of vehicles and machinery as loss of life and damage to property, vehicles and machinery may occur due to natural disasters;
- (k) Pay particular attention to security measures in order to prevent theft and sabotage by unscrupulous elements wishing to take advantage of any temporary lapse in the rule of law in the post-disaster period.

Ministry of Transport

Formation and Responsibilities

152. Formation. The Working Committee for Natural Disaster Management of the Ministry of Transport is chaired by the Minister and the heads of departments serve as members.

153. Responsibilities.

- (a) Lay down policies for disaster preparedness programmes for water and air transport;
- (b) Issue orders and directives for disaster preparedness as required;
- (c) Provide supervision and guidance to lower levels for formulation and implementation of disaster preparedness programmes in order that they can cope with natural disasters with a minimum of loss and damage;

- (d) Take disaster preparedness measures for vessels and aircraft, machinery and infrastructure in the technical sectors of water transport and air transport and provide supervision and guidance in ensuring ready access to the required manpower and materials for those measures;
- (e) Provide supervision and guidance for the evacuation of vessels, aircraft and staff to safer locations depending on the scale of the natural disaster;
- (f) Provide supervision and guidance for the evacuation of the public from vulnerable areas by ship and by boat using vessels and aircraft under the management of the Ministry;
- (g) Provide transportation assistance requested by other ministries and States/Divisions depending on the scale of the natural disaster;
- (h) Provide supervision and guidance to ensure a good communication system within the Ministry of Transport and with other related external departments;
- (i) Provide supervision in conducting constant surveillance from the time of disaster onset and issuing news updates to ministries concerned and to the public in real time;
- (j) Provide further guidance and supervision concerning the guidance National Disaster Preparedness Central Committee;
- (k) Provide supervision for the implementation of disaster response at normal times, alert/warning stage, disaster stage and rehabilitation stage;
- (l) Lay down policies for water and air transport in the post-disaster period;

154. **Normal Times.** In the step-by-step implementation of disaster preparedness programmes, the Ministry of Transport should undertake the following tasks.

- (a) Issue guidelines, orders and directives for different stages of national disaster preparedness;
- (b) Make additions and modifications to previous orders and directives as required;
- (c) Form implementation teams for disaster preparedness activities of all departments under the management of the Ministry and assign duties;

155. Tasks for the water transport sector. Water transport departments under the management of the Ministry of Transport, namely, Inland Water Transport, Myanmar Five Stars Shipping Line, Myanmar Port Authority, Water Resources and Waterways Development Department and Water Transport Directorate, should undertake the following.

- (a) Assign duties to the required committees for disaster management activities and prepare departmental action plans;
- (b) Prepare management action plans that conform to the actual implementation at normal times, alert/warning stage, disaster stage and rehabilitation stage;
- (c) Issue departmental orders and directives on natural disasters; make arrangements to obtain weather and meteorological updates and to communicate them to departments, offices and vessels under the management of the Ministry;

- (d) Supervise strict compliance with disaster-related orders and directives issued by the Ministry at all levels; designate harbours of refuge to prevent damage to vessels from storms and storm surges; take steps and carry out inspections to ensure the sturdiness of piers and quays where ships can be berthed safely depending on the severity of the storm; ensure that the relevant work-related departments conduct a survey of coastwise and inland transport vessels and put in place means of ready communication with those privately owned vessels at any time;
- (e) Ensure that passenger and freight transport departments earmark reserve vessels for relief operations at pre-disaster, disaster and post-disaster stages and that rehearsals and drills are conducted in conformity with departmental management action plans;
- (f) Conduct disaster awareness and training activities for staff, such as seminars and formal training courses;
- (g) Institute departmental disaster response structures for supervision, evacuation, relief, aid, rehabilitation and reconstruction activities and assign duties; supervise vessels to ensure that they are fully equipped with regulation life-saving items; maintain good communication lines with departments and offices in States/Divisions at all times, taking measures to prevent communication disruptions;
- (h) Issue an alert to all concerned along waterway when news of flood currents is received; inspect vessels large and small to prevent accidents leading to sinking; and screen ocean-going vessels for entry into Yangon port under the supervision of departments concerned;
- (i) Issue an alert to all concerned along waterway when a river flood alert is received and provide supervision as required to prevent sinking of vessels;
- (j) Carry out the necessary coordination for effective news releases and make arrangements to issue decrees to mitigate loss of life and damage to property sustained by the public through disaster warnings including storm warnings; broadcast special unscheduled reports on radio and television programmes depending on the urgency of the news to afford the public opportunities to avoid the impact of the disaster;

156. Tasks for the air transport sector. Air transport departments under the management of the Ministry of Transport, namely, Air Transport Directorate and the Myanmar Airways, should undertake the following.

- (a) Form required committees, assign duties and prepare departmental action plans for disaster preparedness management activities;
- (b) Prepare management action plans that conform to the actual implementation at normal times, alert/warning stage, disaster stage and rehabilitation stage;
- (c) Issue departmental orders and directives on natural disasters; make arrangements to obtain weather and meteorological updates and to communicate them to departments, offices and airports under the management of the Ministry;

- (d) Take measures to move the aircraft in service to airports in safe locations and to evacuate the grounded aircraft to safe shelters in the event of natural disasters such as storms;
- (e) Ensure that passenger and freight transport departments earmark reserve aircraft for relief operations at pre-disaster, disaster and post-disaster stages and that rehearsals and drills are conducted in conformity with departmental management action plans;
- (f) Take measures to clear the runways at airports in affected areas to enable the landing of relief aircraft for emergency response;
- (g) Put in place fire breaks, fire prevention measures and fire fighting procedures to safeguard airport terminal buildings and housing from wildfires;

157. **Alert/Warning Stage.** The following should be undertaken in water transport and air transport sectors.

(a) Activities to be undertaken in the water transport sector

1. Communicate disaster alerts in a timely manner to management sub-committees formed with officials from vessels, water transport offices and departments, jetty offices, and staff offices and to other organizations;
2. Contact specialists from the Department of Meteorology and Hydrology to confirm the reliability and probability of the disaster alert;
3. Designate hazard levels depending on the the scale and magnitude of the hazard; move or tow vessels to designated harbours of refuge depending on the the length of the warning period and take damage-control measures for ocean-going vessels; evacuate staff families and important office documents and assets to safe locations;
4. Take measures to prevent quays, piers from being submerged under rising water levels, to move floating machinery and equipment to safe locations, and to require ocean-going cargo vessels to leave for the open sea; keep a powerful all-weather tug boat at the mid-stream buoy for emergency use; ensure the functionality of important navigation aid systems, take necessary measures to cut off electricity to dockyards during natural disasters such as storms and to prevent damage to docked ships undergoing repairs;
5. Issue timely warnings to seaports, vessels along the coastline and inhabitants of coastal areas when an alert for tsunamis or similar natural disasters is received; require ocean-going cargo vessels to leave for the open sea, if necessary; take immediate steps to evacuate those living near the coast to higher ground or high-rise shelters and buildings.

(b) Activities to be undertaken in the air transport sector

1. Keep disaster teams at the ready and disseminate the disaster information received to the airports in vulnerable areas;
2. Make preparations to move the aircraft in service to airports in safe locations;

3. Take measures to evacuate the grounded aircraft to safe hangars and to prevent damage to other aircraft;
4. Take measures to protect fixed air traffic control equipment, radars, communication equipment and important buildings at airports;
5. Clear potentially dangerous large trees around buildings if necessary and put in place fire fighting measures;
6. Earmark aircraft to respond to air transportation requests to evacuate people from critical areas or to deliver of disaster preparedness supplies depending on the reliability of the disaster alert;
7. Keep the aircraft at designated airports if necessary until the disaster risk has passed;
8. Make changes to domestic or foreign flights or suspend flights when required.

158. **Disaster Stage**

(a) Activities to be undertaken in the water transport sector

1. Handle the situation as per the departmental action plans;
2. Communicate disaster updates to the lower levels in real time and provide supervision;
3. Pay particular attention to prevent disruption of communication systems; cut off electricity supply to offices, departments, dockyards and workshops;
4. Coordinate with organizations and provide supervision to emergency relief and protection activities;
5. Comply with the guidance and supervision of the Ministry Working Committee if the large-scale impact of the disaster proves to exceed the coping capacity of the department concerned;
6. Make the best possible efforts to minimize losses and damage during disasters;
7. Ensure that all levels of sub-committees work to cope with the situation through collective action in respective sectors;
8. Ensure that staff operating important vehicles, machinery and equipment do not leave their duty stations without permission; that the electricity supply is cut off during natural disasters such as storms and that communications are maintained with large vessels using all means;
9. Take measures to have people gather in open spaces away from high-rise buildings in the event of natural disasters such as earthquakes as per the management action plans;
10. Assign duties to man supervisory stations and centres 24 hours a day since the time the alert/warning is received;
11. Deploy security systematically at respective airports, ports and port area office buildings in the event of natural disasters;

12. Coordinate with the departments concerned to obtain disaster updates continually, taking care to maintain communications until the disaster is confirmed to have passed;
13. Carry out relief operations in real time during disasters as per the original plans.

(b) Activities to be undertaken in the air transport sector

1. Obtain the hourly disaster updates and information on severity of impact from the information section of the Department of Meteorology and Hydrology;
2. Communicate the news and information obtained to airports continuously;
3. Pay particular attention to prevent disruption of communications;
4. Move the aircraft to safe locations, evacuate important people and equipment and protect equipment for aircraft maintenance and communication as planned previously depending on the type of the natural disaster;
5. Report to the Ministry Working Committee to obtain guidance and assistance if the type of the disaster proves to exceed the management capacity of the department concerned and external assistance is required;

159. **Functions and Responsibilities for Rehabilitation**

- (a) Prioritize a prompt post-disaster damage survey, urgent provision of emergency relief where required, and removal of potential dangers from the disaster situation;
- (b) Prioritize clearing water transport debris that can lead to environmental damage or contamination, clearing and repairing wharves for use in emergency response, clearing waterways for use in emergency response;
- (c) Form departmental teams to assess losses and damage sustained by the entire Ministry; make a list of emergency repairs and construction required for relief and rehabilitation and present it to the management committee of the Ministry;
- (d) Implement repairs, reconstruction and salvage operations as per rehabilitation and reconstruction action plans using departmental resources initially;
- (e) Prepare action plans to fulfil the rehabilitation requirements of departmental offices nationwide in line with the national level recovery management in order to restore vessels, aircraft, ports and airports that are vital for water transport and air transport to normal conditions;
- (f) Ensure that departments and organizations under the Ministry provide mutual support in carrying out rehabilitation activities and coordinate with local authorities and other ministries to complete tasks successfully;
- (g) Obtain documentary photographs and maintain activity records during the disaster stage which are necessary for research into the strengths and weaknesses of the disaster management process given the scale of the losses and damage sustained with the purpose of improving management processes;

160. Activities to be undertaken in the water transport sector

- (a) Ensure that water transport departments make a list of the vessels sunk and lost and assess their value after confirmation is received that the disaster has passed;
- (b) Prioritize the removal of sunk vessels blocking the waterways; prioritize the repair of support machinery needed for loading and unloading cargo to ensure continued operation of the port; conduct measurements to maintain the depth necessary for large vessels;
- (c) Prioritize the recovery of government-owned and privately-owned sunken vessels blocking the waterway, and the recovery of stranded vessels as required; prepare and implement departmental recovery and salvage action plans;
- (d) Prepare and systematically implement action plans for the departure of vessels from harbours of refuge or shelters, resumption of regular service along transport routes and repair of wharves;
- (e) Assess the serviceability of the wharves under the management of the departments concerned together with the extent of damage sustained and take steps to resume regular passenger and freight transport services;
- (f) Ensure the correct positioning of navigation markers, beacon buoys and mid-channel buoys;
- (g) Ensure that dockyards take own measures to clear debris and obtain regular electricity supply for resumption of dockyard operations;
- (h) Submit timely reports on the damage and losses sustained by vessels belonging to various departments and the situation of the staff to the Central Management Working Committee of the Ministry;
- (i) Conduct a survey of damage and losses sustained by externally-owned large cargo vessels for submission to the Central Management Working Committee;
- (j) Form teams to calculate systematically estimates of funds required for salvage and recovery, with departmental breakdowns for submission to the Central Management Working Committee of the Ministry;
- (k) Ensure that departments concerned review the disaster management processes with a view to minimizing losses and damage sustained during disasters and prepare a revised comprehensive disaster preparedness action plan for submission to the Central Management Working Committee of the Ministry;
- (l) Coordinate with other partner organizations to obtain necessary assistance for State-level rehabilitation activities as required;
- (m) Ensure that departments concerned prepare progress reports on their rehabilitation activities for submission to the Central Management Working Committee of the Ministry.

161. Activities to be undertaken in the air transport sector

- (a) Conduct a survey of damage and losses sustained after disasters such as storms and assess the value for submission to the Central Management Working Committee of the Ministry;
- (b) Clear the runways to enable emergency search and rescue operations by air and transport of emergency search and rescue equipment and relief supplies;
- (c) Make arrangements to land at airports closest to affected areas to provide medical evacuation for patients in critical condition from affected areas, and to deliver emergency relief supplies;
- (d) Request all domestic airlines to cooperate fully with local organizations for post-disaster search and rescue, evacuation and rehabilitation activities;
- (e) Make preparations to respond to requests for relief and resettlement assistance from higher level organizations;
- (f) Prioritize repair of airport communication systems that sustained damage during natural disasters;
- (g) Make arrangements for the resumption of normal flights transporting passengers and freight;
- (h) Take steps for immediate repair of airports and aircraft that sustained damage.

Ministry of Culture

Ministerial Committee for Natural Disaster Management

162. **Formation.** The Natural Disaster Management Committee of the Ministry is chaired by the Minister and the heads of departments serve as members.

163. **Functions and Responsibilities of the Ministry of Culture.** The Natural Disaster Management Committee should be formed at the Ministry level and at the State/Division level to undertake tasks.

164. **Pre-Disaster Stage**

- (a) Obtain news and information on the nature disaster and take proactive measures;
- (b) Set the priority status and assign duties for evacuation of assets in the event of natural disasters in vulnerable areas;
- (c) Conduct the Disaster Preparedness Work Coordination Meeting annually to make an overall evaluation of work carried out by Committees at department branches in States/Divisions and museums, to reach decisions and lay down future plans for implementation;
- (d) Identify the strengths and weaknesses of disaster response in other countries and regions, prepare practical action plans and conduct drills regularly;
- (e) Conduct skills training and seminars for staff on disaster preparedness programmes and activities beneficial to the public;

- (f) Prevent the loss or destruction of the country's cultural heritage during disasters and preserve it planning for fixed and movable items as required.

165. **Disaster Stage.** The following should be undertaken.

- (a) Ensure that the central committee designate an official from the central committee to present all activities to the Ministry and higher level departments and to maintain contact with Committees at the State/Division Sections and Branches during disasters;
- (b) Prioritize the evacuation to safe locations of staff from Sections and Branches in affected areas, their families and the local population;
- (c) Carry out field work for the welfare of staff from affected areas and their families, and for the reconstruction of damaged buildings; collect and record information and data, making a list of damage and losses in real time for submission;
- (d) Ensure that the ranking official at the department provides supervision and organizes the staff to minimize loss of life and damage to assets during natural disasters;
- (e) Initiate fixed-item protection measures for ancient artifacts, palm-leaf manuscripts and folded tablet manuscripts in the museum under the supervision of the ranking official and work with the local authorities to evacuate them to safe locations urgently;
- (f) Make provisions for the accommodation and meals of disaster-affected staff on real time;
- (g) Maintain communications with the higher-level department by telephone or telegraph during disasters.

