

## **OBJECTIVES OF THE PLAN**

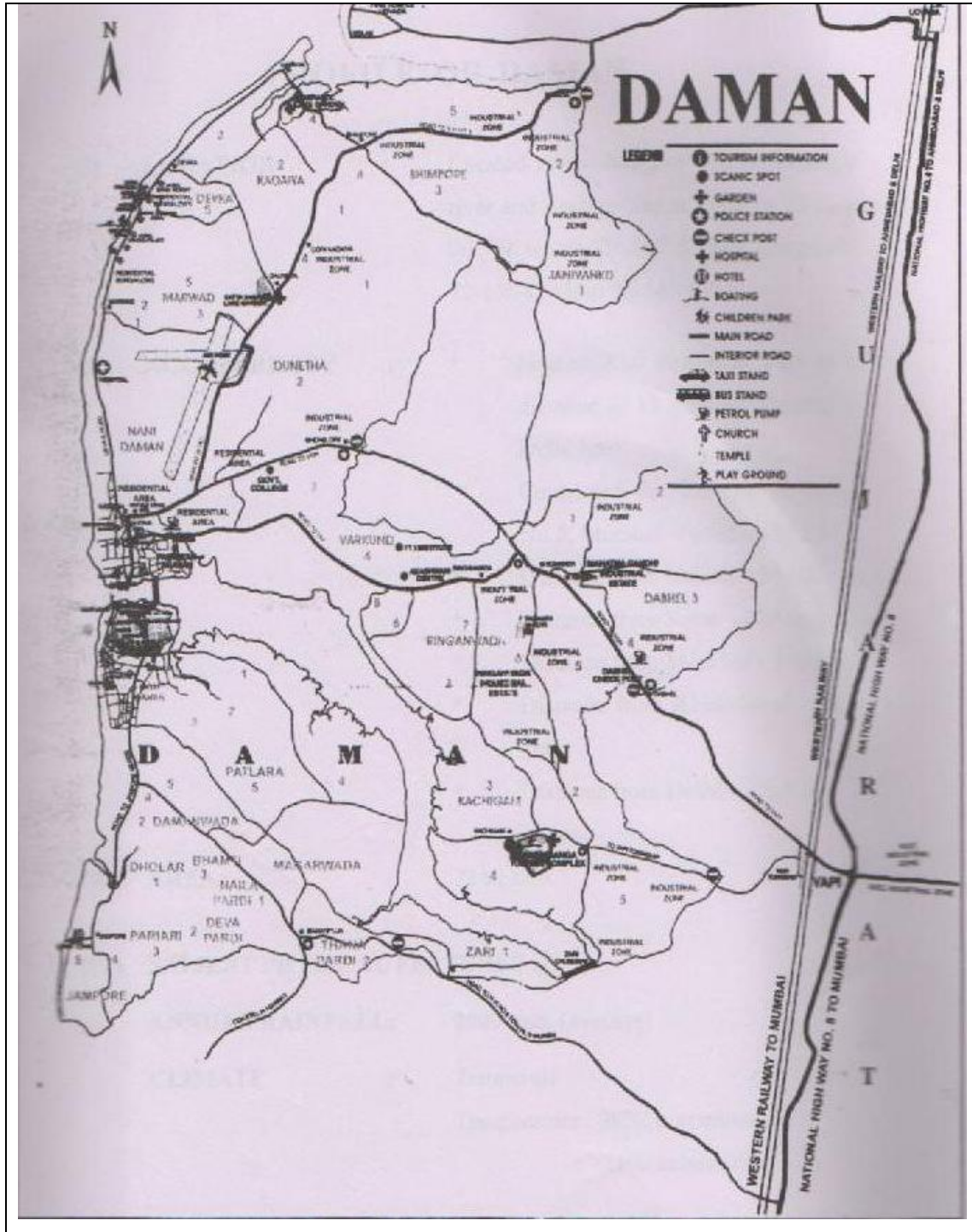
The basic objectives of Daman District Disaster Management Plan is to minimize the impact of disaster on human lives and property, relief to those" affected and restoration of normalcy at the earliest.

This objective can be achieved by undertaking the following **course of action**:-

1. Improving preparedness at the district level through risk and vulnerability analysis.
2. Ascertaining the status of existing resources and facilities available with various Government departments, Police, Fire, Coast Guard, Municipal Council, Panchayat, private Sectors, NGOs and Community for management of disaster in the district administration, for deployment of resources in disaster situation and to face disaster in most effective way.
3. Documentation of disasters in the district with a view to compile critical information and develop insight into management of disasters and evolve future strategies.
4. To protect life and property and to ensure mitigation of disaster to the maximum extent possible with relief to those affected and restoration of normalcy to the earliest.

# CHAPTOR: - 2

## REGIONAL MAP OF DAMAN



## PROFILE OF DAMAN

1. LOCATION	: Located at the Sangam of Damanganga river and Arabian Sea at Latitude 20-22'-00" N to 20-27'-25" N and Longitude 72-49'-42" E to 72-54'-43" E.
2. ACCESSIBILITY	<ul style="list-style-type: none"> <li>• Nearest Rail station is Vapi at a distance of 13 Kms on Mumbai-Delhi line.</li> <li>• Connected to National Highway No. 8, Mumbai-Vadodara – Delhi.</li> <li>• Distance from Valsad – 35 Kms.</li> <li>• Distance from Surat – 120 Kms.</li> <li>• Distance from Mumbai – 192 Kms.</li> <li>• Distance from Ahmedabad – 367 Kms.</li> <li>• Distance from Delhi – 1800 Kms.</li> </ul>
3. AREA	• 72 sq. Kms.

### SALIENT PHYSICAL FEATURES.

Sr. No.	Particulars	Unit	Daman District
1.	Climate Temperature	-	Mild & Warm

2.	Temperature i) Mean Maximum ii) Mean Minimum	Degree Centigrade	31 22
3.	Rainfall for the year 2013	MM	2529.1
4.	Humidity	% (between)	26-100
5.	Maximum Wind speed	Km/Hour	30

**(I) CENSUS 2011.****Population Statistics**

Sr. No.	Particular		Unit	Daman District	Daman and Diu	% in Daman
1.	Area	Rural	Sq. Kms.	35.14	57.38	48.80
		Urban	Sq. Kms.	36.86	54.62	51.19
	Total		Sq. Kms.	72.00	112.00	100.00
2.	Population	Rural	Nos.	32313	60396	16.90
		Urban	Nos.	158860	182851	83.09
	Total		Nos.	191173	243247	100.00
		Male	Nos.	124659	150301	65.21
		Female	Nos.	66514	92946	34.79
	Total		Nos.	191173	243247	100.00
3.	Population Density 2011		Per Sq. Km	2655	2172	
4.	Sex ration		No. of females per 1000 males.	534	618	

**CATEGORISATION OF POPULATION:**

Particulars		2001 Census		2011 Census	
		Numbers	%	Numbers	%
Schedule Caste	Male	1627	-	2224	1.78
	Female	1438	-	2038	3.06
	Total	3065	2.69	4262	2.23
Schedule Tribes	Male	7128	-	7702	6.17
	Female	6753	-	7538	11.33
	Total	13881	12.18	15240	7.97

**NO. OF WORKERS**

1. Total Workers: 58847
  - a. Main workers 56228
  - b. Marginal workers: 2619
2. No. of Households: 11473
3. No of occupied residential houses: 10507.

**VILLAGE-WISE POPULATION DISTRIBUTION**

Sr. No.	Name of village	Unit	Total population
	Daman District		
1	Bhamti	Nos.	939
2	Bhimpore (CT)	Nos.	10936
3	Dabhel (CT)	Nos.	52578
4	Damanwada	Nos.	1176
5	Devapardi	Nos.	255
6	Devka	Nos.	3461
7	Dholar	Nos.	1184
8	Dunetha (CT)	Nos.	12470

9	Jampore	Nos.	875
10	Janivankad	Nos.	2063
11	Kachigam (CT)	Nos.	18434
12	Kadaiya (CT)	Nos.	12717
13	Magarwada	Nos.	6735
14	Marwad (CT)	Nos.	7443
15	Nailapardi	Nos.	827
16	Palhit	Nos.	345
17	Pariari	Nos.	1891
18	Ringanwada	Nos.	4953
19	Thanapardi	Nos.	1091
20	Varkund	Nos.	5355
21	Zari	Nos.	1163
	Total population of villages, (excluding 6 villages counted as Census Town.)	Nos.	32313
	Total population of 6 villages, considered as Census Town.	Nos.	114578
	Total (Daman)	Nos.	146891

# (CT) 6 villages has been declared as Census towns and their population are included in Urban Area.

#### ADMINISTRATIVE SET UP

Sr. No.	Particular	Unit	Daman District
	<u>ADMINISTRATIVE STRUCTURE</u>		
1.	District	Nos.	1
2.	Talukas/Tahsils	Nos.	1
3.	Blocks	Nos.	1
4.	District Panchayat	Nos.	1
5.	Village Panchayats	Nos.	10
6.	Villages	Nos.	21

7.	Census Villages	Nos.	15
8.	Municipal Councils	Nos.	1
9.	Statutory Towns	Nos.	1
10.	Census Towns	Nos.	6
11.	Urban Wards	Nos.	15

**(II) AGRICULTURE LAND USE**

Area wise land utilization	Hectares
Net cultivation	2832
Permanent pasture & Grazing land	174
Area under crops	
• Paddy	1783.34
• Other cereals and Small millets	187.13

**(III) AGRICULTURAL DEVELOPMENT**

Irrigation Potential created,	Unit	Area
Minor irrigation (31.3.2000)	Ha.	833.73
Net irrigated area	Ha.	242.44
Area covered under HYV	Ha.	1000
Diesel pumps installed	Nos.	03
Electric pumps installed	Nos.	385
Village covered with safe drinking water supply:	Nos.	100%
i) With piped water supply through Stand post .		668
ii) Bore wells (hand pumps)		597

**(IV) ANIMAL HUSBANDARY & VETERINARY**

## Basic Infrastructure

i) Veterinary Hospitals	Nos.	Nil
ii) Veterinary Aid Centers	Nos.	02
iii) Veterinary Dispensaries	Nos.	01
iv) Veterinary Doctor	Nos.	01
v) Govt. Dairy demonstration farms	Nos.	01
vi) Govt. poultry farm	Nos.	01
vii) No. of slaughter houses		
▪Registered	Nos.	02
▪Unregistered	Nos.	11

**(V) LIVE STOCK POPULATION CATTLE**

Indigenous Cattle	Nos.	2037
Buffaloes	Nos.	512
Total Sheep	Nos.	0
Total Goats	Nos.	791
Total Horse and Ponies	Nos.	26
Total Donkeys	Nos.	0
Total Pigs	Nos.	00
Total Dogs	Nos.	522
Total Fowls	Nos.	16499



**(VI) FOREST AND WILDLIFE**

<b>Sr. No.</b>	<b>Particulars</b>	<b>Unit</b>	<b>Daman</b>
1	R F Area	Ha.	23.90
2	P R F Area	Ha.	67.35
	Total	Ha.	91.25
3	Bird Sanctuaries area	Nos. Area (Ha)	-
4	No. of Forest Check Post	Nos.	4
5	No. of Forest Beats	Nos.	5

**(VII) FISHERIES**

<b>Fishing Gears Crafts</b>	<b>Unit</b>	<b>2011-12</b>	<b>2012-13</b>
i) Total Gill netters	Nos.	415	419
ii) Total liners	Nos.	--	--
iii) Total Seiners	Nos.	--	--
iv) Total Traditional Crafts	Nos.	343	253
v) Total fishing gears	Nos.	184520	212365
9.2) No. of fishing vessels	Nos.	1452	1475
9.3) Fish production	tones	17.38	19.345

