



# **EARTHQUAKE CONTINGENCY PLAN**

## **THIMPHU THROMDE**

**September 2016**

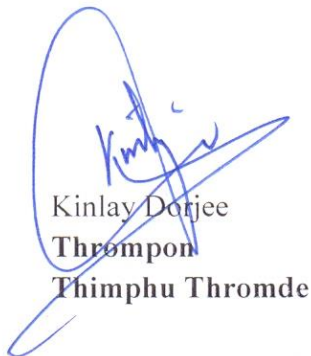
### Thimphu Thromde Tshogde's Approval

The Thimphu Thromde Tshogde is mandated under Sections 66, 67, 76 and 79 of the Disaster Management Act 2013 to institute a Disaster Management Unit and prepare, implement, review and update Disaster Management and Contingency Plan in accordance with guidelines formulated under the act.

The plan has been developed as per the provision of the Disaster Management Act 2013 and the guidance provided by the Contingency Planning Guidelines of Bhutan (2014). It is a result of sustained coordination and efforts made by the Thimphu Thromde, Department of Disaster Management and agencies and organizations identified herein.

The Thimphu Thromde Tshogde accepts its roles and responsibilities mandated by the Act and outlined in the Plan. The Thimphu Thromde Tshogde produces, endorses and shall review this Plan with the authority pursuant to Sections 66, 67, 76 and 79 of the Disaster Management Act of Bhutan 2013.

Thimphu Thromde Tshogde approves this plan made during the 3<sup>rd</sup> Thromde Tshogde 2<sup>nd</sup> Council on 22<sup>nd</sup> July, 2016.



Kinlay Dorjee  
**Thrompon**  
**Thimphu Thromde**

# Table of Contents

## Thimphu Thromde Tshogde’s Approval

### List of Tables

### Figures

### Annexes

### Acronyms

### List of Terms in Dzongkha

<b>1. Introduction</b> .....	6
<b>2. Contingency Planning Framework</b> .....	6
2.1 Justification .....	6
2.2 Purpose .....	7
2.3 Scope of Planning.....	7
<b>3. Earthquake Risk Profile</b> .....	9
3.1 Hazard .....	9
3.2 Vulnerability.....	10
3.3 Capacities .....	11
3.4 Impact Scenario .....	13
<b>4. Response requirements</b> .....	14
4.1 Within the Golden Hours .....	15
a. Declaration of Disaster .....	15
b. Immediate Response and Relief .....	15
c. Emergency relief operation .....	15
4.2 First two weeks .....	16
a. Sustained Relief operation .....	16
b. Moving into Early Recovery .....	16
<b>5. Contingency Structure</b> .....	16
5.1 Thromde Disaster Management Committee.....	16
5.2 Response Coordination Structure.....	17
5.3 Thromde Response Coordination Structure .....	17
5.4 Standard Operating Procedures .....	21
<b>6. Priority Preparedness Actions to Ensure Effective Response</b> .....	23
<b>7. Contingency Stakeholders</b> .....	27
<b>8. Implementation of the Plan and Review Arrangements</b> .....	31
<b>9. Action Plan for Implementation of Priority Preparedness and Risk Reduction Priorities</b> .....	31

## List of Tables

1. Table 1 – Buildings damaged in Thimphu due to 2011 Sikkim Earthquake
2. Table 2 – Capacities within Thimphu Thromde
3. Table 3 – Impact Scenario
4. Table 4 – Thromde Disaster Management Committee Members
5. Table 5 – Thimphu City Evacuation Sites
6. Table 6 – Response Requirements and Preparedness Actions
7. Table 7 – Contingency Stakeholder Roles
8. Table 8 – Priority Risk Reduction and Preparedness Actions

## Figures

1. Figure 1 – Response Coordination structure between Thromde, National and Dzongkhag DM institutions
2. Figure 2 – Thromde Response Coordination Structure
3. Figure 3 – TEOC Communication Network

## Annexes

1. Annex 1 – Thimphu City Evacuation Sites Map
2. Annex 2 – Key Contacts
3. Annex 3 – Procedures for Declaring Disaster Type Forms

## Acronyms

BAFRA	Bhutan Agriculture and Food Regulatory Authority
BHU	Basic Health Unit
BCCI	Bhutan Chamber of Commerce and Industry
BIS	Bureau of Indian Standards
BPC	Bhutan Power Corporation
BIS	Bureau of Indian Standards
BICMA	Bhutan InfoComm and Media Authority
BNUS	Bhutan National Urban Strategy
BT	Bhutan Telecom
CAO	Chief Administrative officer
CGI	Corrugated Galvanized Iron
CSO	Civil Society Organization
CDCO	Chief Development control Officer
CDCL	Construction Development Corporation Ltd.
CUP	Chief Urban Planner
DANTAK	Border Road Organization
DDM	Department of Disaster Management
DDMC	District Disaster Management Committee
DEOC	District Emergency Operation Centre
DM	Disaster Management
DoL	Department of Livestock
DoR	Department of Roads
EOC	Emergency Operation Center
ES	Executive Secretary
FCB	Food Corporation of Bhutan
FSD	Fire Services Division
GIS	Geographic Information System
HEOC	Health Emergency Operation Center
IAP	Incident Action Plan
IMTRAT	Indian Military Training Team
JDWNRH	Jigme Dorji Wangchuck National referral Hospital
LAP	Local Area Plan
MoE	Ministry of Education
MoHCA	Ministry of Home and Cultural Affairs
MoH	Ministry of Health
MTO	Motor Transport Officer
MoWHS	Ministry of Works and Human Settlement
NDMA	National Disaster Management Authority

NEOC	National Emergency Operation Center
N-NODE	Neighbourhood Node
RCC	Reinforced Cement Concrete
RBA	Royal Bhutan Army
RBP	Royal Bhutan Police
SAR	Search and Rescue
SQCA	Standards and Quality Control Authority
SP	Superintendent of Police
TDMC	Thromde Disaster Management Committee
TEOC	Thromde Emergency Operation Center
WASH	Water, Sanitation and Hygiene
YHS	Yangchenphug Higher Secondary School

### **List of terms in *Dzongkha***

<i>Chu</i>	River
<i>Dzongkha</i>	National language of Bhutan
<i>Dzongkhag</i>	District
<i>Thromde</i>	City
<i>Thrompon</i>	Mayor
<i>Thuemi</i>	Representative
<i>Tshogde</i>	Committee
<i>Demkhong</i>	Constituency
<i>Desuups</i>	Volunteer

# EARTHQUAKE CONTINGENCY PLAN THIMPHU THROMDE

---

## 1. Introduction

‘Contingency planning’ comprises decisions made in advance about management of human and financial resources, coordination and communications procedure, and a range of technical and logistical responses for possible disasters/ emergencies.

The Thimphu Thromde Disaster Management Committee prioritized the development of this Earthquake Contingency Plan as earthquakes have the potential to cause the most severe and widespread damage and because the entire country lies atop the major earthquake fault that divides the Indian tectonic plate from the Eurasian tectonic plate. Though recent earthquakes have been moderate in size, geologic evidence shows that the fault is capable of breaking under most of the country in a single massive earthquake leading to unprecedented damages.<sup>1</sup>

Development of this contingency plan is also prompted by the recent M7.8 earthquake that shook Nepal on 25<sup>th</sup> April, 2015 and caused extensive damage and loss of lives. The underlying lesson emerging from this tragedy is to reduce risks and prepare diligently before the occurrence of such large earthquakes.

## 2. Contingency Planning Framework

### 2.1 Justification

The Disaster Management Act of Bhutan, as per Sections 67, 68, 74, 76 and 77 mandates agencies or private sector notified by the National Disaster Management Authority (NDMA) to prepare their disaster management and contingency plans.

Thimphu Thromde is the capital city of the country, hosting most of the national agencies and institutions. It has 7 Demkhongs with a total area of 26.13 square kilometers. As per Bhutan National Urbanization Strategy 2008 (BNUS), the total population of Thimphu Thromde is estimated to be about 120,000 as of 2011 based on growth rate of 7.3 percent per annum.<sup>2</sup> Given Thimphu’s status and population, Thimphu must be prepared to face natural hazards. Being in a high-risk seismic zone, earthquakes would be the most damaging of the natural hazards, due to which Thimphu Thromde prioritizes the development and endorsement of this contingency plan.

---

<sup>1</sup> Current Knowledge about Bhutan’s Earthquake Hazard, GHI, 2014

<sup>2</sup> Eleventh Five Year Plan (July 2013 – June 2018), Local Government Plan – Volume III, Thimphu Thromde, Gross National Happiness Commission, 2013

## 2.2 Purpose

The purpose of this earthquake contingency plan is to ensure that Thimphu Thromde and its partners will be able to deliver prompt, effective and appropriate response in the aftermath of an earthquake and effectively manage potential humanitarian impacts. The plan will help Thimphu Thromde to:

1. ***Provide rapid and appropriate life saving response during the first 72 hours (“the Golden Hours”) after an earthquake.***

This includes conducting life saving measures such as Search and Rescue; emergency first aid; evacuation of families directly impacted by the earthquake and those exposed to secondary hazards; and undertaking safe debris and rubble clearance and/or removal.