166. **Rehabilitation and Reconstruction Stage.** The following should be undertaken.

- (a) The official designated by the central committee should conduct field inspections in the affected areas and localities in the post-disaster period.
- (b) Construct temporary buildings immediately where buildings have been destroyed or damaged;
- (c) Provide the required supplies for the resumption of normal work in a timely manner;
- (d) Make arrangements to transport patients in critical condition without delay to receive treatment;
- (e) Provide support and assistance to the staff and families for accommodation and meals;
- (f) Identify strengths and weaknesses of the disaster response and draw lessons; formulate preparedness plans for similar occurrences;
- (g) Conduct rehearsals and drills for immediate response by the supervisory team as disasters may strike at any season;

- (h) Monitor international news and news releases from the Department of Meteorology and Hydrology constantly and take proactive measures;
- (i) Obtain the contact telephone numbers of departments at the same level, local authorities and other social organizations and coordinate as required;
- (j) Stockpile reserve food supplies/medicines.

Ministry of Communications, Posts and Telegraphs

Ministerial Committee for Natural Disaster Management

167. **Formation.** The Natural Disaster Management Committee of the Ministry is chaired by the Minister and the heads of departments serve as members.

168. **Pre-Disaster** Preparedness activities: Installation of an emergency communications system.

- (a) Form ministerial communications management committee, working committee, support committee and State/Division working sub-committees and assign duties to them;
- (b) Compile the technical specifications and data of the existing communication links and systems;
- (c) Ensure access to backup communications equipment;
- (d) Find ways to install an emergency communications system appropriate to local conditions;
- (e) Form teams for the installation of an emergency communications system;
- (f) Prepare communication links for the transmission and reception of disaster news;
- (g) Issue guidelines to States/Divisions for the operation of the emergency communications system;
- (h) Conduct technical skill training for the emergency communications system;
- (i) Conduct rehearsals for the installation of an emergency communications system;
- (j) Keep emergency communications equipment at the ready, with regular inspections and tests to ensure that the equipment is in good working order;
- (k) Designate backup communications equipment groups upon reception of a disaster alert depending on the locality and ensure their mobility when required;
- (l) Set up a supervisory camp and initiate operations;
- (m) Take steps for the urgent transmission of warning signals to designated centres by facsimile, telephone and telegraph;
- (n) Make arrangements to enable wireless communications with all inhabited islands;
- (o) Prepare a configuration of communication channels with specified frequencies for direct communications between Yangon and RT telegraph equipment groups in service at normal times; and ensure access to backup RT equipment;

- (p) Prepare a configuration for links between the hub and satellite communications equipment such as VSAT, DOMSAT, MPT Satellite Terminal; compile the telephone numbers used on the satellite equipment;
- (q) Compile the communication systems and the telephone numbers that can be used for linkage with township stations in States/Divisions that are separately assigned duties for disaster preparedness;
- (r) Take measures such as constructing an underground fibre optics cable system to replace the existing overland fibre optics cable system for long-distance communications and using the current system as backup link; installing more than one communication systems in coastal and delta areas in early and late rainy season every year when the monsoon appears; constructing two-storey reinforced concrete buildings and using specially constructed storm-resistant towers to protect equipment from natural disasters and conducting training for technicians;
- (s) Take measures to provide telephone communications in affected areas during disasters;
- (t) Keep a CDMA system for on stand-by for emergency installation as this system provides a wider coverage area and keep high-frequency radio communications equipment for backup and carry out periodic checks of their functionality;
- (u) Ensure that the post office maintains a record of the balance on hand by type and amount, the the cash and stamps are safely deposited in the cash box or safe and that the cash box or safe is placed near the postmaster and designated as priority 1 for evacuations;
- (v) Ensure that important records and documentation such as cash book and the stamps accounts book are kept in cabinets and designated as priority 2 for evacuations;
- (w) Enter full details of cash balance and stamps balance accurately in the daily cash account for daily delivery to the Division Office to ensure that State/Division Manager's Office can readily ascertain the cash and stamps amounts in an emergency;
- (x) Ensure access to hooks and flaps, water, sand and fire-extinguishers to deal with fire hazards;
- (y) Draw up disaster preparedness plans at the State/Division level and at Township level;

169. Activities to be undertaken at the Disaster Stage

- (a) Obtain and forward disaster news and updates;
- (b) Repair communication links and equipment in the event of malfunction or damage;
- (c) Establish initial communications with affected areas in States/Divisions using appropriate communication methods;
- (d) Ensure good communications with State/Division capitals and important areas;

- (e) Use the regular communication lines of the Myanmar Post and Telecommunications such as telephone lines, RT telegraph lines and satellite links;
- (f) Set up communications with neighbouring countries by Internet and e-mail in addition to telephone lines;
- (g) Use MPT Satellite Terminals, as a reserve equipment group for a reserve communication channel or request nearby battalions or headquarters for assistance and access to battlefield-use single sideband radio communication devices (SSBs) for reporting and communications if the affected area is outside the normal communications network;
- (h) Use Portable Electric Generators to run the reserve communications channel in affected areas and acquire foldable antennas for MPT Satellite Terminals as a special programme;
- (i) Submit reports on disaster preparedness;
- (j) Find ways to set up hot lines for relief operations in affected areas to provide direct contact with important departments and organizations;
- (k) Use reliable communications systems for real-time access to weather forecasts from neighbouring countries and international meteorological and hydrological organizations;
- (l) Work with the local authorities concerned and other ministries in carrying out relief operations;
- (m) Make arrangements to set up temporary post offices in relief shelters and camps and to provide postal services for victims in shelters as well as for those who have returned to their own areas;
- (n) Issue directives to personnel concerned highlighting the psychological importance of continuous postal services during disasters;
- (o) Securely lock dispatches, parcels, and post office stamps in dispatch boxes in readiness for evacuation in emergencies;
- (p) Set up temporary communication stations to provide communications services for the general public in affected areas as soon as possible; keep reserves of post office supplies (dispatch bags, temporary date stamps, letter-weighing devices and forms for office use) at State/Division Managers' offices;
- (q) Take effective steps to ensure that telephone services are available day and night;
- (r) Maintain emergency telephone communication systems at ministries, branch departments, directorates and other departments such as disaster preparedness programmes and volunteer organizations;
- (s) Help resolve the difficulties encountered by ministries and NGOs in their cyclone preparedness activities by fulfilling communications requirements immediately;
- (t) Install emergency communication systems in affected areas;

- (u) Provide a telephone communications system with areas under the control of armed organizations.

170. Post-Disaster Stage

- (a) Carry out field inspections of communications equipment damaged by natural disaster;
- (b) Find ways to replace the damaged communication system with another suitable system urgently;
- (c) Repair damaged communication equipment;
- (d) Replace communication equipment damaged beyond repair with the reserve equipment;
- (e) Acquire equipment necessary to ensure good communications;
- (f) Ensure normal operation of the emergency communication system, the MPT Satellite Terminal, installed in the affected area for good communications;
- (g) Carry out urgent reconstruction of damaged communication links;
- (h) Take effective measures to maintain telephone service day and night;
- (i) Compile data on the emergency telephone and telegraph communications among ministries, branch offices, departments, storm preparedness programme and other volunteer organizations; address the complaints received from disaster preparedness and emergency operations supervisory offices and branch offices immediately to ensure continuous service;
- (j) Maintain communications with local administrative bodies and ensure that the telephone and telegraph communications board enhances postal services in areas without their support;
- (k) Ensure that temporary communications stations set up dispatch delivery with the nearest communications station as soon as possible;
- (l) Provide increased support to local authorities during life-saving, evacuation, protection and rehabilitation stages to ensure continuous postal services;
- (m) Carry out emergency repair or installation of communications systems during disasters and take measures to enable the use of communications systems in coastal areas;
- (n) Prepare plans for the repair and reconstruction of disrupted telephone communication systems, and submit them to the Planning Commission of the National Disaster Preparedness Central Committee for funding.

Ministry of Energy

Ministerial Committee for Natural Disaster Management

171. **Formation.** The Natural Disaster Management Committee of the Ministry of Energy is chaired by the Minister and undertakes the following tasks.

- (a) Provide supervision in the Ministry of Energy in line with the policies and guidelines of the National Disaster Preparedness Central Committee;
- (b) Carry out coordination as required and give necessary instructions to lower level departments to ensure full cooperation in providing the services of the Ministry of Energy to disaster preparedness activities of all the sub-committees concerned and States/Divisions;
- (c) Set up a intra-Ministry reporting system for disaster alert/warnings;
- (d) Conduct disaster preparedness educational talks and preparedness activities as required to reach the lower levels in the Ministry;
- (e) Store fuel in States/Divisions and directly distribute required amounts to the required area at the required time with the permission of the higher levels, which is the main function of the Ministry of Energy;
- (f) Coordinate close supervision through emergency supervisory centres and mobile supervisory centres at the alert/warning stage and the disaster stage during the emergency period;
- (g) Estimate the fuel requirements during the emergency period and maintain reserves; conduct rehearsals for emergency transport of fuel; organize and assign tasks to set up front and rear fuel distribution centres and mobile fuel points where required for direct distribution of fuel;

172. **Preparedness Activities.** The Natural Disaster Management Committee of the Ministry of Energy, departments and enterprises under the management of the Ministry and their offices, oil and gas fields, factories and workshops, State/Division sales offices, storage and distribution departments and all branch departments should carry out precautionary measures in two categories: preparedness and awareness-raising.

(a) **Preparedness**

1. Form disaster preparedness support working committees at all departments and enterprises; form support working sub-committees with personnel in charge of inland and offshore oil and gas fields, factories and workshops, State/Division sales offices, storage and distribution departments with specified functions and responsibilities and clear priorities; and conduct rehearsals and drills;
2. Take precautionary measures to the greatest extent possible to minimize losses and damage at offices, residential buildings, factories and workshops during disasters; obtain access to clothing, temporary tents, food supplies, water, medicine for relief operations and facilities for administrative matters;
3. Organize teams, assign duties and conduct rehearsals and drills for the timely evacuation of people and movable vehicles, machinery and equipment to safe locations;
4. Take measures for tankers and tank trailers transporting petroleum products to anchor at the nearest port or shore upon reception of disaster warning/alert and unload the fuel to safe locations to prevent loss using fuel unloading facilities available at the port or using other means if such facilities are not available;

5. Form Mobile Command Task Force and assign duties to ensure effective and expeditious implementation of post-disaster relief, rehabilitation and reconstruction.
- (b) **Awareness-raising.** Pay particular attention to conducting awareness-raising talks for urgent dissemination of disaster alerts/warnings to the lowest levels and timely and effective response and sending personnel to join the natural disaster training courses, workshops and seminars conducted from time to time by international organizations, government departments and NGOs.

Myanmar Oil and Gas Enterprise

173. The Natural Disaster Preparedness Management Committee of the Myanmar Oil and Gas Enterprise is formed with the Managing Director as chair and undertakes the following functions and responsibilities.

- (a) Ensure that the supervisory team issues alerts and necessary instructions to inland and offshore projects, oil and gas fields, base camps and test wells located in areas vulnerable to storms, as well as to natural disaster management centres, in real time to minimize losses and damage upon reception of the storm warning/alert released by Department of Meteorology and Hydrology;
- (b) Ensure that the supervisory team issues alerts and necessary instructions in real time to base camps, test wells and natural gas control centres located in areas vulnerable to floods in order to minimize losses and damage as soon as river flood warning/alert is received from the Department of Meteorology and Hydrology;
- (c) Ensure that the supervisory team issues alerts and necessary instructions in real time to oil fields, base camps, test wells and natural gas control centres located in coastal areas for the evacuation of people and movable vehicles, equipment and machinery to safe location as soon as a tsunami alert/warning is received due to earthquakes under the ocean;
- (d) Ensure that the supervisory team issues instructions to prevent the spread of infectious diseases in the aftermath of natural disasters (including earthquakes), to conduct prompt collection of data on losses and damage, to prevent further losses and damage, to arrange accommodation in temporary housing or tents where staff housing has sustained damage and to restore normal conditions as soon as possible;
- (e) Comply with the guidance of the Natural Disaster Management Committee of the Ministry of Energy at disaster risk reduction and preparedness stage, relief stage and rehabilitation stage in oil and gas fields; provide full cooperation to fulfill the requirements of the State/Division, district, township level emergency supervisory centres;
- (f) Coordinate with foreign oil companies engaged in joint inland and offshore oil and gas exploration activities to obtain advance warning on natural disasters and real-time updates during disasters;
- (g) Submit reports on all activities related to disaster preparedness to the Natural Disaster Management Committee of the Ministry of Energy in real time and implement instructions in real time.

Myanmar Petrochemical Enterprise

174. The Natural Disaster Preparedness Management Committee of the Myanmar Petrochemical Enterprise is formed with the Managing Director as chair and undertakes the following functions and responsibilities.

- (a) Comply with the guidance of the Natural Disaster Management Committee of the Ministry of Energy at disaster risk reduction and preparedness stage, relief stage and rehabilitation stage in factories/workshops; provide full cooperation to help fulfill the requirements of the State/Division, district, township level emergency supervisory centres and the ad hoc emergency supervisory centres set up during disasters; submit reports on all activities related to disaster preparedness to the Natural Disaster Management Committee of the Ministry of Energy in real time and implement instructions in real time.

Myanmar Petroleum Products Enterprise

175. The Natural Disaster Preparedness Management Committee of the Myanmar Petroleum Products Enterprise is formed with the Managing Director as chair and undertakes the following functions and responsibilities.

- (a) Form the Natural Disaster Preparedness Management Committee of the Myanmar Petroleum Products Enterprise;
- (b) Ensure that the supervisory team issues alerts and necessary instructions in real time to State/Division sales offices, storage and distribution departments and branches located in areas vulnerable to storms to minimize losses and damage upon reception of the storm warning/alert released by Department of Meteorology and Hydrology;
- (c) Ensure that the supervisory team issues alerts and necessary instructions in real time to State/Division sales offices, storage and distribution departments and branches located in areas vulnerable to river floods to minimize losses and damage upon reception of the river flood warning/alert released by Department of Meteorology and Hydrology;
- (d) Ensure that the supervisory team issues alerts and necessary instructions in real time to State/Division sales offices, storage and distribution departments and branches located in coastal areas for the evacuation of people and movable vehicles, equipment and machinery to safe location as soon as a tsunami alert/warning is received due to earthquakes under the ocean;
- (e) Ensure that the supervisory team issues instructions to prevent the spread of infectious diseases in the aftermath of natural disasters (including earthquakes), to conduct prompt collection of data on losses and damage, to prevent further losses and damage, to arrange accommodation in temporary housing or tents where staff housing has sustained damage and to restore normal conditions as soon as possible;
- (f) Ensure that State/Division sales offices, storage and distribution departments and branches comply with the guidance of the Natural Disaster Management Committee of the Ministry of Energy at disaster risk reduction and preparedness stage, relief stage and rehabilitation stage and provide full cooperation to fulfill the

requirements of the State/Division, district, township level emergency supervisory centres and those of the ad hoc emergency supervisory centres set up during disasters;

- (g) Submit reports on all activities related to disaster preparedness to the Natural Disaster Management Committee of the Ministry of Energy in real time and implement instructions in real time;
- (h) Take measures to store fuel in States/Divisions under the arrangement of the Myanmar Petroleum Products Enterprise for distribution of required amounts to the required area at the required time.