**(VIII) TRANSPORT**

i) Road length (surfaced) km. 191

ii) Number of vehicles (as on 31/03/2014)

Sr. No.	Particulars	Unit	Daman District	Daman & Diu
1	Two wheelers-Motor Cycles/Scoter/Mopeds	Nos.	48829	65218
2	Three Wheelers (Auto Rickshaws/Delivery vans/Pick-up Vans etc)	Nos.	2294	2800
3	Light Motor Vehicles/Taxies/Jeeps/Ambulances/Omni Bus	Nos.	26013	27182
4	Mini Bus/Bus (Stage Carriage/Contract Carriages)	Nos.	461	557
5	Tractors	Nos.	307	514
6	Trailers/Crane/Excavator/Fork Lift/Loader	Nos.	286	421
7	Light Commercial Vehicles/Delivery Vans(4 wheelers)	Nos.	2227	2381
8	H.G.V./M.C.V./Articulated vehicles/Tanker	Nos.	3615	3884
9	Motor Cycle Pass(TR)	Nos.	0	37
	<b>Total Vehicles</b>	<b>Nos.</b>	<b>84032</b>	<b>102994</b>

**(XIII) COMMUNICATION**

<b>a)</b> No. of post office	No.	03
<b>b)</b> Telephone connection	No.	4940
<b>c)</b> Telephone exchange	No.	05
<b>d)</b> Radio Relay Stations	No.	01
<b>e)</b> TV Relay Stations	No.	01

**(IX) EDUCATION**

a) Total Education Institutes	Nos.	110
ii) No. of Govt. Primary Schools	Nos.	34
iii) No. of Govt. Middle Schools	Nos.	24
iv) No. of Non-Govt. aided school	Nos.	03
v) No. of Non-Govt. unaided school	Nos.	14
vi) No. of Govt. Secondary school	Nos.	12
vii) No. of Non-Govt. Secondary School (Aided)	Nos.	03
viii) No. of Non-Govt. unaided Secondary Schools	Nos.	05
ix) No. of Govt. H.S.S.	Nos.	05
x) No. of aided H.S.S.	Nos.	03
xi) No. of Jawahar Navodaya Vidyalaya	Nos.	1
xii) No. of College	Nos.	1
xiii) Technical School/Centre	Nos.	1
xiv) Polytechnic	Nos.	1
xv) No. of ITI	Nos.	1
xvi) No. of professional college (B.Ed)	Nos.	2

**b) No. of Teachers**

i)	Govt. Primary/Middle/Secondary/ H.S.S. Teacher	Nos.	430
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ii)	Non-Govt. Primary/Middle/Secondary H.S. /H.S.S. Teacher	Nos.	176
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	No. of students enrolled		26,174
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**(X) POWER**

## i) Voltage Supply

Magarwada	KV S/S	220/66
Kachigam	KV S/S	66/11
Dalwada	KV S/S	66/11
Dabhel	KV S/S	66/11
Ringanwada	KV S/S	66/11
Varkund	KV S/S	66/11
Bhimpore	KV S/S	66/11

## ii) Contract demand – Mx/Min demand

Total – Max	M.V.	270
Min	M.V.	130

## iii) Installed capacity

Total	MVA	340
Magarwada	MVA	250
Kachigam	MVA	80
Dalwada	MVA	60
Dabhel	MVA	80

Ringanwada	MVA	40
Varkund	MVA	32
Bhimpore	MVA	30

iv) Energy purchased KWH (Lakh) 2185

**(XI) INDUSTRIES & MINERALS**

**INDUSTRIES**

i)	No. of registered units		
	As on 31.03.2013	Nos.	3232
ii)	Capital investment		
	as on 31.03.2013	Rs. Crore	4130.95
iii)	Employment up to 31.03.2013	Nos.	81365

**(XII) MINOR MINERALS**

i) 21 Numbers lease Holder Units

**(XIII) HEALTH SERVICES**

**HEALTH INFRASTRUCTURE:**

<b>Infrastructure</b>	<b>No.</b>
Hospital (Govt.)	1
Community Health Centre	1
Primary Health Centre	2
Sub – Centers	20

Hospital (Private)	9
Bed Strength (Govt.)	202
Blood Bank with BCSU (Govt.)	1
Integrated Counseling & Testing Centre (Govt.)	3
STI Clinics (Govt.)	2
AYUSH Centre	3

**HEALTH MANPOWER SANCTIONED STRENGTH:**

<b>Manpower</b>	<b>Sanctioned under UT fund No.</b>
Specialist	18
Medical Officer	20
Public Health Dentist	4
Asstt. Matron / Ward Sister / Sister in Charge / PHN	10
Staff Nurse	45
Pharmacist	10
X – Ray Technician	6
Lab. Technician / Lab. Assistant	10
Health Worker (F) / ANM	25
Health Worker (M) / BHW	16
Extension Educator / Health Educator	2

Health Assistant (F) / LHV	2
Health Assistant (M) / SI	1
Para Medical Worker (Leprosy)	4
OT Technician / Anesthetist Asstt / ECG Technician	3

## Registration of Births and Deaths

Sr. No.	Indicators	Unit	2001	2012-13
1	Birth Rate	Per 1000 population	22	18.4
2	Death Rate	"	6	4.9
3	Infant Mortality Rate	Per 1000 live births	24	22

**BANKING**

Particulars		Unit	Daman District	UT of Daman & Diu.
1. No. of Banks	<b>Scheduled Banks</b>	No.	14	21
	<b>Cooperative Banks</b>	No.	02	03
	<b>Total</b>		<b>23</b>	<b>32</b>
2. Branches	<b>Scheduled Banks</b>	No.	18	27
	<b>Cooperative Banks</b>	No.	06	10
	<b>Total</b>		<b>33</b>	<b>49</b>

3. Banking Offices	No.	33	49
4. Private Banks.	No.	09	12

**(XIV) TOURISM**

	Unit	Daman	Total
Hotels & Lodges	No.	88	141
Total beds in Hotel	No.	5361	7409
Tourists visited and stay in hotel (Domestic+ Foreign)	No.	1088049	1917797

**(XV) WATER SUPPLY**

a) Village covered with safe drinking water supply	Nos.	22
b) Infrastructure provided:		
i) With piped water supply through stand post	Nos.	668
ii) Bore wells (hand pumps)	Nos.	597

**(XVI) WATER CONSUMPTION**

i) Private Bodies			
	Consumption (m <sup>3</sup> )		117248
	Value	Rs.	1177016
ii) Gram Panchayat			
	Consumption (m <sup>3</sup> )		229230
	Value	Rs.	383400



iii) Municipal Bodies

Consumption (m <sup>3</sup> )	127679
Value Rs.	199980

TOTAL Consumption	(m <sup>3</sup> )	474157
TOTAL Value	Rs.	1760395

iv) Water treatment plant

Dabhel	Old – Area	Sq.mt	40800
	Capacity	Million lts	100
	New – area	Sq.mt	42000
	Capacity	Million lts	150

Magarwada	Area	Sq.mt	47400
	Capacity	Million lts	150

Dunetha (developed)	Area	Sq.mt	64300
	Capacity	Million lts	100

(To be developed)	Capacity	Million lts	125
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# CHAPTER 1: Disaster Management

## 1.1 Introduction

Disaster is a condition which disrupts normal functioning of community and causes wide spread human, material and economic losses which cannot be controlled and prevented by locally available resources.

This means that disaster is a crisis situation which cannot be dealt by affected community within its own resources. Disaster Management means planned and systematic approach towards understanding and solving problems in the wake of disaster. Practical experience has proved beyond doubts that commitment of resources to disaster preparedness in the community, yields better results both in terms of economy and effectiveness compared to sinking resources in an ad hoc way in rescue, relief and rehabilitation, but it is unfortunate that when disaster strikes people then organization and administration are not prepared for it. Neither action plans neither are prepared nor are drills carried out to mitigate the resultant damage. Only after disaster strikes to the particular area, the community and the administration in that area become sensitive and start planning. Till that they believe that worst will not come to them, and when the worst come, they feel helpless and face losses in terms of human lives and physical destruction of properties, crops and entire developmental process.

**Disasters can be classified** broadly into two types:-

### **a) Natural Disaster**

- (i) Drought
- (ii) Floods
- (iii) Cyclone
- (iv) Earth Quake
- (v) Avalanches / Landslides

### **b) Man-made Disasters**

- i) Chemical
- ii) Biological / Epidemic

- iii) Radiological
- iv) Accidents.

In order to deal with various kinds of disasters, we have a separate classification of disasters;

**a) Water and climate related disaster, namely:-**

- i) Cyclone
- ii) Flood
- iii) Hailstorm & cloud bursts
- iv) Sea erosion
- v) Tornadoes & Hurricanes
- vi) Snow avalanches

**(b) Geologically related disaster, namely:-**

- i) Earthquake
- ii) Dam bursts
- iii) Landslides and Mudflows
- iv) Mines fires

**c) Chemical Industrial & Nuclear disasters, namely:-**

- i) Chemical & Industrial disaster
- ii) Nuclear disaster

**(d) Accidents related disasters, namely:-**

- i) Urban fires
- ii) Village fires
- iii) Forest fires
- iv) Electrical disaster
- v) Serial bomb blasts
- vi) Major building collapse

e) Biologically related disasters, namely:-

- i) Epidemics
- ii) Pest attacks
- iii) Cattle epidemics
- iv) Food poisoning
- v) AIDS

## **1.2:- Level of Disasters**

**L** concept has been developed to define different levels of disasters in order to facilitate the responses and assistances to UT and Districts.

**L0 level** denotes normal times which will be utilized for close monitoring, documentation, prevention and preparatory activities. Training on search and rescue, rehearsals, evaluation and inventory updating for response activities will be carried out during this time.

**L1 level** specifies disaster that can be managed at the District level, however, the UT and Centre will remain in readiness to provide assistance if needed.

**L2 level** disaster situations are those, which require assistance and active participation of the UT, mobilization of its resources for management of disasters.

**L3 level** disaster situation is in case of large scale disaster where the UT and District authorities have been overwhelmed and require assistance from the Central Government for reinstating the UT and District machinery as well as for rescue, relief, other response and recovery measures. In most cases, the scale and intensity of the disaster as determined by the concerned technical agency like IMD are sufficient for the declaration of L3 disaster.

## **1.3:- Composite Risk Index of all Hazards**

Gujarat State has prepared a Taluka/Tahsil wise Composite Risk Index of all Hazards. As per this index all Talukas of Gujarat has been categorized into five (5) categories:-

1. **Very High (IX to X D)**

2. **High (VII to VIII D)**
3. **Moderate (V to VI D)**
4. **Low (III to IV D)**
5. **Very Low (I to II D)**

Since District of Daman is surrounded by Valsad district of Gujarat, so the Composite Risk Index of all Hazards will be applied on Daman district also.



As per this map Daman district is surrounded by three talukas of Valsad District:-

- Valsad taluka
- Pardi Taluka
- Umbergaon Taluka.

According to this index Valsad and Pardi Talukas fall under low category and Umbergaon Taluka falls under very low category. Thus **Daman district comes under low to very low category of Hazard Risk index.**

Keeping into consideration the Risk Assessment and Vulnerability Analysis, Daman is prone to the following types of disasters:-

- a) Cyclones
- b) Floods
- c) Earthquakes
- d) Chemical
- e) Fire
- f) Epidemics

## 1.4:-CYCLONE

### Introduction

Cyclones are intense low pressure areas from the center of which pressure increases outwards. The amount of the pressure drops in the center and the rate at which it increases outwards gives the intensity of the cyclones and the strength of winds. Damages expected during cyclonic storm. The types of damages likely to be caused by strong winds of various magnitudes which are associated with cyclonic storms are as follows:-

<b>System</b>	<b>Expected wind speed in Km./Hour</b>	<b>Expected Damage</b>
Cyclone	60-90	Tree branches break, some damage to kutchha houses
Severe Cyclone	90-120	Trees gets uprooted, Pucca houses damaged, communication disrupted.
Hurricanes	120 and above	Big trees uprooted, wide spread damage to houses and installations, total disruption

		of communication.
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India with its long coastline is vulnerable to the impact of tropical cyclone that develops in North Indian Ocean (& moves on to by Bay of Bengal and the Arabian Sea). Cyclone develops in the oceanic area surrounding Indian Subcontinent. These systems are classified as:

- Depressions,
- Deep depression,
- Cyclonic storms,
- severe cyclones and
- Severe cyclone with core of hurricane winds depending on the surface wind associated with them.

