

COMPREHENSIVE GUIDELINE

FOR ARMED FORCES IN DISASTER MANAGEMENT

PREPARED BY



**ARMED FORCES DIVISION
PRIME MINISTER'S OFFICE
BANGLADESH**



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PREFACE

Bangladesh is prone to natural disasters of various types due to its geographic location, dense population and the phenomenon of climate change. Over the years, our resilient people have established Bangladesh as a role model for disaster management in the world. Bangladesh is also an iconic example of civil-military relationship in disaster management. It has been possible due to the active cooperation of all other concerned agencies in disaster field.

Since independence, as per desire of the Government, Bangladesh Armed Forces have always provided unflagging support to general mass in any kind of disaster. They have participated not only in all major disaster management activities within the country, but also extended humanitarian support and assistance to our friendly countries, well beyond our borders. Number of policies, standing orders, acts, regularity framework mark the progress of Bangladesh in disaster management. Armed Forces members, at times, find difficulty to remain aware of all those guidelines. It was felt long before to craft a comprehensive guideline to serve as ready reference for the Armed Forces members, as well as, a source of information for other stake holders too. To neutralize this, an effort has been made to abstract all relevant information in this book.

It is a maiden effort from Armed Forces Division in this field. Knowledge of this book might assist all concerned to better coordinate their respective tasks in disaster management. The book is prepared basing on the existing policies, guidelines and practices. It is subjected to review with the change of associated documents. Armed Forces Division appreciates contribution of British High Commission in publishing this document.



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LIST OF ABBREVIATIONS

AFD – Armed Forces Division
ADPC – Asian Disaster Preparedness Centre
AAR - After Action Review
BMD – Bangladesh Metrological Department
BNACWC – Bangladesh National Authority for Chemical Weapon Convention
CDMP – Comprehensive Disaster Management Program
CCDR – Cabinet Committee on Disaster Response
CBRNE – Chemical, Biological, Radiological, Nuclear and Explosive
COORES – Coordinated Response Exercise
C4IT - Command, Control, Communication and Computer Information Technology
DREE – Disaster Response Exercise and Exchange
DRR – Disaster Risk Reduction
DDM – Department of Disaster Management
DFID – Department for International Development
DIMT – Disaster Incident Management Team
EOC – Emergency Operation Centre
ERM – Emergency Response Management
FSCD – Fire Service and Civil Defence
FPC – Final Planning Conference
FTX – Field Training Exercise
GIS - Geographic Information System
GOVT - Government

LIST OF ABBREVIATIONS



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HADR – Humanitarian Assistance and Disaster Relief
HCTT – Humanitarian Coordination Task Team
HC - Humanitarian Committee
HQ - Headquarters
HSD – Health Service Department
HuMOCC - Humanitarian Military Operations Coordination Centre
IMDMCC – Inter Ministerial Disaster Management Coordination Committee
IPC – Initial Planning Conference
INSARAG – International Search and Rescue Advisory Group
MoDMR – Ministry of Disaster Management and Relief
MNCC – Multinational Coordination Centre
MNMCC – Multinational Military Coordination Centre
NDRCG – National Disaster Response Coordination Group
NSET – National Society for Earthquake Technology
NEOC - National Emergency Operations Centre
OSOCC – On Site Operations Coordination Centre
POC - Point of Contact
PSD – Public Service Division
PSO – Principal Staff Officer
RCG - Regional Consultative Group
RDC – Reception and Departure Centre
RFA - Request for Assistance
RHD – Roads and Highways Department
SAR – Search and Rescue

LIST OF ABBREVIATIONS

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SMEE – Subject Matter Expert Exchange

SOD – Standing Order on Disaster

SOP – Standing Operating Procedure

TTX – Table Top Exercise

UNOCHA – United Nations Office for the Coordination of Humanitarian Affairs

USAR - Urban Search and Rescue

UNDAC - United Nations Disaster Assessment and Coordination

LIST OF ABBREVIATIONS





INTRODUCTION

CHAPTER ONE

1.1 General

Bangladesh stands as the seventh most risky natural disaster prone country in the world as per World Risk Index calculated by the United Nations University Institute for Environment and Human Security (UNU-EHS). Environmental disasters like tropical cyclones, storm surges, floods, tornadoes and droughts ravage the country almost every year. Since Independence, the country is devastated by severe cyclones of varying intensities. One of the severe ones was that of 29 April 1991, when material damage was to the tune of about 2.4 billion US dollars and human casualty of about 1, 40,000 lives. On a previous occasion of a similar catastrophe in 1970, about half a million lives were lost. The Bangladesh flood of 1988 caused economic loss to the extent of about one billion dollars. Cyclone Sidr caused death toll of approximately 3,406, with 1,001 missing, and over 55,000 people sustained physical injuries. Besides, Rana Plaza Tragedy, Bashundhara Fire, Tampaco Factory Fire Incidents, Forcibly Displaced Myanmar Nationals in Bangladesh are the enormous examples of manmade disasters in Bangladesh. Over the period, Bangladesh has proved to be a resilient nation in facing all these kind of disasters specially natural disasters.

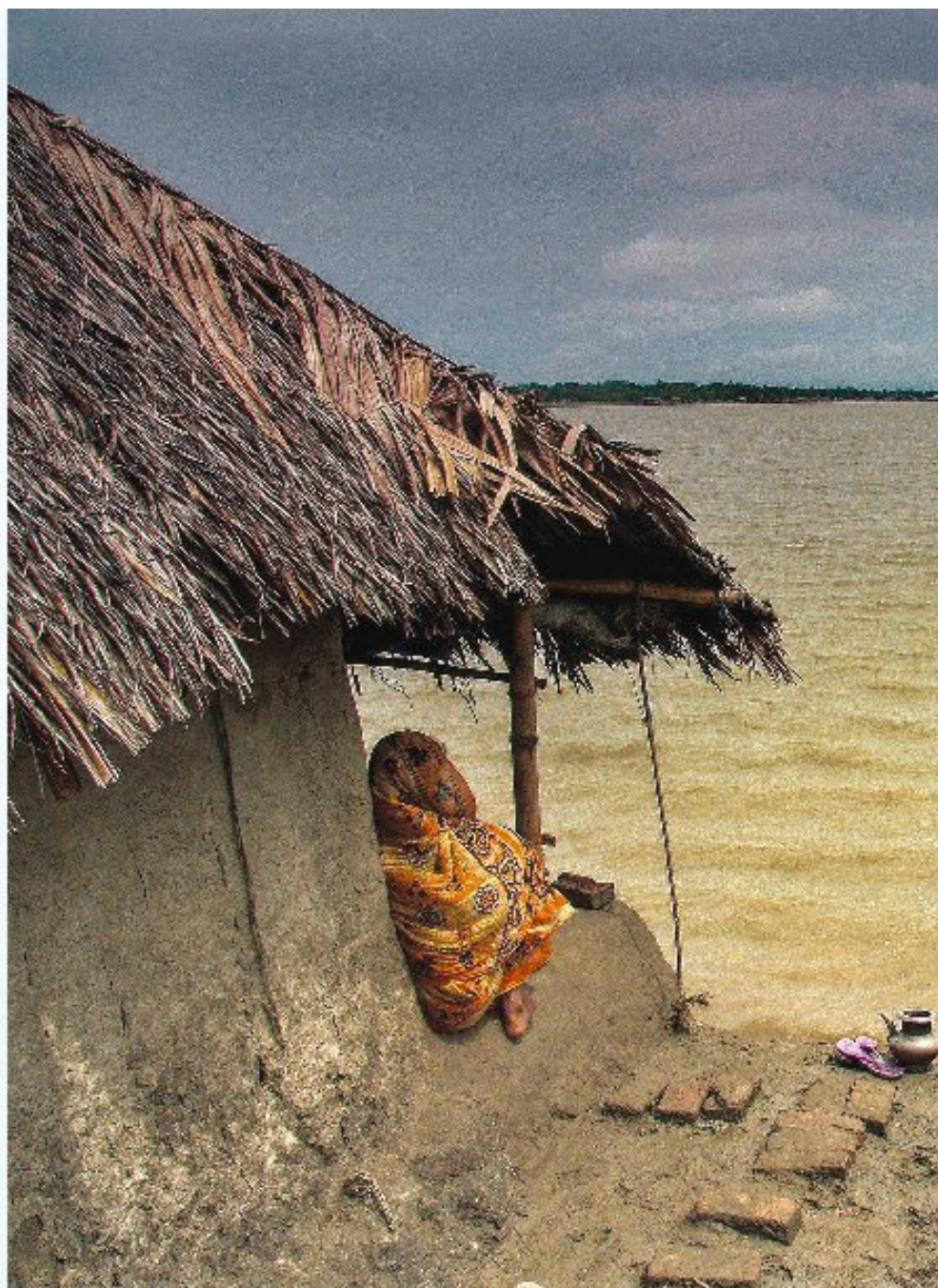
Bangladesh is one of the few countries in the world who has a dedicated ministry for disaster management. Ministry of Disaster Management and Relief (MoDMR) is the lead ministry of Government to manage any kind of disaster. Bangladesh Armed Forces like any other professional armed forces have always responded to the call of nation during any disaster. Over the years, Bangladesh Armed Forces through Armed Forces Division (AFD) have developed professional working environment with MoDMR and other ministries of the Government. Armed Forces members participate in numerous events related to disaster both at home and abroad. This comprehensive guideline is aimed at to act as ready reference to know about different aspects of disaster management in general and involvement of armed forces in any disaster in particular.

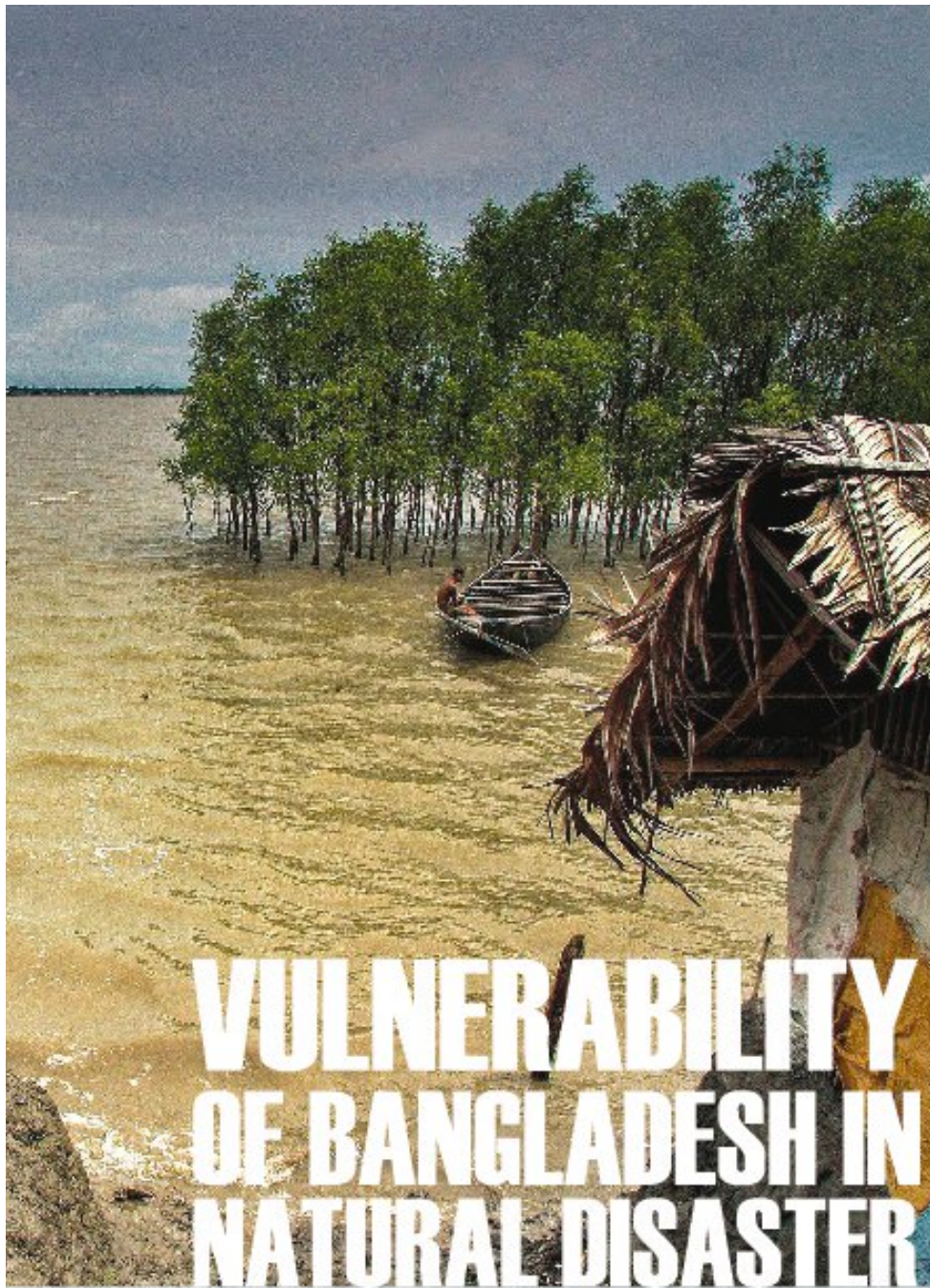
1.2 Requirement of Comprehensive Guideline

Over the years, many studies have been carried out on disaster management in Bangladesh. Hence, different publications are available both at national and international level in this regard. Members of Armed Forces, in coordination with other government and non-government organizations, participate in different types of disaster engagement both at home and abroad. While participating in those engagement armed forces personnel experience new learning and practices. Different types of guidelines for varied approach in disaster management are also discussed. All these learning are not crafted in a single document. Every member in general specially in uniform needs to have more study related to disaster management. As this entails a great deal of study of the related documents, this Comprehensive Guideline for Armed Forces may facilitate Armed Forces members to find desired articulation in one single document rather than flipping through numbers of documents. Involvement in disaster management at home and abroad, participation in various disaster related issues like seminars, symposiums, workshops and exercises generate essential lesson learning for Armed Forces members which need to be documented in a single document for ease of consultation. To participate in a meaningful way in all these discussions, one has to be knowledgeable about national and international disaster management related policies, guideline, SOD and SOPs, act and regulations which are articulately in different documents. Besides, it may also assist civil counterpart to know more about Armed Forces role in disaster management.