Ministry of Electric Power 1

Ministerial Committee for Natural Disaster Management

176. **Formation.** The Natural Disaster Management Committee is chaired by the Minister with heads of departments concerned as members and undertakes the following tasks.

(a) Functions and Responsibilities of the Central Committee

1. Form necessary implementation teams in departments and enterprises concerned; lay down policies for important activities; review progress and issue guidelines as required;
2. Lay down policies and guidelines for the utilization of resources within the Ministry as required during disasters;
3. Lay down principles for coordination with other departments to address requests for assistance/cooperation;
4. Issue orders and guidelines as required to implement disaster preparedness activities effectively and to prevent the wastage of relief and reconstruction supplies during disasters and in the post-disaster period;
5. Include the coordination of all the sub-committees for the implementation of disaster management programmes in the action plan of the central committee;

(b) Functions and Responsibilities of the Disaster Management Working Committee

1. Formulate and implement procedures for disaster preparedness management activities, such as mitigation of disaster impact, precautionary measures, activities to be undertaken during disasters and relief and reconstruction activities, in compliance with the policies and guidelines laid down by the central committee;
2. Manage the assistance and support of the Ministry for relief, resettlement and reconstruction; manage the assistance and support of the State-level National Disaster Preparedness Central Committee if required; and coordinate with local authorities;

3. Ensure participation of lower levels in disaster preparedness educational programmes at construction projects and power generation stations within the Ministry;
4. Install disaster forecast and early warning systems at construction projects, power generation stations under the Ministry in coordination with the departments concerned; conduct rehearsals and drills when appropriate to enable timely dissemination to the lower levels when alerts/warnings are received from the early warning system;
5. Organize and assign duties to departments, specialists and professionals whose cooperation is required and coordinate with local authorities depending on the scale of the natural disasters;
6. Form working sub-committees at construction projects, power generation stations under the Ministry and assign duties; set up reporting systems;
7. Supervise and coordinate the work of all the sub-committees under the management working committee;
8. Submit reports on the work progress of the disaster preparedness management committee every four months to the Minister's Office;
9. Provide supervision during disasters and at the relief and resettlement stage; provide close supervision in the field if required;
10. Provide instructions and supervision to ensure staff safety and to minimize loss and damage to infrastructure and machinery that the Ministry is responsible for.

(c) Measures to cope with natural disasters

1. Lay down programmes for disaster preparedness sub-committees in all sectors to form separate committees at all projects and factories to undertake (jointly with the existing main duties) preparedness activities, activities to be undertaken during disasters and relief and reconstruction activities to prevent losses caused by natural disasters as disaster-related losses and damage to officer buildings, site camps, warehouses, workshops, machinery, vehicles, staff housing belonging to projects under the Hydroelectric Power Implementation Department of the Ministry of Electric Power 1 and to power stations under the Electricity Generation Department of the Ministry are not only the loss of State-owned property but also the loss of the Ministry;

177. Fire Hazard Preparedness. The following should be undertaken.

Inspect electricity usage, enforce rules, conduct educational activities and form a staff team led by a skilled junior technician (electricity) at projects and base camps of factories to inspect power lines and equipment.

178. Activities to be undertaken during disasters

- (a) The electricity team should cut off power from the distribution point supplying the area in which an electrical fire is occurring, take measures to protect other electrical cables from the fire and to prevent electric shocks caused by contact with severed electrical cables;

- (b) The local security personnel and responsible persons should work together to provide security and prevent unscrupulous elements from taking advantage of the situation during the fire.

179. **Flood Hazard**

(a) **Preparedness**

1. Install safety nets around potentially dangerous rock abutments and deploy monitors near potentially dangerous locations to provide warning;
2. Form water sentries teams to monitor river water levels day and night near electricity pylons;
3. Take precautionary measures such as moving power lines, power line poles and transformers away from areas vulnerable to rising river waters and replacing cables with broken insulation as they can be dangerous when wet;
4. Relocate villages and communities in the reservoir area upstream from the hydroelectric main dam to downstream areas systematically in coordination with departments and organizations concerned;
5. Undertake protection measures for ongoing projects;
6. Make technical calculations and take measures for the protection of dams, reservoirs and power stations from disaster risk;
7. Install a communication system between outposts upstream and downstream from the dam to obtain river flood information, which can be used to take precautions against flood damage and to display real-times updates of the river flood situation on the notice boards;
8. Set up a small meteorology and hydrology centre in the project/factory area to make meteorology and hydrology measurements.

(b) **Activities to be undertaken during floods**

1. Submit reports of the flood situation together with the losses and damage data to higher level departments promptly;
2. Evacuate staff to safe locations leaving behind only a skeleton staff to guard the most important factories, workshops and buildings;
3. Keep materials and labour at the ready to build and repair embankments with the assistance of people, personnel, workers, equipment/vehicles, machinery;
4. Conduct relief operations through search and rescue teams with the participation of the entire local population.

180. **Storm Hazard**

- (a) **Preparedness.** Formulate and have in place storm hazard preparedness plans at hydroelectric power projects and power generating stations in areas most vulnerable to storms.

(b) **Disaster Stage**

1. Issue an alert order to storm hazard preparedness organizations when a storm warning is received.
 2. Report losses and damage sustained during the storm and their monetary value;
 3. Arrange security for buildings, warehouses and work sites that have been damaged in the storm.
- (c) **Rehabilitation.** Report details of storm damage together with analyses to the sub-committee concerned and the central committee.

181. **Earthquake Hazard**

(a) **Preparedness**

1. Divide earthquake prone areas into earthquake zones;
2. Construct offices, construction projects and power generating stations under the Ministry to be earthquake resistant and set up safe zones and routes to the safe zones;
3. Put in place mechanisms for the distribution, control and suspension of electricity during emergencies;
4. Raise awareness on do's and don'ts during emergencies;
5. Plan diversion and barriers for dams and reservoirs in earthquake prone areas if necessary;
6. Make plans to organize support vehicles and machinery for search and rescue operations;
7. Plan effective search and rescue programmes according to priority;
8. Make plans to transmit earthquake alerts/warnings to project sites or power generating stations at short notice in real time using early warning systems;
9. Design and construct project structures and power generating stations located in earthquake zones for earthquake resistance in compliance with directives and criteria of Public Works and internationally accepted criteria;
10. Organize skilled persons, conduct drills and acquire rescue equipment to enable timely search and rescue operations in damaged buildings and project sites;
11. Take measures to enhance general awareness and knowledge of the earthquake hazard for all personnel working at offices, project areas and power generating stations under the Ministry and enable them to manage individual safety;
12. Set up a communications network to disseminate timely information on the earthquake hazard to projects and power stations in vulnerable areas.

(b) **Relief and Resettlement**

1. Address all post-earthquake hazards;
2. Submit a report of losses and damage together with analyses to the department concerned;

3. Clear debris from the natural disaster and restore electricity supply, communications and transportation;
4. Make arrangements to set up relief camps for staff working at offices, project areas and power generating stations under the Ministry, who are affected by the earthquake, and ensure that accommodation, meals, health care, aid supplies and security are provided by the sub-committees concerned previously formed within the Ministry.

Ministry of Electric Power 2

Ministerial Committee for Natural Disaster Management

182. **Formation.** The Natural Disaster Management Committee is chaired by the Minister with heads of departments concerned as members and undertakes the following tasks.

(a) Normal Times

1. Follow the news on television, on the radio and in newspapers to obtain weather updates in real time and to be aware of the storm news, river flood alert, earthquake warning released by the Department of Meteorology and Hydrology;
2. Designate shelters to enable evacuation of affected staff at short notice during natural disasters; protect power lines, power distribution stations and factories from damage and take precautionary measures to prevent electric shocks;
3. Issue detailed directives to the staff on the tasks to be performed in the pre-disaster and post-disaster periods;
4. Hold regular workshops and conduct workplace drills for staff in disaster-prone areas;
5. Install lightning rods to protect power lines, power distribution station, electrical equipment, control rooms and buildings from lightning hazard;
6. Clear trees and shrubs before the rainy season to ensure there is a designated free space around power lines;
7. Right the leaning powerline poles and provide support;
8. Check the foundations of powerline poles and build new foundations where necessary;
9. Inspect powerline poles and install stay cables where necessary;
10. Install sufficient reserve diesel generators to resume electricity supply to important installations such as water pumping stations, hospitals, CNG outlets immediately after storms;
11. Store diesel fuel required to run the reserve generators.

(b) Alert/Warning Stage

1. Monitor the weather updates from the Department of Meteorology and Hydrology and turn off the electricity supply before the storm if necessary to ensure safety in case power lines are broken;
2. Store spare parts for 230 KVA, 132 KVA, 66 KVA, 33 KVA, 11 KVA, 6.6 KVA and 400 Volt power line poles, power line control accessories of different sizes, transformers of different sizes, diesel-powered generators;
3. Set up a supervisory office to carry out rehabilitation activities for disaster damage;
4. Make arrangements for the evacuation of staff and officials to nearest disaster free areas;
5. Disconnect or disassemble property systematically for protection of department assets from damage when early warning of the disaster is received;
6. Alert the public not to live or park vehicles near power lines and power line poles;
7. Obtain access to emergency communications systems to enable communication during disasters;
8. Alert all responsible staff for disaster response.

(c) Disaster Stage

1. Keep the supervisory office open 24 hours a day;
2. Repair broken or damaged power lines and replace damaged equipment;
3. Take steps to resume electricity distribution as soon as possible in affected areas;
4. Form departmental evacuation teams to evacuate important documents and assets to safety to prevent disaster-related damage;
5. Turn off the electricity supply during storms to prevent electric shocks and electrical fires caused by broken power lines, collapsed power line poles and electricity pylons.

(d) Rehabilitation Stage

1. Repair urgently power line components, distribution stations, factories and buildings damaged during the disaster;
2. Organize technicians and engineers and assign reconstruction duties by area;
3. Ensure the availability of sufficient numbers of cranes, vehicles and machinery;
4. Continue efforts to resume electricity supply normally;
5. List immediate requirements at the sites and damage sustained; categorize into repaired items, items that can be reused and items that are not useable; take steps to replace damaged items;

6. Calculate damage sustained during the disaster and request funding from higher levels for resumption of electricity distribution and reconstruction;
7. Report continually to higher levels on the damage and the measures taken.

Ministry of Education

Ministerial Committee for Natural Disaster Management

183. **Formation.** The Natural Disaster Management Committee of the Ministry of Education is chaired by the Minister.

(a) Functions and Responsibilities

1. Normal Times

- (aa) Implement the policy of the National Disaster Preparedness Central Committee and issue directives;
- (bb) Confirm existing disaster-related orders and the programmes of the Natural Disaster Management Committee of the Ministry of Education;
- (cc) Ensure coordination among the Armed Forces, States/Divisions, District and Township authorities and NGOs and participation at all levels of disaster preparedness activities;
- (dd) Scrutinize and approve disaster prevention, mitigation, preparedness and response plans;
- (ee) Issue directives for the acquisition and distribution of relief supplies in the pre-disaster period;
- (ff) Carry out repair, maintenance and construction of schools for in areas vulnerable to natural disasters including storms, ensuring disaster resistance;
- (gg) Include disaster-related curricula at basic education schools, universities and degree colleges as required;
- (hh) Conduct drills and disaster-related educational talks on the nature of the disaster, preparedness for disaster-prone areas and disaster response at all levels in basic education schools, universities and degree colleges;
- (ii) Arrange educational talks for the general public on the disasters that the area where the school or university is located is vulnerable to;
- (jj) Conduct educational talks at all levels on environmental conservation activities that help prevent natural disasters;

2. Alert/Warning Stage

- (aa) Review precautions and preparedness against disasters and take necessary measures;
- (bb) Review the reports of the disaster preparedness working committees and issue directives for implementation;

3. Disaster Stage

- (aa) Arrange coordination with the Armed Forces, States/Divisions, District and Township authorities and NGOs and participation in all levels of natural disaster preparedness;
- (bb) Take steps for the protection of educational institutions and their use as relief camps during disasters if necessary;
- (cc) Review the reports of the disaster preparedness working committees and issue directives for implementation;
- (dd) Take steps for the distribution of relief supplies in real time during disasters.

4. Rehabilitation Stage

- (aa) Take steps to be able to report loss of life and damage to property and buildings in real time to the National Disaster Preparedness Central Committee at the post-disaster stage;
- (bb) Obtain requirements for rehabilitation from the Ministry and give instructions to explore the support that may be obtained from local authorities, the State level, well-wishers and donors;
- (cc) Take steps for the reconstruction of schools and the resumption of education.

Natural Disaster Management Working Committee

184. **Higher Education.** The Natural Disaster Management Working Committee is chaired by Deputy Minister (Higher Education).

(a) Functions and Responsibilities

1. Normal Times

- (aa) Implement the policy and decisions of the Natural Disaster Preparedness Central Committee of the Ministry of Education;
- (bb) Formulate disaster prevention, mitigation, preparedness and response plans;
- (cc) Coordinate the disaster preparedness activities of Departments and review the activities of the working committee;
- (dd) Scrutinize the disaster preparedness activities of departments every six months;
- (ee) Make necessary arrangements to incorporate disaster-related subjects in the higher education curricula;
- (ff) Form disaster preparedness sub-committees at all departments and assign duties;
- (gg) Put in place the necessary measures for teaching staff and students in disaster-prone areas at different stages of natural disasters and perform organization work where necessary;

- (hh) Construct two-storey buildings for education buildings to the extent that is possible in areas vulnerable to storms and floods;
 - (ii) Conduct large-scale disaster preparedness drills in cooperation with local authorities at beginning of the monsoon season in April and at the end of the monsoon season in September every year to educate and raise awareness of people in disaster-prone areas;
 - (jj) Take steps to begin teaching of disaster-related subject at universities and colleges under the guidance of the Natural Disaster Preparedness Central Committee of the Ministry of Education.
2. **Alert/Warning Stage.** Coordinate with local authorities and mobilize volunteers for relief, evacuation and life-saving activities.
 3. **Disaster Stage.** Protect educational institution buildings and use them as relief camps during severe storms, and flood seasons under the supervision of local authorities.
 4. **Rehabilitation Stage**
 - (aa) Compile a detailed list of loss of life and damage to property sustained under the Higher Education Departments for submission to the Natural Disaster Preparedness Central Committee of the Ministry of Education;
 - (bb) Supervise disaster-related emergency assistance and resettlement and document progress;
 - (cc) Carry out requirements for the coordination of relief and rehabilitation activities in the post-disaster period;
 - (dd) Take steps to issue promptly to disaster-affected staff housing construction expenses, relief funds and relief supplies from well-wishers;
 - (ee) Send a report on relief and rehabilitation activities to the Ministry of Social Welfare, Relief and Resettlement;
 - (ff) Document the the expenditure for relief operations systematically;
 - (gg) Conduct field inspections of disaster-affected staff and families and arrange employment for their livelihood;

185. **Basic Education.** The Natural Disaster Management Working Committee is chaired by Deputy Minister (Basic Education).