2. ***Ensure advance agreements and mechanisms for effective response and recovery.***

The plan would ensure advance agreements and mechanisms for organization, coordination, resource mobilization, pre-positioning of stockpiles and communication needs and procedures both within the Thromde and with partners and the communities for achieving timely and sustained relief operations for the first two weeks in the aftermath of the earthquake.

A sustained relief operation would need to ensure timely, effective and appropriate provision of basic needs such as food, medical assistance, water-sanitation-hygiene, temporary shelter, social support, and psycho-social trauma and counseling, etc.

3. ***Build resilience for continuity of Thromde’s functions and services.***

This would ensure continuity of governance and delivery of basic services, public safety and protection and effective implementation of measures for early recovery. Emergency response and relief operations should encourage and facilitate, instead of obstructing and hindering early recovery of affected communities and sectors. The Plan will allow rehabilitation of priority facilities and services, strengthen communities’ coping mechanisms and lay the foundations to “build back better” during recovery and reconstruction.

## 2.3 Scope of Planning

Thimphu Thromde prepared the contingency plan in accordance to the Contingency Planning Guideline 2014 prepared by the Department of Disaster Management (DDM) under the Ministry of Home & Cultural Affairs (MoHCA). The earthquake contingency plan has been formulated keeping in mind the following parameters:

1. This Plan will lay down contingency procedures for Thimphu Thromde’s priority hazard, Earthquake.



2. This plan's arrangements and procedures will be limited to Thimphu Thromde's jurisdiction covering an area of 26 sq. km. stretching from Chantagang in the North to Nabirong Chu in the South.
3. The contingency plan will cover the emergency response phase, i.e. the first 72 hours after the earthquake occurrence, and the relief operation phase, i.e. the first two weeks in the aftermath of the earthquake.
4. This plan does not cover disaster risk prevention, mitigation and risk reduction or long term recovery, except to provide recommendations and linkages to these other phases in the disaster risk management.
5. The contingency plan focuses on Thimphu Thromde's roles and responsibilities as provided in the DM Act and Contingency Planning Guideline. A multi-stakeholder approach is used to ensure effective relief and response services in partnership with all relevant stakeholders.
6. The contingency plan will include operational Standard Operating Procedures entailing formal designation of authorities, resources, processes and timelines as endorsed by the Thimphu Thromde Tshogde.
7. Gaps and priority activities identified in this plan should be integrated and implemented as much as possible by the Thromde as part of their regular development plans and budget. In addition, the Thromde may seek resources for the implementation of this plan through the Department of Disaster Management (DDM) and other relevant national and international agencies.
8. This contingency plan is a living document, and the planning itself is an iterative process. As per Disaster Management Act Section 78 and 79, the Contingency Plan shall be updated at least once a year and the review of the plan will take place every five years.
9. This Contingency Plan is on stand-by for the period of one-year from the date of Thimphu Thromde Tshogde's approval. Within this period, this plan will enter into force when the Thrompon, in his capacity as Chairman of Thromde Disaster Management Committee, officially declares earthquake disaster emergency. If the one-year period lapses without such declaration, Thimphu Thromde will review the plan and effect the necessary adjustments and seek renewed approval from the Tshogde. Such review may be conducted before the one-year lapse should there be major changes

in Thimphu Thromde's earthquake risk profile. Major revision, as appropriate, may be effected after completing the five-year period.

10. Thimphu Thromde shall seek the guidance and approval of the NDMA through DDM in the form of protocol to escalate the emergency response operation from Thromde level to National level as guided by classification of Disaster Type I, II, and III in the Disaster Management Act; and the de-escalation when the reverse circumstance sets in.
11. The contingency plan faces data limitations and is based on certain assumptions such as the existence and functioning of various disaster management related institutions, including the Thromde Emergency Operation Center. The plan will need to be revised and strengthened following subsequent simulations and drills.

### **3. Earthquake Risk Profile**

The earthquake contingency planning is being developed based on the risk profile described below. This scenario will continuously be improved and sharpened for accuracy.

#### **3.1 Hazard**

Bhutan is located in the eastern portion of the Himalayan arc, where continental collision between Indian and Eurasian plates drives the Indian plate beneath Tibet and convergence continues at a rate of 16 to 18 mm per year.<sup>3</sup> The main fault that delineates the boundary between the Indian and Eurasian plates approximately parallels Bhutan's southern border. This fault is a thrust fault that dips under Bhutan at a shallow angle, meaning that the fault plane extends underneath the entire country. Bhutan lies in the seismic gap between the 1934 Bihar-Nepal earthquake and the 1950 Assam earthquake, and paleo seismic studies indicate that a very large earthquake last occurred on this section of the plate boundary in approximately 1100 AD.<sup>4</sup>

Two recent moderate earthquakes – the M 6.1 September 2009 earthquake in Narang, Mongar and the M 6.9 September 2011 earthquake with its epicenter in Sikkim, India caused extensive damages in Bhutan – 13 lives were lost and damages to infrastructure, including rural homes, schools, basic health units, and cultural heritage sites resulted in a loss of Nu. 2192 million and Nu. 1197.63 million respectively.<sup>5</sup>

---

<sup>3</sup> Current Knowledge about Bhutan's Earthquake Hazard, GeoHazards International (GHI), 2014

<sup>4</sup> Jigme Dorji Wangchuck National Referral Hospital Seismic Vulnerability Assessment, GHI, 2012

<sup>5</sup> National Recovery and Reconstruction Plans, 2009 and 2011, Department of Disaster Management (DDM)

A Rapid Visual Inspection carried out by Thimphu Thromde after the September 18, 2011 Sikkim earthquake, reported damages to 97 homes and 6 schools (4 with medium damages, 1 with minor and 1 with major damages)<sup>6</sup>.

**Table 1 – Buildings damaged in Thimphu during 2011 Sikkim Earthquake**

	Building Type	Extent of Damage			
		Minor	Medium	Major	Total
1	Traditional Rammed Earth Building	28	42	8	78
2	Hollow Mud Blocks	2		1	3
3	Bricks and Rammed Earth	1			1
4	RCC	11	3		14
5	Stone masonry and rammed earth	1			1
		<b>43</b>	<b>45</b>	<b>9</b>	<b>97</b>

78 of the 97 damaged buildings were traditional rammed earth buildings (some built more than a 100 years ago and some as new as 3 years old), pointing to the vulnerability of traditional structures to earthquake shaking. Report of medium damages (cracks on columns and wall joints) on RCC structures built as recent as 2010, are also worrying and point to the need for strict implementation of building standards and codes and monitoring compliance.

Considering the current information on earthquake hazard in Bhutan, this contingency plan is based on the probability of a moderate earthquake event happening close to Thimphu. In Thimphu, secondary hazards of an earthquake could include fire outbreaks, landslides and lake outburst floods.

### 3.2 Vulnerability

Thimphu Thromde, with 7 Demkhongs has an estimated total population of 120,000 as of 2011 based on growth rate of 7.3 percent per annum.<sup>7</sup> With highest population densities and rapid rate of development, Thimphu is a high-risk earthquake site requiring urgent risk reduction actions and preparedness to deliver effective relief and response in the aftermath of an earthquake.

Though detailed and comprehensive seismic zonation of Thimphu has not yet been conducted, Thimphu is located in the proximity of northeastern India, which according to the Bureau of Indian Standards (BIS), is in the “most active” seismic Zone V. Thimphu began implementing Bhutan building codes for reinforced concrete buildings after 1997. Traditional buildings such as stone masonry, rammed earth, adobe construction, and timber

<sup>6</sup> First round of preliminary rapid visual inspection report, Thimphu Thromde, 2011

<sup>7</sup> Bhutan National Urban Strategy, Ministry of Works and Human Settlement, 2008

construction, which are generally constructed using indigenous practices passed down through the generations, are not subject to specific codes.

A visual earthquake assessment study carried out for Thimphu by the Bhutan Standard Bureau (erstwhile Bhutan Standard and Quality Control Authority (SQCA)) in 2007<sup>8</sup> found that more than 70 percent of the 4,467 buildings and houses were vulnerable to earthquakes. These include 177 of 1,091 concrete buildings, 2,218 of 2,448 made of masonry, and 924 of 928 wooden houses.

The 2011 Sikkim earthquake damaged 97 buildings and 6 schools. More than 80% of the damaged buildings were traditional rammed earth buildings, pointing to the vulnerability of traditional structures and overall need to develop seismic resilient construction guidelines and for strict implementation of building standards and codes and monitoring compliance.

Vulnerable buildings with collapse and major damage hazard can cause a large number of deaths. Therefore, determining whether buildings are vulnerable to major structural damage or collapse in an earthquake is very important. At present there is limited technical capacity in Bhutan to conduct vulnerability assessments, especially to analyze the structural safety of old buildings against seismic forces. However, there is need to urgently conduct vulnerability assessments of buildings within Thimphu city to determine the expected impact of an earthquake.

A city's level of vulnerability during an earthquake, or any disaster is determined to a great extent by the functionality of key/ lifeline services such as water supply, electric power supply, sewerage system, fuel supply, food supply and transportation and communication systems. It would therefore be important to prioritize the assessment of such lifeline services for Thimphu city to determine their vulnerability to earthquake shaking and to implement mitigation/ strengthening measures at the earliest possible.