1.3 Review of Comprehensive Guideline

The book is prepared on the existing document related to disaster policy, guideline and practices. Experience of Armed Forces in disaster management is the basic strength of articulating this book. Different structures, policies, activities related to disasters are subject to change with the revised national and international approach in disaster management. It would be inexorable to update the book and publish required edition of the book in future. ■





VULNERABILITY OF BANGLADESH IN NATURAL DISASTER

CHAPTER TWO

2.1 Overview of Natural Disaster

Bangladesh is prone to natural disasters of various types due to its very geographic location. Dense population and the phenomenon of global warming also supplement the cause. In particular, Bangladesh coastal areas are susceptible to natural disasters caused by cyclone and tidal surge due to the very shape of our southern coast which tends to draw in and intensify cyclone storms to a great extent. The geographical setting and meteorological characteristics have made the country vulnerable to different geo-hazards and hydro-metrological hazards. The major disasters concerned in the country are floods, cyclones, droughts, tidal surges, tornados, earthquakes, river erosion, fire, infrastructure collapse, high arsenic contents of ground water, water logging, water and soil salinity, epidemic, and various forms of pollution etc. These events are termed as disasters when they adversely affect the entire environment, including human beings, shelters and the resources essential for livelihoods. Because of the severe intensity and frequency of the disasters, the resilient people of Bangladesh by now have learnt how to live with most of these natural disasters.

▶ 2.2 Flood

Floods are normal phenomenon in Bangladesh. It usually occurs during the monsoon season. The country experiences normal flooding incidents in between June to September.

▶ 2.3 Cyclone

Cyclone and storm-surges are common annual events during the pre-monsoon and retreating monsoon periods along the coastal belt of Bangladesh.

▶ 2.4 Tornados

Bangladesh faces tornados at different times which made variety of damages including loss of lives. Normally tornados take place in between March to October.

► 2.5 Riverbank Erosion

Riverbank Erosion refers to an endemic and recurrent natural hazard in Bangladesh. Every year, millions of people in Bangladesh are affected by erosion that affects valuable resources such as standing crops, farmland and homestead land etc.

► 2.6 Cold Wave

Cold wave coupled the country normally in the month of December and January. It disrupts the lives of many in northern Bangladesh. Poor people are affected badly while children and elderly people remain as the worst sufferer.

► 2.7 Fire

Fire is one of the notable human induced disasters in Bangladesh. Many people become victim of fire accidents almost in every year.

► 2.8 Building Collapse

Few years back Bangladesh met with major incident like building collapse. The collapse of Rana Plaza on April 24, 2013 was the most tragic industrial accident in the history of Bangladesh; which killed 1135 people, leaving 2,500 people injured. Immediately after the incident, a rescue operation was initiated under the coordination of AFD keeping Bangladesh Army in lead role with Bangladesh Navy, Bangladesh Air Force, Fire Service, BGB and Police in supporting role. One of the important aspects of the rescue operation was the stimulus participation of volunteers of different age and groups.

► 2.9 Earthquake

Although Bangladesh has not experienced any mega earthquake, but due to close proximity of tectonically active plate boundaries, Bangladesh is prone to earthquake. The country has experienced numerous earthquakes in the past 400

years. In 1548, the first recorded earthquake was a terrible one. Sylhet and Chittagong were violently shaken, the earth opened in many places and threw up water and mud of a sulphurous smell. In 1642, More severe damage occurred in Sylhet district. Buildings were cracked but there was no loss of life. In 1762, the great earthquake of April 2, caused a permanent submergence of 155.40 sq km near Chittagong. The earthquake proved very violent in Dhaka and along the eastern bank of the Meghna as far as Chittagong. In 1897, the earthquake is known as the Great India Earthquake with a magnitude of 8.7 and epi centre at Shillong Plateau. The great earthquake caused serious damage to masonry buildings in Sylhet town where the death toll rose to 545. In 1950, known as the Assam Earthquake, occurred with a magnitude of 8.4 with the epi centre in Assam, India. In 2009, known as Bay of Bengal Earthquake. The epi centre was located at the North Andaman Islands of the Bay of Bengal and seacoast of Myanmar. The magnitude recorded was 7.5. Throughout Bangladesh, the tremor was felt strongly in Dhaka. 4.7 magnitude earthquake struck Bangladesh on 8th November 2017. The epicenter of the earthquake was 72 km away from Dhaka. The epicenter was 10 km deep and struck near Akhaura, close to the Bangladesh-India border. There was tsunami warning along the coastal belt of Bangladesh in 2013.

► 2.10 Others

Beside the above-mentioned hazards, other significantly disasters in Bangladesh are arsenic contamination, salinity intrusion, drought, water logging and landslides. The south western coastal belt of Bangladesh is suffering from salinity intrusion and water logging for ages.

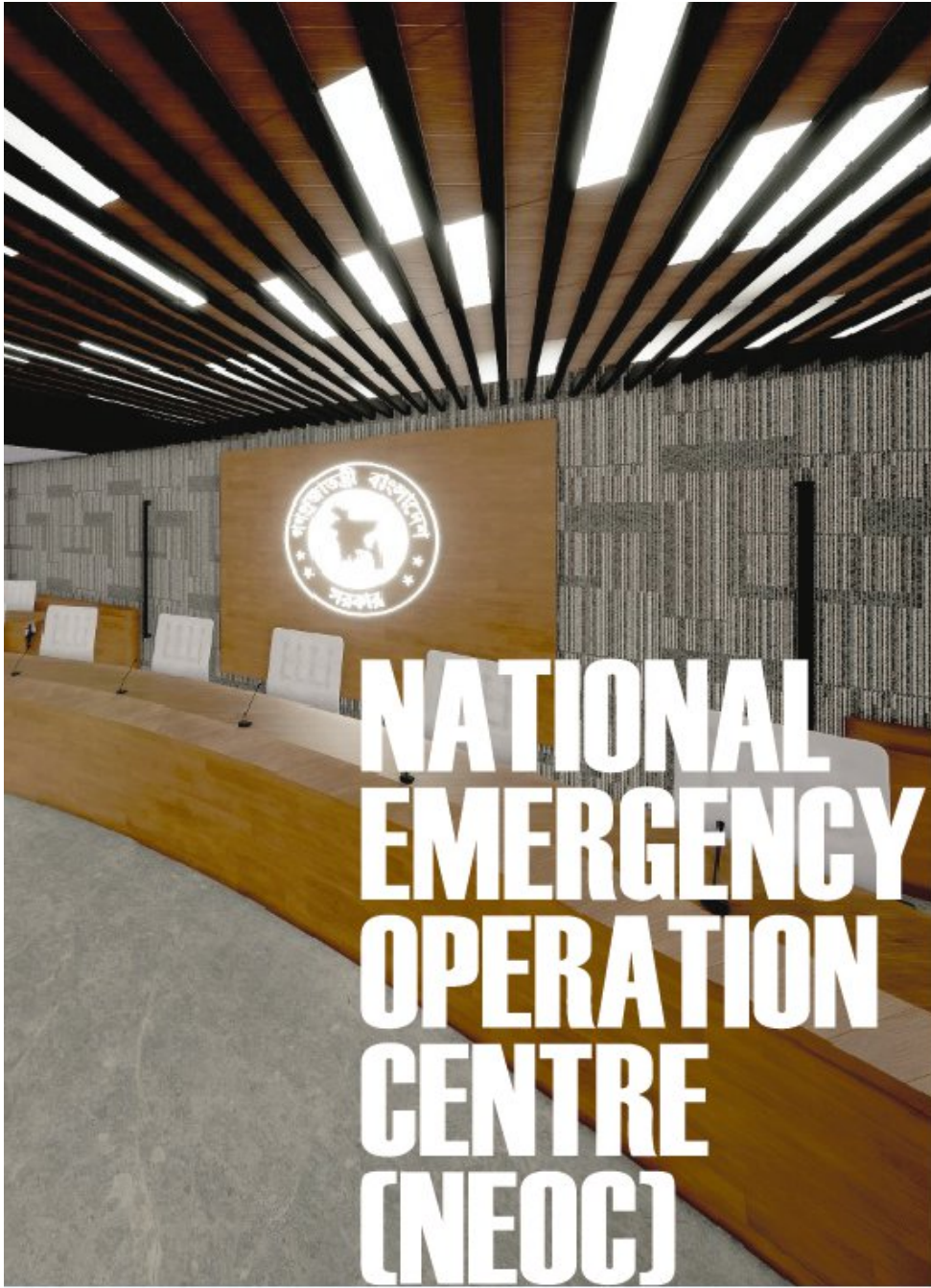
► 2.11 Impact of Disasters

The overall economy of Bangladesh is significantly distressed by natural disasters. Apart from short-term consequence, the long-term impacts of those disasters are quite significant. All

the planning efforts for development by Government are disrupted by these calamities leaving behind damaged facilities, physical assets and land. The human suffering goes beyond description. However, the impact and suffering due to natural and manmade disaster not only depends on their nature, type and scale of it, it also critically depends on institutional strength and response capacity of different agencies that usually take measures to manage disasters such as the government and non-government organizations. Bangladesh has given the highest priority to risk reduction initiatives in disaster management efforts and mainstreaming it in all development initiatives of the Government. Institutional strength, technological know-how and access to those technologies play a significant role to successful disaster management. For example, in 1991 and 1997, cyclones were of the same magnitude; but in 1991 cyclone, approximately 138,882 people died compared to death toll in 1997 which numbered to 134. It was possible due to improved forecasting system, adequate warning dissemination, social mobilization, proper coordination by the government and other institutional backup.

Natural disasters cannot be prevented, but the damage can be minimized with adequate preparedness and risk reduction measures. The impacts of these disasters differ by type and magnitude. Bangladesh has made considerable progress in Disaster Management which is already recognized and praised by the world community. It includes pre-disaster preventive measures, emergency response during disaster and post-disaster rehabilitation. Bangladesh Armed Forces have proved to be one of the most efficient amongst all other National agencies and organizations involved in disaster management. Bangladesh Armed Forces have responded to the calls of friendly countries and made significant contribution in disaster management efforts well beyond its borders too. ■





NATIONAL EMERGENCY OPERATION CENTRE (NEOC)

CHAPTER THREE

3.1 Background

Bangladesh's geographical location in the Alpine-Himalayan organic belt, one of the most seismically active regions globally, further increases its vulnerability to earthquakes. It has faced ten strong ground motions, of which, epicenter of two earthquakes (Great India Earthquake of 1897 at 8.7 Richter scale and Bihar-Nepal Earthquake of 1934 at 8.0 Richter scale) were located within the territory of the country. The main channel of Brahmaputra River changed its course at Bhahadurabad point and shifted southwards as Jamuna due to the severe tectonic uplift of the Madhupur fault at 7.5 Richter scale magnitudes in 1762. The 1897 earthquake claimed hundreds of lives and caused serious damage to masonry buildings in Sylhet. The recent earthquake in Nepal (April 2015) killed more than 10,000 people and left 23,000 people injured was alarming for Bangladesh since it does not have much experience in managing earthquakes. This Nepal earthquake became a realization to urban resilience issues against earthquakes in Bangladesh further entailing a strong and effective emergency operational mechanism to responded to mega disasters in the country. Based on the experiences of different existing legal and institutional frameworks, the government of Bangladesh initiated to form a centre of excellence, namely the National Emergency Operation Centre (NEOC), for an effective and efficient management of emergency operations following a disaster of massive level. The entire concept is still in draft form and yet to be finalized by the Government.

3.2 Vision

To enhance emergency response capacity, reduce the loss of life and property and alleviate the sufferings of people affected by mega disasters through establishing a centre of excellence, namely NEOC.

3.3 Mission

Provide a sustainable strategic (policy level) arrangement (capable of withstanding 7-10 Richter scale earthquakes, level 4-5 cyclone and tornados, devastating floods, severe fire and chemical explosions, epidemics etc.) with a view to issuing command and policy guidance for a quick and effective response during any mega disaster.

3.4 Objectives of NEOC

3.4.1 Broad objective

Functioning as apex body for coordination of policy directions and emergency operation according to the instructions of NDMC and establish command over executing agencies for supporting emergency response activities during disaster and post-disaster situations.

3.4.2 Specific objectives

- ▶ To act as 24/7 central operation point to response in any mega disaster of the country.
- ▶ Provide a central coordination point (including coordination with foreign support providers) for ensuring smooth humanitarian assistances.
- ▶ Collecting and sharing information related to the impacts of disaster.
- ▶ Developing comprehensive response mechanisms based on real time disaster situations.
- ▶ Providing strategic advice based on evaluation of disaster situations, preparedness activities and previous responses.
- ▶ Providing strategic directions and suggestions to implement the emergency response operations.
- ▶ Institutionalizing an efficient monitoring and evaluation system to ensure the proper functioning of the NEOC.
- ▶ Establishing data bank system regarding historical data related to disasters, preparedness and response activities in collaboration with National Disaster Management Research and Training Institute.
- ▶ Securing an efficient communication system that will sustain during and post-disaster situation and act as a centre of information flow.
- ▶ Ensure functioning of the roles and responsibilities of the NEOC officials at policy and operational levels.
- ▶ To enhance national emergency response capacity through effective operation facilities and data management systems.