(a) **Functions and Responsibilities**

1. **Normal Times**

- (aa) Implement the policy and decisions of the Natural Disaster Preparedness Central Committee of the Ministry of Education;
- (bb) Formulate disaster prevention, mitigation, preparedness and response plans;
- (cc) Coordinate the disaster preparedness activities of Departments and review the activities of the working committee;

- (dd) Scrutinize the disaster preparedness activities of departments every six months;
 - (ee) Make necessary arrangements to incorporate disaster-related subjects in the basic education curricula;
 - (ff) Form disaster preparedness sub-committees at all departments, bureaus and boards and assign duties;
 - (gg) Put in place the necessary measures for teaching staff and students in disaster-prone areas at different stages of natural disasters and perform organization work where necessary;
 - (hh) Construct two-storey buildings for education buildings to the extent that is possible in areas vulnerable to storms and floods;
 - (ii) Carry out appropriate repairs and maintenance of primary school buildings in areas vulnerable to storms;
 - (jj) Conduct large-scale disaster preparedness drills in cooperation with local authorities at beginning of the monsoon season in April and at the end of the monsoon season in September every year to educate and raise awareness of people in disaster-prone areas;
 - (kk) Take steps to begin teaching of disaster-related subject at basic education schools and education colleges under the guidance of the Natural Disaster Preparedness Central Committee of the Ministry of Education.
2. **Alert/Warning Stage.** Coordinate with local authorities and mobilize volunteers for relief, evacuation and life-saving activities.
3. **Disaster Stage.** Protect educational institution buildings and use them as relief camps during severe storms, and flood seasons under the supervision of local authorities.
4. **Rehabilitation Stage**
- (aa) Compile a detailed list of loss of life and damage to property sustained under the Higher Education Departments for submission to the Natural Disaster Preparedness Central Committee of the Ministry of Education;
 - (bb) Supervise disaster-related emergency assistance and resettlement and document progress;
 - (cc) Carry out requirements for the coordination of relief and rehabilitation activities in the post-disaster period;
 - (dd) Take steps to issue promptly to disaster-affected staff housing construction expenses, relief funds and relief supplies from well-wishers;
 - (ee) Document the the expenditure for relief operations systematically;
 - (ff) Conduct field inspections of disaster-affected staff and families and arrange employment for their livelihood;

186. **Information Documentation Committee**

(a) **Functions and Responsibilities**

1. Submit forecasts of earthquakes, storms and floods released by the Department of Meteorology and Hydrology promptly to Natural Disaster Preparedness Working Committee of the Ministry and notify, alert and warn the educational institutions in the area concerned;
2. Take documentary photographs and video of buildings (including electricity and water supplies) belonging to all the departments, bureaus and boards;
3. Make arrangements to produce and broadcast educational films, videos, news and articles on disaster management and preparedness;
4. Implement the directives of the Natural Disaster Preparedness Central Committee and Working Committees of the Ministry;
5. Be prepared to go into the field and take documentary photographs and video at any time to any place in the event of natural disasters;
6. Document all the disaster preparedness activities of the Ministry for submission to higher level departments.

187. **Appointment of a focal person.** Those designated as focal persons of the Ministry of Education should make contact and maintain communications on behalf of the Natural Disaster Preparedness Central Committee of the Ministry.

188. Those designated as departmental focal persons shall be in charge of making contact and maintaining communications with higher level and same level departments and organizations on behalf of their respective departments.

189. **Departments.** The Disaster Management Committees of Departments excluding the Basic Education Departments shall be chaired by the respective Directors General and undertake the following.

(a) **Normal Times**

1. Implement the policy and decisions of the Natural Disaster Preparedness Central Committee of the Ministry of Education;
2. Formulate disaster prevention, mitigation, preparedness and response plans;
3. Coordinate the disaster preparedness activities of departments, universities, degree colleges and affiliated departments and review the activities of the working committee;
4. Scrutinize the disaster preparedness activities of departments, universities, degree colleges and affiliated departments every six months;
5. Make necessary arrangements to incorporate disaster-related subjects in the higher education curricula;
6. Form disaster preparedness sub-committees at all departments, universities, degree colleges and affiliated departments and assign duties;

7. Ensure that the focal persons of departments, universities, degree colleges and affiliated departments present activities to the Higher Education Natural Disaster Preparedness Working Committee for implementation;
8. Put in place the necessary measures for teaching staff and students in disaster-prone areas at different stages of natural disasters and perform organization work where necessary;
9. Construct two-storey buildings for education buildings to the extent that is possible in areas vulnerable to storms and floods;
10. Conduct large-scale disaster preparedness drills in cooperation with local authorities at beginning of the monsoon season in April and at the end of the monsoon season in September every year to educate and raise awareness of people in disaster-prone areas;
11. Take steps to begin teaching of disaster-related subject at universities and colleges under the guidance of the Natural Disaster Preparedness Central Committee;
12. Form the Natural Disaster Preparedness Management Team with the Director General as the chairperson and the officials in charge as members;
13. Ensure that the Natural Disaster Preparedness Management Team provides supervision to formulate preparedness plans for disasters such as fires, floods, storms and earthquakes at the department head office, the Yangon branch office, education colleges and teacher training middle schools and to conduct rehearsals and drills;
14. Carry out coordination as per the Fire Security Plan of the Ministry Office as well as educational activities, mobilization and regular inspections to prevent fire negligence and electrical fires in staff housing;
15. Plant wind breakers around the office buildings in coordination with the Ministry Office and around staff housing with the staff's own arrangement as the rainy season brings occasional gusts; fell old trees and cut down big branches that are too close to the buildings;
16. Pay attention to the weather announcements, carry out regular inspections for the weather resistance of office buildings and staff housing and maintain roofs and walls for sturdiness and security;
17. Educate the staff on the habit of observation to recognize cracks in office buildings and staff housing and in the ground in the surrounding area and to report the potential hazards promptly as part of earthquake preparedness, given the location of the department (head office) near the town of Pinyinmana close to an earthquake fault line;
18. Organize beforehand to carry out evacuation to safe locations of department-owned items with restricted access, important documents and staff, clearing of debris and salvage operations during storms;

19. Ensure that the disaster management team puts in place disaster preparedness plans for fire, flood, storm and earthquake hazards and conducts rehearsals and drills periodically according to the plans;
 20. Organize educational talks at schools on early warning systems for unusual natural disasters;
 21. Incorporate natural disasters (fires, floods, storms, landslides, earthquakes, volcanic eruptions), vulnerabilities to them, early warning signs and precautionary measures, into the teaching programmes of geography, science and life skills at education colleges and teacher training schools;
 22. Invite specialists from the Department of Meteorology and Hydrology periodically to conduct educational talks, and carry out educational activities to pay attention to weather-related announcements;
 23. Coordinate with local authorities and specialists from departments concerned to provide training to teaching staff and students at schools in disaster-prone areas;
 24. Present to the department and make arrangements to construct two-storey buildings for schools in areas vulnerable to storms to the extent that is possible and to make the necessary repairs and maintenance;
 25. Coordinate with the departments and organizations concerned for assistance in providing access to drinking water at schools in arid zones, in building reservoir tanks and in vaccination for health and prevention of infectious diseases.
- (b) **Alert/Warning Stage.** Coordinate with local authorities and mobilize volunteers for relief, evacuation and life-saving activities.
- (c) **Disaster Stage.**
1. Protect educational institution buildings and use them as relief camps during severe storms, and flood seasons under the supervision of local authorities;
 2. Ensure coordination among the Armed Forces, States/Divisions, District and Township authorities and NGOs and participation at all levels of disaster preparedness activities;
 3. Take prompt cooperative action against fire hazards to office buildings caused by forest fires and electrical fires as per the fire security plan drawn up by the Ministry Office;
 4. Report to responsible persons immediately, communicate with fire stations and police stations in real time, extinguish the fire with the help of staff families living in the vicinity, evacuate property and deploy security in case of fire hazard to staff housing;
 5. Comply with safety measures to be undertaken during disasters;
 6. Respond to the disaster as planned previously with the support and assistance of departments, local authorities and social organizations.

(d) Rehabilitation Stage.

1. Compile a detailed list of loss of life and damage to buildings at departments, universities, degree colleges and affiliated departments for submission to the Natural Disaster Preparedness Working Committee of the Higher Education Department;
2. Supervise disaster-related emergency assistance and resettlement and document progress;
3. Carry out requirements for the coordination of relief and rehabilitation activities in the post-disaster period;
4. Take steps to issue promptly to disaster-affected staff housing construction expenses, relief funds and relief supplies from well-wishers;
5. Submit a report on relief and rehabilitation activities to the Ministry of Education;
6. Document the the expenditure for relief operations systematically for audit purposes;
7. Conduct field inspections of disaster-affected staff and families and arrange employment for their livelihood;
8. Obtain requirements for rehabilitation from the Department and give instructions to explore the support that may be obtained from local authorities, the State level, well-wishers and donors;
9. Take steps for the reconstruction of schools and the resumption of education during the rehabilitation period;
10. Collect data on loss of life and damage to property for submission to higher levels;
11. Provide assistance to resolve the difficulties encountered by disaster-affected staff families and give encouragement;
12. Clear debris where school buildings have collapsed and carry out salvage work, assess damage and make arrangements for prompt repairs.

190. **Basic Education Departments.** At each Basic Education Department, the Director-General serves as Chairman of the Natural Disaster Management Committee, which is formed with appropriate members as required and undertakes the the following functions and responsibilities.

(a) Functions and Responsibilities

1. Supervise the subordinate staff to implement successfully the standing orders on natural disasters as well as the programmes, guidelines and policies laid down by the Central Committee for Protection Against Natural Disasters of the Ministry of Education;
2. Cooperate and coordinate with the Armed Forces, authorities at the State/Division, District/Township level and NGOs for protection against natural disasters at all levels;

3. Take precautions against natural disasters to minimize negative impact, make plans and carry out drills systematically for prevention and rapid response;
4. Carry out the necessary preparations, coordination and cooperation for the stockpiling and distribution of relief supplies before disaster strikes.

(b) Normal Times

1. Provide awareness and training to teaching staff in consultation with the natural disaster management team; select volunteers among the education staff at schools and offices and make frequent rehearsals of relief, evacuation and life-saving activities;
2. Incorporate education on natural disasters into the school curricula of subjects such as science and geography in consultation with the natural disaster management team; and educate the entire people through teachers and students;
3. Conduct TV, video and DVD presentations frequently at schools and offices on natural disasters that have taken place internationally; invite knowledgeable experts and professionals from the departments of meteorology and hydrology, geology and geography to conduct talks on natural disasters frequently and put up educational posters and distribute leaflets on natural disasters;
4. Instil in teachers and students especially in disaster-prone areas an awareness and willingness to serve as volunteers in relief, evacuation, shelter and logistics efforts in coordination with local authorities concerned in case of the sudden onset of disasters;
5. Prepare and make available a list of structures on higher ground in urban or rural areas that may be used as shelters in case of flash floods;
6. Study in advance and make a prioritized list of the routes that may be used for prompt evacuation to a safe location in urban or rural areas in case of a natural disaster and make it known to students;
7. Designate as a focal point in every township at least one education staff member who has received sufficient training;
8. Categorize the necessary management activities at township education offices and provide training to prepare for natural disasters;
9. Mobilize Red Cross activities at every school, and organize the necessary training in coordination with Township Red Cross Societies to enable every student to acquire First Aid skills;
10. Construct two-storey buildings for education offices and schools to the extent that is possible in areas vulnerable to storms and floods in order to ensure storm resistance and protection against floods;
11. Categorize area-wise risk zones, such as Coastal\Mid-Land\Inland or Hazardous area/Normal area;
12. Ensure that offices and schools in coastal areas are designed for resistance against storm surges and tsunamis and take necessary precautions;

13. Ensure that sturdy two-storey building designs are used for the construction of new schools and for the reconstruction of collapsed schools in coastal areas, medium ground areas and low-lying flood prone areas, taking into consideration their potential use as storm shelters in the architectural designs;
14. Provide repair and maintenance funds and/or emergency reserve funds to ensure that the existing primary school buildings, including those outside coastal areas, are of a sturdy construction that can withstand strong winds and earthquakes without collapsing;
15. Appoint engineers at the State/Division level to inspect the quality, sturdy construction and disaster preparedness of buildings;
16. Prepare for fire hazards at offices and schools by drawing up a proper fire prevention plan, communicating and assigning planned measures, and conducting monthly coordination discussions and rehearsals;
17. Mobilize those responsible for fire prevention throughout the fine-weather season as fire hazards are greater at this time in order to facilitate their emergency response and planned collaboration in case of a fire.

(c) Alert/Warning Stage

1. Reflect on the prevention and preparedness issues in connection with warnings of forthcoming natural disasters and take the required preparedness measures;
2. Mobilize and participate in relief, evacuation and life-saving activities as volunteers in coordination with local authorities;
3. Make immediate preparations for timely evacuation to safe locations when a natural disaster warning is received up to a week or several hours in advance through early warning systems or from the behaviour of animals;
4. Carry out frequent drills for immediate evacuation as soon as a warning is received through early warning systems from the radio or through the media, or through natural indications, such as the flight of animals or their movement to higher ground, and organize teams of volunteers to mobilize natural disaster preparedness, especially between April and September every year;
5. Facilitate the moving of important documents at offices and schools when a natural disaster strikes by having cabinets marked as priority 1, 2, 3, etc.;
6. Stress the emergency relief and settlement, the safety and survival of teachers, students and education staff and the prevention of epidemics in the aftermath of the disaster.

(d) Disaster Stage. During natural disasters such as powerful storms and severe floods, education buildings may if necessary be used as prevention and relief facilities under the supervision of the local authorities.

(e) Rehabilitation Stage

1. Prepare detailed lists on the loss of life and property and damage to buildings at the department and at schools in States/Divisions or Townships and submit

- them to the Central Committee for Protection Against Natural Disasters through the department/minister's office;
2. Supervise the emergency assistance and resettlement after natural disasters and report on the progress and measures taken;
 3. Take necessary measures for post-disaster relief and rehabilitation in coordination with the organizations concerned;
 4. Make arrangements for the prompt delivery of relief funds provided by donors of housing construction expenses and other relief supplies to natural disaster victims among staff members;
 5. Submit a report on relief and rehabilitation work to the Ministry of Social Welfare, Relief and Resettlement;
 6. Preserve and maintain records in preparation for audits concerning expenses incurred in carrying out relief activities;
 7. Carry out field inspections of the situation of staff members and families affected by the natural disasters and make arrangements for their livelihood.

Ministry of Livestock Breeding and Fisheries

Ministerial Committee for Natural Disaster Management

191. The Natural Disaster Management Committee of the Ministry of Livestock Breeding and Fisheries is chaired by the Minister with heads of departments as members and undertakes the following functions and responsibilities.