### **3.3 Capacities**

Thimphu Thromde has a Disaster Management Committee led by the Thrompon and its day-to-day management is being undertaken by the Environment Division. However, there is need to institutionalize the committee and the teams and other arrangements.

The Thromde does not yet have a Disaster Management Plan, which hinders integration of earthquake risk reduction and preparedness priorities in Thromde's development planning and budgeting to support effective implementation of the contingency plan. Without a

---

<sup>8</sup> [http://bhutanobserver.bt/5690-bo-news-about-thimphu\\_at\\_grave\\_risk.aspx](http://bhutanobserver.bt/5690-bo-news-about-thimphu_at_grave_risk.aspx)

disaster management plan in place it is also difficult for the Thromde to plan and acquire necessary resources to undertake earthquake risk reduction and response preparedness. Current capacities within Thimphu Thromde management includes the following:

**Table 2 – Capacities within Thimphu Thromde**

	Capacity within Thimphu Thromde	Number
1	Dzongkhag Disaster Management Committee	1 (with 15 members)
2	Search and Rescue Team including Thuemis	1 (with 25 members)
3	Member of National Search and Rescue Team	1
4	Thromde Task Force Members	7
5	Various DM teams	To be formed
6	GIS Experts	2
7	Structural Engineer	2
8	Urban Planner	4
9	Bull dozer	7
10	Vehicles	69
11	Walkie Talkies	40
12	Trained Desuups	9
13	Thromde officers who have undergone Integrated training	10
14	Identified Safe Evacuation Sites	10
15	Building Inspectors	15
16	Sanitary Inspectors	5
17	Emergency family kits	100

Resources with other agencies within Thimphu Thromde that should be considered a capacity during response and relief lie with agencies such as the Ministry of Health (hospitals, basic health units, ambulances, medical staff); Royal Bhutan Police (Fire engines, fire fighters, SAR teams, equipment); Food Corporation of Bhutan (food stockpiles); DeSuups (volunteers); etc. However, there is need to establish clear linkages and have pre-agreements in place with the various stakeholder agencies to ensure coordinated response and relief actions in the event of an earthquake.

In terms of disaster risk management, Thimphu Thromde is currently confronting various challenges. There is need for development and endorsement of the Thromde Disaster Management Plan along with contingency plans for earthquake (including clear response and relief arrangements and clear information sharing and decision-making procedures) and other major perceived hazards. There is need to build risk reduction and preparedness capacities including the formation and capacity enhancement of various disaster response, relief and management teams; formal designation of evacuation center and routes; and increased community awareness on the

hazard risk, key protective actions for safety and community mobilization and support for the disaster management related plans.

### 3.4 Impact Scenario

Based on the identified vulnerabilities and capacities, following is the impact scenario in the aftermath of the earthquake:

**Table 3 – Impact Scenario**

Impact		Assumption	Quantity	Description
<b>Damage to Infrastructure and critical services</b>	Homes/ Buildings	50% buildings built prior to the year 1997 collapse	900 houses damaged	350 collapse, 150 heavily damaged, 400 minor damaged.
	Roads and Bridges	Bridges and roads damaged	2 bridges heavily damaged 3 partially damaged	
			5 locations of Urban Road unpliantable	Some parts of Babesa Expressway and Taba-Dechencholing highway damaged
			Main land transportation routes are disrupted	Complete dependence on airlift from Paro Airport
	Power and communication disruption	30% of telecom towers, 50% of substation, 20% transformers, 15% electric poles	6 BT , 4 TCell  2 Motithang, 1 Changzamtog, 2 Lungtenphu and Babesa	
	Water and sewer lines disrupted	40% of water tank and 20% of main pipe and sewer line unusable		
	Health Centers (hospitals, BHUs, Clinics)	1 out of 3 hospital , 3 out of 6 BHUs  1 out of 2 Clinic		Hospital partially damaged, Motithang BHU heavily affected and Decchencholing and

				DANTAK hospital partially damaged
<b>Impacts on human lives</b>	Requiring immediate response (SAR, Evacuation)	5% of Thimphu city's population affected	5700 individuals affected	300 dead, 400 critically injured, 500 missing/trapped/buried 4500 require evacuation
	Requiring humanitarian and basic services	40% of population will not require food assistance  60% of population will sustain themselves for first 3 days  30% of food commodities will not reach Thimphu in time		
	Requiring Emergency medical services		500-600 individuals requiring emergency medical attention	
<b>Disruption of governance</b>		Government, Thromde, Corporate, and private offices affected	20% of govt. offices function affected	Govt office - 10 fully not functional, 40 partially functional
			15% of corporate office affected	Thromde - 40% employees affected
			20% of private offices affected	Corporate - 5 not functional, 10 partially functional
				Private - 50 not functional, 100 partially functional
<b>Disruption of the economy</b>		Inflation of goods and commodities	>50% increase in price	Demand exceeds supply
		Disruption of livelihood		

#### 4. Response requirements

In line with the impact scenario, Thimphu Thromde will focus on the following major response areas:

## 4.1 Within the Golden Hours

### a. Declaration of Disaster

- Declare disaster type as per DM Act 2013.
- Activate contingency plan and Thromde Emergency Operation Center (TEOC).
- Establish contact and coordinate with NEOC.

### b. Immediate Response and Relief

- Deploy emergency rapid assessment teams to gather immediate humanitarian (response and relief) needs and assess critical public utilities.
- Carry out emergency planning and deploy response (SAR, first aid, evacuation) and relief teams.
- Support the provision of Search and Rescue services, including for those trapped in collapsed structures.
- Assist in provision of emergency medical evacuation and emergency medical services, including orthopedic surgeries, intensive care, life saving and emergency first aid assistance to injured persons and other medical services.
- Evacuate affected families (those whose houses have been destroyed or are heavily damaged and in danger of collapse) to designated safe areas.
- Work to restore key governance functions and lifeline facilities (telecoms, water, electricity, fuel and energy, transportation).
- Mobilize and coordinate emergency transportation, including emergency helicopter services.
- Maintenance of public order and protection including traffic management.

### c. Emergency relief operation

- Provide humanitarian and basic needs at evacuation sites and to all other affected families:
  - Food – Basic food provisions/ rations as per relief standards.
  - Water and Sanitation – Provide - safe drinking water facilities at identified evacuation sites; emergency water purification/ treatment facilities/options; emergency toilets and sanitary supplies – as per relief standards.
  - Health – Ensure provision of emergency first aid and medical services to the injured and carry out medical evacuation for serious conditions, as required. Ensure set up of medical camps at evacuation sites and medical outposts, as required.
  - Shelter – Provide temporary shelter as per pre-agreed designs and standards to affected families at evacuation sites.
  - Social and protection - Assist and protect vulnerable groups (children, people with special needs, elderly, women) and provide emergency tracing and reunification of separated families, emergency counseling for survivors, and ensure safety and protection in evacuation sites.



- Management of dead bodies – Ensure transportation and storing of unidentified bodies in morgue and identified emergency morgue sites; and arrange for mass cremation of dead bodies.

## 4.2 First two weeks

### a. Sustained Relief operation

- Ensure sustained basic humanitarian needs (food, shelter, water-sanitation, health and protection, psycho-social counseling and trauma management, dead body management) for affected families and maintain public order including traffic management.
- Provide continuous safety and awareness information to the public on the earthquake, aftershocks, its effects, etc.
- Regulate market supplies and prices and establish relief supply chain including warehouses, transportation fleets, and distribution network.
- Ensure TEOC operates at required scale with the activation of planning, financing and coordination functions and task teams as appropriate.
- Continue coordination with NEOC and with other relief agencies and actors.

### b. Moving into Early Recovery

- Initiate damage and recovery and re-construction need assessments to determine further relief need and requirements for early recovery and re-construction
- Conduct post-earthquake safety assessment of homes and buildings to ensure their safety. This process would encourage people to move back into safe homes and for offices and businesses to resume.
- Continue restoring basic and critical public utilities and services.
- Support establishment of temporary learning spaces or re-opening of schools to encourage children to come back to normalcy and ensure education in emergencies.