3.5 Operational Procedures of NEOC

► NEOC has three parts

3.5.1 Policy/Advisory Body

The Policy / Advisory Body is headed by the Honorable Prime Minister. It will consist of existing National Disaster Management Council (NDMC) headed by the Honorable Prime Minister and consisting of the Ministers of the relevant Ministries including other high officials as its Members and Inter-Ministerial Disaster Management Coordination Committee (IMDMCC) headed by Honorable Minister for MoDMR and consisting of all the Secretaries including other high officials) as second line of forces after NDMC.

3.5.2 Operational Body

Operational body will be headed by the Honorable Minister for MoDMR. It will have five different wings headed by the Ministers of the concerned ministries/divisions. The wings are Planning, Operations, Logistic, Finance, and Monitoring & Human Resource Management.

3.5.3 Routine Functional Body

Routine Functional Body will be headed by the Director General (Additional Secretary/equivalent). The routine functional body of NEOC will be headed by a Director General (Additional Secretary/equivalent) through a permanent organizational structure. This body will have 3 supporting wings: operation & maintenance, planning & logistics, and administration & finance.

3.6 Structure of NEOC

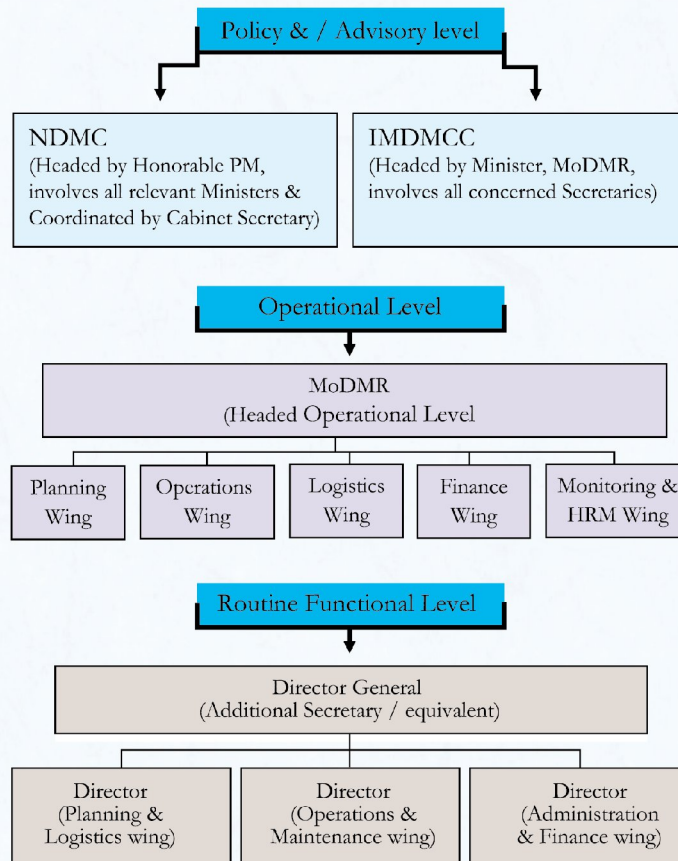


Figure 1: Structure of NEOC

Armed Forces will be mostly involved in the activities of Operations Wing at Operational Level with representation at all levels / wings beginning from NDMC to last tier of wing/ cell. Details of Operations Wing are given under:

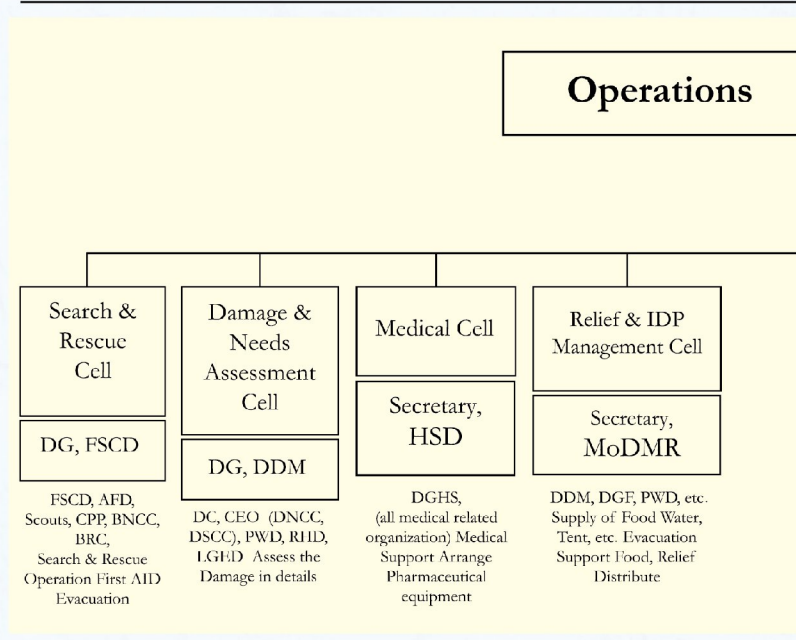


Figure 2: Operation Wing





REGULATORY FRAMEWORK FOR DISASTER MANAGEMENT

CHAPTER FOUR

4.1 National Disaster Management Council (NDMC)

DMC is the apex policy making body in Bangladesh that is headed by the Hon'ble Prime Minister. The council formulates policies and guideline for the Inter-Ministerial Disaster Management Coordination Committee which is composed of the ministers of officials of the relevant ministries. It implements the policies and guidelines through MoDMR. The ministry has two organs: the Department of Disaster Management and Cyclone preparedness implementation Board. Both the organs have committees at the District and below level to reach the people. Figure 3 shows the different disaster management institutions in Bangladesh.

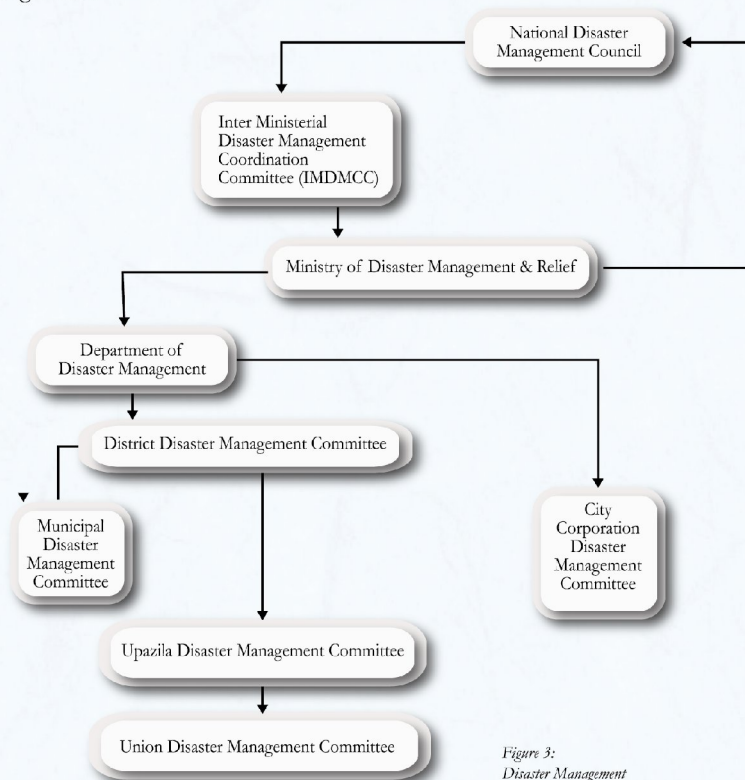
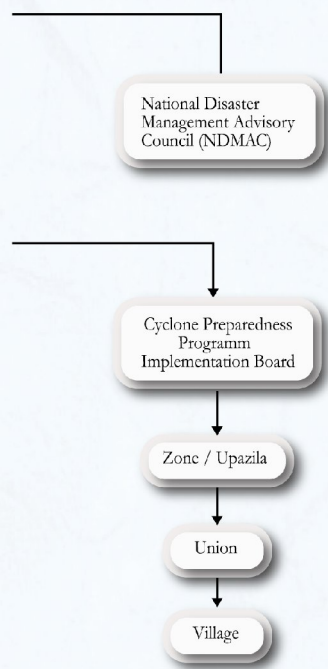


Figure 3:
Disaster Management
Institutions in Bangladesh



4.2 Regularity Framework and Procedures

A disaster management regulatory framework is established under which Bangladesh disaster management framework is implemented, work of ministries, departments, NGO's and civil society are undertaken. The regulatory framework provides the relevant legislative policy and best practice framework under which the activity of DRR and ERM in Bangladesh is managed and implemented. The framework is composed of:

4.2.1 Disaster Management Act

The Disaster Management Act creates the legislative framework under which disaster risk reduction and emergency response management is undertaken in Bangladesh and the legal basis from which activities and actions are managed. It also creates mandatory obligations and responsibilities on ministries, committees and appointments. The act is passed in the parliament in 2012. It provides the legal basis for participation of Armed Forces in Government Disaster Management effort. As per organizational structure, it includes services' chiefs and PSO AFD in

the apex organization named as National Disaster Management Council (NDMC), which is headed by Hon'ble Prime Minister, responsible for providing all strategic directives in any major disaster. Beside NDMC, inclusion of PSO AFD in national disaster response group allows participation of armed forces in any disaster. Same is with the other disaster committees starting from City Corporation to Union level committee where armed forces representatives are included.

4.2.2 National Disaster Management (DM) Policy

The National DM Policy defines the national policy on disaster risk reduction and emergency response management. It describes the strategic policy framework and national principles of disaster management in Bangladesh. It is strategic in nature and describes the broad national objectives and strategies in disaster management. It allows forming separate disaster management unit comprising all security and law enforcement agencies in order to respond to disaster management and emergency response. AFD rehearses that in the form of different cells during disaster related exercise.

4.2.3 National Disaster Management Plan

The National Disaster Management Plan is prepared for the year 2010-15 that gives out guidelines, instructions and action plan. It gives out strategic goals that need to be achieved by the specific time frame. It also marks the organisations as Lead/Supporting Agencies, where in most cases services are made responsible to work in supporting role. It establishes disaster management regulatory and planning frameworks, identifies priority areas for DRR and emergency response management. Armed Forces members remain involved in the formulation of different plans at different committees.

4.2.4 Standing Order on Disaster

SOD has been prepared with the avowed objective of making the concerned persons understand their duties and responsibilities regarding disaster management at all levels, and

The National Disaster Management Plan is prepared for the year 2010-15 that gives out guidelines, instructions and action plan. It gives out strategic goals that need to be achieved by the specific time frame.

accomplishing them. All Ministries, Divisions/ Departments and Agencies shall prepare their own Action Plans in respect of their responsibilities under the SOD for efficient implementation. NDMC, IMDMCC and CCDR will ensure the coordination of disaster-related activities at the National level. Coordination at District, Upazila and Union levels will be done by the respective District, Upazila and Union Disaster Management Committees. The Disaster Management Bureau will render all assistance to them by facilitating the process.

SOD outlines the disaster management arrangements in Bangladesh and describes the detailed roles and responsibilities of Committees, Ministries, Departments and other organizations involved in DRR and emergency response management and establishes the necessary actions required in implementing Bangladesh's Disaster Management Model, e.g., defining the risk environment, managing the risk environment, and responding to the threat environment. SOD was first crafted in 1997. Since beginning of SOD articulation in 1997,

AFD has made huge contribution taking opinion of all the services. It delineates the duties and responsibilities to be performed by each stake holder including armed forces; It mentions about the representation of armed forces personnel along with other personnel in different committees starting from the apex organization i.e NDMC till local ward level committee.

As per SOD, task of Bangladesh Armed Forces is mentioned during Risk Reduction and Emergency Response time. Emergency Response time has been divided into Normal Times, Alert and Warning Stage, Disaster Stage, and Early Recovery and Rehabilitation Stage. Existing SOD was revised in January 2010. Further, MoDMR is presently working to adapt the present changes to incorporate in the next SOD.

4.2.5 Dead Body Management Instruction 2016

In 2016, Dead Body Management Instruction was formulated. Different aspects of dead body management have been mentioned in this instruction. It delineates the roles and responsibilities of different groups / committees. Armed Forces personnel have been included in the City Corporation Disaster Response Coordination group and in the work force for dead body search and rescue group.