(a) Normal Times or Pre-Disaster Period

1. Designate an official as a focal point to facilitate the Natural Disaster Preparedness functions and responsibilities of the Ministry of Livestock Breeding and Fisheries;
2. Carry out decision-making and planning on disaster preparedness of departments and enterprises of the Ministry in line with the guidance of the National Disaster Preparedness Central Committee;
3. Carry out awareness-raising and training activities for staff at the departments and enterprises of the Ministry to ensure an effective and rapid response during disasters;
4. Coordinate to set up an emergency fund for prompt fulfilment of rehabilitation requirements in the post-disaster stage;
5. Undertake provision of early warning for natural disasters; supervision of the disaster preparedness of departments and enterprises of the Ministry and submission of reports on the activities of the Ministry to the National Disaster Preparedness Central Committee;

(b) Disaster Stage

1. Ensure that departments and enterprises of the Ministry minimize damage to State-owned facilities through various means of disaster preparedness;
2. Designate an official as a focal point to maintain communications with the National Disaster Preparedness Central Committee and the local disaster supervision team;
3. Ensure that the Ministry issues a directive to departments and enterprises of the Ministry for cooperation with the local disaster supervision teams in compliance with the supervision and guidance of the latter and for provision of necessary assistance and support;
4. Report the disaster impact and damage situation in real time to the National Disaster Preparedness Central Committee and higher level organizations.

(c) Rehabilitation Stage

1. Conduct promptly an inspection and field observation of damage to State-owned facilities and privately owned cattle, animals, fisheries and other facilities in the livestock-breeding and fisheries sector;
2. Draw up and implement short-term and long-term plans for rehabilitation and present them to the National Disaster Preparedness Central Committee for funding;
3. Supervise the rehabilitation activities of departments and enterprises and fulfil requirements;
4. Coordinate with local authorities and other ministries as required in carrying out rehabilitation activities;
5. Report losses and damage as well as rehabilitation activities to higher level organizations and to the National Disaster Preparedness Central Committee.

Livestock Breeding and Veterinary Department

192. **Livestock Breeding and Veterinary Department (Head Office).** Livestock Breeding and Veterinary Department (Head Office) should undertake the following tasks in addition to regular responsibilities.

(a) Normal Times or Pre-Disaster Period

1. Designate an official from the committee as a focal point to facilitate the Natural Disaster Preparedness activities;
2. Conduct regular preparedness coordination meetings every four months to review State/Division, District and Township level activities, make decisions and prepare plans for the future;
3. Press ahead with mobilization activities to ensure that department staff and local population appreciate the preparations necessary to launch a systematic and effective disaster response;

4. Document and scrutinize area-wise evacuation plans to high ground areas and hillocks to prevent loss of life and loss of animals due to the storm surge in the delta and coastal regions;
5. scrutinize action plans from disaster-prone areas and package or earmark required vaccines, medicines, medical equipment and supplies for emergency delivery;
6. Supervise local veterinary staff to obtain agricultural and livestock breeding data such as the number of households, number of people in each household, number of farmers, number of livestock with breakdowns by kind, history of infectious diseases, acreage of farm land, farming implements, yield per acre from officials in charge of departments concerned in their own localities or village tracts and carry out double-checks through field observations;
7. Review previous experience for strengths and weaknesses to plan optimal support in the rehabilitation stage as loss of livestock is probably unavoidable in natural disasters;
8. Coordinate and provide support for the evacuation of livestock from affected areas to safe locations, veterinary care as well as procedures to calculate and provide a basic supply of animal feed, local raw feed, drinking water;
9. Conduct training and seminars for staff periodically to foster familiarity with disaster preparedness activities and systems, a strong humanitarian spirit and involvement in environmental conservation measures;
10. Assign supervisory duties to State/Division, District Staff Offices.

(b) Disaster Stage or the Emergency Period

1. Designate an official as a focal point to present all stages of departmental disaster response activities to higher levels and to coordinate with State/Division, District and Townships;
2. Fulfil the requirements of State/Division, District and Townships as first priority to evacuate livestock in affected areas to safe locations;
3. Provide assistance and support to lower-level departments for integrated service including provision of animal feed and water and veterinary care for livestock at in safe locations;
4. Carry out field work for information collection and survey of relief and resettlement measures in affected areas; make decisions and implement management support for the welfare of local staff and families, as well as departmental functions and responsibilities;
5. Assign disaster-stage functions and responsibilities to State/Division, District and Township Staff Offices.

(c) Rehabilitation Stage

1. Carry out field work in affected areas at the Rehabilitation Stage;

2. Deploy veterinary task forces together with supplies of vaccines and medicine to affected areas and ensure that daily reports are submitted to the Ministry of Livestock Breeding and Fisheries on the activities of the task force;
3. Submit to departments and organizations concerned the travel programmes of foreign specialists from international organizations to affected areas in accordance with procedure to obtain permission; ensure that a report is made to the Township Coordination Group concerned before departure;
4. Report to the Ministry of Livestock Breeding and Fisheries on the livestock, animal feed, veterinary medicine and supplies provided by the State and donated by international organizations and private businessmen, mentioning the support programme, type of support and quantities and the monetary value, and including documentary photographs where necessary;
5. prevent the loss of donated livestock and supplies during transportation, ensure vaccination for livestock as required; instruct the local staff of Livestock Breeding and Veterinary Department to report to Township Coordination Groups concerned upon arrival in affected areas and hand over the list of supplies for distribution in the area;
6. Ensure prompt delivery of donated supplies to farmers in village tracts that sustained actual losses and damage with the arrangement of the Township Coordination Groups concerned upon arrival of the supplies in affected areas;
7. Ensure that township offices compile detailed lists of village tract that received the donated supplies and the supplies received by each farmer and send them promptly to the Head Office, together with verification signatures of the Township Coordination Groups and the documentary photographs;
8. Assign rehabilitation-stage functions and responsibilities to State/Division, District and Township Staff Offices.

Fisheries Department

Normal Times

- (a) Designate an official as a focal point to facilitate disaster preparedness activities;
- (b) Conduct regular preparedness coordination meetings every four months to review State/Division, District and Township level activities, make decisions and prepare plans for the future;
- (c) Submit regular four-monthly reports on the disaster preparedness activities of the department to the Ministry;
- (d) Provide leadership and educational activities to ensure that department staff and fisheries workers appreciate the preparations necessary to launch a systematic and effective disaster response;
- (e) Organize fishery-sector disaster preparedness activities as follows, given the nature of the work and the structure of the Fisheries Department
 1. By the nature of the work (salt water fishing, fresh water fishing, fish breeding, export quality control, processing and cold storage)

2. By structure (State/Division, District and Township level Staff Offices)

- (f) Supervise salt water fishing (coastal and deep water), fresh water fishing, fish breeding, export quality control, processing and cold storage for compliance with departmental regulations, orders and directives.

193. **Alert/Warning Stage.** Provide supervision to departments and enterprises for the implementation of departmental action plans for the Alert/Warning Stage.

194. **Disaster Stage.** Provide supervision to departments and enterprises for the implementation of departmental action plans for disasters.

195. **Relief Stage.** Fisheries Department (Head Office) and State/Division, District and Township level offices should undertake disaster relief activities as follows.

- (a) Carry out field inspections of losses and damage in each State/Division, District and Township;
- (b) Submit the losses and damage data to the Head Office;
- (c) Make arrangements to fulfil immediate requirements (food, medicine, clothing, accommodation, etc.)

196. **Rehabilitation Stage.** After the relief operations, the following rehabilitation activities should be undertaken to restore normal conditions.

- (a) Contact the States/Divisions, Districts and Townships and have data collected on loss of life, loss of animals and damage to property; submit priority areas and activities; draw up rehabilitation plans for submission through all levels of organizations at the head office;
- (b) Acquire required supplies and deliver to affected area under head office supervision;
- (c) Make arrangements for the prompt provision of main requirements for the resumption of operations;
- (d) Make arrangements for access to required items, subsidies and loans to help restore normal conditions;
- (e) Provide scrutiny and supervision to rehabilitation activities to be carried out by export quality control and to the work of factory inspection and supervision section, price endorsement and production development section, laboratories inspection and supervision section and export inspection section.

City Development Committees

Natural Disaster Management Committees of City Development Committees

197. The Natural Disaster Management Committee is chaired by the City Development Committee Chairman and undertakes action plans for different natural disasters.

198. City Development Committee staff should draw up disaster preparedness action plans, issue orders and directives and provide supervision to reduce disaster impact and to minimize losses and damage sustained.

199. **Formation.** The Natural Disaster Management Committee should be formed with the mayor as the chairperson. Preparedness activities for natural disasters which may strike at any time and place should be planned systematically and implemented as follows.

(a) **Flood Hazard**

1. Clear creeks, large drains and underground drains that pass through the city, side drains along main roads and river outlets; install flood gates at river outlets to prevent tidal inflows;
2. Expand the drains and sewers to suitable size to cope with increased waste water and sewage due to the growth of buildings and population in the city;
3. Scrutinize filling of ponds for housing development before permission is granted as as filling of small ponds that served as retention basins when the population was small has caused flooding of residential areas and roads;
4. Install spillways and sluice gates as required at large ponds and canals in the city to enable their use as retention ponds during the rainy season;

(b) **Fire Hazard**

1. Provide access to sufficient numbers of fire extinguishers and a reserve water supply at factories, workshops and industrial zones and work with organizations concerned to conduct educational talks on the prevention of fire and staff awareness of fire hazards;
2. Ensure access by fire engines at all times;
3. Provide supervision to ensure that fire prevention plans are in place at all markets;
4. Coordinate with Fire Departments to conduct fire fighting demonstrations, rehearsals, drills and inspections under their arrangement;
5. Coordinate with Myanmar Electricity Supply Departments to ensure proper use of electricity at markets and access to sufficient voltage;
6. Keep fire fighting equipment at the ready;
7. Ensure access to emergency water supply for fire fighting in reservoirs and from fire hydrants;
8. Form fire prevention task forces to carry out inspections;
9. Install mechanical ventilation systems using primary and secondary power sources to provide ventilation in market basements;
10. Install a sufficient number of fire extinguishers that are recognized by the Fire Services Department after the completion of building construction;
11. Form fire fighting units in every market;
12. Arrange access to fire extinguishers, water pumps, reservoirs, fire hoses, hooks, flaps, sand bags, fire alarms and organize market fire fighters at big modern markets and conduct fire fighting demonstrations and drills for those who work at the market by the Fire Services Department;

13. Install emergency fire fighting systems in high-rise buildings; use architectural designs with provisions for emergency fire fighting and escape in construction and include emergency ladder systems.

(c) Storm Hazard

1. Disseminate storm alerts to the public using various means;
2. Plant trees as wind breakers and breakwaters along rivers, creeks and shorelines in cities;
3. Cut down or trim large trees that are too close to power lines and buildings before storms;
4. Include wind load in designs and structural calculations to ensure storm resistance of buildings;
5. Allow billboards only when design calculations are carried out by SEC-licensed Structural Engineers and storm-resistant materials are used in construction.

(d) Earthquake Hazard

1. Disseminate an early warning to the public upon reception of information on predictable natural disasters except the earthquake hazard;
2. Evacuate the communities in vulnerable areas close to the sea, rivers, creeks;
3. Coordinate with departments and organizations concerned in the event of a natural disaster to set up relief camps for disaster victims in suitable locations and provide accommodation, services and supplies;
4. Use earthquake resistant designs and provide supervision through the close supervisory committee for the construction of markets and other buildings that the City Development Committee is responsible for;
5. Include open spaces for use as earthquake shelters in urban planning and take steps to create them if they have not been included;
6. Mobilize for urgent evacuation to safe zones during earthquakes if possible;
7. Distribute emergency drinking water using water tankers;
8. Provide construction materials and build housing for people made homeless by the earthquake through coordination between the local authority and ministries.

Rehabilitation Activities

200. For rehabilitation after a natural disaster, the local authorities, departmental personnel and the local community should work together to undertake the following.

- (a) Ensure regular access to drinking water;
- (b) Clear and carry out maintenance work for sewage and drainage systems blocked or damaged during the natural disaster;
- (c) Renovate public parks;
- (d) Distribute water in the townships using water tankers to prevent water shortage;

- (e) Contribute to the provision of construction materials and housing for people made homeless by the disaster;
- (f) Carry out maintenance work and reinforce earth embankments along the river banks to prevent river floods;
- (g) Take systematic measures to prevent disposal of litter and industrial waste into drainage ditches;
- (h) Issue required orders and directives to prevent damage to the city drainage system in the construction of high-rise buildings and provide supervision and enforcement.

Deadly Major Disasters in the World

Some of the deadly major disasters in the world are as follows:

(a) Storms

1. The Cyclone of 1839 claimed 300,000 lives in India.
2. Storms and floods in 1970 killed 300,000 people in Bangladesh.
3. The Cyclone of 1970 killed 500,000 people in Bhola, Bangladesh.
4. The Storm of 1991 killed 138,000 people in Bangladesh.
5. Cyclone Nargis of 2008 killed 134,000 people in Myanmar.

(b) Tsunami

1. The tsunami in 1952 claimed 40,000 lives on the island of Borneo, Indonesia.
2. An earthquake and tsunami in 1908 killed 100,000 people in Messina, Italy.
3. The Indian Ocean tsunami of 2004 killed 350,000 people.
4. The earthquake and tsunami of 26 December 2004 affected 11 countries and claimed 250,000 lives.

(c) Floods

1. The flood of 1887 claimed 3,000,000 lives in China.
2. The Yangtze (Chang Jiang) River Floods of 1935 killed 145,000 people.
3. The flood in 1971 killed 100,000 people in Hanoi, Vietnam.
4. The failure of Banqiao Dam in China claimed 232,000 lives in 1975.
5. The Yellow River Flood of 1991 in China killed approximately 2,000,000 people.

(d) Earthquakes

1. The earthquake of 1556 in Shanxi Province, China, claimed 830,000 lives.
2. The earthquake of 1970 killed 66,000 people in Peru.
3. The earthquake of 1976 in Tangshan, China, killed 242,000 people.
4. The earthquake of 1976 in Tangshan, China, killed 242,000 people.
5. The earthquake of 1978 killed 250,000 people in Armenia.
6. The earthquake of 1990 killed 50,000 people in Gilan, Iran.
7. The earthquake of 1990 killed 50,000 people in northwestern Iran.
8. The earthquake of 2001 killed 20,000 people in Gujarat, India.
9. The earthquake of 2003 killed 41,000 people in Bam, Iran.
10. The earthquake of 2008 killed 69,100 people in Sichuan, China

(e) Volcanic Eruptions

1. The volcanic eruption of Mt. Tambora, Indonesia, in 1815 killed 71,000 people.
2. The volcanic eruption of Mt. Krakatau, Indonesia, in 1883 killed 36,000 people.
3. The volcanic eruption in Moro Gulf, the Philippines, in 1976 killed 5,000 people.
4. The volcanic eruption in Columbia in 1985 killed 23,000 people.
5. The volcanic eruption in Papua New Guinea in 1998 killed 3,000 people.

(f) Forest Fires

1. The forest fires in Wisconsin, USA, in 1871 killed 2500 people.
2. The forest fires in Ontario, Canada, in 1916 killed 250 people.
3. The forest fires in Kalimantan, Sumatra, Indonesia, in 1997 killed 240 people.
4. The forest fires in Greece in 2007 killed 74 people.

(g) Landslides

1. The landslide in Unzen, Japan, in 1792 killed 16,000 people.
2. The landslide Venezuela in 1999 in killed 200,000 people.
3. The landslide in Southern Leyte, the Philippines, in 2006 killed 1800 people.

(h) Famines

1. The famine in India from 1896 to 1902 killed 190,000,000 people.
2. The famine in China in 1907 killed 240,000,000 people.
3. The famine in Bangladesh in 1974 killed 26,000 people.
4. The famine in Ethiopia in 1984 killed 1,000,000 people.
5. The famine in North Korea from 1996 to 1998 killed 1,200,000 people.