## 5. Contingency Structure

### 5.1 Thromde Disaster Management Committee

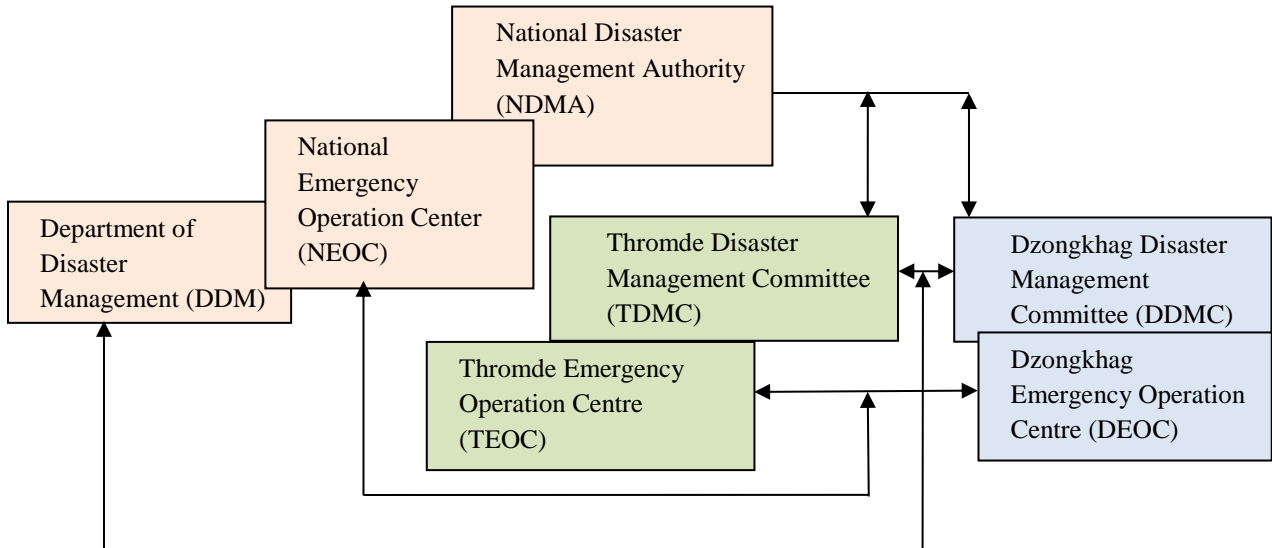
**Table 4 – Thromde Disaster Management Committee Members**

	Members	Designation	Location	Contact Details
1.	Kinlay Dorjee	Thrompon	Thromde Office	17655191
2.	Passang Dorji	Executive Secretary	Thromde Office	77205370
3.	Ugyen	Thromde Thuemi	Dechenchholing/Taba	17674872
4.	Phub Dem	Thromde Thuemi	Bangdro/ Olakha	17671707
5.	Kunga Yonten	Thromde Thuemi	Thimphu Norzin	17640193
6.	Ugyen Penjor	Thromde Thuemi	Jungshina/Kawajangsa	17627474
7.	Namgay Tsheirng	Thromde Thuemi	Babesa	17604871
8.	Rinzin Dorji	Thromde Thuemi	Changangkha	17116181
9.	Dorji Dema	Thromde Thuemi	Motithang	17963076

10.	L.B. Pradhan	Fire SP	Changzamtog	17622901
11.	Operation Desk Chief	Chief Engineer	Thromde Office	17953764
12.	Logistic Desk Chief	Chief Adm. Officer	Thromde Office	17604202
13.	Planning Desk Chief	Specialist	Thromde Office	17379020
14.	Jasraj Limbu	Focal Person	Thromde Office	17938554

## 5.2 Response Coordination Structure

Figure 1 – Response coordination structure between Thromde, National and Dzongkhag DM Institutions

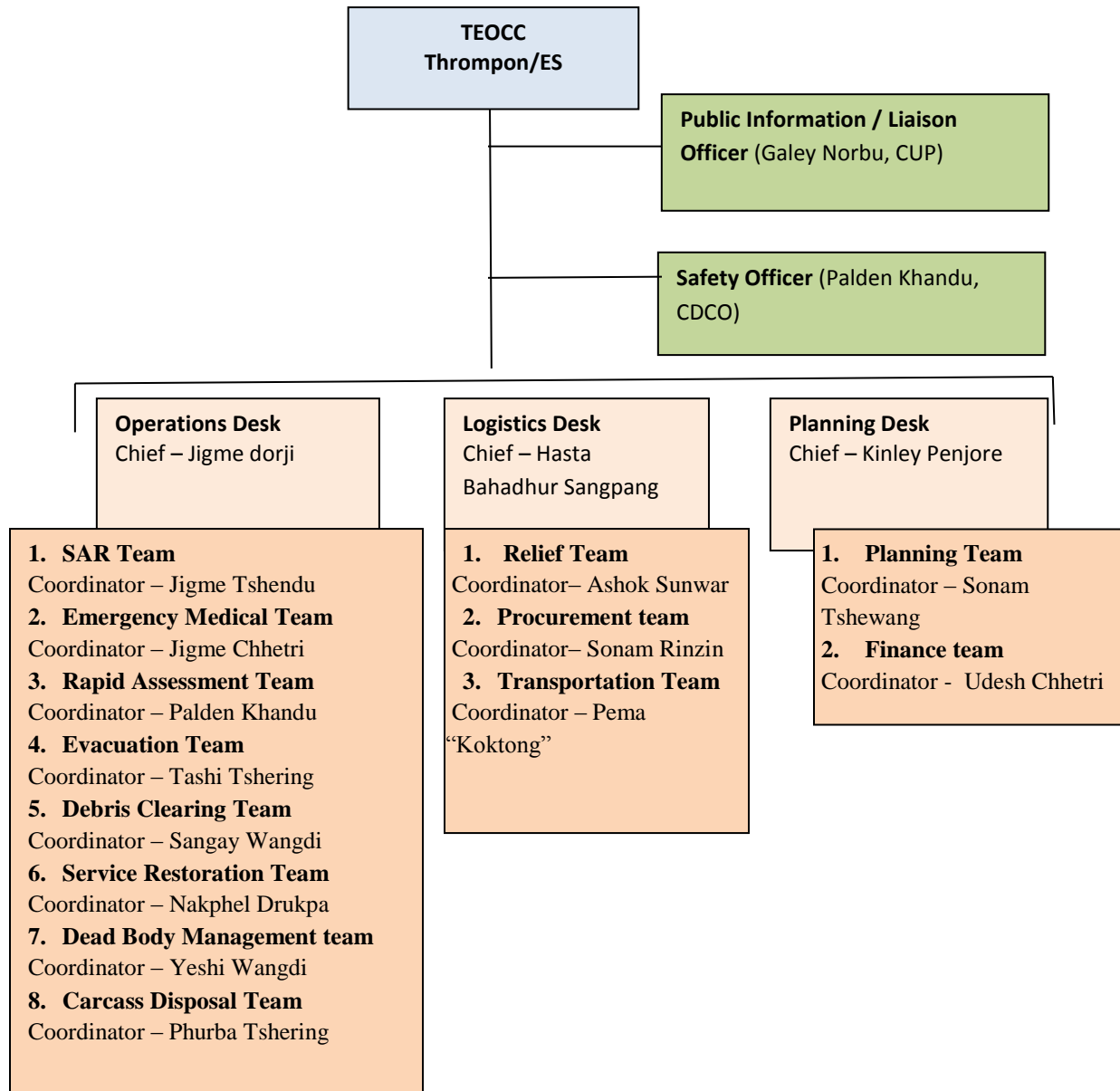


The Thromde DM Committee shall report to the NDMA through the National Emergency Operation Center. Thromde EOC will be in constant touch with the NEOC to provide situation updates to the NDMA, to coordinate mobilization of support and resources and to receive further directives from NDMA. The TEOC will also work closely with the Dzongkhag DEOC to ensure coordination between relief and response efforts and to support each other for effective response and relief, as required.

## 5.3 Thromde Response Coordination Structure

Currently, Thimphu Thromde city garage at Chubachu has been identified as the TEOC. The Thromde EOC shall be manned by the Thromde DM Committee members and all response coordination, information sharing and decision-making efforts shall be made from the EOC.

**Figure 2 – Thromde Response Coordination Structure**



Following are the Roles and Responsibilities as per the Thromde Response Coordination structure:

1. **Emergency Operation Center Commander** – The Thrompon shall assume the role of the EOC commander. The Executive Secretary shall be the second in command and shall assume the role of the commander in the absence of the Thrompon. The commander will be responsible for all aspects of the emergency response shall provide overall directives to all teams.

2. **Public Information Officer/ Liaison Officer** – The PIO/LO shall be responsible for communicating and sharing important incident response information with all units/teams and with the media and public, as required.
3. **Safety Officer:** The Safety officer shall ensure the safety of the TEOC and work with operations and coordination desk to ensure safety of teams and all personnel in the field.
4. **Operations Desk:** The Executive Secretary shall be the Chief of the Operations desk. The Chief Engineer of the Thromde shall be the second in command and shall head the Operations desk in the absence of the Executive Secretary. The Chief of Operations will oversee and coordinate the entire relief/response operation and the following teams shall be formed under the operations section:
  - a. **Search and Rescue (SAR) Team** – Arrangements shall be made before hand with the RBP and RBA and other SAR teams. The Thromde SAR team shall coordinate with the RBA and RBP for deployment, mobilize other SAR teams and volunteers, and perform search and rescue operations, as required.
  - b. **Emergency Medical Team** - The medical team shall be headed by the Thromde Health Officer and the team shall be responsible for coordinating with the hospitals, BHUs and trained volunteers to provide emergency first aid, medical services and medical evacuation support.
  - c. **Rapid Assessment Team** – The Thromde Thuemis and Inspectors shall lead the rapid assessments to determine immediate response and relief needs - dead, injured, without shelter, missing, people needing SAR, evacuation and medical assistance. The teams shall also assess the extent of damage to homes, road network, bridges, and other critical services (water, power, etc.).
  - d. **Evacuation Team** – The MTO shall head the evacuation team. The team shall pre-identify list of resources required (vehicle, drivers, fuel) and ensure teams for each evacuation area. The team shall mark each evacuation site and evacuation routes and ensure that affected people (priority to vulnerable groups – injured, children, elderly, people with special needs, women) are evacuated to the nearest evacuation sites (*Annex I – Map of Evacuation Sites*). The identified evacuation sites are:

**Table 5 – Thimphu City Evacuation Sites**

Name	Location	Acre
EC 1	Dechencholing LAP	2.8
EC 2	Green Open Space, above Dechencholing LAP	19.5
EC 3	Lower Taba NNode	1.8
EC 4	Babena Recreational Area	5.9
EC 5	Hejo Nnode	2.8
EC 6	Recreational Park, below HTMTI	4.7
EC 7	3 Tank Motithang Nnode	4.4
EC 8	Park Below Changangkha Temple	10
EC 9	Changlimithang Football ground	9.5
EC 10	Changlimithang Archery ground	4.9
EC 11	Athletic ground below YHS	8.01
EC 12	Changjiji Football Ground	6.7
EC 13	Lungtenphu Nnode below Sheri Block	2.7
EC 14	South Bus terminal, below Olakha workshop	5.5
EC 15	Below IMTRAT Head Office towards Semtokha	0.5
EC 16	Below IMTRAT Head Office towards P/ling	1.9
EC 17	Botanical Garden, Wangchu Taba	33.6

- e. **Debris Clearing Team** - The team will be headed by an Engineer. 7 teams shall be formed along with lists of machinery, excavators, vehicles with Thromde, DoR and CDCL and private vehicles, and community volunteers. There will be need for pneumatic excavator to break rocks, pavements and concrete for evacuation during disaster. The debris clearing team will clear areas based on the rapid assessment and as directed by Operations Chief.
- f. **Service Restoration Team** – The team will be headed by the Head of the Customer Service Centre and the following units will be formed within the team
- i. Drinking water and sewerage restoration unit
  - ii. Power restoration unit
  - iii. Roads and Bridges restoration unit
  - iv. Communication restoration unit
- g. **Dead Body Management Team** – The team will - support families to transport body to cremation ground; support Dratshang Lhentshog and RBP to carry out mass cremation in case of unidentified bodies.
- h. **Carcass Disposal Team** – shall be led by the Thromde Environment Development Division and shall be responsible for collecting, transporting and disposing carcass at identified locations in coordination with DoL and BAFRA.
5. **Logistic Desk:** The Chief Administrative Officer of the Thromde shall be the Chief of the Logistic Deck. The Procurement Officer shall be the second in command and shall assume

the position of Chief in the absence of the CAO. The following teams shall be formed under the Logistic desk:

- a. Relief Team** – The Relief team shall be responsible for setting up of temporary shelters at evacuation sites and ensuring WASH and food supplies/ facilities for both responders and affected families. The team will ensure stockpiles of blankets, tarpaulin sheet, tents, CGI sheets, family kits, etc. as per minimum standards and make pre-arrangements for shelter construction materials such as bamboo, rope, mat/mattress fuel/fire wood, etc. The team shall also ensure safety and security, crowd management in coordination with RBP and volunteers at evacuation sites and at distribution points. The team will also work with the hospitals and MoH to ensure medical centers at evacuation sites.
  - b. Procurement Team** – The procurement team shall be responsible for mobilizing resources and carrying out emergency procurement as per the requirement of the all the other teams.
  - c. Transportation Team** – The transportation team shall ensure transportation arrangements, including helicopter services, as required. The team will also be responsible for making arrangements for other vehicles and machinery.
- 6. Planning and Finance Desk:** The desk will be responsible for - Overall planning for the relief and response operations; Data collection, collation and reporting to the EOC/NEOC and production of situation/incident status reports and updates; Mobilize resources and establish data collection systems as necessary; Costing and financing of the relief and response efforts; Financial management; and Maintain proper documentation, reporting and accounts. The planning and the accounts division will be responsible for this desk.

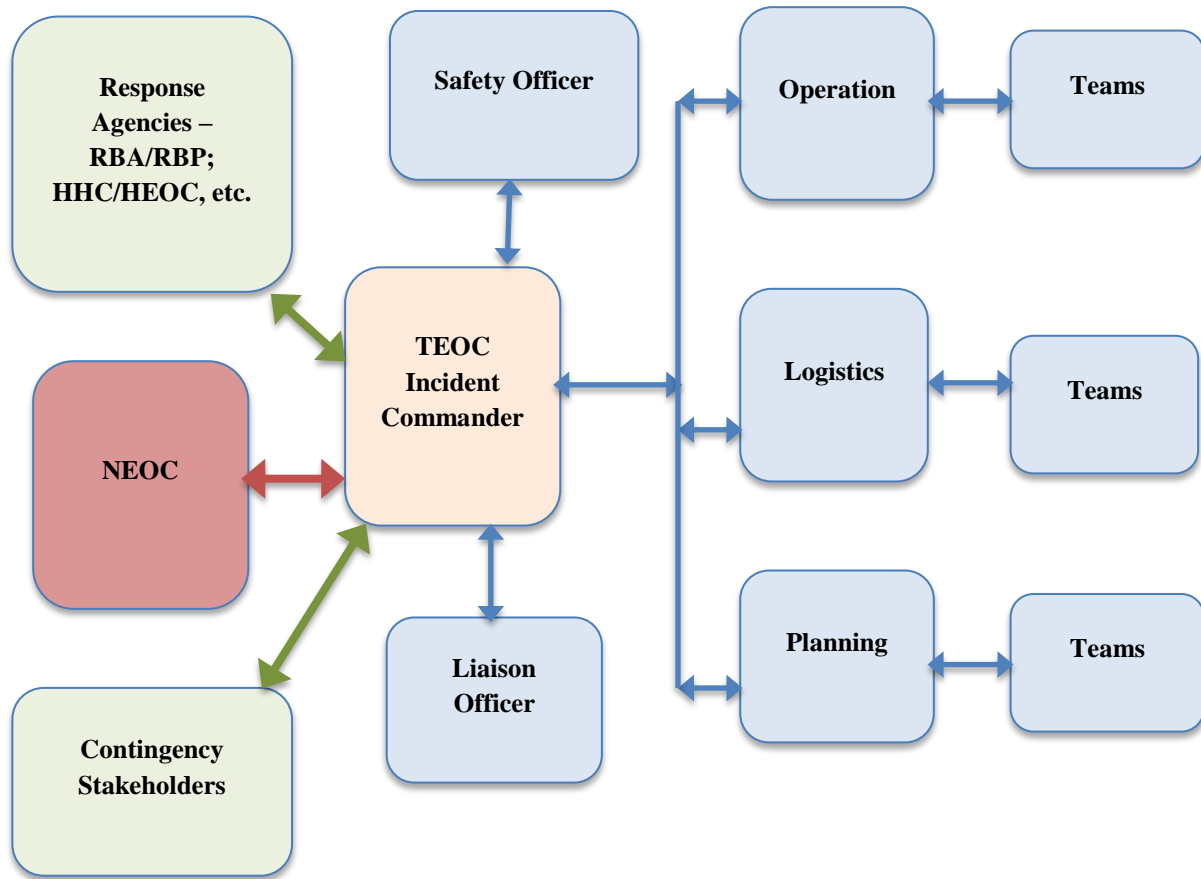
#### 5.4 Standard Operating Procedures

The standard procedures to be followed immediately after an earthquake are outlined below:

1. As soon as an earthquake strikes the Thromde earthquake contingency plan will be activated
2. The TEOC commander will fully activate the TEOC and the various Desks and Teams, conduct an emergency TDMC meeting and initiate communication with the NEOC
3. Rapid assessment teams will be deployed to conduct immediate rapid assessment and pass on assessment information to the Operations Desk
4. Operations Desk to compile rapid assessment report and submit to the Emergency Operation Center Commander
5. Based on the rapid assessment information formulate the Incident Action Plan/ IAP (response strategy for a fixed duration)

6. Initiate response actions based on the IAP -
  - a. Briefing of Desk Chiefs by Emergency Operation Center Commander on IAP and Rapid Assessment Report.
  - b. Briefing of Team coordinators by Desk Chiefs
  - c. Briefing of team members on their respective task by the team coordinators (including area, timings, shift system, communication, etc.).
  - d. Briefing to all teams by Safety Officer
  - e. Contact focal persons in the Emergency Stakeholders - RBA/ RBP; Health Help Center/ HEOC; MoE's EOC; etc.
  - f. Deployment of teams – SAR; emergency medical; evacuation; relief, service Restoration, Transportation etc.
7. Chairman of TDMC/Emergency Operation Center Commander to submit rapid assessment report and IAP to NEOC through the TEOC
8. Logistics and Finance to mobilize resources as per the IAP
9. Debrief of the day's response – At Team level, Desk level and EoC level
10. Planning Desk - based on de-brief information to plan for operations for the next day
11. Identified contingency stakeholders (as detailed under section 6.5) to provide their services for relief and response as agreed
12. Liaison officer to submit list of resources required to the NEOC
13. Liaison officer to depute volunteers based on needs in the field
14. Public information officer to provide timely press releases and advisories