#### 1.4.2:- Meteorological Department of India

The criteria followed by the Meteorological Department of India to classify the low pressure systems in the Bay of Bengal and in the Arabian Seas as adopted by World Meteorological Organization (W.M.O.) are:

Sr, No.	Type of Disturbances	Associated wind speed in the circulation in km per hour
01	Low Pressure Area	31.5
02	Depression	31.5 to 50
03	Deep Depression	50 to 61
04	Cyclonic Storm	61 to 87
05	Severe Cyclonic Storm	87 to 116.5
06	Severe Cyclonic Storm with a core of Hurricane winds	More than 116.5

### **1.4.3:-Associated Authority**

The Nodal Department for controlling, monitoring and directing measures for organizing rescue, relief and rehabilitation is the **Revenue Department** of the district. All other concerned Departments should extend full cooperation in all matters pertaining to the management of the Cyclone disaster whenever it occurs. The Departments like Revenue, Home including Transport, Ports & Fisheries, Power, Finance, Information and Broadcasting etc. shall have a major role in emergency response during occurrence of Cyclone.

### **1.4.4:- Cyclone Monitoring:**

Cyclones are monitoring through synoptic charts and INSAT (Indian National Satellites) when it is in the high seas. When the cyclones approach the coastal areas they are tracked through cyclone detection radars which are installed in coastal stations of the east and west coasts of the country, covering the entire region.

#### **Cyclone Warning System:**

Cyclone warning is provided in four stages.

#### **1.) Pre-Cyclone Watch**

It is issued when a depression forms over the Arabian Sea irrespective of its distance from the coast and is likely to affect Indian coast in future. The pre-cyclone watch is issued by the name of Director General of Meteorology and is issued at least **72 hours in advance** of the commencement of adverse weather. It is issued at least once a day.

#### **2.) Cyclone Alert**



It is issued at least **48 hours before** the commencement of the bad weather when the cyclone is located beyond 500 Km from the coast. It is issued every three hours.

### 3.) **Cyclone Warning**

It is issued at least **24 hours before** the commencement of the bad weather when the cyclone is located within 500 Km from the coast. Information about time /place of landfall is indicated in the bulletin. Confidence in estimation increases as the cyclone comes closer to the coast.

### 4.) **Post landfall outlook**

It is issued **12 hours before** the cyclone landfall, when the cyclone is located within 200 Km from the coast. More accurate & specific information about time /place of landfall and associated bad weather indicated in the bulletin. In addition, the interior distraction is likely to be affected due to the cyclone are warned in this bulletin.

## **1.4.5:- Warning Dissemination process**

1. Cyclone/flood forecasting is generally the responsibility of the Indian Meteorological Department (IMD). IMD is the nodal agency for providing cyclone warning services. IMD's INSAT satellite based Cyclone Warning Dissemination System (CWDS) is one of the best currently in use in India to communicate cyclone warnings from IMD to community and important officials in areas likely to be affected directly and quickly.

2. After getting information from IMD, warning dissemination is a responsibility of UT Government (COR). The COR under the Revenue Department is responsible for disseminating cyclone warnings to the public and Line Departments.

3. On receiving an initial warning, the office of the COR disseminates the warning to all Line Departments, the District administration and IG Police. Warning messages are transmitted through wireless to all districts and Villages. District Collectors are provided with satellite

phones and a Ham radio to maintain effective communication, even if terrestrial and cell-phone communication fails.

4. The UT (EOC) i.e. control rooms of the other line departments at the UT level as well as district level also get the warnings. The control rooms are activated on receiving the warnings.

Informatory messages on cyclones are issued for broadcast to AIR as soon as a cyclone is detected in the Arabian Seas.

- Telecast through Door Darshan
- Broadcast through AIR
- Bulletins to the Press
- Satellite based disaster warning systems (This is known as **Cyclone Disaster Warning System**).

In addition to the above, cyclone warnings are also disseminated through teleprinters, telex, facsimile and telephones wherever such facilities exist with the recipient. The warning bulletins are normally, issued at 3 hourly intervals, but more frequently whenever needed. These bulletins contain the information on the areas threatened by cyclones, heavy rainfall, and magnitude of destructive winds and inundation of coastal area by stern surges. Advisories for fishermen not to venture into the sea and for evacuation of the people from the low-lying areas are also included.

The cyclone warnings are disseminated to –

- Commercial shipping and Indian Navy/Coast Guard
- Port Authorities
- Fisheries Officials
- Officials of the State and Central Government
- Commercial Aviation.
- General Public

## Daman & Diu Scenario

Looking into past records details of severe, medium and hurricane type cyclone affecting Daman District are as follows:

Sr.	Type of Cyclone	Month	Year
1.	Hurricane cyclone	November	1982
2.	Medium cyclone	June	1983
3.	Severe cyclone	June	1996
4.	Medium cyclone	October	1996
5.	Medium cyclone	December	1998
6.	Severe cyclone	May	1999
7.	Cyclone Hyphene	August	2008

According to Cyclone Hazard Map of India, Daman is located in the **moderate damage risk zone**, with probable maximum wind speed of 44 m/s. The coastal areas are subjected to severe cyclonic storms. The frequency of occurrence of cyclones on the different portions of the coast has been different. Even for the same design wind speed in same areas, the risk of damage for year will be higher, in areas subjected to more frequent cyclones. Daman lies in the latitude between 20° to 21 ° N. Thus, the cyclonic storms constitute a serious natural hazard in the territory. During last 150 years, Gujarat suffered more than 25 cyclones of varying intensity, lastly in the year 1999.

The areas likely to be affected by cyclone in Daman have been stated as under:-

- **Kadaiya**
- **Devka**
- **Marwad**
- **Nani Daman**  
(Jetty)
- **Moti Daman**  
(Fort Area)
- **Elephant Bagh**

- Dholar
- Jampore

## 1.5:-FLOOD

### 1.5.1 Background

Flood occurs when surface water covers land that is normally dry or when water overflows normal confinements. The most widespread of any hazard, flood can arise from abnormally high precipitation, storm surges from tropical storms, dam bursts, and rapid snow melts or even burst water mains. Flood Atlas of India brought out by Central Water Commission draws pictorially the areas liable to floods and the achievement of flood protection measures. Besides the problem of flooding in the river basins, heavy intensity rains could cause local flooding in certain areas where the drainage is either naturally poor or the drains are choked due to various reasons such as careless dumping of refuse in the drains and lack of maintenance. Much of the flooding problems in towns & cities occur due to such causes.

### 1.5.2:- Flood Forecasting and Warning

Flood forecasting is a process whereby the authorities are alerted to impending conditions where floods may be likely. Flood forecasting requires understanding of meteorological and hydrological conditions, and is therefore the responsibility of the appropriate government agencies, National Organization is required, but information needs to be made available at a river basin scale.

The main components of a **national flood forecasting and warning system** are as follows:

- Collection of real-time data and prediction of flood severity and time of onset of particular levels of flooding.
- Preparation of warning messages, describing what is happening, predictions of what will happen and expected impact. Messages can also include what action should be taken.

- The communication and dissemination of such messages.
- Interpretation of the predictions and other flood information to determine flood impacts on communities.
- Response to the warnings by the agencies involved and communities.
- Review of the warning system and improvement in the system after flood event.
- If predictions fail, the reasons of prediction failure should be communicated to communities in order to establish trust.

### **Community based flood forecasting and warning systems**

It is important that the people in each community receive information as early as possible about the possibility of flooding in their area. In addition to the valuable information from the official flood warning system, communities should attempt to develop their own warning systems. At community level, it is important that warnings are received by all individuals. The way in which messages are disseminated in communities will depend on local conditions, but may include some or all of the following:

- Media warnings (print and electronic)
- General warning indicators, for example sirens
- Warnings delivered to areas by community leaders or emergency services
- Dedicated automatic telephone warnings to at-risk properties
- Information about flooding and flood conditions in communities upstream. One approach to disseminating messages is to pass warning messages from village to village as the flood moves downstream
- Keep watch and be regularly informed about the river level and embankment conditions in the local area. The monitoring of the river and embankment should be increased as the water level increases and crosses the critical danger level
- A community-based warning system to pass any information about an approaching flood to every family.

### **Procedure for disseminating warnings to remote areas**

Communities in remote areas may not be able to receive the types of warnings described in the previous section. Responsibilities need to be defined clearly for lower tiers of administration and the emergency services to have predefined links with communities in remote areas.

This should include;

- Local radio, which should be supplied with clear and accurate information
- Local means of raising alarms, for example church bells, sirens, loud hailers, loudspeakers etc. The latter could be the responsibility of selected individuals or wardens, who need to be provided with equipment and transport, for example motor cycles or bicycles;
- High Priority Telegram
- Doordarshan and the local cable channels (TV channels & radio Channels including FM radio)
- Bulletins in the Press
- Satellite Based disaster Warning Systems
- Fax
- Telephone

### **Daman Scenario**

Daman has a major river namely **Daman Gang** river which merges in the Arabian Sea. Daman has also two small rivers namely **Kulak and Kalian**. Daman Ganga River comes from Gujarat and it enters Daman from Vapi in Gujarat.

In August 2004, due to heavy rain in South Gujarat and water released from Madhuban Dam in Damanganga river, the some area of Daman District are flooded and approximate damage of public/private utilities as follows:

1.	Losses of Human lives and cattle lives	Nil
2.	Losses of Houses/Huts	18 Nos.

3.	Losses of Cropsetc.	10 Hac & 30 R.A. Area and 3153 Trees (Like Mango, Papaya, Date, Bawar, Jangli Trees, Vas, Amli, Rose, Chichoo, Realwood, Coconut etc.)
4.	Approximate cost of washed out of reconstructed Damanganga bridge	Rs. 7,00,00,000.00
5.	Approximate cost of washed out Fishing Jetty at Nani Daman.	Rs. 20,00,000.00
6.	Approximate cost of damage to the approach road of Fishing Jetty, Nani Daman.	Rs. 3,00,000.00
7.	Approximate cost of damage to the 2 Nos. of Steps provided at the approach road towards upstream side and down stream side, Nani Daman.	Rs. 2,50,000.00
8.	Approximate cost of damage to the Landing Structure to the top wearing slab, Nani Daman.	Rs. 2,00,000.00
9.	Approximate cost of damage to the down steps adjacent to landing Jetty, Nani Daman.	Rs. 1,00,000.00
10.	Approximate cost of damage to the Landing Jetty, Moti Daman.	Rs. 7,00,000.00
11.	Pataliya Causeway connecting Gujarat and Daman District.	Rs. 2,00,000.00
12.	Zari Causeway joining to Kachigam & Zari Village i) Cost of approach at Kachigam side approach, ii) Cost of damage surface of the Causeway including wearing coat and other damage to the Causeway. iii) Police Booth. iv) Barricades vertical types and Railway types. v) Sign Board at Various places.	Rs. 3,00,000.00 Rs. 16,00,000.00 Rs. 60,000.00 Rs. 40,000.00 Rs. 40,000.00
13.	Ring Road along the Fort Wall	Rs. 6,00,000.00
14.	District and other District Road and other miscellaneous.	Rs. 12,00,000.00

On account of construction of Madhuban Dam in Vapi, there are minimal chances of floods in Daman. Though the chances of floods in Daman has become minimal on account of construction

of Madhuban Dam, Damanganga River at Vapi in Gujarat, the UT Administration has opened a **Flood Control Room** in Collectorate which receives information regarding discharge of water from Madhuban Dam from time to time. The co-ordination Committee and various departments will have similar responsibility in floods as in cyclones.