4.3 Disaster Management Framework and Armed Forces

AFD laterally coordinates with the Ministry of Disaster Management and Relief and other ministries, organization and agencies involved in Disaster management. Further, AFD guides the Service Headquarters regarding their employment and coordinates the effort of three services. At Division level, the formation or base headquarters coordinates with the local administration and similar is done at the district level and below. Besides, AFD has a monitoring cell in the Prime Minister's Office which functions as per the directive of PSO, AFD. ■

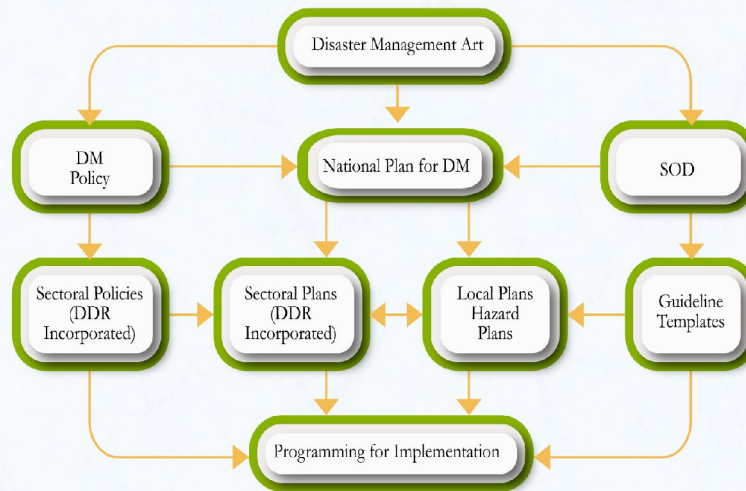
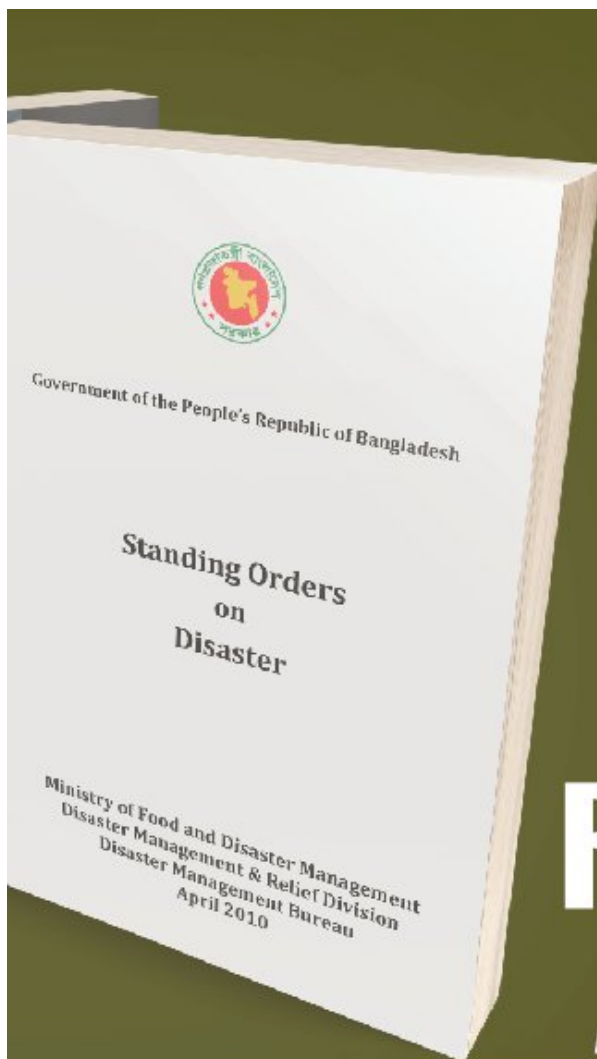


Figure 4: Disaster Management Regulative Framework





ROLE OF ARMED FORCES AS PER SOD

CHAPTER FIVE

5.1 Representation of Armed Forces

Armed Forces are well integrated in the Disaster Management regularity framework of Bangladesh. AFD in addition to discharging normal responsibilities will take the following steps to implement its own action plans to cope up with the disasters:

Risk Reduction

- ▶ Develop a sectoral risk mitigation and preparedness strategy plan through conducting a detailed sectoral risk assessment.
- ▶ Prepare earthquake and land slide contingency plan for AFD.
- ▶ Arrange training, seminar on earthquake and other disasters.
- ▶ Organise drills on earthquake preparedness and emergency response.
- ▶ Organise DREE in coordination with MoDMR.
- ▶ Introduce a policy to map out the earthquake vulnerable areas and the possible damage and loss and response planning with implementation strategy.
- ▶ Establish a disaster risk communication system, management and information sharing and emergency communication system.
- ▶ Arrangement for supply, store and maintenance of search and rescue equipment.
- ▶ Ensure budgetary provision for the pre disaster and risk management activities.

Emergency Response

Normal Time

- ▶ Establish effective contact and coordination with National Disaster Response Coordination Group (NDRCG) and MoDMR.

- ▶ Ensure necessary and appropriate preparedness along with the necessary equipment of the Armed Forces to extend all supports required with regards to the security, evacuation and rescue purposes of the people especially in the disaster prone areas – committing the risk and vulnerability.
- ▶ Arrange training on disaster management for task force.
- ▶ Formation of Task group of Armed Forces for emergency deployment for search, rescue, relief and evacuation work effectively.
- ▶ Plan budgetary provision for response during any disaster and arrange necessary funding for implementation of the budget.
- ▶ Plan for the deployment of Armed Forces in aid to civil power when requested in assistance with MoDMR.
- ▶ Arrange training on emergency response, relief and recovery/rescue.
- ▶ Ensure safety and security of installations, establishments, equipment, personnel and resources.
- ▶ Prepare contingency plan.
- ▶ Designate a Disaster Management Focal Point and inform all concerned.

Alert and Warning Stage

- ▶ Operate the Control Room, Prime Minister's Monitoring and Coordination Cell 24/7.
- ▶ Maintain communication with the National Emergency Operation Centre (NEOC) in coordination with MoDMR.
- ▶ Keep the appropriate units of Army, Navy and Air Force in readiness for conducting rescue, evacuation and relief operations as per requirement.

Disaster Stage

- ▶ On the basis of requisition of the Government deploy the Armed Forces for disaster response, relief and rehabilitation work in aid to the civil power.
- ▶ Collect information on the rescue, relief and rehabilitation work and dispatch it regularly to the Prime Minister's Monitoring Cell, IMDMCC and MoDMR.
- ▶ Be prepared for early recovery, relief and rehabilitation work as decided by the Government. Implement rescue and relief activities of civil authorities as per request/demand.
- ▶ Under the Incident Management System keep coordination with civil administration and authorities.
- ▶ Prepare a report on relief and rehabilitation operations by the Armed Forces once deployed and inform it to the NDMC and MoDMR.

Emergency Rescue and Rehabilitation Stage

- ▶ Assist in damage assessment and rehabilitation requirement in the disaster affected area.
- ▶ Assist in rehabilitation program undertaken by MoDMR if requested.
- ▶ Assist local Government in removal of debris and development of the environment.
- ▶ Ensure supply of drinking water and assist local administration to develop the road network.
- ▶ Establish field hospital if required.
- ▶ Assist local authorities to establish temporary shelter.

5.2 Bangladesh Army

Bangladesh Army will perform the following duties:

Risk Reduction

- ▶ Develop a sectoral risk mitigation and preparedness plan through conducting a detailed sectoral risk assessment of Bangladesh Army including CBRNe disaster.
- ▶ Ensure budgetary provision for the implementation of the plan.
- ▶ Establish a disaster risk based communication system.
- ▶ Undertake staff education and awareness training on disaster management issues.
- ▶ Develop a disaster contingency plan light earthquake, CBRNe and other disasters risk reduction and management activities. Prepare and periodically update the agency contingency plan.
- ▶ Establish an effective monitoring and evaluation system to ensure appropriate utilization of resources.
- ▶ In Coordination with MoDMR, local admin, BNACWC to mark chemical risk prone area.
- ▶ Arrange regular seminar and observed preparedness regarding toxic chemical substances on Chemical Weapon.

Emergency Response

Normal Time

- ▶ Ensure earmarking light transports, trucks, rescue vessels and motor boats for emergency duties.
- ▶ Undertake emergency response planning including
 - Warning and alerting signals
 - Communications systems
 - Exercises and assessment of response preparedness

- Security of Installations, equipment and personnel
- Identification of resources to assist response and relief operations
- Identification of Task Force and reserve Task Force and Task Force composed of infantry company, engineer, doctors (first aid, medical assistance, nurses, medicines)
- ▶ Prepare and continuously update own Action Plan for security and safety of people, materials, installations and equipment and review the status of preparedness.
- ▶ Prepare operational plan for responding to the call of civil administration during disaster.
- ▶ Impart training on Disaster Management, earthquake drills, fire drills to officers and soldiers in all training institutes and staff colleges on emergency response, relief and recovery.
- ▶ Organise drills on disaster preparedness and response.
- ▶ Arrange training, demonstration, collection of equipment to respond to CBRNe related disaster management in coordination with BNACWC, FSCD and local administration.

Alert and Warning Stage

- ▶ Establish the Control Room for disaster in the headquarters and concerned formation headquarters and convey the telephone number of the Director of Military Operation (Office and Residence), control room and duty officers of the coordination cell of the Prime Minister's Monitoring Cell and the control rooms of the MoDMR, Navy and Air Force.
- ▶ Issue warning orders to all concerned. Issue orders for the rapid mobilization of the army assigning specific duties in areas likely to be affected by disaster.
- ▶ Organize Task Force in each formation for working as a Disaster Control Unit. Comprising self sufficient Infantry, engineers, doctors, medical assistant, nurse with first aid.

- ▶ Earmark a Reserve Task Force if needed and Move the Task Force to the convenient positions if needed.
- ▶ Task Force Commander will coordinate with local civil authority for evacuation, rescue, relief, health care and rehabilitation activities.
- ▶ Coordinate response of disaster caused by toxic chemical on chemical weapon with local administration and BNACWC.
- ▶ Dispatch report about the situation and the activities to the coordination cell of the Prime Minister's Monitoring Cell.

Disaster Stage

- ▶ Keep the disaster Control Room at the Army and relevant formations headquarters operational 24/7.
- ▶ Collect information regarding the levels of the preparedness and other activities from the disaster prone areas and despatch to the Prime Minister's Monitoring Cell and NDRCC of MoDMR.
- ▶ Employ special unit for the rescue operation of chemical disaster in coordination with BNACWC, FSCD and local administration.
- ▶ Creation of special medical team with specialist from military/ civil doctors for the treatment of chemical disaster affected people due to chemical weapon on toxic chemical substance.
- ▶ Participate directly in the decontamination, dead body management etc. and assist other organizations.
- ▶ Deploy Task Force in consultation with Prime Minister's Office and MoDMR, as requested.
- ▶ Assist local administration by the provision of:
 - Emergency Evacuation
 - Collapse structure search and rescue operation
 - Removal of dead bodies and debris

- Medical services including field hospital services, if necessary
- Disease prevention
- Temporary shelter construction and operation
- Damages, losses and needs assessments
- ▶ Dispatch reports regularly to the coordination cell of the Prime Minister's Monitoring Cell and NDRCC of MoDMR in order to keep informed about the latest situation.
- ▶ Undertake relief operations in all affected areas and assist local administration for implementing rescue operations.

Early Recovery and Rehabilitation Stage

- ▶ Conduct a survey in affected areas and assess requirement of relief and rehabilitation.
- ▶ Assist the local administration in removing debris in affected areas and improving the environment.
- ▶ Assist with the provision of medical services for the treatment of injured persons of the disaster affected area and also assist the agencies engaged in the prevention of epidemics.
- ▶ Assist local administration for ensuring arrangement of pure drinking water.
- ▶ Set up field hospitals if required.
- ▶ Assist local authority in construction of temporary shelters.
- ▶ Participate in reconstruction and rehabilitation operations if requested by the civil administration.
- ▶ Dispatch the detailed report to the coordination cell with the Prime Minister's Monitoring Cell and MoDMR stating all the aspects of relief and rehabilitation work for perusal of the NDMC concerning the progress of work relating to relief and rehabilitation.

5.3 Bangladesh Navy

Bangladesh Navy will perform the following duties:

Risk Reduction

- ▶ Develop a sectoral risk mitigation and preparedness plan through conducting a detailed sectoral risk assessment of Bangladesh Navy including CBRNE disaster.
- ▶ Ensure budgetary provision for the implementation of the plan
- ▶ Undertake staff education and awareness training to its staff on disaster management issue.
- ▶ Undertake staff training of Bangladesh Navy on preparedness of earthquake including CBRNE related other disaster management issue.
- ▶ Prepare and update the sectoral contingency plan (special emphasis can be given on Cyclone) with annual drills to be organized to review the preparedness status.
- ▶ Establish a sectoral risk communication system.
- ▶ Assist BNACWC, FSCD and local administration to mark chemical risk prone area.
- ▶ Observed and arrange regular conference, seminar, training on Toxic Chemical on Chemical weapon related disaster response, preparedness and management.

Emergency Response

Normal Time

- ▶ Designate and keep MoDMR informed about Disaster Management Focal Points at Naval Headquarters, Khulna, Chattogram.
- ▶ Arrange training for the Naval Force on emergency response, relief and recovery.

- ▶ Undertake emergency response planning including:
 - Warning and alerting signals
 - Communications systems
 - Exercises and assessment of response preparedness
 - Security of installations, ships, equipment and personnel
 - Responding to civil administration
 - Identification of resources to assist response and relief operations
 - Identification of suitable water transports
- ▶ Develop institutional arrangement for long term relief operations at short notice.
- ▶ Maintain effective communication with weather office/MoDMR in order to receive early warning and take proactive measures by concerned office of Naval Headquarters.
- ▶ Arrange training, demonstration, collection of equipment to respond to chemical weapon and toxic chemical used in industry related disaster management in coordination with BNACWC, FSCD and local administration.
- ▶ Prepare water transport list of suitable vessels for relief and rescue activities.
- ▶ Arrange annual exercises.
- ▶ Develop plan to protect ship, equipment, materials, items and personnel from disasters.

Alert and Warning Stage

- ▶ Issue warning orders to all units.
- ▶ Collect and exchange information with Indian Ocean Tsunami Early Warning System (IOTWS) and Bangladesh Meteorological Department (BMD) on regular basis through Sea level Data Monitoring Unit at Chottagram and act accordingly during emergency.

- ▶ Establish disaster control room in Naval Headquarters and provide telephone numbers of Director of Naval Operations (office and residence), control room and duty officer to the Prime Minister's Coordination/Monitoring Cell, NDRCC at the MoDMR, Control Room of Bangladesh Army and Air force.
- ▶ Make necessary arrangement for protection of ships and installations, personnel and equipment of Bangladesh Navy likely to be affected during disaster.
- ▶ Coordinate toxic chemical substances on chemical weapon related disaster response with local administration and BNACWC.

Disaster Stage

- ▶ Deploy ships in aid to civil power as requested by civil administration.
- ▶ Assist local administration by the provision of:
 - Damages/losses and needs assessments
 - Medical services
 - Transport and distribution of relief goods
 - Restoration of communication and conducted necessary operation in coastal area
- ▶ Arrange required manpower in Control Room of Naval Headquarters, Chattogram, Khulna and Payra.
- ▶ Keep all ships and stations ready for conducting cyclone relief operations due to Cyclone and Flood at short notice.
- ▶ Employ special unit for the rescue operation for Chemical disaster in coordination with BNACWC, FSCD and local administration.
- ▶ Form special medical team with specialist from military/civil doctors for the treatment of Chemical Weapon on toxic chemical disaster affected people.