**Figure 3 – TEOC Communication Network**



### **6. Priority Preparedness Actions to Ensure Effective Response**

For effective execution of the earthquake contingency plan and to ensure all the response requirements are met, the following priority preparedness actions are identified for urgent implementation:



**Table 6 – Response Requirements and Preparedness Actions**

Area	Response Requirements	Priority Preparedness Actions	Responsible Agency
<b>I. Policy support and institutional arrangement</b>	Clear roles and responsibilities and; decision making and information flow mechanism during disasters, at the national level	Policy instruments/clear directives from NDMA/DDM regarding the roles and responsibilities of national agencies and institutions	NDMA/DDM
		Clear clusters and coordination mechanism at national level for disaster response from NDMA/DDM	NDMA/DDM
		Policy decisions regarding the required resources and financial authorities and access	NDMA/DDM
		Regulations and administrative provisions from Thromde to support the contingency plan	TDMC
<b>II. Within the Golden Hours</b>			
a. Declaration of Disaster	Declaration of disaster type as per DM Act 2013. Activation of contingency plan, Thromde Emergency Operation Center (TEOC) and coordinating with NEOC.  Deployment of emergency rapid assessment teams  Carrying out emergency planning and deploying response (SAR, first aid, evacuation) and relief teams.  Restoring key governance functions and lifeline	Procedures for declaring disaster types ( <b>Annex III – Forms</b> ) Establishment of TEOC; Procedures to check staff safety and Staff call back procedures; SOPs and Protocol between TEOC and NEOC; Emergency coordination structure  Assessment procedures and tools; Training of rapid assessment teams  Formation of teams with clear responsibilities; provide appropriate training; carry out drills and exercises  Pre-agreements with key agencies to restore lifeline facilities	DDM; TDMC  TDMC; Operations Desk; Rapid Assessment Team; DDM  TDMC; Desks and Teams; Emergency Response Agencies; Contingency stakeholders  TDMC; Key agencies

	<p>facilities and emergency transportation landing pads.</p> <p>Maintenance of public order and protection including traffic management.</p>	<p>Pre-agreements with key agencies; training in traffic and crowd control</p>	<p>TDMC; RBP</p>
b. Life Saving	<p>Support provision of Search and Rescue services (rural and urban), including in collapsed structures.</p> <p>Providing emergency medical evacuation and services.</p> <p>Evacuation of affected families to designated safe areas.</p>	<p>Capacities in Urban SAR and SAR in collapsed structures; Pre-agreements with key agencies on SAR</p> <p>Pre-arrangements for emergency first aid and medical support with MoH/ hospitals; Emergency medical capacities and resources available with hospitals, BHUs and other health facilities.</p> <p>Identification of evacuation sites and routes; Evacuation teams and procedures; Facilities at evacuation sites</p>	<p>TDMC; RBP</p> <p>TDMC; Ministry of Health; Hospitals; BHUs</p> <p>TDMA; Operations desk; Evacuation team</p>
c. Emergency relief operation	<p>Provision of humanitarian and basic needs at evacuation sites and to all other affected families:</p> <p>Food – Basic food provisions/ rations as per relief standards.</p> <p>Water and Sanitation – Provision of safe drinking water facilities at identified evacuation sites and emergency water purification options; and emergency toilets and sanitary supplies – as per relief standards.</p> <p>Health – Provision for emergency first aid and medical services to the injured and medical evacuation for serious conditions. Provision for</p>	<p>Stockpiling of food/basic provisions as per relief standards; transportation and distribution arrangements</p> <p>Establishment of safe drinking water facilities at identified evacuation sites; identification of alternate drinking water sources; agreed options for emergency water purification and stockpiling; agreed standards and provisions for emergency toilets; and provision of sanitary supplies.</p> <p>First aid team and training; pre-agreements with hospitals/ Ministry of Health for emergency medical services, medical evacuation and medical camps at evacuation sites.</p>	<p>TDMC; MoA; FCB</p> <p>TDMC</p> <p>TDMC; MoH; Hospitals; BHUs</p>

	<p>medical camps at evacuation sites.</p> <p>Shelter – Provision of temporary shelters as per pre-agreed designs and standards.</p> <p>Social and protection - Assist and protect vulnerable groups; support emergency tracing and reunification of separated families; emergency counseling and psychosocial support; safety and protection in evacuation sites.</p> <p>Management of dead bodies – Ensure transportation and storing of unidentified bodies in morgue and identified emergency morgue sites.</p>	<p>Agreed shelter designs; Shelter team and training; stockpiling of materials for shelter construction</p> <p>Psycho-social and counseling team and training; evacuation site safety teams; Re-unification plan, information dissemination and procedures.</p> <p>Identification of morgue and alternate sites; Procedures for dead body storing, identification and release; Pre-agreement with hospitals/ Ministry of Health</p>	<p>TDMC</p> <p>TDMC; MoH; RBP</p> <p>TDMC; MoH; Hospitals</p>
<b>III. First Two Weeks</b>			
a. Sustained relief operation	<p>Ensure sustained basic humanitarian needs for affected families and maintain public order including traffic management.</p> <p>Provide continuous safety and awareness information to the public on the earthquake, aftershocks, its effects, etc.</p> <p>Regulate market supplies and prices and establish relief supply chain including warehouses, transportation fleets, and distribution network.</p>	<p>Ensure replenishment of stockpiles; Relief fund/ support mobilization procedures; Coordination with police and Deesuups.</p> <p>Awareness and information dissemination teams; Coordination with NEOC and support from DDM and relevant technical agencies.</p> <p>Pre-agreement with suppliers; identification of storage facilities and transportation arrangements; ensuring proper distribution and accountability.</p>	<p>TDMC; NDMA; DDM; Response Agencies; Contingency stakeholders</p> <p>TDMC; NDMA; DDM;</p> <p>TDMC; BCCI; MoEA</p>

	<p>Ensure TEOC operates at required scale with the activation of planning, financing and coordination functions and task teams as appropriate.</p> <p>Continue coordination with NEOC and with other relief agencies and actors.</p>	<p>TEOC capacities; Formation and training of various teams.</p> <p>Coordination mechanisms and procedures.</p>	<p>TDMC</p> <p>TDMC</p>
b. Moving into early recovery	<p>Initiate damage and recovery and re-construction need assessments.</p> <p>Conduct post-earthquake safety assessment of homes and buildings to ensure their safety.</p> <p>Continue restoring basic and critical public utilities and services.</p> <p>Support establishment of temporary learning spaces or re-opening of schools.</p>	<p>Agreed tools and trained teams for assessments.</p> <p>Agreed tools ad trained teams for assessment.</p> <p>Required stockpiles, supplies, manpower.</p> <p>Linkages with school DM plans and coordination with Ministry of Education.</p>	<p>TDMC; DDM</p> <p>TDMC; DDM; MoWHS</p> <p>TDMC; Concerned Agencies</p> <p>TDMC; MoE</p>

## 7. Contingency Stakeholders

**Table 7 – Contingency Stakeholder Roles**

<p><b>1. Royal Bhutan Police (RBP)</b></p> <p>Focal Person - Major Ugyen Wangdi, Mobile Number: 17708085</p> <p>Teams associated with – Evacuation, SAR</p>
<p><b>Roles -</b></p> <ol style="list-style-type: none"> <li>1. Evacuation of casualties and rescue operation</li> <li>2. Safeguarding the properties from larceny</li> <li>3. Control movement of people and traffic in a disaster zone</li> <li>4. Maintain law and order in the affected zone</li> <li>5. Dispatching of fire service team for fire control and rescue</li> <li>6. Assess the situation and inform the disaster control center</li> </ol>

Resource available	Quantity	Location	Specification
Inflatable boat	1 No.	FSD	Seamax ocean 430
(New Technology) NT bag	2 Nos.	FSD	ResQtec
Spreader	1 No	FSD	ResQtec
Ram	1 No.	FSD	ResQtec
Diamond chain with cutter	1 No.	FSD	Aska
Power Unit (MTO)	1 No.	FSD	REsQtec
Line Throwing Gun	1 No.	FSD	ResQmax
Inflatable lighting tower	4 Nos.	FSD	Aska
Stretcher	2 Nos	FSD	Junkin
Power Chain Saw	1 No.	FSD	Steel

## 2. Royal Bhutan Army (RBA)

Focal Person – Major Thinlay Gyeltshen Mobile Number - 17977727  
[adrcahp@gmail.com](mailto:adrcahp@gmail.com)

Teams associated with – Evacuation, Search and Rescue, Relief, Debris clearing, Service Restoration, Transportation

### Roles -

1. Provide SAR services
2. Provide evacuation services
3. Facilitate emergency evacuation and the provision of emergency medical services
4. Facilitate the clearing of debris and restoration of services
5. Facilitate transportation and distribution of relief
6. Support establishment of evacuation shelters

Name of Resources	Quantity available	Location	Specification and quality
Light Search and Rescue	One Task Team (1:10)	Thimphu	CAMP, One

## 3. Ministry of Health (MoH)

Disaster Focal Person: Sonam Wangdi; Mobile Number - 17777419  
[swangdinacp@gmail.com](mailto:swangdinacp@gmail.com),  
 Emergency Medical Service Division

Teams associated with – Emergency Medical, Transportation, Evacuation

### Roles -

1. Provide medical services in all JDWNRH, BHUs, Satellite clinics
2. Ensure safety of medical in-house patients and set up emergency clinics

3. Set up clinics and provide medical staff to evacuation centers based on needs submitted by Thromde
4. Provide health care including emergency care to the community following Disaster.
5. Respond to health needs as submitted by Thromde
6. Collaborate with other partners in addressing public health issues in disaster planning.
7. Advocate on injury prevention, food water safety, immunization and vector control to prevent diseases.
8. Assist Thromde or RBP in handling infected dead body or bodies with universal precautions.
9. Assist Thromde or RBP in preserving dead body using chemicals as per the national policy or standards.