Villages and streets of **Kachigam, Varkund, Khariwad, Ghanchiwad, and Kharawad** are identified to be affected by floods. The shelter points of cyclone will also work as shelter points for floods.

All the Department of Daman District shall prepared for flood from the month of May. The Control room in Collector office Daman shall be open from 15`x' June and will work round the Clock. The A.D.M/Deputy Collector will interact with the Executive Engineer, Madhuban Dam. As soon as the warning of release of water from Madhuban Dam is received, the Control room will informed the same to the Police, Fisheries Department, Port officer, P.W.D, D.M.H.S. The Supdt. of fisheries with help of Machhi Mahajan and other NGO's announce the information of release of water.

## **1.6:- EARTHQUAKE**

### **Background**

Earthquakes strike suddenly without warning, and are unpredictable. Therefore preventive measures for ensuring safety of buildings, structures, communication facilities, water supply lines, electricity and life are of utmost priority.

Earthquakes are caused by natural tectonic interactions.

As per the Seismic Zoning Map of India, there are five seismic zones depending on the High Damage to Low Damage Risk Zone. The object of this Seismic Zoning map is to classify the area of country site a number of zones in which, one can reasonably forecast the intensity of earthquake shock which will occur in the event of a future earthquake. The magnitude and intensity of earthquake can be quantified as per the Richter scale. The magnitude M of an earthquake is denoted by a number which is a measure of energy released during earthquake occurrence.



## **Daman & Diu Scenario**

The UT of Daman is geographically part of Gujarat on the Arabian Sea Coast. During last 200 years, Gujarat recorded 9 earthquakes of moderate to severe intensity in the years 1819, 1845, 1847, 1848, 1864, 1903, 1938, 1956, 2001. The last one of the worst earthquakes in the history was in 2001 with death toll of 26.

On 4 October, 1851, Daman suffered moderate earthquake. According to one recorded version, it sounded like underground explosions and heavy rumblings which continued for some seconds.

According to earthquake hazard map of India, Daman is located in the moderate damage risk zone with probable earthquake of 5.0 to 6.0 magnitudes on Richter scale.

## **1.7 CHEMICAL AND INDUSTRIAL ACCIDENTS**

### **Background**

A "chemical accident or emergency" refers to an event which results in the release of a substance or substances hazardous to human health and/or the environment in the short or long term. These events can cause illness, injury, disability or death to human beings, often in large numbers, and can result in extensive damage to the environment with considerable human and economic costs (OECD/UNEP).

Chemical and industrial emergencies may arise in a number of ways:

- Disaster/explosion in a plant handling or producing toxic substances.
- Accidents in storage facilities, handling large and various quantities of Chemicals.
- Accidents during the transportation of chemicals from one site to another.
- Misuse of chemicals, resulting in contamination of food stocks or the Environment, overdosing or agrochemicals.
- Improper waste management such as uncontrolled dumping of toxic

Chemicals, failure in waste management systems or accidents in wastewater treatment plant.

- Technological system failures.
- Failures of plant safety design or plant components.
- Natural hazards such as fire, earthquakes, and landslides.
- Arson and sabotage.
- Human error.

### **Indian Scenario**

All over the world, people are becoming victims of industrial accidents that release hazardous substances into the environment. Trains carrying chemicals derail and trucks overturn. Pipelines rupture and chemical plants develop accidental leaks and releases. Accidents occurring in one district may seriously affect the populations of other districts or perhaps influence the ecology of the entire region. Therefore, crucial preparations must be made by Government to prevent or respond to such events and minimize harmful effects.

### **Daman Scenario**

The Union Territory of Daman & Diu is considered as one of the most important industrial centers of the Country. From 1980 onwards, there has been a real influx of industries especially in Daman.

The UTs of Daman & Diu have about 2500 industrial units and employing about 60000 employees. The major industries are Plastic Processing units, Textiles (Texturizing/ Twisting/ Spinning/Knitting/Looms etc), Pharmaceuticals (formulations only and not bulk drugs ), Wire Drawing, Corrugated Boxes and other Paper products , Tiles, Engineering, Cosmetics & Detergents , Distilleries & Breweries , Oils & Greases, Woven sacks, Electrical & Electronic units, assembling units , ferrous and Non ferrous units etc., chemicals (non hazardous - mixing and blending of chemicals only).

These industries currently in operation can be broadly classified as mentioned below:-

Sr. No.	Type of Industry	No. of Units
1.	Distilleries	04
2.	IMFL Bottling Units.	07
3.	Breweries.	01
4.	Plasticizers*	09
5.	Pharmaceuticals*	50
6.	Inks, Pigments & Paints*	06
7.	Resins, Acid Slurry*	04
8.	Solvents, Thinners, Reducers, Retarders, Lacquers, Polishes*	08
9.	Varnishes, Enamels*	01
10.	Oils and Greases	30
11.	Metal finishing compounds	02
12.	Ferrous Metal recyclers	09
13.	Non-ferrous metal recyclers	18
14.	Wire & Cable (including wire drawing, enameling, galvanizing, PVC coating, painting etc.)*	60
15.	Stone Crushers	16
16.	Engineering units with Pretreatment process (pickling, degreasing, phosphate, power coating, painting etc.)	25
17.	Engineering units without Pretreatment process	250
18.	Personal care products (detergents, soaps, powders, creams, cosmetics etc.	38

19.	Perfumes, Flavours, Essential Oils*	15
20.	Plastic products (excluding recycling and carry bags unit)	900
21.	Plastic recyclers	60
22.	Plastic carry bags	40
23.	Textiles (without wet processing)	170
24.	Electronic units	100
25.	Mineral Water	02
26.	Packing Materials	200
27.	Miscellaneous	150
	TOTAL	2175

\* Units likely to handle hazardous chemicals

As per the information of Pollution Control Committee, Daman and CIF/B these industries are allowed to keep the identified hazardous chemicals within the prescribed limits and hence the chances of chemical accidents are minimal.

Many factories have D.G. sets and Boilers and these units use Petroleum fuels, which are normally stored in tanks. These fuels are Furnace Oil/LDO/HSD and the threshold quantities under the Manufacture; Storage & Import of Hazardous Chemicals Rules, 1989 (notified under the Environment (Protection) Act, 1986 is 15000 Tones for isolated storage. However, the normal quantity restored in the industries in these UTs is between 1 Ton to 150 Tones. It is ensured that a dyke wall is provided around the petroleum tanks so that in case of leakage. The Petroleum products do not spread-and cause hazards. It is also ensured that all Petroleum products/hazardous substances are isolated in all respects from the main plant. Moreover, proper fire fighting equipments, personal protective equipments, first aid boxes, mock drills, job related training etc. are provided by the management. In some Factories, wherever required, on site Emergency plans have been prepared, which will enable the Management to deal with the safety aspect in times of Emergency within the factory premises.

**In Daman no chemical accident is reported so far.**

## **1.8:- FIRE DISASTER**

### **Background**

Incidence of fire becomes a disaster when at the human interface; proper safety norms are not followed. It is a disaster which spreads rapidly and mitigation and management requires spontaneous response. Planning and implementation machinery both at meso and micro levels should be at the highest -level of preparedness both pre-disaster and post-disaster. The loss of human and economic losses attains enormous levels.

### **Indian Scenario**

Due to the haphazard growth of urban areas and unplanned expansion of industries in various pockets of our country, incidence of fire had taken the form of disaster. Normally, it starts as a small accident and takes the form of a conflagration if not controlled immediately.

### **Daman Scenario**

As per the information collected from the 'Pollution Control Committee Daman', there is no industry situated in Daman who deals in hazardous chemicals out of the total 2500 registered large/medium/small industries. The major accident which may happen in industry is 'fire'. Our vulnerability analysis shows that other than fire, no incident of manmade disaster has taken place in any of the industries.

As per the detailed information of Daman Fire Service, the average number of fire incidents in Daman is around 40 per annum. Out of these incidents, near about 25 - 30% fire incidents are of serious nature.

### **Detailed information of Daman Fire Service**

## **SUMMARY OF FIRE ACTIVITIES FOR THE LAST TEN YEARS.**

**District: NANI DAMAN (HEADQUARTER)**

Year	FIRE CALL				Emer gency Call	Falls Call	Total	Injure d	Life Saved	Life Lost	Collection of Fees/ Revenue
	Small	Me d	Ma j	Seri ous							
2001	20	14	10	00	20	00	<b>64</b>	00	00	00	00
2002	24	28	14	00	17	00	<b>83</b>	00	00	00	00
2003	33	28	05	00	23	00	<b>89</b>	01	00	31	00
2004	41	07	11	00	32	00	<b>91</b>	02	05	01	9350/-
2005	45	06	10	01	50	02	<b>114</b>	03	02	01	30138/-
2006	39	09	20	00	42	00	<b>110</b>	01	02	06	246461/-
2007	48	15	14	00	38	00	<b>115</b>	04	00	00	143386/-
2008	41	08	13	01	30	01	<b>94</b>	02	00	02	142299/-
2009	42	13	14	00	37	01	<b>107</b>	00	00	01	33623/-
2010	52	12	21	01	52	01	<b>139</b>	02	05	04	27491/-
<b>2011</b>	<b>53</b>	06	19	00	41	00	<b>119</b>	01	00	01	65346/-
<b>2012</b>	<b>51</b>	12	24	00	47	01	<b>135</b>	00	04	00	134590/-
<b>2013</b>	<b>61</b>	08	15	00	54	01	<b>139</b>	03	00	02	27049/-
<b>Total</b>	<b>550</b>	166	190	03	483	07	<b>1399</b>	19	18	49	859733/-

**District: MOTI DAMAN**

Year	FIRE CALL				Emer gency Call	Falls Call	Total	Injure d	Life Saved	Life Lost	Collection of Fees/ Revenue
	Small	Me d	Ma j	Seri ous							
2006	00	00	00	00	00	00	<b>00</b>	00	00	00	00
2007	13	01	03	00	15	00	<b>32</b>	00	00	00	00
2008	11	00	04	00	17	00	<b>32</b>	00	00	00	00
2009	08	02	01	00	10	00	<b>21</b>	00	00	00	00
2010	21	02	07	00	15	00	<b>45</b>	00	00	01	00

2011	29	03	04	00	15	00	<b>51</b>	<b>00</b>	<b>00</b>	<b>00</b>	<b>00</b>
2012	32	03	13	00	15	00	<b>63</b>	<b>00</b>	<b>00</b>	<b>00</b>	<b>00</b>
2013	29	05	07	00	18	01	<b>60</b>	<b>01</b>	<b>00</b>	<b>06</b>	<b>00</b>
<b>Total</b>	<b>143</b>	<b>16</b>	<b>39</b>	<b>00</b>	<b>105</b>	<b>01</b>	<b>304</b>	<b>01</b>	<b>00</b>	<b>07</b>	<b>00</b>

## 1.9:- EPIDEMICS

### Background

An epidemic is defined as the occurrence of an illness or other health related event that is unusually large or unexpected. Epidemics are commonly caused by a disease known or suspected to be of infectious or parasitic origin; however, epidemics can be associated with other hazards.

An epidemic can evolve rapidly into a disaster, thus a prompt response is needed.