- ▶ Participate directly and assist other organizations in the decontamination, dead body management etc.
- ▶ Naval Headquarters shall keep close liaison with the Control Room of the Prime Minister's monitoring cell and NDRCC at the MoDMR.
- ▶ Adopt all possible security measures in close cooperation and coordination with the concerned civil authority.
- ▶ At the directives of Naval Headquarters, the ships/stations will assist the civil authorities.
- ▶ Regularly send report on the overall activities to the Control Room of Prime Minister's Office Monitoring Cell and NDRCC at MoDMR.

Early Recovery and Rehabilitation Stage

- ▶ Determine the requirement of relief and rehabilitation after damage, losses and needs assessment (DLNA) of the affected areas and suggest AFD and DDM about the necessary steps.
- ▶ Assist local administration in all possible ways for relief and rehabilitation programs in the affected areas.
- ▶ Continue all activities undertaken by the local/civil authority until the return of normalcy.
- ▶ Prepare detailed report on all aspects of relief and rehabilitation and submit the same to MoDMR.

5.4 Bangladesh Air Force

- ▶ In addition to normal functions, Bangladesh Air Force will perform the following duties:

Risk Reduction

- ▶ Develop a sectoral risk mitigation and preparedness plan through conducting a detailed sectoral risk assessment of Bangladesh Air Force including CBRNE disaster.
- ▶ Ensure budgetary provision for the implementation of the plan
- ▶ Establish a disaster risk based communication system.
- ▶ Prepare and periodically update the agency contingency plan.
- ▶ Undertake staff training of Bangladesh Air Force on preparedness of earthquake including CBRNE related other disaster management issue.
- ▶ Assist BNACWC, FSCD and local administration to mark chemical risk prone area.
- ▶ Observed and arrange regular conference, seminar, training on Toxic Chemical on Chemical Weapon related disaster response, preparedness and management.
- ▶ Arrange annual exercises (including Air Lifting/Air dropping).
- ▶ Keep BAF helicopter include special helicopter ready for disaster at all time and conduct its maintained and repair work.

Emergency Response

Normal Times

- ▶ Formulate contingency plans for the protection of own aircraft, equipment and installations for responding to the call of the civil administration.
- ▶ Establish Disaster Control Room with updated aerial maps of flood prone areas, coastal areas and offshore islands.
- ▶ Maintain updated data about airstrips and helipads.
- ▶ Arrange effective procedures for the receipt of meteorological data from Meteorological Department and other sources.
- ▶ Arrange training, demonstration, collection of equipment to respond to chemical weapon and toxic chemical used in industry related disaster management in coordination with BNACWC, FSCD and local administration.
- ▶ Undertake training on emergency response, relief and recovery.
- ▶ Prep parachute to conduct emergency relief activities by air dropping.
- ▶ Undertake emergency response planning including:
 - Warning and alerting signals
 - Communications systems
 - Exercises and assessment of response preparedness
 - Ensure security of installations, aircraft, equipment and personnel

- Responding to civil administration
- Identification of resources to assist response and relief operations
- Identification of suitable airstrips, helipads
- Selection of aircraft for transport and reconnaissance

Alert and Warning Stage

- ▶ Issue early warning directives to all concerned.
- ▶ Keep transport aircraft and helicopters stand by.
- ▶ Take precautionary steps for keeping aircraft and equipment of the Bangladesh Air Force in cyclone prone areas at a safer place.
- ▶ Designate one Liaison Officer to communicate with Prime Minister's Monitoring Cell as required necessity and maintain liaison with the NDRCC at the MoDMR and Control Room of Army and Navy.
- ▶ Employ special unit for the rescue operation for CBRNe disaster in coordination with BNACWC, FSCD and local administration.
- ▶ Form special medical team with specialist from military/civil doctors for the treatment of Chemical weapon on toxic chemical disaster affected people.
- ▶ Participate directly in the decontamination, dead body management etc. and assist other organizations.

Disaster Stage

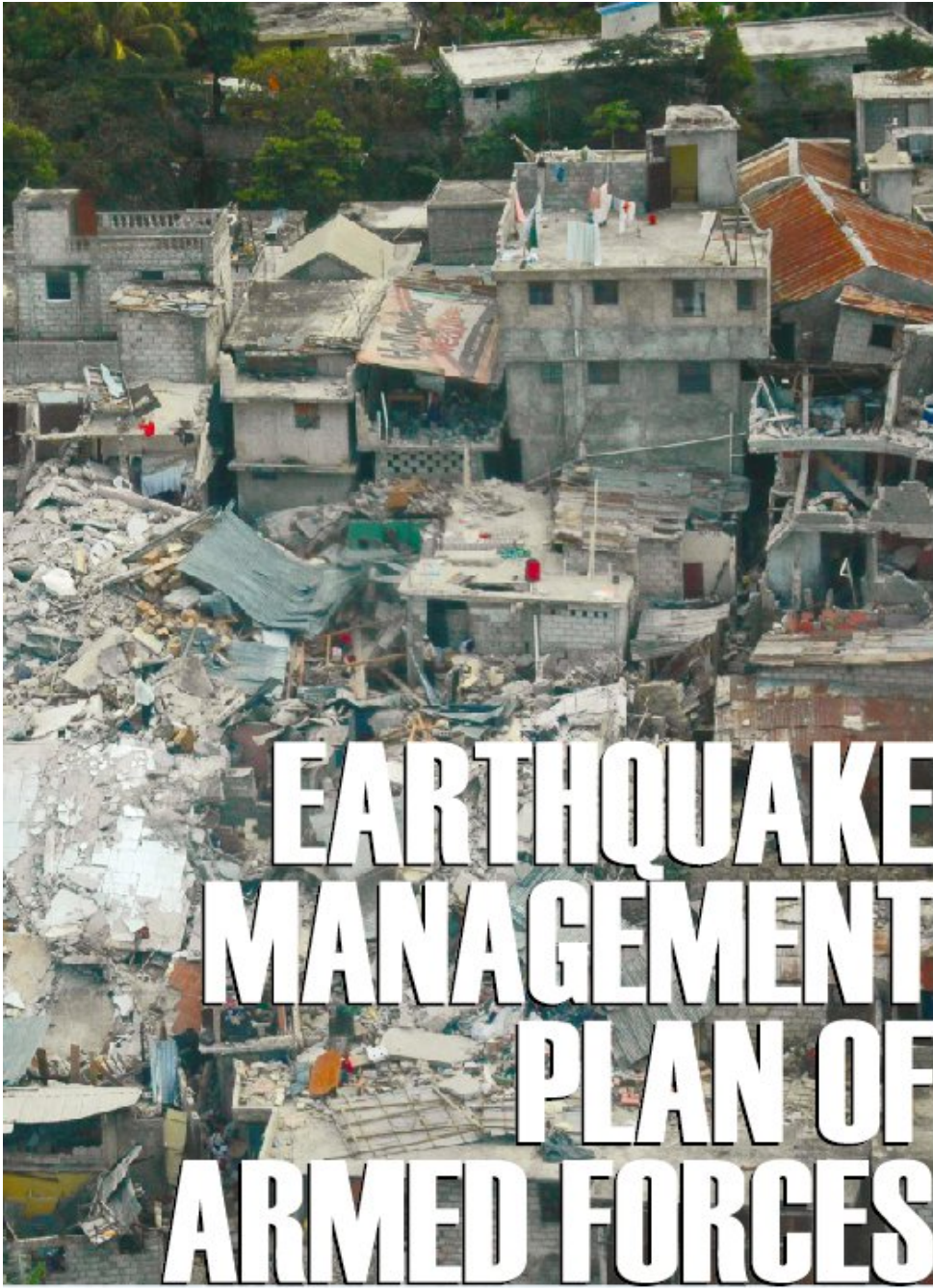
- ▶ Monitor cyclone, flood and earthquake situation.
- ▶ Provide any additional meteorological information, if collected through own sources, to the concerned authority in order to supplement the information of BMD and BWDB.
- ▶ Keep transport aircraft and helicopters ready for rescue operation and assessment of damage and loss during disaster.
- ▶ In case of severe disaster, provide required airlifts support to the relief operations by civil authority.
- ▶ Allow use of military air field for emergency search, relief distribution, response and temporary depot of relief goods.
- ▶ Participate in rescue and transportation activities after earthquake.

Rehabilitation Stage

- ▶ Conduct aerial survey to assess the nature and extent of loss and damage in cyclone, flood and earthquake affected areas and send a report to the NDMC and IMDMCC.
- ▶ Evacuate seriously injured persons to the nearest hospitals.
- ▶ Provide transport aircraft and helicopters for the survey/visit of affected areas by concerned authorities.
- ▶ Carry relief materials like food and water to the affected areas and deliver them to people by airdrop if required.

- ▶ Assist civil administration with helicopters for transportation of essential relief materials, medicines and medical teams to affected area.
- ▶ Utilize wireless, radio, night vision technology, telephone communications of Bangladesh Air Force as complementary to existing civil communication network for transmission of very important messages and images.
- ▶ Provide assistance to other activities as per directive of the Government for the interest of overall relief operations.
- ▶ Provide a detailed report describing all the aspects of relief operations to the NDMC and MoDMR.
- ▶ Nominate one Liaison Officer for Relief Missions (Air Force) of friendly countries. ■





EARTHQUAKE MANAGEMENT PLAN OF ARMED FORCES

CHAPTER SIX

6.1 Background

SOD of MoDMR delineates roles and responsibilities of AFD along with other services in disaster management. Earthquake and landslide disasters are given priority for AFD in SOD. To implement own action plan, AFD has taken numerous steps in disaster management. Mentionworth are Contingency Plan for Earthquake Hazard by AFD, Earthquake Search and Rescue Operation Contingency Plan of Dhaka City, Earthquake Contingency Plan of different cities of Bangladesh are mention worthy steps of AFD. This chapter will focus on all these steps of AFD in earthquake disaster management effort.

6.2 Contingency Plan For Earthquake Hazard

In August 2009, a board was formed at AFD in collaboration with UNDP, Department for International Development (DFID), EU, Comprehensive Disaster Management Program (CDMP), Asian Disaster Preparedness Centre (ADPC), and National Society for Earthquake Technology (NSET). The board identified the intended actions to be taken by AFD in response to a damaging earthquake. The overall goal of the project on contingency Planning was to develop a comprehensive geo-hazard risk reduction. “Contingency Planning” strategy that is linked to an easy implementation framework to be able to address the current needs and issues. It would be followed at all the National, City and Agency levels and cover all the levels of disaster risk management from preparedness to response. The project on Contingency Planning was comprised of two main activities:

• Activity I

Determine status of Contingency planning and design of interim contingency plan

• Activity II

Turn interim contingency plans into final versions (using maps for selected urban areas that highlight earthquake-vulnerable school/hospital/emergency response and control buildings etc.)

The report contains six sections. Section 1 includes a general discussion regarding earthquake threat in Bangladesh and identification of risk scenario related to the agency's functions. In Section 2, general aspects of agency level plans have been discussed. In Section 3, functional response, roles and responsibilities assigned for AFD have been identified. In Section 4, operating procedure guidelines for AFD has been developed. In Section 5, a readiness checklist has been proposed for AFD. In Section 6, agency level actions for training and capacity building of staff, awareness creation, reporting, pre-positioning of emergency facilities, and resource mobilization for purchase of equipments have been identified. Summary of all six sections have been mentioned subsequently in this chapter.

6.2.1 General Discussion Regarding Earthquake Threat In Bangladesh And Identification Of Risk Scenario Related To The Agency's Functions

Over the past decades, urbanization in Bangladesh has been rapidly taking place without proper guidance. As a result many of the urban centers have developed haphazardly. These urban centers are fast growing and have a significant influence in the economic developments of the country. It is therefore, essential to have a realistic understanding on the nature, severity and consequences of likely damage/loss that a possible event of earthquake could cause. A strong earthquake affecting a major urban center like Dhaka, Chattogram, or Sylhet may result in damage and destructions of massive proportions and may have disastrous consequences for the entire nation.

A low to moderate level of earthquake may cause severe damages to the life and property that may go beyond the existing capacity of the agencies. Considering likely earthquake threat in Bangladesh, the CDMP under the MoDMR took initiative to develop likely scenarios of earthquake for Dhaka, Chattogram and Sylhet. The report presents the likely building collapse, debris generation, fire hazards and casualties during different

levels of earthquakes in these three cities and current preparations/ capacity of AFD to cope with the situation.

Geographically Bangladesh is located close to the boundary of two active plates: the Indian plate in the west and the Eurasian plate in the east and north. In the past, there were several earthquakes in the country that had caused severe damages to life and properties. Some of the major earthquakes around the region includes the 1548 earthquake, the 1664 earthquake, the 1762 earthquake, the 1869 Cachin earthquake (Ms 7.5), the 1885 Bengal earthquake (Ms 7.0), the 1897 Great Assam earthquake (Ms 8.1), and the 1918 Srimangal earthquake (Ms 7.6). However, it seems that Bangladesh did not experience any large earthquake since 20th century for about 100 years. The 1918 earthquake is not to be a characteristic one, since the magnitude is small for the plate boundary fault. This may mean that Bangladesh has a high risk of large earthquake occurrence in near future. Several major active faults, e.g. The plate boundary fault (the northern extension of subduction fault) and the Dauki Fault, are inferred in Bangladesh. These faults are likely to generate large earthquakes over M 8. However, the nature, detailed location, and the faulting history on these faults are not well known yet.

Three different scenarios have been developed to identify the possible damage to buildings and other infrastructures and also to find out the number of casualties. The three scenarios are taken as least, moderate and high intensities cases as assumed based on different magnitude of earthquakes. The following are the different scenarios and loss estimation in the cities of Dhaka, Chattogram and Sylhet.