#### 4. Bhutan Telecom and Tashi Cell

**Focal Person –**

1. Bhutan Telecom - Sonam Tashi; sonam.tashi@bt.bt; Mobile Number - 17113400
2. Tashi Cell - Ganga R. Sharma, General Manager, Network Operations, Mobile Number - 77889977/ 77107710; dhungel@tashicel.com

**Roles:**

- Free reserve capacity for emergency purposes
- Provide immediate restoration of telecommunication facilities based on their own assessment and on assessments conducted by Thromde
- Provide alternative/ emergency communication system
- Maintain an excess Capacity in the Network
- Ensure priority call routing for personnel involved in “response and recovery”.

#### 5. Bhutan Info-Com and Media Authority (BICMA)

Focal Person – Sonam Jamtsho and Wangay Dorji; Mobile Number - 17624363  
[sonamxtso@bicma.gov.bt](mailto:sonamxtso@bicma.gov.bt) & [Wangay.dorji@bicma.gov.bt](mailto:Wangay.dorji@bicma.gov.bt)

**Roles:**

- Ensure SOPs to provide communication priority numbers, numbers to be finalized with all stakeholders.
- One frequency to be assigned for disaster management stakeholders
- Priority numbers to cater to communication during emergency.
- Provide awareness to public to use SMS rather than voice call.
- Support alternate emergency communication system for disaster

#### 6. Bhutan Power Corporation (BPC)

**Focal Person: Sonam P Tshewang ([sonamptshewang@bpc.bt](mailto:sonamptshewang@bpc.bt), 17118177)**

**Roles**

- a. Provide immediate restoration of power facilities based on their own assessment and on assessments conducted by Thromde
- b. Support emergency power facilities

Resource available	Qty.	Location	Specification	Required quantity	Source
--------------------	------	----------	---------------	-------------------	--------

66/33/11kV Jimena S/S	1	Jimina	5MVA x 1 no	5MVA	66kV from Olakha and Chomdo
33/11/0.415 kV Gidakum Power house	1	Gidakom	1.6MVA x 1no	1.6MVA	66/33/11kV Jimena S/S and Hydro Genset
33/11kV Babesa S/S	1	Babesa	5MVA x 2 nos	10MVA	66/33kV Olakha S/S
33/11kV DPH S/S	2	Changzamtok	5MVA x 3 nos and 2.5MVA x 1no	17.5MVA	66/33kV Olakha S/S
33/11kV RICB S/S	1	Below Changangkha Lhakhang	5MVA x 2 nos	10MVA	66/33kV Olakha S/S and 66/33/11kV Pangrizampa S/S
33/11kV Motithang S/S	1	Motithang below HTMTI	2.5MVA x 2 nos	5MVA	66/33kV Olakha S/S and 66/33/11kV Pangrizampa S/S
33/11kV TMH S/S	1	Samtiling	2.5MVA x 2 nos	5MVA	66/33kV Olakha S/S, 66/33/11kV Pangrizampa S/S and Hydro Genset
66/33/11kV Pangrizampa S/S	1	Pangrizampa	10MVA x 2nos for 66/33 kV level and 2.5MVA x 2nos for 33/11kV side	15mVA	220kV Simtokha S/S
33/11kV Chubachu S/S	1	Chumachu	5MVA x 2 nos	10MVA	66/33kV Olakha S/S

### 7. Food Corporation of Bhutan

**Focal Person: Cheney Dema , Mob no: 77231805**

**Roles:**

- a. Provide supply of food items based on needs submitted by Thimphu Thromde and as per the standards of relief
- b. Provide support in carcass disposal
- c. Inflation control

Name of Resources	Quantity available	Location	Specification and quality	Required quantity	Source
All most all food essential	n/a	Changjiji, Babesa, Changzamtog	Not fixed (depends on market demand)		Phuentsholing

### 8. Bhutan Chamber of Commerce and Industry; Pvt. Sector

Focal Person – Sonam Dorji, Mob no: 77114051

**Roles:**

- a. Provide equipment and vehicle support during an earthquake based on request from Thimphu Thromde
- b. Support provision of food, water, tents, blankets

- c. Provide financial assistance, if possible, for response, relief, and recovery efforts
- d. Support regulation of market rates

**9. Bhutan Post**

Focal Person: Tashi Phuntsho - Mobile no: 77190173

**Roles:**

- a. Provide logistical support during an earthquake based on request from Thimphu Thromde in terms of sorting, packing and distributing relief supplies;
- b. Support coordination of inter-agency logistics;
- c. Provide assistance to the Thromde’s logistic team.

**8. Implementation of the Plan and Review Arrangements**

- The DM focal person and the Environment Division shall facilitate implementation of the plan. The TDMC shall print the contingency plan for purpose of coordination and public awareness.
- The TDMC shall meet at least twice a year to review the contingency procedures and to ensure and review the implementation of the priority preparedness, risk reduction and resource mobilization activities, including simulation exercises and drills.
- The TDMC will establish the various desks and teams along with detailed capacity needs assessment and plans for necessary capacity building and stock piling of resources.
- The TDMC shall ensure the implementation of the provisions of the contingency plan in coordination with the DDM, the response agencies, contingency stakeholders and with support from international and national partners and donors.
- The TDMC and the Thromde Sector heads will be responsible for facilitating implementation of the plan and ensuring that priority activities are incorporated into their annual and five year plans.

**9. Action Plan for Implementation of Priority Preparedness and Risk Reduction Priorities**

**Table 8 – Priority Preparedness and Risk Reduction Actions**

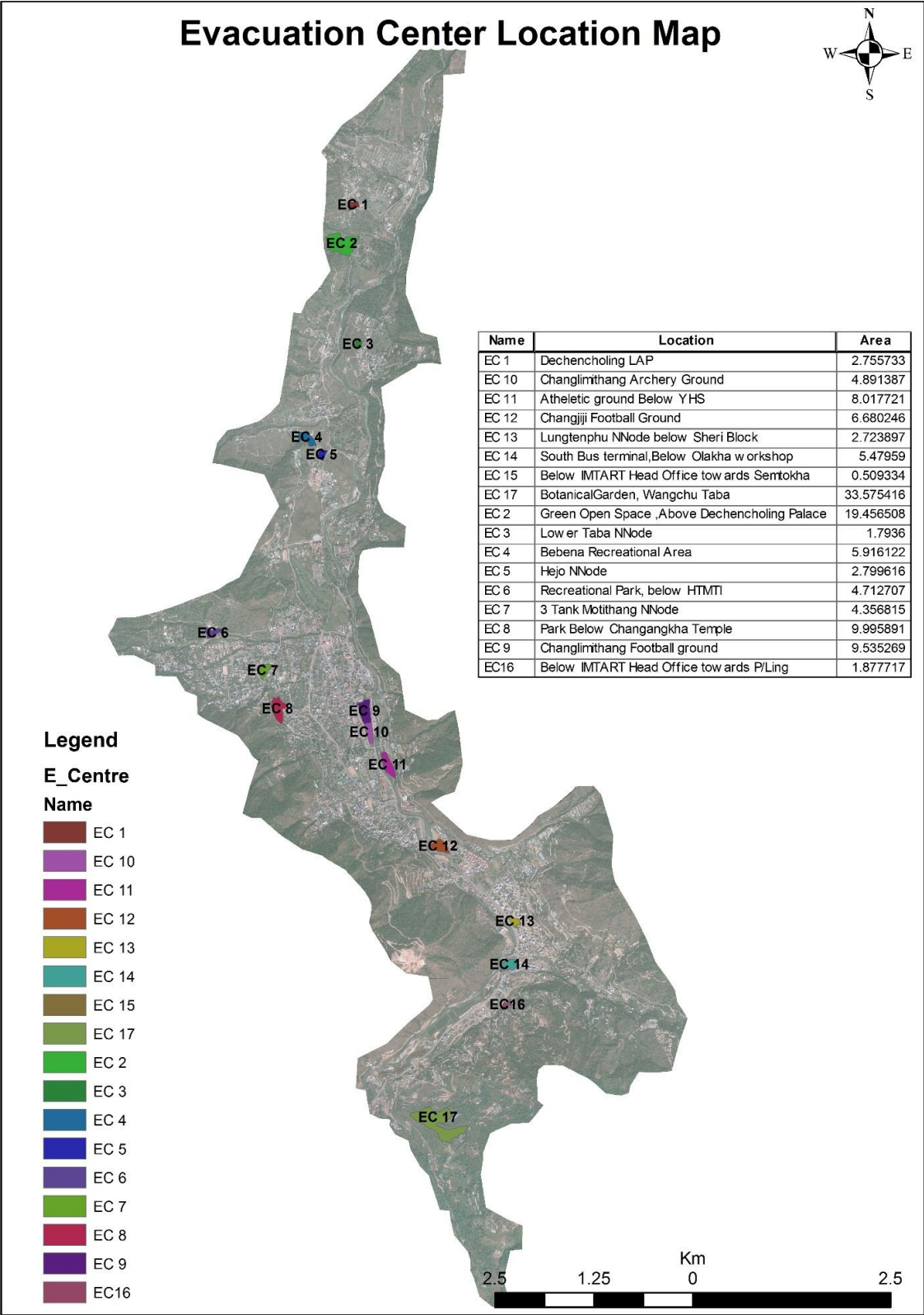
	<b>Priority Actions</b>	<b>Responsible Agency</b>
1.	Map secondary hazards such as landslide, liquefaction prone areas.	TDMC with relevant agencies
2.	Develop a Thromde Disaster Management Plan	TDMC with support from DDM