The term epidemic can be applied to any pronounced rise in the occurrence of a disease and is not restricted to sudden outbreaks. New and unrecognized epidemics occasionally arise such as AIDS (acute-immunodeficiency syndrome) which was detected in the United States in 1981 when requests for medication increased.

Many epidemic diseases can cause epidemics if environmental conditions, host susceptibility, or host carriers change in a way that favors transmission and infection.

### Daman & Diu Scenario

Daman& Diu has no history of epidemics in past. However, one recorded disaster was in Surat in 1994 which is 120 km away from Daman.

## 1.10:- TSUNAMI

- Daman & Diu is prone to Tsunami risk due to its coastline and probability of occurrence of near and offshore submarine earthquakes in the Arabian Sea.
  - Makran Subduction Zone (MSZ) -South West of Karachi is an active fault area which may cause a high magnitude earthquake under the sea leading to a tsunami.
  - The Hazard Risk and Vulnerability Atlas shows (Fig. 5) the estimated inundation based on Probable Maximum Surge (PMS) at highest high tide level.
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## CHAPTER 2

### Disaster Preparedness Measures

#### 2.1 Resource Availability

During past disaster, it has been observed that a comprehensive database of disaster management related inventory is essential for an organized response. More often than not, lack of proper and adequate information has hampered swift and measured response resulting in delay which could be critical in such eventualities.

Task	Activity	Responsibility
Resource Mapping	<ol style="list-style-type: none"> <li>1. Identify available resources viz. Human, financial, and equipment for disaster management at: <ul style="list-style-type: none"> <li>• UT level</li> <li>• District Level</li> <li>• Panchayat level</li> <li>• Municipal ward level.</li> </ul> </li> <li>2. Identification of gap of resources as per the need.</li> <li>3. Process for procurement of lacking resources.</li> </ol>	<ul style="list-style-type: none"> <li>• Revenue Department,</li> <li>• Line Department,</li> <li>• Local bodies,</li> <li>• NGO</li> </ul>
UT Disaster Resource Network	<ol style="list-style-type: none"> <li>1. Collect and compile UT resource information.</li> </ol>	<ul style="list-style-type: none"> <li>• UT Authority.</li> <li>• DDMA.</li> <li>• Line Dept.</li> <li>• Mamlatdar and DPO</li> </ul>
	<ol style="list-style-type: none"> <li>2. Create GIS based UT resource network and allot unique username and password.</li> <li>3. Maintain GIS based UT resource network.</li> </ol>	<ul style="list-style-type: none"> <li>• UT Authority</li> <li>• IT Dept.</li> <li>• Revenue Dept.</li> </ul>
	<ol style="list-style-type: none"> <li>4. Regular updating of resource data.</li> </ol>	<ul style="list-style-type: none"> <li>• UT Authority</li> <li>• Revenue Department,</li> <li>• Line Department,</li> <li>• NGO</li> </ul>

## 2.2 Community based Disaster Management

- Community is not only the victim but invariably the first responder in any disaster
- Any disaster revolves around the coping capacity of the community

**Therefore, community should be closely associated with prevention, mitigation, preparedness, training, capacity building, response, relief, recovery i.e. short term and long term, rehabilitation and reconstruction.**

Task	Activity	Responsibility
Community Preparedness	1. Selecting vulnerable community and most vulnerable groups at risk (keep gender issues in mind)	<ul style="list-style-type: none"> <li>• Revenue Department</li> <li>• UTDMA</li> <li>• Finance Department</li> <li>• Local Bodies</li> <li>• Mamlatdar</li> </ul>
	2. Disseminate information about vulnerability and risk to the community	
	3. Promote local level disaster risk management planning through participatory approach	
	4. Advice and issue direction wherever necessary for community disaster prevention, mitigation and preparedness	
	5. Provide necessary resources and support for disaster risk reduction at community level	
	6. Promote community managed implementations	
	7. Review the preparedness at community level	
	8. Take appropriate actions to enhance community preparedness	

Task	Activity	Responsibility
	9. Promote community education, awareness and training	
	10. Ensure fail safe mechanism for timely dissemination of forecasting and warning of impending disaster to the community	
	11. Disseminate information to community to deal with any disaster situation	

### 2.3 Training, capacity building and other proactive measures

Task	Activity	Responsibility
	1. Training to Volunteers personal in various aspect of disaster management	<ul style="list-style-type: none"> <li>• UTDMA</li> </ul>
	2. Training to home Guards personal in various aspect of disaster management including search and rescue	<ul style="list-style-type: none"> <li>• NIDM</li> <li>• UTDMA</li> </ul>
	3. Training to educational and training institutions personal in various aspect of disaster management	<ul style="list-style-type: none"> <li>• Education Department</li> <li>• UTDM</li> </ul>
	4. Training to civil society and corporate entities in various aspect of disaster management	<ul style="list-style-type: none"> <li>• NIDM</li> <li>• UTDMA</li> </ul>
	5. Training to fire and emergency service personal in	<ul style="list-style-type: none"> <li>• NIDM</li> </ul>

Task	Activity	Responsibility
	various aspect of disaster management	<ul style="list-style-type: none"> <li>• UTDMA</li> </ul>
	6. Training to police and traffic personal in various aspect of disaster management	<ul style="list-style-type: none"> <li>• Home Dept.</li> <li>• Police</li> <li>• NIDM</li> <li>• UTDMA</li> </ul>
	7. Training to media in various aspect of disaster management	<ul style="list-style-type: none"> <li>• NIDM</li> <li>• UTDMA</li> <li>• Information Dept</li> </ul>
	8. Training to govt. officials in various aspect of disaster management	<ul style="list-style-type: none"> <li>• NIDM</li> <li>• UTDMA</li> <li>• Departmental Training Institutes</li> </ul>
	9. Training to engineers, architects, structural engineers, builders and masons in various aspect of disaster management	<ul style="list-style-type: none"> <li>• NIDM</li> <li>• UTDMA</li> <li>• Departmental Training Institutes</li> </ul>

## 2.4 Awareness

Task	Activity	Responsibility
Information education And communication	1. Advertisement, hording, booklets, leaflets, banners, shake-table, demonstration, folk dancing and music, jokes, street play, exhibition, TV Spot, radio spot, audio-visual and documentary, school campaign,	<ul style="list-style-type: none"> <li>• Revenue Dept.</li> <li>• Information Dept.</li> <li>• UTDMA</li> <li>• Education Dept.</li> <li>• Local Bodies</li> </ul>

	- Planning and Design - Execution and Dissemination	
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## 2.5:-Techno-legal regime

Task	Activity	Responsibility
Institutional Arrangement.	1. Creation of State Level Disaster Management Authority	<ul style="list-style-type: none"> <li>• Revenue Department</li> </ul>
	2. Formation of DM policy and guidelines	
	3. Development of relief norms and packages	<ul style="list-style-type: none"> <li>• Revenue Department</li> <li>• Finance Department</li> <li>• UTDMA</li> </ul>
	4. Development of Disaster Management Plans (UTDMA has prepared few hazard specific plans) <ul style="list-style-type: none"> <li>▪ Hazard – wise State Disaster Management Plans</li> <li>▪ State Action Plans</li> <li>▪ Departmental Disaster Management Plans</li> <li>▪ Dist., City &amp; Village Plans</li> </ul>	<ul style="list-style-type: none"> <li>• Revenue Department</li> <li>• All Line Department</li> <li>• UTDMA</li> <li>• Mamalatdar</li> </ul>
	5. Regular rehearsal, review and updating of plans	

Task	Activity	Responsibility
	6. Publication & dissemination of Plans	
	7. Strengthening of Early Warning System <ul style="list-style-type: none"> <li>• Conduct study</li> <li>• Analyze</li> <li>• Implement</li> </ul>	<ul style="list-style-type: none"> <li>• Revenue Dept.</li> <li>• Science &amp; Tech Dept.</li> <li>• UTDMA</li> <li>• IMD</li> <li>• DDMA</li> <li>• All Line Dept.</li> </ul>
	8. Arrangement with service provider companies for multiple warning messages	
	9. Safety Measures <ul style="list-style-type: none"> <li>• Identification of places</li> <li>• Alarm System</li> <li>• Personnel protective equipments</li> <li>• Promotion of life saving methods and techniques</li> </ul>	<ul style="list-style-type: none"> <li>• Revenue Dept.</li> <li>• Science &amp; Tech Dept.</li> <li>• UTDMA</li> <li>• IMD</li> <li>• DDMA</li> <li>• All Line Dept.</li> </ul>
	10. Strengthening of relief distribution and accounting system at state and district level <ul style="list-style-type: none"> <li>• Identification of centralized system for receipt, storage and</li> </ul>	<ul style="list-style-type: none"> <li>• Revenue Dept.</li> <li>• DMC</li> <li>• DP.</li> <li>• UTDMA</li> <li>• DDMA</li> <li>• Civil Supply Dept.</li> </ul>

Task	Activity	Responsibility
	distribution of relief <ul style="list-style-type: none"> <li>• Rate contract, procurement and stockpile of relief material</li> </ul>	
	11. Strengthening of EOC at state, region and district level. <ul style="list-style-type: none"> <li>• Retrofitting of existing buildings</li> <li>• Strengthening of resources                             <ul style="list-style-type: none"> <li>▪ Task forces</li> <li>▪ Equipments</li> <li>▪ SOPs</li> <li>▪ Financials</li> </ul> </li> <li>• Arrangement for optional EOC</li> <li>• Arrangement of mock drills</li> <li>• Arrangement of logistics</li> <li>• Strengthening communication means.</li> </ul>	<ul style="list-style-type: none"> <li>• Revenue Dept.</li> <li>• DMC</li> <li>• DP.</li> <li>• UTDMA</li> <li>• DDMA</li> <li>• All Line Dept</li> </ul>

**2.6:-Medical Preparedness**

Task	Activity	Responsibility
Medical Preparedness	1. Preparation of Authentic medical database for public and	Medical & Health Dept. Hospitals (Govt. & Private)

Task	Activity	Responsibility
	<p>private facilities available in the UT.</p> <ul style="list-style-type: none"> <li>• Collection of Data</li> <li>• gap analysis</li> <li>• Strengthening</li> </ul>	
	<p>2. Resource management</p> <ul style="list-style-type: none"> <li>• Manpower, logistics, medical equipments, medicines, antidotes, personal protective equipments, disinfectant, vaccine</li> </ul>	
	<p>3. Identification of medical incident command system</p> <p>- Incident Commander</p> <ul style="list-style-type: none"> <li>• UT Level</li> <li>• Dist. Level</li> <li>• Disaster site</li> </ul> <p>- Identification of each section head at each level</p> <ul style="list-style-type: none"> <li>• Operation</li> <li>• Planning</li> <li>• Logistic</li> <li>• Administration &amp; Finance</li> </ul>	



Task	Activity	Responsibility
	<ul style="list-style-type: none"> <li>• Media and Public information</li> <li>- Identification of key members of different task force.</li> <li>- Control room arrangement                             <ul style="list-style-type: none"> <li>• Departmental control room</li> <li>• UT and district control room</li> </ul> </li> <li>-Appointment of liaison officer in shifts.</li> <li>- Planning                             <ul style="list-style-type: none"> <li>• Preparation of medical management plan                                     <ul style="list-style-type: none"> <li>○ UT level</li> <li>○ Dist. Level</li> <li>○ Hospital preparedness plan</li> </ul> </li> </ul> </li> <li>-Training and capacity building                             <ul style="list-style-type: none"> <li>• Hospital preparedness,</li> <li>• Pre hospital care,</li> <li>• Mass casualty management, etc.</li> </ul> </li> </ul>	

## **CHAPTOR: 3 DISASTER RESPONSE**

### **3.1 Introduction**

Response measures are those which are taken instantly prior to, and following, a disaster aimed at limiting injuries, loss of life and damage to property and the environment and rescuing those who are affected or likely to be affected by disaster. Response process begins as soon as it becomes apparent that a disastrous event is imminent and lasts until the disaster is declared to be over.