(i) Epidemics of Infectious Diseases

1. The plague in countries of Asia, Europe and Africa from 1300 to 1720 killed 300,000,000 people.
2. Malaria killed 250,000,000 people worldwide in the 20th century.
3. Flu killed 100,000,000 people worldwide from 1918 to 1919.
4. SARS killed 775 people in countries of Asia, Europe and the Americas in 2002-2003.

Major Disasters in Myanmar

Some of the major disasters in Myanmar are as follows:

(a) Fires

1. The Mandalay Fire of 1984 broke out on 24 March 1984 and spread to 3 townships. A total of 2,368 buildings were lost, affecting 22,324 people in 4,585 households. Losses ran to about Kyats 780 million.
2. The Meikhtila Fire of 1991 broke out on 7 April 1991. A total of 3,261 buildings were lost, affecting 25,377 people in 5,026 households. Losses ran to about Kyats 685 million.
3. The Maing Shu Fire of 1999 broke out on 28 March 1999. A total of 658 buildings were lost and 1 person died. The fire affected 7,445 people in 1,847 households. Losses ran to about Kyats 550 million.
4. The Myeik Fire of 2001 broke out on 23 December 2001. A total of 1,377 buildings were lost, affecting 15,443 people in 2,676 households. Losses ran to about Kyats 4,000 million.
5. The Labutta Fire of 2003 broke out on 10 January 2004. A total of 153 buildings were lost, affecting 639 people in 157 households. Losses ran to about 235 Kyats million.
6. The Kyaikhtiyo Pagoda Fire of 2004 broke out on 27 January 2004 between the Kyaikhtiyo Hill and Hunter's Hill in Kyaikhto Township, Mon State. A total of 96 shops and 30 residential huts were lost, killing 1 person. The fire affected 563 people in 126 households. Losses ran to about Kyats 400 million.
7. The A-Phyauk Oilfield Fire of 2004. The forest fires near Kywe Bakan Chaung Village, A-Phyauk, Taik-Kyi Township, in Yangon Division spread to the No. 13 Oil Well of A-Phyauk Oilfield at 18:50 hours on 12 February 2004.
8. The 2005 Fire in Hlaing Township, Yangon Division, affected 9,145 people, with losses ran to about Kyats 80 million.
9. The 2007 Fire of Pyapon Township, Ayeyarwady Division, occurred in Phonegyi Thaug Village and affected 3,085 people. Losses ran to about Kyats 102 million.
10. The 2008 Fire of Pulaw, Thanintharyi Division, affected 1,400 people. Losses ran to about Kyats 2,200 million.

(b) Floods

1. The Myanmar floods of 1974. Heavy rains in the middle of the rainy seasons in 1974 caused flooding in 133 Townships in 12 States and Divisions. A total of 35,548 buildings were lost and 1,355,922 people from 420,874 households were affected.
2. The Ayeyarwady Division floods of 1991. Flooding caused by the failure of Htein Ngu Dam, in Lay Myet Hnar Township, Ayeyarwady Division, on 28 July 1991, destroyed 74,740 houses in 9 townships, affecting 35,9946 people in 83,753 households and 245,919 acres of farmland. Losses ran to about Kyats 1,068.09 million.

3. The Myanmar floods of 1997. Adverse weather conditions occurred all over the world in 1997 under the influence of the El Niño. In Myanmar, heavy rains in the middle of the rainy seasons caused flooding in 49 Townships in 12 States and Divisions. A total of 89,846 buildings were lost and 243 people were killed. The floods affected 525,997 people from 991,847 households.
4. The Wantwin floods of 2001. Heavy rains caused flash floods in 6 wards in the town of Wantwin and in 6 villages in Meikhtila District on 1 July 2001. The floods washed away 463 houses, made 2,172 people homeless and killed 42.
5. The Myikyina District floods of 2004. Flooding in the towns of Wain Maw, Chi Bwe and Pan Wah in Myitkyina, Kachin State, from 18 to 21 July 2004 destroyed 2,255 houses, affecting 29,936 people in 2,295 households. Losses ran to about Kyats 97 million.
6. The Kani floods of 2004. Flooding in the town of Kani, Sagaing Division, on 14 September 2004 destroyed 306 houses, killing 3 and affecting 1,464 people in 306 households. Losses ran to about Kyats 16 million.
7. The Mandalay and Sagaing Division floods of 2006. Flooding in Mandalay and Sagaing Divisions in 2006 affected 14,012 people and killed 16.
8. The Kachin State and Sagaing Division floods of 2007. Flooding in the towns of Banmaw and Shwe Ku in Kachin State and the town of Khantee in Sagaing Division in 2007 affected 3,060 people.

(c) Storms

1. The Kyauk Phyu Storm of 1967 made landfall near the town of Kyauk Phyu and lasted from 15 to 18 May 1967 in Kyauk Phyu and Patheingyi Districts. Wind speeds exceeded 100 miles per hour. Losses amounted to about Kyats 30 million.
2. The Sittwe Storm of 1968 made landfall near the town of Sittwe and lasted from 7 to 10 May 1968. A total of 57,633 houses in the towns of Sittwe, Pauktaw, Myaypon and Minpya were destroyed. Losses amounted to about Kyats 800 million, and 1,037 people and 17,537 heads of cattle were killed.
3. The Patheingyi Storm of 1975 made landfall near the town of Patheingyi and lasted from 5 to 7 May 1975. A total of 246,700 houses were destroyed. Losses amounted to about Kyats 776.5 million, and 303 people and 10,191 heads of cattle were killed.
4. The Kyauk Phyu Storm of 1978 made landfall near the town of Kyauk Phyu and lasted from 12 to 17 May 1978. About 90% of houses in Kyauk Phyu were destroyed. Losses amounted to about Kyats 20 million.
5. The Gwa Rahine State Storm of 1982 made landfall near the town of Gwa at 7:30 p.m. on 4 May 1982. Houses, boats, ships and cattle in 6 townships including Gwa Township were destroyed. Losses amounted to about Kyats 70.55 million and 5 people were killed.
6. The Sittwe District Rahine State Storm of 2004 struck on 19 May 2004 destroying 4,628 houses in the towns of Sittwe, Myaypon, Minpya, Pauktaw and Kyauk Phyu

and affecting 24,248 people in 4,628 households. Losses amounted to about Kyats 183.41 million and 205 people were killed.

7. Storm Marla of 2006 affected 42,856 people in Ayeyarwady Division, Yangon Division and Rakhine State, killing 37 and injuring 23. Losses amounted to about Kyats 1263.89 million.
8. Storm Akash of 2007 affected 10,570 people in Sittwe and Kyauk Phyu Districts of Rakhine State. A total of 14 people were killed and 17 went missing. Losses amounted to about Kyats 5892.72 million.
9. Storm Nargis of 2008 affected 800000 people in Ayeyarwady Division, Yangon Division, Kayin State, Bago Division and Mon State. A total of 84,537 people were killed, 19,359 injured and 53,836 went missing. Losses amounted to about Kyats 11 trillion.

(d) Earthquakes

1. The Bago Earthquake of 1930, magnitude 7.3, struck on 5 May 1930, destroying houses in Bago and felling the htee of Shwe Maw Daw Pagoda. A total of 500 people in Bago and 50 people in Yangon were killed, making the earthquake the deadliest in Myanmar history.
2. The Sagaing Earthquake of 1956, magnitude 6.5, struck on 16 July 1956, destroying houses and pagodas in the town of Sagaing and killing 52 people. It also resulted in a slight displacement of the Sagaing Bridge.
3. The Bagan Earthquake of 1975, magnitude 6.8, struck on 8 July 1975, destroying pagodas that constitute priceless heritage of the ancient times. The earthquake killed 2 people and injured 15.
4. The Taungdwingyi Earthquake of 2003, magnitude 6.7, struck on 22 September 2003, destroying 108 pagodas including priceless ancient pagodas, 153 houses, 9 schools, rail tracks, 3 bridges and the sluice gates of Kinpoontaw Reservoir. It also killed 1 monk, 1 novice and 5 people.
5. The earthquake and tsunami of 2004, magnitude 9.0, struck at 7:32 a.m. on 26 December 2004, destroying 601 houses and affecting 2,592 people in Ayeyarwady Division, Tanintharyi Division, Rakhine State and Yangon Division. It also killed 61 people. Losses amounted to about Kyats 1585.56 million.

(e) Landslides

1. The Kyunsu Township Landslide of 2005 occurred on 17 August 2005 in Kyunsu Township, destroying 4 houses.
2. The Pulaw Township Landslide of 2005 occurred on 14 September 2005 in Pulaw Township, Tanintharyi Division, destroying 2 houses, injuring 21 people and killing 12. Losses amounted to Kyats 0.1 million.
3. The Htantalan Township Landslide of 2005 occurred on 17 September 2005 in Htantalan Township, destroying 2 houses and affecting 8 people in 2 households.
4. The Mogok Township Landslide of 2007 occurred on 14 October 2005 in Mogok Township. Losses amounted to about Kyats 1 million.

5. The Mogok Township Landslide of 2008 occurred on 16 August 2008 in Bawbadan Village, Mogok Township, destroying 1 house, affecting 6 people in 1 household. Six people died.
6. The Thantaunggyi Township Landslide of 2008 occurred on 5 September 2008 in Thantaunggyi Township, Kayin State, destroying 2 houses, affecting 15 people in 4 household. Three people died. Losses amounted to about Kyats 6.2 million.
7. The Lashio Township Landslide of 2008 occurred on 8 September 2008 in Lashio Township, Northern Shan State, killing 3 people.

Appendix C

Causes of Natural Disasters, Their Potential Impact, Predictability, Mitigation, Damage Assessment and Aid Provision

Appendix C-1

Causes of Storms, Their Potential Impact, Predictability, Mitigation, Damage Assessment and Aid Provision

1. **Causes.** Storms are caused when low-pressure areas form at sea and begin moving towards inland areas at high wind speeds of up to 80 miles an hour.
2. **Potential Impact.** Storms cause heavy rains, floods and landslides. The potential impacts include the following.
 - (a) Damage to and collapse of buildings;
 - (b) Injury or death caused by collapsing houses or trees or wind-blown objects;
 - (c) Loss of cattle and livestock;
 - (d) Disruptions in electricity supply, communications and traffic; damage to motor vehicles;
 - (e) Damage and losses caused by flooding and landslides;
 - (f) Contamination of farmland by saline water making it uncultivable for a long period;
 - (g) Destruction of food and water supplies;
 - (h) Common colds, diarrhea and other diseases
3. **Predictability.** Early warning of low-pressure areas can be provided with the understanding that they may weaken and dissipate rather than grow into storms. A storm heading to land can be detected 24 hours in advance, which gives sufficient time for evacuations. Precautions can easily be taken as storms are seasonal.
4. **Mitigation of losses and damage**
 - (a) Identify vulnerable areas in the event of a natural disaster, seek wind shelters, build earth embankments and reinforce existing ones, plant rows of trees as wind breakers;
 - (b) Identify storm shelters around the local area and mark access routes for ease of use day and night;
 - (c) Ensure that all households prepare an emergency kit consisting of some food supplies, drinking water, water-proof clothing, a plastic sheet, medicines, candles, matches, cooking utensils, etc.
 - (d) Provide the general public with awareness and training activities on storm preparedness and do's and don'ts during storms;
5. **Damage Assessment and Aid Provision.** Assess damage through a comparative analysis of previously taken and current satellite photographs and aerial photographs,

surveillance by helicopter and information from the ground, and deliver aid according to priorities.

**Causes of Tsunamis, Their Potential Impact, Predictability, Mitigation,
Damage Assessment and Aid Provision**

1. **Causes and Characteristics.** Tsunamis are usually associated with undersea earthquakes. They cause little damage in the open sea but acquire great destructive power when they reach the coast as they can become giant waves of up to 100 feet, moving at more than 30 miles per hour. A notable characteristic of tsunamis is that waters recede a short time before their onset.
2. **Potential Impact** includes powerful giant waves washing away everything along the coastline, destruction of buildings, people washed out to sea and drowning, flooding, destruction of crops, food supplies and drinking water, disruptions of transportation and communication.
3. **Predictability.** Precautionary measures can be taken as soon as strong undersea earthquakes occur as they are often followed by tsunamis. As tsunami warning systems have widely been installed, there are good prospects of an early warning/alert. But the interval between the warning/alert and the actual arrival of the tsunami is likely to be short.
4. **Mitigation of losses and damage**
 - (a) Take measures such as educational activities characteristics of tsunamis, selection of shelters and evacuation routes, preparing towns and villages located in vulnerable flood plains or near the coastline at low altitudes for urgent evacuation immediately after reception of an alert from the warning system, conducting drills and rehearsals, at the preparedness stage, as the interval between the reception of an alert from the early warning systems and the actual arrival of the tsunami is likely to be short;
 - (b) Take steps to ensure that relief teams are deployed when disaster strikes;
 - (c) Plant rows upon rows of trees in parallel to the coastline both near the coast and further inland;
 - (d) Build an earth embankment inside the coastline.
5. **Damage Assessment and Aid Provision.** Assess damage promptly, using information from the ground, satellite photographs and helicopter surveillance; prioritize depending on the damage situation and deliver aid.

Causes of Earthquakes, Their Potential Impact, Predictability, Mitigation, Damage Assessment and Aid Provision

1. **Causes.** Earthquakes are caused by the shifting of tectonic plates.
2. **Potential Impacts**
 - (a) Fissures appearing in the ground, landslides, sunken blocks, collapsing sides of hills and mountains leading to destruction of buildings;
 - (b) Outflow of water from fissures where underground aquifers are affected and reduction of water level in wells or wells drying up;
 - (c) Sparks from the shorting of power lines causing fires and fires from firewood stoves, electric stoves or gas stoves;
3. **Predictability.** Earthquakes are generally not predictable. However, a knowledge of the earthquake zone that a particular locality belongs to and previous earthquakes together with observation of unusual bird and animal behaviour in the environment or around the house and the community may yield useful results.
4. **Mitigation of losses and damage**
 - (a) Enforce land utilization zones; (Having separate high-rise zone, low-rise zone, parks and recreation zone facilitates evacuation and the provision of shelters, fire breaks and access routes for relief operations at the time of earthquake and fire hazards.)
 - (b) Provide supervision to ensure compliance with construction criteria depending on the earthquake hazardous zones;
 - (c) Have vulnerable buildings relocated to safer locations where appropriate or rebuilt according to specified standards;
 - (d) Conduct awareness and training activities for the general public on the do's and don'ts during earthquakes;
 - (e) Provide training for the local population including members of the Union Solidarity and Development Association, the Red Cross and the Auxiliary Fire Brigade, organize doctors, nurses and technicians to provide medical treatment and ensure access to operating equipment, operating rooms, medicines and other requirements in sufficient quantities as severe earthquakes cause damage and losses in an extensive area with people trapped in the debris, requiring substantial manpower and equipment to conduct search and rescue operations and to provide medical care;
 - (f) Organize access to vehicles, machinery and support equipment such as fire engines, water bowsers, water tanks, bulldozers, backhoes, concrete breakers, dumpsters for operations involving fire fighting, route clearing, evacuation of trapped victims, etc. as aftereffects of earthquakes often include fires caused by shorting of power lines and those from kerosene and gas stoves;

5. **Damage Assessment and Aid Provision.** Prioritize affected areas using collated information from the ground and helicopter surveillance and dispatch aid as soon as possible. As the number of injured people is usually large, arrangements need to be made in advance for admission to different hospitals in the area.