Scenario Earthquakes

Dhaka city

- ▶ Madhupur Fault (7.5 Mw)
- ▶ Plate Boundary Fault-2 (8 Mw)
- ▶ Earthquake under the city (6.0 Mw)

Chattogram city

- ▶ Plate Boundary Fault-1 (8.5 Mw)
- ▶ Plate Boundary Fault-2 (8.0 Mw)
- ▶ Earthquake under the city (6.0 Mw)

Sylhet city

- ▶ Dauki Fault (8.0 Mw)
- ▶ Plate Boundary Fault-3 (8.3 Mw)
- ▶ Earthquake under the city (6.0 Mw)

In order to take necessary preparation by different agencies during earthquake, the numbers of people that will be injured and killed by the earthquake have been estimated into four (4) severity levels that describe the extent of the injuries. The levels are described as follows:

- ▶ **Severity Level 1:** Injuries will require medical attention but hospitalization is not needed.
- ▶ **Severity Level 2:** Injuries will require hospitalization but are not considered life-threatening.
- ▶ **Severity Level 3:** Injuries will require hospitalization and can become life threatening if not promptly treated.
- ▶ **Severity Level 4:** Victims are killed by the earthquake.

Following is the description on the casualties in the city of Dhaka in different time on different scenarios. Similar estimation is made for Chattogram and Sylhet City Corporation Area.

Table 1 : Casualties in Dhaka during Different Cases in Different Time

Time and Case	Level of casualties			
	Level 1	Level 2	Level 3	Level 4
2AM				
Case 1	152,307	50,905	9,028	17,884
Case 2	23,965	6,952	1,139	2,251
Case 3	110,753	37,265	6,671	13,216
2PM				
Case 1	137,582	45,810	8,221	15,892
Case 2	32,021	9,433	1,572	3,021
Case 3	91,863	30,759	5,586	10,804

Source: Hazus calculation based on database, engineering geology and seismic hazard

6.2.2 General Aspects of The Agency Level Plan

AFD acted very credibly in responding to major disaster events in the past and is ready to perform the required duties in any type of emergency at any time. Other than Bangladesh FSCD, AFD can be kept alert to perform any duty on 24/7 throughout the year. The authority for Army units to go to field is provided under the legal provisions of the constitution under common law of the country and it is called “Employment of military in aid to civil power”. This law can be applied for any type of emergency situation whether it is a man-made event or natural calamity. Before mobilizing the units, the unit commanders will have their own evaluation of the situation and also be provided with other information from possible external sources (national and international). Armed Forces will be given early warning to prepare for emergency response duties by military high authority during which they have to keep ready man-power, equipment and other resources. This warning period may be few hours or even a day depending on the nature of the event (for example in case of Cyclones Armed Forces gets a longer period to show readiness as Meteorological Agencies normally can make available advance information on the possible cyclone track). They will wait until they get the clearance to proceed to areas of need from Service Headquarters and deployment order comes usually after the event.

AFD is composed of Principal Staff Officer's Office, five Directorates and an Administrative Company. The Directorates are:

- ▶ Operations and Plan Directorate
- ▶ Intelligence Directorate
- ▶ Training Directorate
- ▶ Civil and Military Relation Directorate
- ▶ Administration and Logistics Directorate

Out of all five, Operations and Plan Directorate is the lead directorate for any kind of disaster and HADR issues where AFD is involved.

6.2.3 Functional Response, Roles and Responsibilities

To ensure this Contingency Planning as a forward planning process, it is obvious to agree upon specific scenarios and objectives. An effective potential response system has to be put in place in order to prevent, or better respond to, an emergency or critical situation. In this regard, AFD needs to accomplish the different activities well-before the earthquake event, during and soon after the disaster events, and following a disaster event. All these activities are categorized in different heads such as contingency planning, operations response, emergency services, urban crisis planning, health and emergency medical care, welfare, food and nutrition, mass media communications and public information, water and sanitation, transport and immediate recovery.

6.2.4 Operating Procedure Guidelines

Few planning assumptions have been considered prior determining task of AFD during normal time and on activation of national earthquake contingency plan. As per assumptions selected personnel of Army, Navy, Air Force, Para-military forces in Districts, pourashavas, major cities with high seismic risk such as Dhaka, Chattogram, Sylhet etc. can be designated as "NODAL OFFICERS-AFD", Officer –in-charge- AFD-District and "Officer-in-charge – AFD-City level" respectively for effective Command, Control and Coordination during earthquake events. These NODAL OFFICERS-AFD during activation of national earthquake contingency plan within their area of command and control will make arrangements for assessment of buildings for suitability for occupation, special care and services to agencies and critical facilities.

6.2.5 Readiness Checklist

Few checklists for preparedness and reporting template for AFD with regard to Earthquake hazard have been prepared. It

needs to be filled by the Nodal Officer of different departments and submitted through the AFD to the National Disaster Response Coordination Centre (NDRCC) at the end of May and November every year.

6.2.6 Actions For Training & Capacity Building Of Staff, Awareness Creation, Reporting, Pre-positioning Of Emergency Facilities, Resource Mobilization For Purchase of Equipment

An approach is suggested where gap analysis need to be identified. In order to this an assessment of existing capacity needs to be carried out. In 2016, AFD took an initiative where existing capabilities of Armed Forces along with civil resources were identified and crafted those within a data base management system. The arrangement need to be enhanced further to carry out gap analysis of manpower, equipment and material. Different issues of gap analysis as identified are sharing resources with civil administration, lack of coordination with civil administration , lack of proper methodologies for damage /need assessment, lack of proper training, lack of database and need for accessing data bases of other organizations, no methodology for vulnerability assessment, lack of Incident Command System etc.

The project suggests following action plan for enhancement of capacity:

- ▶ Establishment of core group at periphery level including all stakeholders (DMB, CDMP, I.GRD/Civil Admin/FSCD/Army/NGOs and other relevant ministries)
- ▶ Enhancement of the national capacity of disaster mitigation in respect of planning and responding to disasters like Earthquakes and Tsunamis by preparing Earthquake/Tsunami Response Plan
- ▶ Assessment through field based survey to find out vulnerability of the area for their capacity building by table-talk and simulation exercise
- ▶ Establishment of Field /Mobile Hospital

- ▶ Provision of increased number of training – capacity building and regular mock drill for better preparedness of impending disasters and post-disaster health care management
- ▶ Distribution of emergency life- savings drugs for maintaining buffer stock in order to organize case management in emergency situations for Upazila and district level as preparedness for disaster
- ▶ Provision of emergency transport like country boat, speed boat, emergency ambulance etc. and increase reserve fund for emergency response
- ▶ Arrangement of adequate supply of logistics like life-jacket, rain-coat, umbrella, gum boot, and other essential materials during response activities

6.3 Contingency Plan of Dhaka City

In 2010, considering earthquake contingency plan for AFD, Dhaka City was divided into eight sectors. Sector 1 encompasses Uttarkhan, Dakkhinkhan, Uttara, Turag and Dhaka Cantonment Thana under responsibility of 86 Independent Signal Brigade. Sector 2 includes Hazrat Shahjalal International Air Port Thana under responsibility of Bangladesh Air Force. Sector 3 includes Mirpur, Darus Salam and Sher-e-Bangla Nagar Thana under responsibility of 6 Independent Air Defence Artillery Brigade. Sector 4

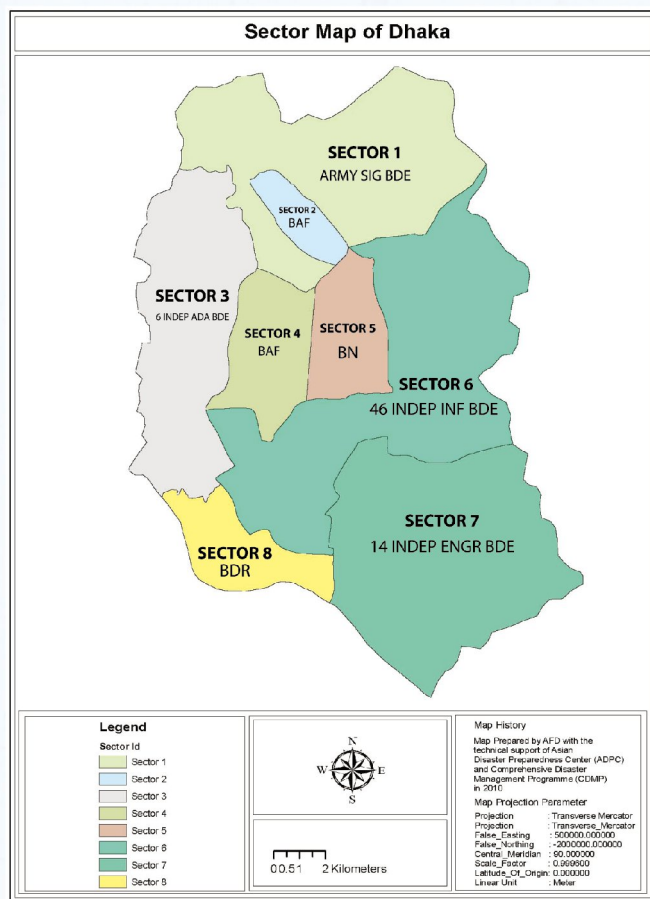


Figure 5: Sectors Map of Dhaka

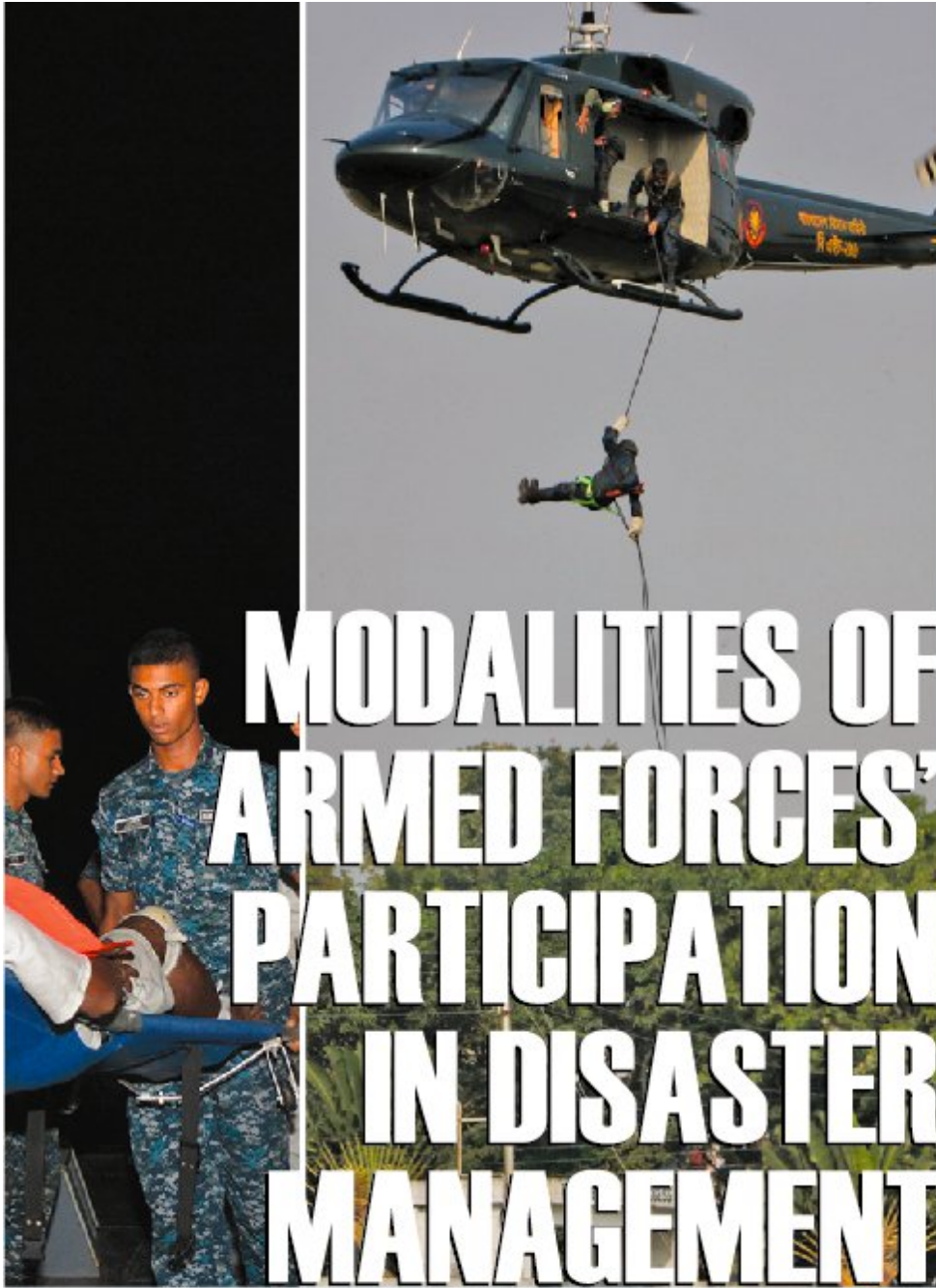
encompasses Base Bashar and Kafrul Thana under responsibility of Bangladesh Air Force. Sector 5 comprises Gulshan and Banani Thana under responsibility of Bangladesh Navy. Sector 6 is the largest sector under responsibility of 46 Independent Infantry Brigade. Its divided into four sub sectors. Sub sector 1 comprises Dhanmondi, Kalabagan, New Market, Hazaribag and

Sher-e-Bangla Nagar Thana, Sub sector 2 comprises Tejgaon, Tejgaon Industrial, Ramna and Shahabag Thana, Sub sector 3 comprises Rampura, Badda, Gulshan, Banani, Khilgaon and Bhatara Thana, Sub sector 4 comprises Chawkbazar, Bangshal, Lalbag, Kotwali and Kamrangir Char Thana. Sector 7 is comprised of Shahjanpur, Motijheel, Paltan, Sabuzbag, Mugda, Jatrabari, Demra, Kadamtali, Wari, Gendaria and Shampur Thana under responsibility of 14 Independent Engineer Brigade. Sector 8 comprises Hazaribagh, Lalbagh, Kotowali and Kamrangirchar Thana under responsibility of Border Guard Bangladesh. Since 2016, effort is taken by AFD to update complete contingency plan for each of the sectors by responsible unit during annual Disaster Related Exercise and Exchange (DREE). All responsible organizations have already carried out detailed reconnaissance of their respective areas. A consolidate reconnaissance report for all eight sectors of Dhaka City Corporation is prepared at AFD where vulnerability assessment, density of construction, nearby disaster management related organizations with their capabilities, description of vulnerable industries and installation, water reservoir and open space, warehouses, important installation and personalities (if any), list of disaster equipment and important contact numbers within respective areas are mentioned.