Response includes not only those activities that directly address the immediate needs, such as search and rescue, first aid and shelters, but also includes systems developed to coordinate and support such efforts. For effective response, all the stakeholders need to have a clear perception/vision about hazards, its consequences and actions that need to be taken in the event of it.

#### **Trigger Mechanism and Plan activation.**

The Revenue Department of the District Administration of Daman is the Nodal Department for controlling, monitoring and directing measures for organizing rescue, relief and rehabilitation. All other concerned line departments should extend full cooperation in all matters pertaining to the response management of the disaster whenever it occurs.

The disaster response structure will be activated on the receipt of disaster warning/on the occurrence of the disaster. The occurrence of disaster may be reported by the concern monitoring authority to the Collector by the fastest means. The Collector will further inform to Chairperson/Administrator of the UT level Disaster Management Authority and will activate all departments for emergency response including District EOC under the Guidance of UT level

Disaster Management Authority. And also, they will issue instructions to include the following details:

- Exact quantum of resources (in terms of manpower, equipments and essential items from key departments/stakeholders) that is required.
- The type of assistance to be provided.
- The time limit within which assistance is needed.
- Details of other Task/Response Forces through which coordination should take place.

The District EOC and other control rooms at the district level should be activated with full strength. Once the situation is totally controlled and normalcy is restored, the COR declares End of Emergency Response and issues instructions to withdraw the staff deployed in emergency duties.

### **Emergency Operations Centre**

Emergency Operation Center (EOC) is a physical location and normally includes the space, facilities and protection necessary for communication, collaboration, coordination and emergency information management. At present **District Disaster Cell (DDC) / Control Room is working as a form of EOC at District Level** under the supervision of District Collector/ COR.

UTDMA is in process of developing an EOC at UT as well as district level that will comprehensive network for effective disaster management which includes emergency communication, operation and response management. The EOC will be the hub of activity in a disaster situation. This is however, not to underestimate its normal time activities. The EOC, the key organizational structure, is flexible to expand when demand increases, and contracts when the situation comes to normal.

### **Activation of EOC**

The EOC is a nodal point for the overall coordination and control of relief work. In case of an **L1** Disaster the DEOC will be activated, in case of an **L2** disaster UTEOC will be activated along

with the DEOC.

The primary function of an EOC:

- Receive, monitor, and assess disaster information.
- Keep track of available resources.
- Monitor, assess, and track response units and resource requests.
- Manage resource deployment for optimal usage.
- Make policy decisions and proclaim local emergencies as needed.
- Coordinate operations of all responding units, including law enforcement, fire, medical, logistics etc.
- Augment comprehensive emergency communication from EOC to any field operation when needed or appropriate.
- Maintain EOC security and access control.
- Provide recovery assistance in response to the situations and available resources
- Keep senior, subordinate and tenant officials informed.
- Keep local jurisdictions (Village/town/City, district and State) informed.
- Operate a message centre to log and post all key disaster information.
- Develop and disseminate public information warnings and instructions.

The District level Disaster Management Authority (Collector is Chairperson of DDMA) shall be stationed at our Control Room i.e. EOC. This EOC will have exhaustive list of telephone numbers of all concerned including adjoining districts and all information and control over the

resources available to them by DRN inventory and information regarding the resource to face disaster by IRDN inventory. The Authority will work on these lines.

- Communications,

- Information discrimination to public/public awareness. We propose to have a wireless system for close coordination of various departments.

- **Search & Rescue (SAR):**

- **Maritime SAR** - This work will be looked after by Coast Guard.
- **Ground SAR** - This work will be done by Police, Fire and Civil Defense.
- **Personnel & Equipments** - As per our Resource Inventory, the Coordination Committee will mobilize all resources as per the need.
- **Medical Facilities** - The work will be taken by Director (Health).
- **NGOs**- Various NGOs will work as per the instructions of ADM/Dy Collector.
- **Transportation** - This department will provide vehicles for evacuation and for Supplying relief materials.
- **Civil Supplies** - This will be directly controlled by Deputy Collector. The foremost task of this department is to provide food, water, relief material and to run emergency shelter points at various identified places.
- **PWD** - This department will ensure drinking water facility, maintenance of Govt. buildings, provision of temporary toilets and to maintain communication network of roads.

- Electricity **department** - This department will ensure electrical supply at various shelter points, hospitals and at EOC through Generator sets till. The normal electrical supply is restored.
  
- **Miscellaneous** - The Co-ordination Authority will make arrangements regarding following issues:
  - ✓ Relief Funds
  - ✓ Cleanliness
  - ✓ Drainage
  - ✓ Cremation of dead
  - ✓ Disposal of animal carcass

### **3.2 Institutional Arrangements**

Under this Daman District Disaster Management Plan, all disaster specific mechanisms would come under a single umbrella allowing for attending to all kinds of disasters. The existing arrangements therefore will be strengthened by defining this administrative arrangement. This arrangement proposes Administrator as the head supported by the Relief Commissioner/ District Collector through the branch arrangements at the Control room both at UT level and at the district levels.

The following parts of District Administration will play an important role in mitigation of disasters in Daman.

- **Revenue Dept.**
- **Municipal Council**
- **District Panchayat.**

#### **REVENUE ADMINISTRATION**

- Collector/DM as Head of District Administration

- One ADM/Deputy Collector/Land Acquisition Collector
- One Mamlatdar
- One Block Development Officer
- Enquiry Officer City Survey
- Eight Talathis

## **DAMAN MUNICIPAL COUNCIL**

### General Information

- The oldest Municipal body in Asia. Senate established in 16<sup>th</sup> Century. Later replaced by camera Municipal Damao in Potruguese time.
- Members called as “Vogal” nominated with the approval of Governor General of Goa, Daman & Diu in Portuguese time
- Geographical Area is about 6.5 Sq.Kms with population of 36,021.
- 15 wards with 15 Councillors, President, Vice-President, Chief Officer and Municipal Engineer are the functionaries.
- Five wards are reserved for Women.

## **PANCHAYATI RAJ**

The Panchayat Institution is headed by Secretary (Panchayat) followed by Director Panchayat, President (District Panchayat) and Chief Executive Officer.

### General Information.

- Eight Panchayats - Marwad, Bhimpore, Varkund, Dabel, Kachigam, Magarwada, Damanwada, Pariyari.
- Source of income – House Tax, Birth & Death Fees, Construction Fees, Grant-in-Aid.
- Compensatory grant in lieu of Octroi by Government.

Other than above mentioned organizations officers of following departments will also have to play important role in disaster management :-

1. The Superintending Engineer, P.W.D.
2. The Executive Engineer, Electricity,
3. The Health Officer, Primary Health Centre
4. The CEO, District Panchayat
5. The Chief of Police,
6. The Chief Officer, Municipal Council,
7. The Range Forest Officer,
8. The Superintendent, Fisheries Department,
9. The Veterinary Officer,
10. The Port Officer,
11. The Sub-Inspector, Civil Supplies,
12. The Mamlatdar,
13. The Block Development Officer,
14. The Zonal Agricultural Officer,
15. The Department of Telecommunication,
16. The Fire Services,
17. Coast Guard.

### **3.2.1:-ROLE OF DISTRICT ADMINISTRATION**

On the basis of capability analysis of District Administration, our Command, Control and Coordination will be as follows:-

#### **District, Disaster Management Committee (DDMC)**

Chairman:

District Collector.

Members:

1. Sup. Of Police
2. Deputy Conservator of Forests



3. CEO, District Panchayat
4. Deputy Collector
5. Chief of Police
6. Director of Medical & Health Services
7. Superintending Engineer, PWD
8. Executive Engineer, Electrical
9. Commanding Officer, Coast Guard
10. Chief Executive Officer, District Panchayat
11. Addl. Director Education
12. Asstt. Director Transport
13. Chief Officer, Daman Municipal Council
14. The Mamlatdar.
15. The Block Development Officer.
16. The Veterinary Officer
17. The Zonal Agriculture Officer.
18. Superintendent of Fisheries
19. The Fire Officer,
20. The Port Officet
21. Sub Inspector Civil Supply.
22. Concerned commanding authorities of Coast Guard.

**Special Invitees:**

- President, Industries Association
- Development Commissioner/ IG(Police)
- Commissioner & Secretary (Finance)
- President, District Panchayat
- President, Daman Municipal Council
- Member of Parliament, Daman & Diu
- Superintending Engineer - Madhuban Dam.
- Division Engineer – Telecommunications

- NGOs, Organizations, NSS, Scout and Guides

- **Daman District Disaster Management Authority (DDMA) has been constituted in 2005.**
- **UT Disaster Management Authority (UTDMA/SDMA has been constituted in 2005.**

**Coordination meeting (District Disaster Management Committee)** by Collector with Heads of other Departments of Health, PWD, Police, Port, Education, Municipalities, Coast Guard, Animal Husbandry, Civil Supplies, Prominent NGOs, Political leaders and opinion workers of the District are to be conducted in first week of **April and September** every year on the following issues.

- Establishment and ensuring functionality of various shelters & treatment centers.
- Identification of various teams to visit affected areas for surveillance and treatment.
- Providing medicines and disinfectants to mobile teams and treatment centers.
- Organizing mobile teams to transport patient to nearest treatment centers.
- To carry out repairs of essential infrastructure, roads, drainages, vehicles, boats etc. Special directives to DMC and Panchayat to keep drainage system free of all blockages so that the rain water in the event of heavy rain drains out fast.
- To replenishing stocks of food, essential commodities, medicines including first aid kits, relief material and fodder for animals etc. wherever necessary, the Committee will also ensure availability of water at shelter points and other residential areas.
- In case of cyclone treat the administrative machinery to be geared up to meet the challenges.

- The co-ordination meeting of the related departments will take up the issue of, review of pre-contracts and pre-agreements and ask all the contractual parties to gear up for the eventuality.
- Planning of Evacuation, rescue and relief.
- Planning for participation of Public Volunteers, NGO's and charitable institutions.
- Updating of resource inventory of Daman.

### **The Collector**

- Facilitate and, coordinate with, local Government bodies to ensure that pre and post - disaster management activities in the district are carried out.
- Assist community training, awareness programmes and the installation of emergency facilities with the support of local administration, non-governmental organizations, and the private sector.
- Take appropriate actions to smoothen the response and relief activities to minimize the effect of disaster.
- Recommend Commissioner of Relief and UT Administration for declaration of disaster.

### **3.2.2:-ROLE OF P.W.D., DAMAN.**

The Public Works Department is one of the important Departments of this UT. This department is very rich regarding resources and skilled personnel. This organization will work as subsidiary part of Collectorate. The Superintending Engineer of PWD is one of the members of Disaster Management Committee and will be one of the most important allies at the time of disaster. He will ensure the prompt action of his department on the line of decision taken by Co-ordination Committee under the chairmanship of Collector, Daman. The PWD Department will also act as a filler as per the requirement of Administration. The main works assigned to PWD Department are as follows:-

1. Pre-disaster arrangement

- i) All Technical Assistants and Jr. Engineers with road gang workers and building maintenance labourers should be called and kept ready at offices with truck and all tools & equipments.
  - ii) Constant inspection should be carried on by Jr. Engineers.
  - iii) Have to manage cement bags (also empty bags) which can be used during and after disaster.
2. Lifting of debris
  3. Cleaning and preparing of roads, bridges with the help of DMC, District Panchayat and Forest Department.
  4. Repairing of all Govt. buildings and to assist private building owners. For this as a pre disaster exercise, department has to keep ready all building, maintenance, labourers with all tools and equipments.
  5. Have to maintain water supply before and after the disaster. Water supply maintenance and garage maintenance staffs are to be kept ready at and near the office/control room. To maintain uninterrupted water supply there must be generator facility at all pump houses.
  6. Department has to make proper arrangement for oil, petrol, diesel within reach not only for PWD but also for other Govt. agencies.
  7. All vehicles should be kept in working condition.