**Causes of Floods, Their Potential Impact, Predictability, Mitigation,
Damage Assessment and Aid Provision**

1. **Causes**
 - (a) Heavy rains;
 - (b) Rising river waters;
 - (c) Dam failures;
 - (d) Storm surges;
 - (e) Tsunamis (See Appendix C-2)
2. **Potential Impacts.** Plains, coastal areas and low-lying areas are especially vulnerable.
 - (a) Damage to buildings, food supplies, household items, small buildings being washed away, damage or destruction from impact with floating debris;
 - (b) Damage to infrastructure such as railway tracks, motor roads, powerline poles and bridges; disruption to communications and transportation; negative impact on education and health;
 - (c) Drowning of people, cattle and livestock;
 - (d) Colds, diarrhea and dysentery from contaminated drinking water;
 - (e) Destruction of crops, salination of soil making farmland uncultivable for several years.
3. **Predictability.** Forecasts issued by the Department of Meteorology and Hydrology can provide between 3 and 7 days of advance notice before the onset of heavy rains, flooding and storm surges, while the Irrigation Department can give several days or hours of advance notice before dam failures.
4. **Mitigation of losses and damage**
 - (a) Study flood-prone areas using aerial photographs and build embankments, improve drainage systems;
 - (b) Put in place flood preparedness programmes; conduct rehearsals;
 - (c) Ensure compliance with standards depending on earthquake zones in the construction of dams;
 - (d) Identify beforehand high ground areas that can be used as shelters during floods;
 - (e) Having boats and rafts in every household;
 - (f) Plan for evacuation of family members to identified shelters upon reception of early warning; ensure that all family members are aware of the plan; conduct rehearsals and drills;
 - (g) Carry out educational activities for the flood hazard and conduct rehearsals and drills;

- (h) Dispatch search and rescue teams to the affected area promptly;
- (i) Organize motorized vessels and row boats in the local area beforehand and assign specific areas to each.

5. **Damage Assessment and Aid Provision.** Prioritize affected areas using collated information from helicopter surveillance and the teams on the ground and dispatch aid as soon as possible.

**Causes of Droughts, Their Potential Impact, Predictability, Mitigation,
Damage Assessment and Aid Provision**

1. **Causes.** Scarcity of rain, heat waves, environmental degradation.
2. **Potential Impacts.**
 - (a) Drying up of water sources;
 - (b) Lowering of the underground water table, leading to destruction of crops;
 - (c) Food shortages of people and animals caused by destruction of crops and pastures;
 - (d) Human and animal diseases caused by malnutrition and shortage of clean water.
3. **Predictability.** Forecasts can be made by the Department of Meteorology and Hydrology. The above-mentioned negative impacts take effect gradually rather than all at once, providing sufficient time to take preparatory action.
4. **Mitigation of losses and damage.** Make long-term plans for the construction of dams and irrigation ditches, greening of the environment and cultivation of drought-resistant crops; take short-term measures such as evacuation of some of the population to areas outside drought affected regions, delivery of food and water supplies to drought affected regions and educational activities on the do's and don'ts concerning living, diet and health.

Causes of Fire Hazards, Their Potential Impact, Predictability, Mitigation, Damage Assessment and Aid Provision

1. **Causes**
 - (a) Negligence in handling gasoline, diesel, kerosene, charcoal, electricity or gas;
 - (b) Earthquake related fires;
 - (c) Spreading of forest fires.
2. **Potential Impacts.**
 - (a) Destruction of housing, warehouses, factories, workplaces, household items and food supplies;
 - (b) Casualties caused when people are trapped in buildings on fire; burns and injuries;
 - (c) Fires spreading through sparks; injuries sustained by large numbers of people;
 - (d) Disruptions of transportation and economic activity.
3. **Predictability.** Partial predictions of fires are possible based on the weather, density of population, type of housing and the nature of inhabitants. Fires usually have rapid onset and the preparation time cannot be any longer than the time it takes for the fire to reach a particular area.
4. **Mitigation of losses and damage.**
 - (a) Take seasonal fire prevention measures and provide supervision to enforce them;
 - (b) Arrange sufficient access to fire engines, water bowsers, water tanks and water supply points;
 - (c) Carry out fire hazard awareness activities for the public;
 - (d) Put in place fire breaks;
 - (e) Enforce fire prevention standards in the construction of buildings;
 - (f) Conduct educational activities for the public on fire fighting techniques and use the participation of the public during fires;
 - (g) Maintain good information and communication systems and the ability to dispatch resources to vital locations; ensure effective and focused utilization of resources.
5. **Damage Assessment and Aid Provision.** Collect, review and utilize information from the field and from helicopters as planned.

**Causes of Landslides, Their Potential Impact, Predictability, Mitigation,
Damage Assessment and Aid Provision**

1. Causes

- (a) Landslides all over the world are related to earthquakes. They are common on high mountain ranges and plateaus and slopes. Sustained heavy rains may also cause landslides in such areas.
- (b) Some landslides are caused by human activity. Extensive logging on mountain slopes may lead to soil erosion and collapse of entire mountainsides. Excavation of mines, land development for various purposes, road construction, etc. can also damage environmental and ecological systems, causing landslides.
- (c) Landslides can occur as a result of human activity in developed areas just as they do in undeveloped areas due to natural phenomena. Landslides and mudslides occur at short notice often at night and are rarely seen in progress. While landslides are fairly common, it is difficult to obtain real-time information on landslides as they usually occur in remote hilly regions.

2. Potential Impacts.

- (a) Landslides have the potential to cause severe and extensive damage to state-owned and privately owned infrastructure.
- (b) The number of casualties can be high depending on the scale of landslides and mudslides. In addition, the topography of the area concerned may be changed permanently.
- (c) The Columbia landslide of 1985 buried all the towns and villages in the area and more than 20,000 people lost their lives.
- (d) The Utah landslide of 1985 in the USA affected a mountain side half a mile high and about a mile wide. Losses ran to approximately US\$ 500 million.
- (e) Most inhabitants of hilly regions in every country live in towns and villages located on hillsides and are most vulnerable to landslide hazards.
- (f) Landslides often cause destruction of all railway tracks and motor roads leading to disruption of transportation.
- (g) Factories, workshops and dams located in or associated with hilly regions may be affected by landslide hazards.

3. Predictability. Although landslides often occur as an aftereffect of earthquakes, those unrelated to earthquakes are difficult to predict. Landslides may occur without warning.

4. Mitigation of losses and damage

- (a) On-site soil tests by professionals are necessary before construction of houses and other structures.

- (b) Inhabitants in residential areas need to be alert to the possibility of landslides and shifts along fault lines. Urgent evacuation is required for those living on hillsides when doors become stuck, cracks appear in walls and foundations, fences and trees shift position and fissures appear in the ground.
- (c) Those living in hilly regions should locate houses on flatlands on the plateaus and stay alert especially during heavy rains.
- (d) Those living in lower areas should evacuate urgently to higher ground away from the affected area as soon as they hear sounds of an approaching landslide, such as the sound of big trees falling, boulders falling and hitting one another and other rumbling sounds.
- (e) To mitigate the impact of landslides and address the above issues, constant attention needs to be given to the root causes of landslides such as flood control, stability of highways in the mountainous regions, enforcement of standards in the construction of houses, factories and workshops on the hillsides, ensuring earthquake resistance and forest conservation

Union of Myanmar
State Peace and Development Council

Notification No. 14/2005

Yangon, The 1st Day of the Waning Moon of Pyatho, 1366 ME

(25 January 2005)

Formation of the Myanmar Natural Disaster Preparedness Committee

1. The State Peace and Development Council has formed the Myanmar Natural Disaster Preparedness Committee with the following officials in order ensure the systematic prediction of natural disasters that may occur from time to time in the country, the systematic conduct of preparedness measures and the prompt and effective implementation of relief and assistance programmes during natural disasters.

(a) Prime Minister	Chairperson
(b) Secretary 1 of the State Peace and Development Council	Vice Chairperson
(c) Minister, Ministry of Agriculture and Irrigation	Member
(d) Minister, Ministry of Home Affairs	Member
(e) Minister, Ministry of Culture	Member
(f) Minister, Ministry of Transport	Member
(g) Minister, Ministry of Education	Member
(h) Minister, Ministry of Health	Member
(i) Minister, Ministry of Information	Member
(j) Minister, Ministry of Rail Transportation,	Member
(k) Minister, Ministry of Social Welfare, Relief and Resettlement,	Secretary
(l) Deputy Minister, Ministry of Social Welfare, Relief and Resettlement,	Joint Secretary

2. The duties and functions of the Myanmar Natural Disaster Preparedness Committee are as follows.

- (a) Document the natural disasters that have occurred in the countries of the world, including Myanmar, and the experience gained; formulate preparedness programmes for potential future disasters; and provide leadership and guidance in the formulation and implementation of rescue and relief plans during disasters;
- (b) Provide supervision and guidance to the formulation and implementation of mobilization programmes to ensure ready access to required manpower and material resources for rescue and relief activities;
- (c) Provide guidance and supervision to the designation of relief areas for prompt and effective undertaking of rescue and relief activities and the organizing and utilization of material resources and manpower belonging to departmental and social organizations for each area designated;

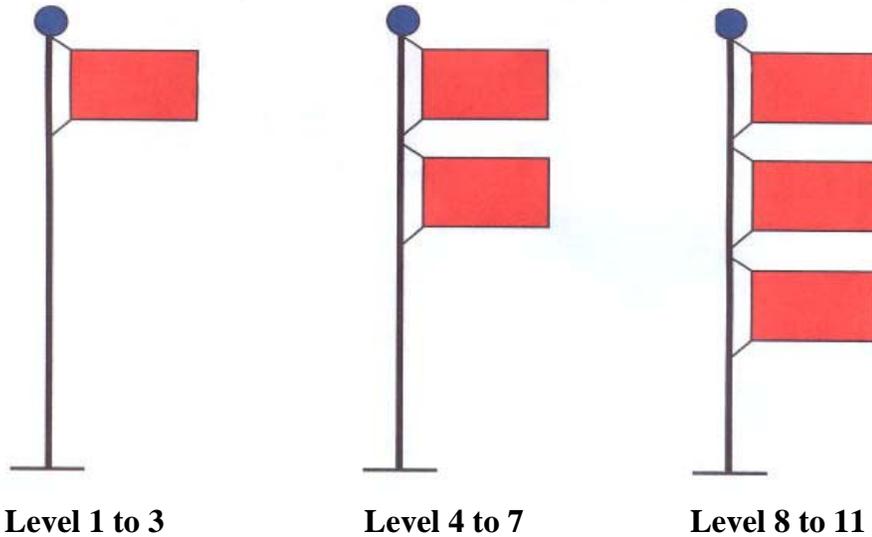
- (d) Provide guidance in declaring an emergency in the disaster-affected area and in obtaining and utilizing the resources of the Armed Forces in addition to those of the Myanmar Police Force to provide security;
 - (e) Provide guidance for field supervision from the central level to ensure food sufficiency, prevention of epidemics, fulfilment of the emergency requirements of food and medicine, etc. in the disaster-affected area;
 - (f) Provide leadership and guidance for the systematic implementation of rehabilitation activities such as resumption of agricultural and livelihood work, restoration of transportation and communications, provision of regular education and health care services in disaster-affected areas as priority 1, 2 or 3, depending on the urgency of the work;
 - (g) Provide guidance and supervision for the dissemination of news and information on the disaster situation and the rescue and relief measures taken by the State, making them available to foreign countries, international organizations and governments;
 - (h) Provide guidance in supervising the utilization of supplies and funds provided from abroad as well as the work of the organizations involved in the rescue and relief operations;
 - (i) Provide guidance and supervision to other activities related to natural disaster preparedness.
3. The Myanmar Natural Disaster Preparedness Committee may form and assign duties to working committees at the central level and supervisory committees at the State/Division level as required.

By order,

Signed

Thein Sein
Lieutenant General
Secretary 1
State Peace and Development Council

Designation of Flag Signals Indicating Storm Hazards for Display in Wards/Villages



(Red flags are used.)

- Alert Level 1:** There is a possibility of a storm in the area and the public should pay particular attention to weather news updates and comply with instructions.
- Alert Level 2:** A storm has begun forming and the public should pay particular attention to weather news updates and comply with instructions.
- Alert Level 3:** There is a likelihood of severe weather conditions caused by a storm and the public is advised to pay particular attention to alerts/warnings, news updates and comply with instructions.
- Alert Level 4:** A storm of modest strength is imminent and the the public is advised to pay particular attention to alerts/warnings and comply with instructions.
- Alert Level 5:** A weak storm has become one of moderate strength and the public is advised to stay alert.
- Alert Level 6:** Weather conditions are likely to worsen due to the storm and the public is advised to comply with alert/warnings.
- Alert Level 7:** Weather conditions are likely to worsen due to a storm of moderate wind speeds in the area and the public is advised to follow the weather updates and comply with alert/warnings in a timely manner.
- Alert Level 8:** The storm is gaining strength and the public is advised to begin evacuations.
- Alert Level 9:** A severe storm will strike the area and evacuations are advised.
- Alert Level 10:** A severe storm is imminent and everyone should evacuate to safe locations.
- Alert Level 11:** The storm has struck and communications have been disrupted.

Emergency Aid Request Form

_____ **State/Division**

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

Note: The township concerned should make direct submissions both to the central level and to the State/Division level at the same time to prevent delays. Every effort should be made to send these preliminary reports within one hour or two of the disaster onset. Please use all means of communication, including e-mail, fax, telephone, telegraph and communication equipment.

Damage Assessment Form

Casualties and Damage to Housing

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

Losses and Damage to Livelihoods

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

Losses and Damage to Schools, Hospitals/Clinics

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

Losses and Damage to Religious Buildings

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

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

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

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

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

Other Losses and Damage

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

Appendix H

Issuing Weather Reports including Storm News and Weather Warning Flag Signals for Display at Ports

Categories of Storms According to Strength

1. Storms that affect Myanmar are categorized as follows according to strength.

No.	Terminology	Wind Speed	
		Knots per hour	Miles per hour
a	Low pressure area	18-27	21-31
b	Gale	28-33	32-38
c	Tropical storm	34-47	39-54
d	Cyclone	48-63	55-74
e	Severe cyclone	64-85	75-102
f	Super cyclone	86 and above	103 and above

Weather Alerts and Forecasts

2. The Department of Meteorology and Hydrology issues the following forecasts, special weather news and alerts.

(a) Regular Daily Weather News

1. The Myanmar Language Programme of the Nay Pyi Taw Voice of Myanmar makes daily weather news broadcasts four times a day: in the morning at 07:00 hours, in the afternoon at 13:00 hours, in the evening at 18:00 hours and at night at 20:00 hours.
2. The English Language Programme of the Nay Pyi Taw Voice of Myanmar makes daily weather news broadcasts in the afternoon at 14:00 hours and at night at 21:30 hours.

The above programmes in Myanmar and in English can be tuned in at the following frequencies.

Time	Short Wave (meter)	Medium Wave (meter)
Morning	41.75	520
Afternoon	50.13	520 and 505
Evening	30.85	520, 505 and 594

3. City FM Yangon makes weather news broadcasts twice a day at 89 MHz. The schedule of the weather news broadcasts is not fixed.