3.	Initiate local risk management activities in vulnerable communities	TDMC
4.	Conduct detailed vulnerability assessment of lifeline systems such as water supply, drainage, power, fuel, communications, bridges, fire services, roads, etc.	TDMC with relevant agencies
4.	Strengthen seismic performance of existing critical infrastructures such as hospitals, schools, bridges and emergency services	Relevant Agencies
5.	Develop and implement action plans to strengthen minimum safety standards and step up building standard and code compliance monitoring	TDMC
6.	Seek endorsement of the Earthquake CP and clear directives from NDMA/DDM regarding the roles and responsibilities of national agencies and institutions and coordination mechanism at national level for disaster response	TDMC with support from DDM
7.	Ensure procedures for declaring disaster types and agreement on activation protocol and Escalation and De-escalation protocol with DDM	TDMC with support from DDM
8.	Establishment of a functional TEOC and required procedures	TDMC with support from DDM and other national/international agencies
9.	Put in place Standard Operating Procedures for: <ul style="list-style-type: none"> <li>- Staff safety and call back</li> <li>- Protocols between TEOC and NEOC</li> <li>- Rapid assessments</li> <li>- SOPs for each team</li> </ul>	TDMC with support from DDM
10.	Formation of teams with clear responsibilities; provide appropriate training; carry out drills and exercises	TDMC
11.	Put required pre-agreements in place with response agencies and emergency stakeholders, as required (SAR, Evacuation, Emergency Medical Services, Relief, Transportation, Debris Clearng, Service Restoration, etc.)	TDMC in coordination with concerned stakeholders/ agencies
12.	Identification of evacuation sites and routes and installation of basic facilities at evacuation sites	TDMC
13.	Develop inventory of resources which will be critical for emergency response	TDMC
14.	Work to improve the communications and transportation networks, including setting up of a public announcement system	TDMC with support from communication and transport agencies
15.	Conduct periodic mock drills and simulation exercises	TDMC

16.	Mobilize volunteers and provide basic emergency response training	TDMC with support from local CSOs

### **Annex I – Thimphu City Evacuation Site Map**



Annex II – Key Contacts

	Person	Designation/Organization	Contact Number
<b>1.</b>	<b>Thromde Emergency Operation Centre</b>		
<b>2.</b>	<b>Thromde Disaster Management Committee</b>		
a.	Kinlay Dorjee	Thrompon/TT	17655191
b.	Passang Dorji	Executive Secretary/ TT	77205370
c.	Ugyen	Thromde Thuemi, Dechenchholing/Taba	17674872
d.	Mrs. Phub Dem	Thromde Thuemi, Bangdro/ Olakha	17671707
e.	Kunga Yonten	Thromde Thuemi, Thimphu Norzin	17640193
f.	Ugyen Penjor	Thromde Thuemi, Jungshina/Kawajangsa	17627474
g.	Namgay Tsheirng	Thromde Thuemi, Babesa	17604871
h.	Rinzin Dorji	Thromde Thuemi, Changangkha	17116181
i.	Dorji Dema	Thromde Thuemi, Motithang	17963076
j.	L.B. Pradhan	SP, RBP	
l.	Jigme Dorji	Operation Desk Chief	17953764
m.	Hastabahadhur Sangpang	Logistic Desk Chief	17604202
n.	Kinley Penjore	Planning Desk Chief	17379020
o.	Jasraj Limbu	Focal Person/ Member secretary	17938554
<b>3.</b>	<b>Team Coordinators</b>		

a.	Jigme Tshendu	SAR team coordinator	17648440
b.	Jigme Chhetri	Emergency medical team coordinator	17612945
c.	Palden Khandu	Rapid assessment team coordinator	17118448
d.	Tashi Tshering	Evacuation team coordinator	17602119
e.	Sangay Wangdi	Debris clearing team coordinator	17607857
f.	Nakhphel Drukpa	Service restoration team coordinator	77237374
g.	Yeshi Wangdi	Dead body management team coordinator	77305005
h.	Phurba Tshering	Carcass disposal team coordinator	17331619
i.	Ashok Sunwar	Relief team coordinator	17943462
j.	Sonam Rinzin	Procurement team coordinator	17849510
k.	Pema"Koktong"	Transportation team coordinator	77235539
l.	Sonam Tshewang	Planning team coordinator	17631692
m.	Udesh Chhetri	Finance team coordinator	17606887
<b>4.</b>	<b>NEOC/ Department of Disaster Management</b>	325035/321004/327319/321792	
<b>5.</b>	<b>Response Agency Focal Persons</b>		
a.	Fire Services Division, Royal Bhutan Police	Major Ugyen Wangdi	17708085
b.	Ministry of Health	Sonam Wangdi, Emergency Medical Services Division	17777419
c.	Ambulance	Emergency Number	112
d.	Fire Services	Emergency Number	110
e.	Police Services	Emergency Number	113
f.	Traffic Police	Emergency Number	111
<b>6.</b>	<b>Emergency Stakeholder Agency Focal Persons</b>		

a.	BICMA	Sonam Jamtsho and Wangay Dorji	17624363
b.	Bhutan Power Corporation	Sonam P Tshewang	17118177
c.	BCCI	Sonam Dorji	77114051
d.	Bhutan Post	Tashi Phuntsho	77445033
e.	Food Corporation of Bhutan	Cheney Dema	77231805

**Annex III**

## Disaster Type I and II Declaration and Extension Forms

### Form 1

### Request for approval to declare disaster Type I or Type II

(This form is in accordance with Section 99 of the Disaster Management Act of Bhutan, 2013)

#### SECTION 1:

*To be completed by the Chairperson of the Dzongkhag Disaster Management Committee*

A disaster situation is proposed to be declared for the:

Dzongkhag/or part of a Dzongkhag:	
-----------------------------------	--

I request the Authority for approval to declare Type I/II disaster ( <i>Please tick the appropriate box</i> )	Type I
	Type II

Details on the nature of disaster, extent of damages and any other information including justification for its declaration: ( <i>Attach further documentation is necessary</i> )	
--	--

The declaration is necessary for the following reasons:

*(Please tick the appropriate box/es)*

*(NB: To declare a disaster situation at least one of the following must be valid)*

A disaster has happened in the Dzongkhag	
A disaster is happening in the Dzongkhag	

AND

I have taken reasonable steps to consult with:

*(Please tick if completed)*

The Dzongkhag Disaster Management Committee	
Each local government whose area is in or partly in the area of proposed declaration	
Ministry and agency concerned	

Name:	
Dzongkhag:	

Phone Number:	
Signature:	
Date and time:	

**SECTION 2:**

To be completed by the Chairperson of the Authority

I (approve/withhold) the request for declaring a disaster situation.

Date and time of granting or withholding approval:	
--	--

-----  
**Chairperson of the National Disaster Management Authority**



## Extension of a disaster situation for Type I or Type II

(This form is in accordance with Section 102 of the Disaster Management Act of Bhutan, 2013)

### SECTION 1:

*To be completed by the Chairperson of the Dzongkhag Disaster Management Committee*

*It is requested that the current declaration of a disaster situation be extended for the :*

The Dzongkhag or defined area within the Dzongkhag:	
---	--

Date and time the original declaration commenced		Current ending date for declaration:	
--	--	--------------------------------------	--

*(NB: maximum extension period allowed is not more than 10 days)*

Ending date and time of previous extensions: <i>(if relevant)</i>	
--	--

Proposed new ending date of declaration:	
--	--

Reason for extension:	
-----------------------	--

Name:	
Dzongkhag:	
Phone Number:	
Signature:	
Date:	

### SECTION 2:

*To be completed by the Chairperson of the National Disaster Management Authority*

I (approve/withhold) the request for the extension of declaration of disaster situation.

Date and time of granting or withholding approval:	
--	--

-----  
**Chairperson of the National Disaster Management Authority**