Special care for Govt. buildings and circuit house – Constant inspections are to be carried out with Jr. Engineer of Building Maintenance. The generators at Govt. offices and Circuit House should be kept in operative condition with stock of diesel and other items. eg food grains, vegetables, candles, matchbox, kerosene with staffs.

**(LIST OF OFFICERS / OFFICIALS)**

Sr. No.	Name of the Officer/ Officials	Designation	Residential Address	Phone No. /Contact No.		Mobile Number
				Office	Residence	
1.	2.	3.	4.	5.	6	7.

Sr. No.	Name of the Officer/ Officials	Designation	Residential Address	Phone No. /Contact No.		Mobile Number
1.	Shri C. A. Somani	S. E., P.W.D.	Rest House, PWD, Nani Daman	2230468 2230484		9586244660
2	Shri M. R. Rana	A.S.W., S.E., PWD.	1/374, Wadi Falia, Nani Daman	2230468	----	9825222308
3	Shri Mayank R. Rana	AE. SD- II PWD	1/374,wadi falia, Nani Daman	2230468	2251577	9898071750
4	Shri G. N. Jadav	I/C E.E.PW D WD – I, Daman	202,Narhari Appt, Mashal Chowk, Nani Daman	2230926	-	9904115133
5	Trupti Parate	Tender Clerk	Assucena Road,, Moti Daman	2230926	----	9879847330
6	Shri Y.D. Tandel	D' Man Gr.III	Fort Arera, Moti Daman	2230926	2261618	9979687258
7	Shri R.N.Ahir	D'Man Gr.III, PWD,W .D.-I Daman	C-Type Qtrs, Fort Area Moti Daman	2230926		9825714568
8	Shri P.D. Rana	Asst. Engg PWD, SD-I	Rana Street, Nani Daman	2255143		9825188289
9	Shri Pravin C.Rana	Asstt.En gg, PWD, WD-III, Daman	Rana Street Nani Daman	2255143	2250101	9879047142
10	Shri Rohit B.Modasia	Junior. Engg. PWD, SD-I	Dunes Residency Dunetha, N. Daman	2255143		9427243494

Sr. No.	Name of the Officer/ Officials	Designation	Residential Address	Phone No. /Contact No.		Mobile Number
11	Shri P.M. Tandel	Junior Engg PWD, SD-I		2255143		
12	Shri M. A. Momin	D' man' Gr-III/ ,PWD	Khariwad, Main' Road, Nani Daman	2255143	2250429	
13	Shri K.G. Navghare	Chemist , Gr.II, PWD, SD-I.	C Type Qtrs Neaer Dist. Library	2255143		
14	Shri H.R. Patel	Lab Asst; PWD, SD-I	Near Champion Bar Marwad Nani Daman	2255143	2254946	999841481
15	Shri Jayantilal R. Vala	Junior Engg PWD SD-II	Dalwada , Nani Daman	2255083		9426876745
16	Shri Dilip G.Patel	Tech Asst.PW D SDF' II	Ambawadi Moti Daman	2255083		9377474654
17	Kum.Kalpana B. Solanki	Junior Engg, PWD, S.D.II	Wadi falia, Nani Daman	2255143	2254946	
18	Shri Manish C. Kapadia	Tracer	Vaniawad Nani Daman	2255083	2254946	
19	Shri H.N. Gohil	D' Man Gr.III	PWD, SD-II			
20	Shri M.J.Mandaliya	Asst. Engg, PWD,	Rana Street, Nani Daman	2255116		9426594929

Sr. No.	Name of the Officer/ Officials	Designation	Residential Address	Phone No. /Contact No.		Mobile Number
		S.D-.IV,				
21	Shri Pankaj V.	Junior Engg. PWD, S.D.IV.,	Lohar Street Kathiria Nani Daman			
22	Shri Bipin S.Pawar	Junior Engg, PWD, S.D.IV	Near Children's Park Silvassa	2255116	2642013 2644580	9824100480
23	Shri P.D. Rana	I/.c E.E., PWD,W D III,	Rana Street, Nani Daman	2230911	22503411	9825188289
24	Shri Ashok N. Patel	Junior Engg, PWD, WD III	Vatar Ta. Pardi Valsad	2230911	2243729	9824187201

## PROFORMA – B (LIST OF VEHICLES WITH PWD)

Sr. No.	Vehicle Category	Vehicle No.
1	Water Tanker	GDB – 9914
2	Water Tanker	DD-03-A 0117
3	Water Tanker	DD-03-A 0122
4	Water Tanker	DD-03-A 0123
5	Water Tanker	DD-03-0102
6	Tempo	DD-03-0104
7	Mini Tempo	DD-03-0113
8	Quails	DD-03-D -0012
9	TVS Suzuki	DD-03-A 0042
10	Tempo	DD-03-0114

<b>Sr. No.</b>	<b>Vehicle Category</b>	<b>Vehicle No.</b>
11	Tempo	GDB – 79
12	Dumper	GDB – 73
13	Tempo Four Wheeler	GDB – 97
14	Tempo Four Wheeler	DD-03-104
15	Tempo Four Wheeler	DD-03-114
16	Tempo Three Wheeler	DD-03-112
17	Tempo Three Wheeler	DD-03-113
18	Truck	-

PROFORMA – C LIST OF PERSONS HAVING BULL DOZERS AND OTHER EQUIPMENTS.

<b>Sr. No.</b>	<b>Name &amp; Address of agency/Contractor/</b>	<b>Contact person/Phone No.</b>	<b>List of Machineries</b>
1.	Vikram Stone Quarry, Kunta	Shri Vikrambhai/Arjunbhai (M) – 9824028921	JCB, Hitachi, Road Roller, Tanker.
2.	P. D. Patil, Daman	Shri Patil Ph. 2260369	Dumper
3.	Jamnesh Const. Co., Daman	Shri N. N. Mehta/Muish Ph. 2254301	Dumper
4	Rajiv Const. Co., Daman	Shri Leeladharan/Hasubhai Ph 5545242	Dumper
5	B. U. Patel, Bhathaiya, Moti Daman	Shri Balubhai Ph. 2254175	Dumper
6	S. H. Patel, Bhimpore	Shri Shantubhai ( M ) 9825672177	JCB, Dumper Hitachi
7	A. K. Construction, Daman	Shri Ambrishbhai	Dumper



Sr. No.	Name & Address of agency/Contractor/	Contact person/Phone No.	List of Machineries
		(M) 9825112579	
8	Jay Gurudev Const, Daman	Shri Ranchhodbhai	JCB
9	Swati Construction, Daman	Shri Ashokbhai (M ) 9377651115	JCB

### 3.2.3:-ROLE OF ELECTRICITY DEPARTMENT, DAMAN

The contingency plan from Electricity Department is framed as follows:

#### A. PRELIMINARY PREPARATIONS

1. All technical and non-technical staffs are to be alert.
2. All Junior Engineers have to keep all materials ready to rectify any type of fault in supply lines.
3. The Substation battery should be checked and must be in ready to use condition.
4. Fuel for vehicle and sub-station generator must be in stock.
5. All line staff sub-stations have to be equipped with torches and cells.
6. The VHF sets should be kept in running condition. There must be sufficient sets of VHF sets.
7. The patrolling of lines should be carried out for tinning out weak points and should be recorded in sub-station for HT & LT line transformer etc.
8. First Aid Boxes should be provided at all complaint centres, sub-stations and offices.
9. Sufficient quantity to tools and plant for all section/Jr. Engineers or respective area and sub-stations should be provided. Address and phone numbers of all technical and non-

technical staff with the information regarding assigned duty must be provided at all section office and sub-station.

10. The reserved stock of lying materials should be maintained on top priority.

**B. IMMEDIATE MEASURES:**

1. Restoration of Power Supply in emergency: In cases of breakdowns of Electrical Network due to Cyclone, Tempest and Earth quakes, the department immediately will take up urgent remedial steps for attending the disturbed and affected electrical infrastructures. For this purpose, the Junior Engineers who are stationed at various complaint centres in Daman & Diu districts shall attend such works with their line staff area wise and do the needful action for immediate reliefs. The list of Jr. Engineer and staff is attached at **Annexure “A”**.
2. The 220/ KV Substation at Magarwada and 66KV Sub-station at Dabhel, Kachigam, Varkund and Dalwada are provided with relay breaker and other facilities so as to enable their consecutive area to automatically ‘put off’ in case of conductor / poles snapping which may prove fatal. List of such stations are attached at **Annexure “B”**.
3. Materials required for repairing of damages electric lines and equipments are always kept available in the stores of the electricity department. The list of Departmental stores attached at **Annexure “C”**.
4. The Junior Engineers of various sections are carrying out the said relief / repair works under guidance of their Executive Engineer / Assistant Engineer. The list of such Assistant Engineers attached at **Annexure “D”**.
5. The Department also takes the help of authorized electrical contractors who are registered electrical practioners for the UT of Daman & Diu, they provide assistant for imparting men and materials and technical expertise to the department and carryout the relief works as and when called for by the department.
6. List of private electric stores which stationed in Daman and neighboring areas that are identified for supplying the electrical line and other materials for the emergency cases and extending full co-operation to the departmental activities during disastrous situations. List of such stores attached at **Annexure “F”**.

**A. Activities for extra high-tension equipments :**

The Department has provision for repairing and reconditioning of Extra High Tensionline and equipments through the Team of GEB stationed at 220/110/66KV Sub-station at Vapi and navsari. List of such Team is attached at **Annexure “G”**.

**B. Communication facilities :**

The Department has V.H.F. & phone facilities for communication between various sub-stations and complaint centres. List of phone numbers given at **Annexure “H”**.

**C. Standby power arrangement :**

Department has provisions for making use of diesel generating sets of LT and HT Industrial consumers located at various industrial estates of **Somnath, Kachigam, Dabhel, Ringanwada, Bhenslore, Bhimpore, Kadaiya and Dalwada** areas, in such disastrous conditions. List of consumers having D.G. set has been attached at **Annexure –I**.