6.4 Contingency Plan for Other Cities of Bangladesh

DREE is conducted in different cities of Bangladesh beside Dhaka. While doing this exercise, effort is taken to prepare complete contingency plan of different cities. So far, other than Dhaka, contingency plan of Sylhet, Chattogram and Mymensingh City are completed. AFD plans to prepare/update contingency plan of maximum possible cities during conduct of DREE in every year. ■





CHAPTER SEVEN

7.1 General

Whenever Bangladesh faces a disaster, be it natural or man made, it becomes imperative for the Armed Forces to respond quickly with its own management, communications and administrative machineries to assist the civil authorities. The purpose is to provide humanitarian relief to prevent further loss of lives and property. This contribution has usually been made under some form of official arrangement 'In Aid to Civil Power', as laid down in the standing operating procedures. Experience has shown that military forces are fully effective in disaster management role because of its robustness that can operate in all-weather condition, having all terrain capability and holding required equipment to meet emergency.

Armed Forces Division plays a vital role in disaster management as part of overall national strategy to cope with disaster. MoDMR is the prime Government organ on whose requests; AFD works primarily in Aid to the Civil Power to mitigate the crisis. The prime role of AFD is to coordinate the employment of Armed Forces in disaster management and the overall relief operation. During a Disaster, Army, Navy and Air Force personnel are deployed to the affected areas. To facilitate their work, AFD establishes a monitoring cell to coordinate with all concerned ministries of the government, which includes Ministry of Foreign Affairs, Ministry of Home Affairs, Ministry of Disaster Management and Relief, Ministry of Health and Ministry of Civil Aviation, and of course friendly armed forces.

7.2 Integration of Armed Forces In Disaster Management

According to the Disaster Management Act and SOD, in any deadly disaster situation or in respect to apprehension of any deadly disaster when necessity of Armed Forces assistance become essential, the National Disaster Response Coordination group would submit recommendation to the government for cooperation of the Armed Forces. If any recommendation is received from National Disaster Response Coordination Group, the government may give directives to the Armed Forces Division to provide necessary assistance to civil administration in pre-disaster or emergency response activities during a disaster accordingly.

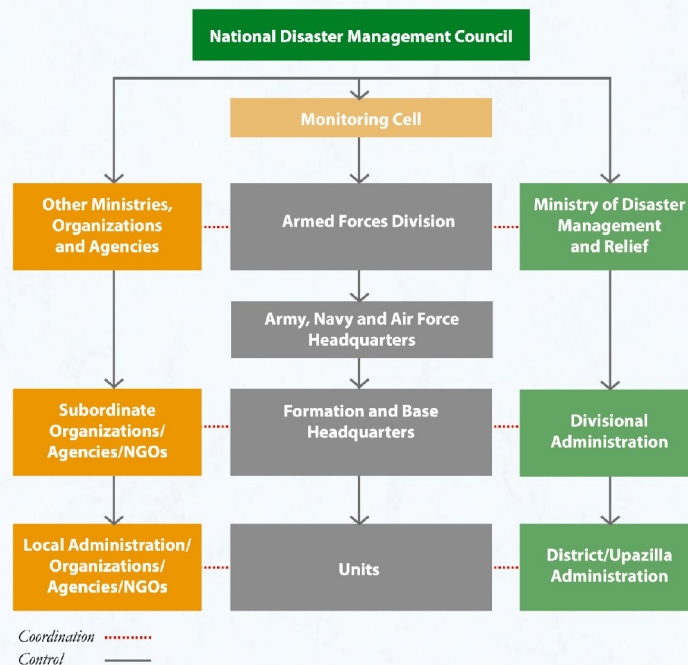


Figure 6: Procedure of Armed Forces Integration during any disaster

Figure 6: Procedure Of Armed Forces Integration During any Disaster

In Figure 6, three procedures have been described. On right, working procedure of lead ministry, MoDMR with their division / district body, on centre, vertical and lateral coordination of AFD once involved and on left, working procedures of other ministries have been shown. AFD laterally coordinates with MoDMR and other ministries, organization and agencies involved in Disaster management. AFD guides the Service Headquarters regarding their employment, and coordinates the effort of three services. At Division level, the formation or base headquarters coordinates with the local administration and similar is done at the district level and below.

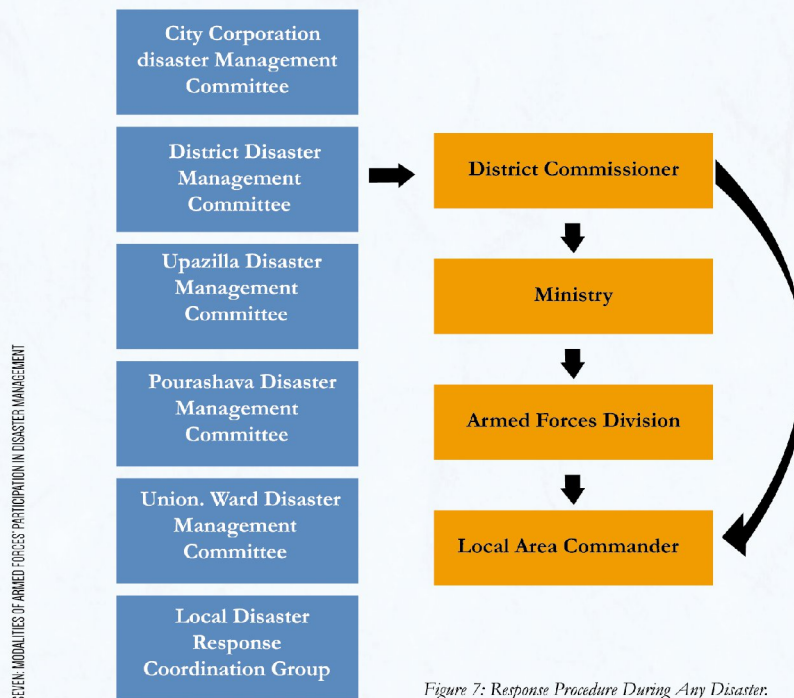


Figure 7: Response Procedure During Any Disaster.

In a local level, if it becomes essential to take assistance of Armed Forces to deal concern disaster situation effectively, the District Disaster Response Coordination group may submit its recommendation to Deputy Commissioner to take cooperation of Armed Forces. Deputy Commissioner either may send a demand note to the AFD through MoDMR seeking assistance of Armed forces, or, address an emergency situation to avoid delay. He also may seek cooperation directly from local armed forces authority. In such scenario he would inform this matter to MoDMR and AFD as soon as possible through a written, fax or e-mail. Said mechanism is shown at Figure 7. The subject may appear simple in the figure but in reality, it is a difficult understanding to coordinate the efforts of several organizations who work with different pace. ■





COMMON INTERNATIONAL PRACTICES IN DISASTER MANAGEMENT

CHAPTER EIGHT

8.1 General

It is imperative to know about the common international practices of disaster management. In many occasions, Bangladesh may need to respond to the international call during any major disaster. Examples are Nepal Earthquake 2015, Srilanka Earthquake 2004 and 2016 etc. Few specific guidelines as per UN are followed during this international response where multi agencies remain involved. This chapter delineates the role of different organizations in any disaster where international agencies are involved.

8.2 UNOCHA

The United Nations Office for the Coordination of Humanitarian Affairs (OCHA) is a UN body which encompass the coordination of humanitarian response, policy development and humanitarian advocacy. The agency's activities include organization and monitoring of humanitarian funding, as well as information exchange, coordination and rapid-response teams for emergency relief. All UN members while participating in any international disaster response try to follow the guide lines of UN OCHA. The Generic International Disaster Coordination Model of UN OCHA is as under:

Model at Figure 8 is likely to be adopted in any multinational disaster management for an effected country. Few of the terminology as specified in the model are mentioned below:

a. On-Site Operations Coordination Centre (OSOCC).

OSOCC concept was originally developed by OCHA and the International Search and Rescue Advisory Group (INSARAG) network. It was designed to assist affected countries in coordinating international search-and-rescue efforts following an earthquake. However, OSOCC's emergency management principles make it a valuable tool in any sudden-onset disaster involving international relief resources. Over the last decade, the OSOCC concept has been used during numerous disasters including floods, hurricanes, tsunamis and complex emergencies.

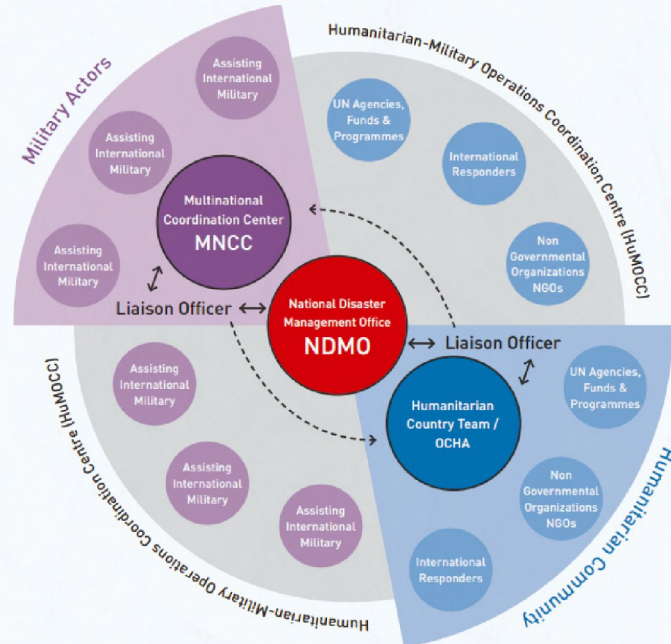


Figure: 8 Generic International Disaster Coordination Model by UN OCHA

An OSOCC has three primary objectives:

- (1) To be a link between international responders and the Government of the affected country.
- (2) To provide a system for coordinating and facilitating the activities of international relief efforts at a disaster site, notably following an earthquake, where the coordination of many international Urban Search and Rescue (USAR) team is critical to ensure optimal rescue efforts.

(3) To provide a platform for cooperation, coordination and information management among international humanitarian agencies.

- b. Reception / Departure Centre (RDC). In many disasters, there is a need to establish a RDC as a part of the OSOCC. The RDC should be located at the arrival point of international relief teams to facilitate and coordinate their arrival and further deployment. The RDC's primary responsibility is to register teams, provide an information briefing, direct teams to the OSOCC and pass processed information of incoming teams to the OSOCC in order to facilitate its operational planning. The RDC functions as a coordinating body for international relief traffic. It is intended to support the airport authorities with these activities. As the RDC may be the first point of contact for relief teams when arriving in the affected country, it must be prepared to facilitate the same basic services as that expected of an OSOCC. Some of the services expected by any RDC include situational updates, operational information, logistical support, and the facilitation of immigration /customs procedures for staff, equipment and humanitarian aid.
- c. Humanitarian - Military Operations Coordination Centre (HuMOCC). The HuMOCC objective is to provide a predictable humanitarian-military coordination platform. Complementary to the OSOCC, the HuMOCC aims to provide the physical space dedicated to facilitating the interface between humanitarian and military actors present in country. This is the “space” where humanitarian capacity gaps during the critical period emanating from the OSOCC, Humanitarian Country Team (HCT) or clusters could be temporarily filled-up by available military capacity. The HuMOCC will also serve as a one-stop shop for information-sharing and update, task sharing and division, and shared/joint planning on humanitarian needs and gaps (actual, anticipated or projected) and available military

capacity on the ground. The HuMOCC services are geared towards optimizing the use of available military assets to support humanitarian priorities in critically affected locations.

- d. Multinational Coordination Center (MNCC). MNCC facilitates coordination and cooperation of foreign military forces with the affected nation to support humanitarian assistance and disaster relief missions. MNCC organization and tasks should be tailored to the situation. Once the foreign military forces members have agreed upon specific MNCC tasks and organization, they can develop detailed procedures. It does not rely upon formal command relationships among military forces.
- e. Multinational Military Coordination Center (MNMCC). It is felt that within MNCC, there may be a requirement to form MNMCC when multiple forces are deployed. Same was experienced in Nepal Earthquake April 2015. Immediately after the earthquake, United Nations Disaster Assessment and Coordination (UNDAC) team was deployed to Kathmandu, with four United Nations Humanitarian Civil-Military Coordination (UN-CM Coord) officers. To support military to military and civil-military coordination, the Government of Nepal and Nepalese Army established a MNMCC. The MNMCC was chaired by the Nepalese Army with the participation at the beginning of the operation of foreign military liaison officers from Algeria, Bangladesh, Bhutan, Canada, China, Israel, India, Japan, Pakistan, Singapore, Spain, Sri Lanka, Thailand, UK and US. In Bangladesh perspective, MNMCC is likely to be established by AFD during any such disaster management where multinational countries are involved with the approval of Government. ■





CHAPTER NINE

9.1 Background

The Asia-Pacific series of Conferences on Military Assistance to Disaster Relief Operations (APC-MADRO) that took place over a five-year period (2005-2010), were organized with the aim of developing collaborative Guidelines to assist the planning of foreign military assistance in support of disaster response operations in the Asia-Pacific region. At the end of this process, the Asia-Pacific Regional Guidelines for the use of Foreign Military Assets in Natural Disaster Response Operations (APC Madro Guidelines) were finalized and endorsed.