4. Yangon Radio makes weather news broadcasts for sea-going vessels at 15:45 hours at 156.6 MHz.
5. Myanmar Radio and Television (MRTV) and Myawady Television (MWD) make weather news broadcasts after the 8:00 p.m. News. MRTV-4 makes weather news broadcasts 4 times a day on a flexible schedule.

The above-mentioned daily weather news include the following details.

- (aa) Summary of the weather during the last 24 hours;
 - (bb) Conditions in the Bay of Bengal;
 - (cc) Unusual developments;
 - (dd) Forecast for the next day until the evening;
 - (ee) Forecast for the next two days;
 - (ff) Conditions at sea;
 - (gg) Forecasts for Nay Pyi Taw, Yangon, Mandalay and their vicinities.
- (b) Special Weather News. The Special Weather News is released as required beginning with the formation of a storm in the Andaman Sea and/or the Bay of Bengal. The Special Weather News is carried by the Voice of Myanmar and City FM two or three times every hour and by the MRTV and MWD in regular weather reports.
- (c) Alerts/Warnings. The Department of Meteorology and Hydrology issues the following Alerts/Warnings.
1. Gale Alert
 2. Heavy Rains Alert
 3. Scarce Rains Alert
 4. Unseasonable Rains Alert
 5. Storm Alert
 6. River Floods Alert
- (d) Storm Warnings. Storm warnings are issued depending on the severity of the storm and the likelihood of making landfall along the Myanmar coast and are carried by the Voice of Myanmar 3 to 6 times every hour and by the MRTV and MWD in real time as a news bar.

Storm warnings include the following storm-related details.

1. Current location of the storm
2. Forecast on the probable path of the storm
3. Forecast on the time and location of landfall
4. Forecast on the probable rainfall due to the storm
5. Forecast on the probable winds inland and at sea due to the storm
6. Forecast on the probable storm surge

- (e) Flood Warnings. The Hydrology Section of the Department of Meteorology and Hydrology has river water monitoring stations along the major rivers of Myanmar: the Ayeyarwady River, the Chindwin River, the Duhtawady River, the Sittaung River, the Bago River, the Thanlwin River and the Shwe Kyin River, and the River Flood Warning is issued when the river waters reach about 1 meter below the danger level. River Flood Warnings give at least 24 hours to 72 hours of advance notice. The Warnings are included in the weather news broadcast by Voice of Myanmar (Radio), MRTV, MWD and MRTV-4. In addition, advance warnings are transmitted using telephone, fax and Single-sideband modulation (SSB).
- (f) Storm Signals. A storm warning signal pole is set up in Nan Thida Garden of Yangon Port to indicate the strength of the storm for vessels at the port. Storm warning signal poles are also set up within the premises of other ports as well. The storm warning signals are given in Appendix H-1.

3. Designating an emergency

(a) Yellow Stage

The formation of a tropical storm in the Bay of Bengal and the Andaman Sea is designated as the Yellow Stage. At this Stage, the Voice of Myanmar and City FM broadcast updates two or three times an hour while the MRTV and the MWD include updates in the daily weather news. At the Yellow Stage, the part of the Bay of Bengal and the Andaman Sea where the storm is forming is indicated. The maritime weather forecasts and storm warnings are to be obtained from a Myanmar Five-Star Shipping Line vessel at Yangon Port.

(b) Orange Stage

When a tropical storm has formed in the Bay of Bengal and the Andaman Sea and begins moving toward the Myanmar coast, the Orange Stage is designated. At this stage, the Voice of Myanmar and City FM broadcast updates three or four times an hour while the MRTV and the MWD carries frequent updates as a news bar.

1. Details to be included in a storm warning

- (aa) Level of the storm
- (bb) Location
- (cc) Forecast on the probable path of the storm
- (dd) Forecast on the time and location of landfall
- (ee) Forecast on the probable rainfall due to the storm
- (ff) Forecast on the probable winds inland and at sea due to the storm
- (gg) Forecast on the probable storm surge

(c) Red Stage

When a storm moving towards Myanmar coast is expected to make landfall in 12 hours, the Red Stage is designated. At this stage, storm warnings containing the following details are broadcast 3 to 6 times an hour by the Voice of Myanmar,

while the MRTV, the MRTV-4 and the MWD carries real-time updates as a news bar and as breaking news.

1. Details to be included in a storm warning
 - (aa) Level of the storm
 - (bb) Location
 - (cc) Forecast on the probable path of the storm
 - (dd) Forecast on the time and location of landfall
 - (ee) Forecast on the probable rainfall due to the storm
 - (ff) Forecast on the probable winds inland and at sea due to the storm
 - (gg) Forecast on the probable storm surge

(d) Brown Stage

When a storm makes landfall on the Myanmar coast, the Brown Stage Emergency is designated. At this stage, storm warnings are broadcast 3 to 6 times an hour by the Voice of Myanmar, while the MRTV, the MRTV-4 and the MWD carries real-time updates as a news bar and as breaking news.

1. Details to be included in a storm warning
 - (aa) Level of the storm
 - (bb) Location of landfall
 - (cc) Forecast on the probable path of the storm
 - (dd) Forecast on the probable rainfall due to the storm

(e) Green Stage

When a storm has weakened and the storm hazard has passed, the Green Stage is designated. After the storm has passed, updates are broadcast 2 to 3 times an hour by the Voice of Myanmar, while the MRTV, the MRTV-4 and the MWD carries real-time updates as a news bar and as breaking news.

(f) 24-Hour News Updates

A 24-hour broadcasting station or broadcasting channel dedicated to special weather updates should be set up. This channel should broadcast weather updates and special news round the clock as required.

**Flag Signals Indicating Storm Warnings
Issued by Department of Meteorology and Hydrology
for Ocean-Going Vessels and Ports
to be Displayed at Ports for Use by Vessels and Navigators**

3 Warning Systems

1. Normal Warning System

The Normal Warning System consists of 11 danger signals: 2 for far-away areas, 8 for the vicinity of the port and 1 showing disruption of communication with the meteorology department. This system is in use in the towns of Myeik, Mawlamyine and Dawei.

2. Summary Warning System

Only 5 warnings are distinguished. This system is in use in Kyauk Phyu Port.

3. Warning System Indicating Eye of the Storm

In this system, the location of the storm's eye is given in addition to the regular warning. This is in use in Sittwe, Hainggyi Island, Yangon Port and Pathein Port.

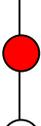
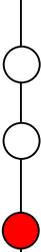
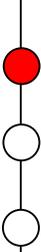
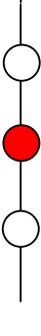
(a) Normal Warning System

1. Weather Signal for Far-Away Areas

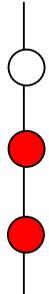
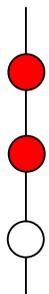
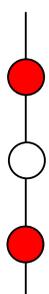
This signal is intended for ocean-going vessels leaving the port for the open sea. It does not concern the port area.

		No.	Day	Night
Caution is advisable.	There is severe weather and a storm is forming in a part of the sea. Note: This signal applies to storms that cross the Tanintharyi coast from the east and heads into the Andaman Sea or the Bay of Mottama.	1		
Use caution.	There is a storm in a part of the sea. But it does not mean the port is in any danger.	2		

2. Weather Signal for the Vicinity of the Port

		No.	Day	Night
Caution is advisable.	Heavy rains and strong winds are expected at the port.	3		
Use caution.	Storm hazard is expected at the port. But it is not necessary to take full shelter. Note: This signal is flown in ports located in the general direction of the storm's probable path.	4		
Danger is imminent.	A storm of low to moderate strength is indicated to the east if flown at a port in Yangon, Pathein or Hainggyi Island, and to the south if flown in other ports. The storm is expected to make landfall and bringing strong winds and heavy rains to the port area.	5		
Danger is imminent.	A storm of low to moderate strength is indicated to the west if flown at a port in Yangon, Pathein or Hainggyi Island, and to the north if flown in other ports. The storm is expected to make landfall and bringing strong winds and heavy rains to the port area.	6		
Danger is imminent.	A storm of low to moderate strength is expected to make landfall at or near the port and bringing strong winds and heavy rains to the port area.	7		

Restricted

Severe storm	A severe storm is indicated to the east if flown at a port in Yangon, Pathein or Hainggyi Island, and to the south if flown in other ports. The storm is expected to make landfall and bringing very strong winds and very heavy rains to the port area.	8		
Severe storm	A severe storm is indicated to the west if flown at a port in Yangon, Pathein or Hainggyi Island, and to the north if flown in other ports. The storm is expected to make landfall and bringing very strong winds and very heavy rains to the port area.	9		
Severe storm	A severe storm is expected to make landfall at or near the port and bringing very strong winds and very heavy rains to the port area.	10		
No communications	Communications between the port and the meteorology department have been disrupted. The port official expects severe weather conditions in the port area.	11		

(All day-time warnings use black signals and all night-time warnings use red and white signals.)

3. Summary Warning System

This system uses only 5 signals. The details can be obtained from the port official. This system is in use at Kyauk Phyu Port.

Caution is advisable: Same as No. 3 day-time and night-time signals above.

Use caution: Same as No. 4 day-time and night-time signals above.

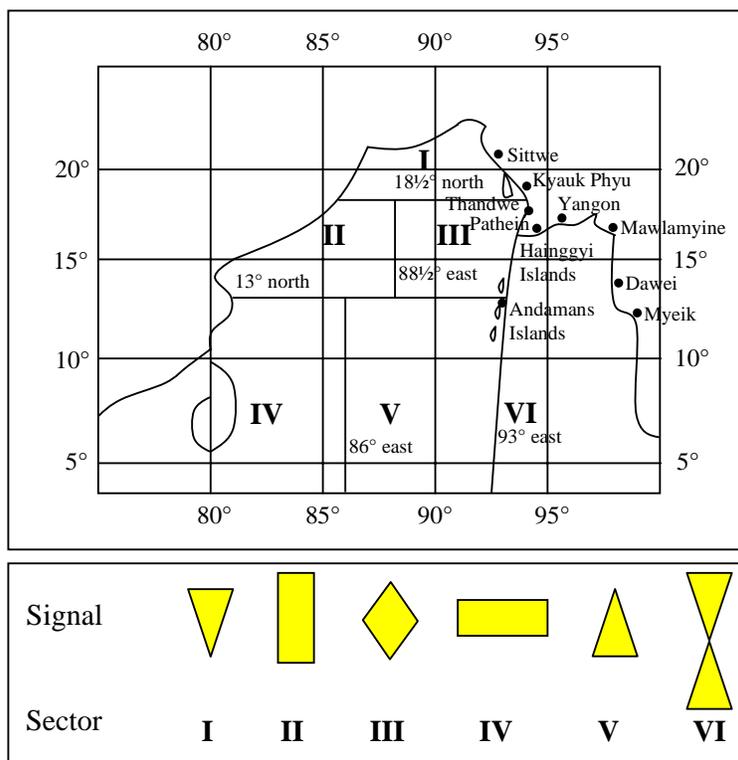
Danger is imminent: Same as No. 7 day-time and night-time signals above.

Severe storm: Same as No. 10 day-time and night-time signals above.

No communications: Same as No. 11 day-time and night-time signals above.

4. Warning System Indicating Eye of the Storm

This system is used when the port area is not immediately threatened although unstable severe weather conditions are occurring in a distant region. This system divides the Bay of Bengal into 6 sectors as shown in the map below, and provides a signal for each sector.



For example, when Sector V has strong winds, it will have the signal .

Similarly, when Sector II has a storm, ports that are not threatened will have the signal and those that are at risk will have one of the signals for the "Vicinity of the Port".

Guidelines for the Construction, Maintenance and Utilization of Cyclone Shelters

Aim

1. In areas vulnerable to storms, where cyclone shelters are necessary, appropriate sites should be carefully chosen before construction to ensure that the shelters serve their purpose. Moreover, individuals and organizations will need to be assigned functions and duties for their maintenance at normal times so that the buildings are ready for use during storms, and not have problems making them unsuitable as shelters. These general guidelines are issued for the construction, maintenance and utilization of cyclone shelters, including utilization for other purposes, based on the experience and example of Bangladesh. States/Divisions vulnerable to storms should use these guidelines as a basis to establish procedures and practices appropriate to their context.

Site Selection

2. Where Cyclone Shelters are necessary, the most appropriate sites should be selected, using the Geographical Information System Technology, after a detailed consideration of the density of population, transportation and communication conditions, distance from areas where the eyes of the cyclones are often located and the topography of the area. Before selection decisions are taken, the recommendations of the local authorities need to be obtained and the selected sites should be able to serve the majority of the local population.

3. Routes that provide easy access to the cyclone shelters are essential to enable people to reach the shelters during disasters and emergencies without delay. The location of the cyclone shelter should have road links to towns, to main routes and to surrounding rural communities.

4. Government-approved designs contained in the master plan should be utilized in the construction of cyclone shelters in order to facilitate their use for the principal intended purpose and other occasional purposes. In their construction, consideration need to be given not only to shelter provision during disasters but to emergency water supply, food storage, shelter for pets, livestock and cattle, standards of sanitation for hygiene. Special emphasis should be placed on the construction of cost-effective buildings.

Overall Management System for Cyclone Shelters

5. If the owner or builder of the cyclone shelter makes use of the building during normal times, the responsibility for its maintenance will rest with the owner or builder. However, if the ownership of the storm shelter has been transferred to the local authority, its management, utilization and maintenance will become the responsibility of the local authority. Regardless of the ownership, occupancy and utilization of the cyclone shelter during normal times, coordination for all matters related to the shelter should be carried out by the local authority. Thus, the local authorities need to monitor the cyclone shelters in their area and submit quarterly situation reports in writing to the Ministry of Social Welfare, Relief and Resettlement. The Ministry of Social Welfare, Relief and Resettlement should collate the information and submit regular updates to the Government Office.

Repair, Maintenance and Renovation of Cyclone Shelters

6. If the persons or organizations that have ownership of the cyclone shelters make use of the buildings, the responsibility for the repair, maintenance and renovation of the shelters should rest with the owners. If the cyclone shelters are transferred to the government/local authorities upon completion of construction, the authorities concerned should take the responsibility for their repair, maintenance and renovation. A budgeted allocation should be made by the Ministry of Social Welfare, Relief and Resettlement to the authorities concerned for this purpose. The local authorities should carry out the repair, maintenance and renovation of the shelters promptly without delay. In Bangladesh, approximately 90% of the cyclone shelters are used as school buildings during normal times, with the rent being paid by the Education Department. In addition, the cyclone shelter buildings are also rented out as wedding halls, auditoriums, halls for cultural and traditional performances and festivals, with the proceeds going to the State. The important requirement is that the building should be constantly maintained and fully ready for use during disasters.

Utilization of Cyclone Shelters

7. While individuals or organizations may rent the cyclone shelters for their own purposes during normal times, the State/Division Disaster Management Committees concerned will reserve the right to utilize them as needed during disasters and emergencies. During disasters, the decisions of the Committees shall be final. The cyclone shelter buildings that are not in full use during normal times may be allowed to serve as schools, public education centres, night schools, loan centres for public social welfare, distribution points for social welfare supplies, temporary dispensaries, etc., depending on local requirements. However, to serve their purpose of shelter provision during storms, the cyclone shelter buildings need maintenance and renovation to be ready for use at any time and arrangements should be in place for their immediate return to public service when required from those who have rented it temporarily.