Building upon the outcomes of the Asia-Pacific series of conferences and related Guidelines, a multi-stakeholder Regional Consultative Group (RCG) on Humanitarian Civil-Military Coordination for Asia and the Pacific was formed in 2014 to act as a regional forum that brings together the humanitarian, civilian and military actors involved in disaster response preparedness planning and disaster response in the region. As outlined in the RCG Terms of Reference, the RCG was formed to: a) discuss response preparedness planning, with a focus on coordination of operational planning between civilian and military actors; b) facilitate exchange of information and innovative ideas to enable well-coordinated and needs-based effective disaster response to a broad range of humanitarian emergency operations; c) strengthen linkages with other relevant platforms with an emphasis on the relationship with Regional Organizations and the Global Consultative Group on Humanitarian Civil-Military Coordination. The chairmanship of the RCG is rotated among Member States on an annual basis.

The Government of Singapore, represented by the Ministry of Defence (MINDEF) and the Singapore Armed Forces (SAF) chaired the RCG in 2017 and hosted the RCG Third Session from 5 to 6 December 2017 at the SAF's Changi Regional HADR Coordination Centre (RHCC). The event was organized with the support of the RCG Secretariat, represented by the UN OCHA Regional Office for Asia and the Pacific (ROAP), and the United States Center for Excellence in Disaster Management and

Humanitarian Assistance (US CFE-DM). The Third Session was attended by more than 130 participants from 26 countries and 24 regional/international organizations, academia and the private sector.

9.2 RCG on Humanitarian Civil-military Coordination (UN-CMCOORD) For Asia And The Pacific

The objective of this plan is to find out how civil-military coordination can support disaster preparedness and ensure effective operational readiness. During the RCG First Session (2015), members agreed that when discussing civil-military coordination, it would have been very useful for selected RCG countries to develop country-level work plans that would outline how civil-military coordination would plug into and contribute to response preparedness efforts. As a result of the RCG Second Session (2016), RCG members continued to focus and further develop these work plans, better identifying how civil-military coordination could contribute to increasing the speed, volume and quality of life-saving assistance provided in the initial phase of a response and by augmenting nationally-led efforts.

► **Disaster Impact Model (DIM).** Experience of conducting preparedness and response in Asia-Pacific has shown that secondary data can be effectively utilized to build an accurate picture of vulnerabilities, even before a disaster occurs. Using data such as shake maps, typhoon tracks and wave patterns, alongside population and housing data, disaster impact models can be created during the preparedness phase that can be updated when a disaster occurs. These models assist government, the humanitarian community as well as military and police actors to calculate estimates of the number of people affected by a specific disaster, as well as how many would most likely require humanitarian assistance, as a means of informing more accurate initial response planning.

► **Needs Analysis.** Once a DIM is developed, a Needs Analysis process is undertaken to understand and prioritize humanitarian needs. An understanding of the full requirement of needs, and the 'Key Immediate Needs' that will be delivered in the first four to six weeks, ensures that the government, the humanitarian community and military/police actors can develop a coordinated contingency plan during the preparedness phase

► **Response Capacity Analysis.** A Capacity Assessment allows for a more accurate understanding of how identified needs will be met and by whom. In Asia-Pacific, local communities, governments and militaries are the first responders, and it is important to understand the specific roles they play and how the international community can best augment their efforts. The specific focus of the RCG is to identify what would be the comparative advantage and value added of military actors in meeting the identified needs, determining what military functions, appropriate relief tasks, and effects may be required by the military to support civilian-led response efforts and ensure the rapid delivery against identified key humanitarian needs.

► **Response Modalities.** It involves identifying how assistance will be delivered, based on existing capacities as well as operational constraints. The RCG dialogue is key to highlight what potential infrastructure barriers or logistic bottlenecks there may be in meeting the key needs of people affected, as identified by the DIM. This should inform discussions with military actors on the mobilization of unique capabilities to overcome these challenges.

9.3 RCG Coordination Structure

With an increasing number of governments in the region having their own disaster management agencies and corresponding national disaster coordination structures, efforts are focused on adapting the humanitarian Coordination Architecture to the specific national contexts. In a response that is 'as local as possible and as international as necessary', the

objective is to have a coordination architecture that is tailored, flexible and inclusive of the role of the military and police, as key operational partners for humanitarian action.

Following this initial introduction, Government representatives from each of the RCG priority countries (Bangladesh, Indonesia, Myanmar, Nepal and the Philippines) outlined progress made against their respective RCG work plans.

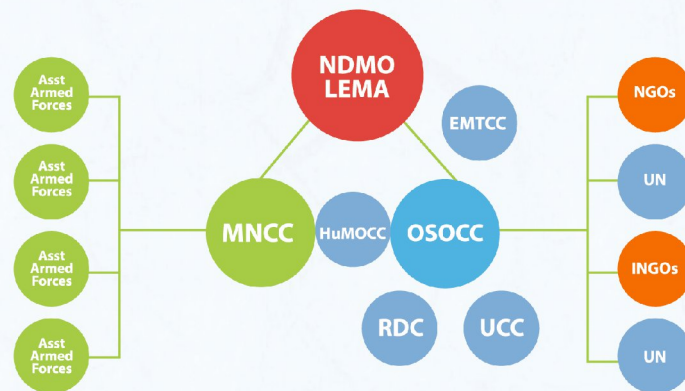


Figure 9: Coordination Architecture in Disaster Response

Different key roles/functions of each of the coordination mechanisms are as under:

USAR Coordination Cell (UCC). It is a specialized cell in the Operations function of an OSOCC, to assist with and strengthen the coordination of international USAR teams during the rescue phase of a disaster. The UCC is manned by international USAR team members and staff from the UNDAC team. Members of international USAR teams will be included in a UCC to augment and complement the UNDAC team to facilitate operational USAR planning. The UCC will be responsible for supporting national authorities with planning and tasking of teams in the initial life-saving rescue phases. In USAR operations, each international relief team should, if required, second a team member as an UCC liaison to work within the UCC.

► **Emergency Medical Team Coordination Cell (EMTCC).**

Following sudden onset disasters, Emergency Medical Teams (EMTs) often arrive in-country to provide emergency care to patients with traumatic injuries and other life-threatening conditions. The EMTCC is a dedicated cell of the OSOCC that may operate semi-detached from the OSOCC, and, in some cases be established and operated by the Ministry of Health.

► **Humanitarian Civil-Military Coordination.** When an UNDAC team deploys (or pre-deploys) in an emergency and military actors are present, the UN-CMCoord focal point or dedicated officer in the OSOCC takes responsibility for assessing and establishing the initial interface with military actors, both national and foreign. Should the number of actors and identified needs increase significantly, a shift from the OSOCC-based approach to a dedicated Humanitarian- Military Operations Coordination Concept (HuMOCC) may be deemed necessary. The HuMOCC, comprising humanitarian and military representatives, will remain linked to the OSOCC and/or sub-OSOCCs. In such cases, the HuMOCC will be led by the NDMO with support from UN-CMCoord officers. Its main purpose is to further facilitate information sharing, joint planning and task division between humanitarian actors, through the clusters, and military actors.

► **Multinational Coordination Centre (MNCC).** As outlined in the Multinational Force Standing Operating Procedures (MNF SOPs), the MNCC is established by the disaster Affected State to provide a center for all foreign assisting militaries to coordinate and plan operations with full information sharing relative to the ongoing operations and respective nations participation. The MNCC is an essential organization that integrates multinational partners in support of Multinational Force (MNF) contingency operations. The MNCC aids coordination of participating MNF militaries contributions to achieve unity of effort and avoid duplication of assistance during disaster responses. At the end of the introductory part, participants joined one of the working groups based on the above outlined coordination platforms. The following key findings were then presented in plenary:

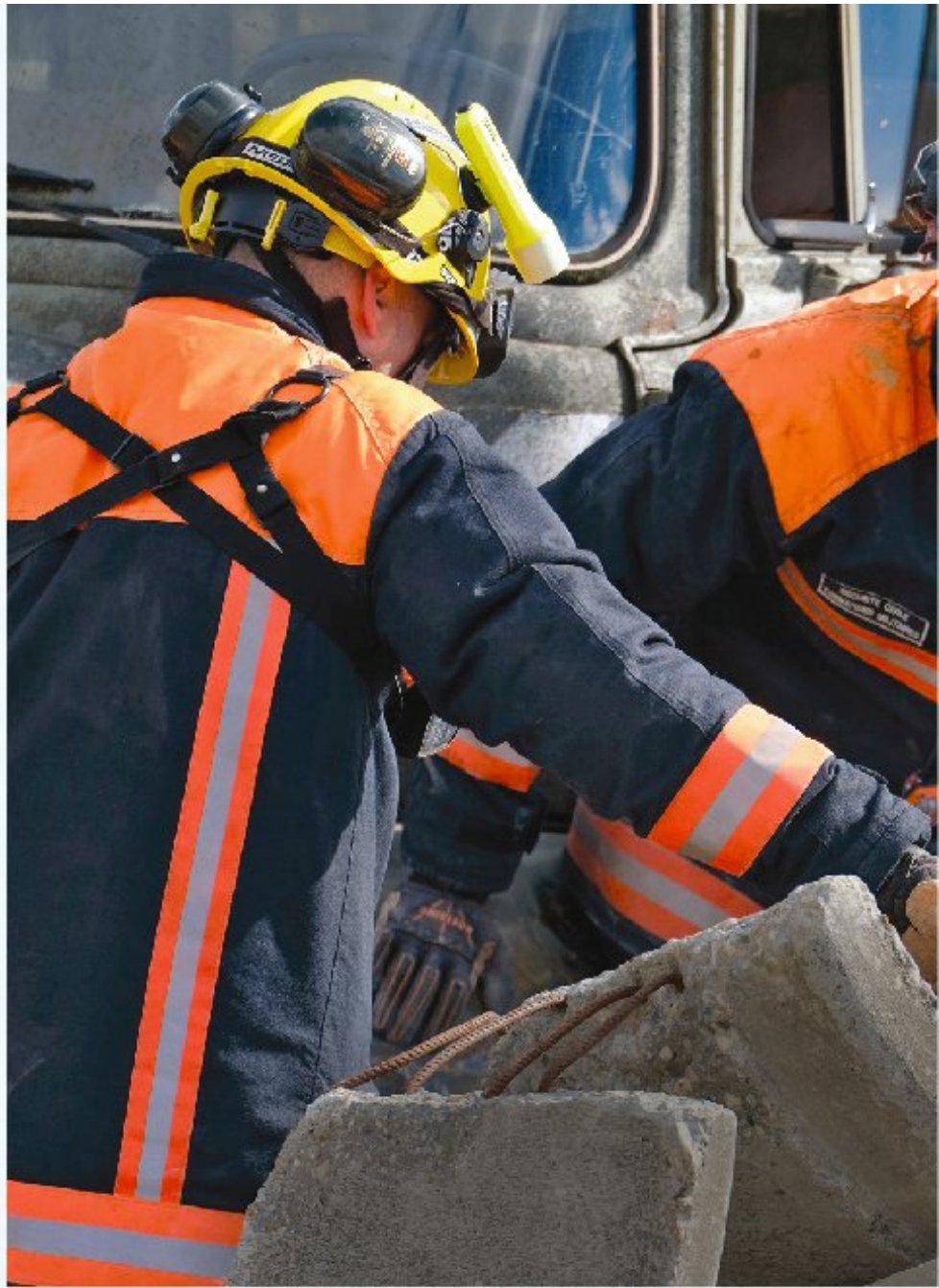
► **On-site Operations and Coordination Cell (OSOCC).**

The OSOCC is one of the key tools in support of Government-led response efforts. As such, it should be tailored to the national coordination architecture and offer services that are requested by the national authorities. An important focus is currently placed on ensuring a good level of inter-operability between regional and international platforms.

► **Humanitarian-Military Operations Coordination Concept (HuMOCC).** A Government-led (NDMO) predictable coordination platform to support specific civil-military functions and services:

- Facilitate effective and coherent sharing of information
- Contribute to achieving common situational awareness
- Advise on the appropriate foreign military assets (FMA) to be deployed/ employed
- Contribute to establishing a needs-based and demand-driven system
- Provide a structure for host nation/humanitarian actors to define priorities and needs, and military actors to plan/execute requests for assistance (RFA) for use of FMA
- Facilitate development of realistic indicators and benchmarks – assist with transition planning.

The implementation of the HuMOCC is context-specific and its activation is based on the nature and scale of the disaster. Key linkages between the HuMOCC and the UCC/EMTCC include: Tracking of requests, allocation and fulfillment of tasks; b) Logistic support to sustain EMT and USAR teams once deployed; c) Support for medevac for extraction of casualties; d) Expedite military support for technical/satellite imagery for SAR; d) Facilitate the transition phase and the exit planning of international teams; e) Deployment of FMA to support EMTs; f) Gap identification in the overall disaster response operation.





INTERNATIONAL SEARCH AND RESCUE ADVISORY GROUP (INSARAG) GUIDELINES

CHAPTER TEN



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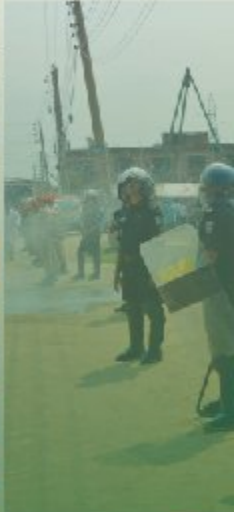














OVERVIEW OF DISASTER RESPONSE EXERCISE AND EXCHANGE (DREE)

CHAPTER ELEVEN





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