**D. Station / complaint center with 24 Hrs Staff on Duty** has been attached at **Annexure –J**.

**ANNEXURE “A’**

**LIST OF JUNIOR ENGINEERS AND STAFF**

**Name of Junior Engineer: Shri Jay Salanki, Phone No.9898540640**

<b>Sr. No.</b>	<b>Name of 66/11 KV Sub-station</b>	<b>Name of Sub-station Operator</b>	<b>Phone No.</b>
1.	220/66/11 KV Magarwada	Prashant	9824746985
2.	66/11 KV Kachigam	Rajesh R. Patel	9825974235
		Dipak K. Fulbariya	9978692397
3.	66/11 KV Kachigam-II	Jignesh	9825133042
4.	66/11 KV Dabhel	Patel Nareshbhai B.	8000556068
		Kaushik P. Rana	9824171433

**Name of Junior Engineer: Shri Jignesh Panwala, Phone No.9409185881**

Sr. No.	Name of 66/11 KV Sub-station	Name of Sub-station Operator	Phone No.
1.	66/11 KV Ringanwada	Dhirubhai K. Rathod	9228237356
		Kiran Fulbariya	9426868931
2.	66/11 KV Varkund	Umesh M. Patel	9638332124
		Vatesh L. Chaudary	9904064632
3.	66/11 KV Dalwada	Vikas Vala	9825572230
		Naranbhai F. Patel	9723732823
4.	66/11 KV Bhimpore	Ashok S.Prajapati	9978197416

**Kachigam area.**

Sr. No	Name	Designation	Phone No.
1.	Suresh J. Patel	Junior Engineer	9429115698
2.	Ramesh K. Patel	Lineman	9824058959
3.	Ganda Patel	Lineman	9712245003
4.	Dalpat V. Patel	Asst.L/W	9825938118
5.	Chiman Patel	Lineman	7874105306
6.	Anthan Rosaria	Lineman	9825897438

**Moti Daman Area**

Sr. No	Name	Designation	Phone No.
1.	Bhartesh Solanki	Junior Engineer	9974820660
2.	Uttam K. Patel	Assistant Lineman	9586069626
3.	Piyush D. Gohil	Line Helper	9998627024
4.	Devang P. Panwala	Line Helper	9825659396
5.	Ramdas R. Mitna	Assistant Lineman	7874114281
6.	Sudhir Damania	Assistant Lineman	9879922337

**Somnath / Ringanwada area**

Sr. No	Name	Designation	Phone No.
1.	Bharat Bamania	Junior Engineer	9662995577
2.	Ramesh Mitna	Assistant Lineman	9712885532
3.	Mohanbhai D. Patel	Assistant Lineman	9825828954
4.	Nagar K. Patel	Assistant Lineman	9825672094
5.	Ramesh M. Patel	Lineman	9825539662

**Dabhel Industrial Area**

Sr. No	Name	Designation	Phone No.
1.	Ajay Patel	Junior Engineer	9825671055
2.	Prabhubhai L. Patel	Assistant Lineman	9624411722
3.	Satish P. Patel	Line Helper	9879286853
4.	Hareshbhai B. Mitna	Line Helper	9824392112
5.	Kanti Patl	Line Helper	9726851628

**Devka, Marvad, Kadaiya, Dalwada, area**

Sr. No	Name	Designation	Phone No.
1.	Sameer Pandya	Junior Engineer	9429920604
2.	Raman B. Patel	Lineman	9979435760
3.	Pramod N. Patel	Assistant Lineman	9824785439

4.	Thakur N. Halpati	Assistant Lineman	9824733361
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### **Bhimpore Vankad & Pataliya Area**

Sr. No	Name	Designation	Phone No.
1.	Sameer Pandya	Junior Engineer	9429920604
2.	Narendra H. Palsania	Assistant Lineman	
3.	Renet Pereira	Assistant Lineman	
5.	Ramesh C. Patel	Assisant Linemen	

### **Nani Daman City**

Sr. No	Name	Designation	Phone No.
1.	Mahesh Bamania	Junior Engineer	9723990909
2.	Navin S. Halpati	Assisant Linemen	9979479108
3.	Chotu R. Patel	Assisant Linemen	9979539346
4.	Mahendra Sahani	Line Helper	9979282392
5.	Lalji Sahani	Line Helper	9825570518
6.	Chunilal Chauhan	Line Helper	9925475339

### **Varkund Substation**

Sr. No	Name	Designation	Phone No.
1.	Sameer Pandya	Junior Engineer	9429920604
2.	Kanti Halpati	Assistant Lineman	974528447

3.	Sailesh	Line Helper	9925041421
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**ANNEXURE “B”****LIST OF ELECTRIC 66/KV SUB-STATIONS**

Sr. No.	Name of sub station	Location	Phone No.
1.	66/11KV Sub-Station, Dabhel	Nr. Dabhel Indl. Coop. Society, Dabhel	2242794
2	66/11 KV Sub-Station, Ringanwada	Nr. ITI, Ringanwada, Daman	2992729
3.	66/11KV Sub-Station, Kachigam	Kachigam	2242802
4	66/11 KV Sub-Station Magarwada	Magarwada	
5	66/11 KV Sub-Station, Varkund	Near Government College, Daman	2261067
6.	66/11 KV Sub-Station, Dalwada	Kadaiya Indl. Estate, Near Village, Dalwada.	2220984
7.	66/11 KV Sub-Station, Bhimpore	Kadaiya Indl. Estate, Near Village, Dalwada.	2990003
8.	66/11 KV Sub-station, Kachigam-II	Near Premier Industrial Estate	

**ANNEXURE “C”****LIST OF DEPARMENTAL STORES**

Sr. No.	Name of Stores	Location	Phone No.
1.	Divisional Stores, Kachigam	At Kachigam Sub-Station campus.	2242802
2	Sub Divisional Stores, Somnath	At Somnath, Opp. Somnath Temple	2257500
3.	Sub Divisional Stores, Dabhel	At 66 KV Sub-Station Yard, Dabhel.	2242794
4.	Sub Divisional Stores, Dalwada.	At 66/KV Sub Station Yard, Dalwada	2220984

**ANNEXURE “D”****LIST OF EXECUTIVE ENGINEER & ASSISTANT ENGINEERS**

Sr. No.	Name of Executive Engineer & Assistant Engineer	Phone No.
1.	Shri M.R.Ingle Executive Engineer	9426982023
2	Shri Vishwambhar Singh, Assitant Engg. (O&M) S/D- I	9879058328
3.	Shri Raju. M Assitant Engineer (O&M), S/D-III	9904286603
4.	Shri M.P Singh, Assitant Engineer (Store)	9825834171
5.	Shri Anil Damania, I/c Assistant Engineer, S/D-IV	9825782962
6.	Shri Haresh Tandel I/C Assitant Enginner	9898149493
7.	Shri Sarjeet Singh, I/C Assistant Engg. (Tech)	9426881654



**ANNEXURE 'F'****LIST OF PRIVATE ELECTRICAL STORES**

Sr. No.	Name of Electrical Stores	Address	Phone No.
1.	M/s. N.R. Electrical & Consultants	Shop No.3, New Canteen Buldg, GDDIDC, Daman Indl estate, Somnath, Kachigam Rd., Daman	252205
2.	M/s. Narayan Harikrushna Traders	4, Swati Apartment, Saikrupa Society, Daman	250632
3.	M/s. Raj Electricals & Engineers	Shop No.1&2, D.K. Shopping Complex, C-5, Commercial Zone, Char Rasta, Daman	422191 430491
4.	M/s. Neelam Electrical	Sai Kripa Society No.1, Swati Apartment, Shop No. 3, Daman	250630

**ANNEXURE 'G'****LIST OF POWER AUTHORITIES**

Sr. No.	Name of Power Grid Authority	Phone No.
1.	Shri M.S. Thakur Deputy General Manager, Ambethi S/S	9429899813
2.	Shri Raghuvanshi, Manager, 400KV Magarwada	9427615762

**ANNEXURE 'H'****LIST OF V.H.F. SETS/ DG SETS**

Sr. No.	Name	Place
1	V.H.F. set for communication (Stationery Set)	66/11 KV S/S, Kachigam.

2	Stationary Set	66/11 KV S/S, Dalwada
3	Stationary Set	66/11 KV S/S, Dabhel
4	Stationary Set	Nani Daman Complain Center
5	Portable DG Sets 2 Nos	Kachigam Store

### ANNEXURE 'I'

#### List of Consumers Having D.G.Sets

Sr.No.	Name of the Consumer and Address
01	M/s. Kaisha Manufacturing Pvt. Ltd Sr.No.50/4., Kadaiya, Village Bhimpore, Daman
02	M/s. Boss Appliances No.9/5 and 9/6, Dabhel Opposite Rashmi Tiles, Vapi, Daman Road, Daman
03	M/s. Power Systems India Ltd, P.No.19/20 Silver Industrial Estate, Bhimpore, Daman
04	M/s. Megha Extrusions Plot No.101/1 Daman Industrial Estate Kadaiya, Daman
05	M/s. Maharashtra Plastics and Industries 17, Kabra Industrial Estate Kachigam, Daman
06	M/s. Plastibends India Ltd., 74/1,74/2, 74/3, Daman Industrial Estate, Kadaiya, Daman
07	M/s. Golden Cross Pharma P. Ltd, Sr.No.690/2., 3 Plot No. 17 and 18 Dabhel Daman
08	M/s. Carrier Aircon Ltd Sr.No.192/2-A Panchal Udyog Nagar Bhimpore, Daman
09	M/s. Borker Pacakging Pvt. Ltd., 341/5A Bharat Industrial Estate,

	Bhimpore, Daman
10	M/s. Super Pack Industries -54/6-A and 2-E, Village Kadaiya, Daman
11	M/s. Polyole Fibres Pvt. Ltd., 146 Village Dabhel, Daman
12	M/s. Milan Plast Pvt. Ltd, Plot No. 439/1 440-4-6 Dabhel Check Post, Daman
13	M/s. Mittal Filaments Pvt. Ltd., Plt No. 22-A Mahatma Gandhi Udyog Nagar, Dabhel Daman
14	M/s. Essar Ferro Alloys Co. 97/5 Daman Industrial Estate Kadaiya, Daman
15	M/s .Enercon (1) Ltd., (Unit- II) 33, Silver Industrial Estate, Bhimpore, Daman
16	M/s. Kabra Plastic Ltd., Pl.Sr.No.57/3(7-A).., 57/2(6-7), Dunetha, Daman
17	M/s. Triveni Rayons Pl. N.H.19., OI DC Dabhel, Daman
18	M/s. BDS Indutries Serial No. 70/2 (B) Daman Industrial Estate Kadaiya, Daman
19	M/s. Sekhsaria Export 336/3 Bhimpore, Daman
20	M/s. Super Knit Industries 91/92 Bharat Industrial Estate Kadaiya, Daman
21	M/s. Inchemie Health Specialties Pvt., Ltd., Plot No. 7., Sr. No.157/2 Mahatma Gandhi Udyognagar Dabhel, Daman
22	M/s. Meher Synthteics Pvt. Ltd., Sr.No. 112, Arnalia Village Dabhel, Daman
23	M/s. Madhusudan Industries 168, Dabhle Industrial Co-operative Society Limited, Dabhel, Daman
24	M/s. Sakshi Agencies 644/7 and 8 GL.No.4., Agarwala Industrial Estate, Dabhel, Daman
25	Shree Shyam Implex., Pl.No. 362/10 Ganesh Indutrial Estate.

	Kachigam Daman
26	M/s. Virat Industries., 220/2 and 3, 221 Dabhel., Daman
27	M/s. Pet Fibres Limited 168/82-191 Dabhel Industrial Cooperative Society Limited, Dabhel
28	M/s. Firmenich Aerinatics (I) Pvt., Ltd., 57/3 (6 and 9) Bhenslore, Dunetha, Daman
29	M/s. Daman Poythread Pvt. Limited 732/2., 733/5 and 736/6 Dabhel, Daman
30	M/s. Balsara Extrusions Pvt. Ltd Plot No. 14 and 15 Somnath Road.,Daman
31	M/s. Alkem Laboratories Limited Plot No. 167/2 Amalia Daman
32	Harsh Synthetics Pvt. Ltd., Mahatma Gandhi Udyognagar OI DC Dabhel., Daman
33	M/s. Paper Past Industries (I) Pvt. Limited (II), Plot No.99/1., Daman Insutruals Estate, Kadaiya, Daman
34	Morwal Finance PVT. Limited Serial No. 168/106 Dabhel Cooperative Society Limited, Dabhel Daman
35	M/s. Hertz Chemicals Limited 86, Silver Industrial Estate, Bhimpore, Daman

**ANNEXURE - J****STATION / COMPLAINT CENTER with 24 Hrs Staff on Duty**

<b>Sr. No</b>	<b>Location</b>	<b>Area Covered</b>	<b>Contact No</b>
1	Electricity Department Nani Daman, Near Satyanarayan Temple, Complain Center.	Nani Daman, Devka, Marvad	2255030

Sr. No	Location	Area Covered	Contact No
2	Dalwada Sub Station	Kadiya, Dalwada	2220984
3	Bhimpore Complain Center Panchayat Premises Bhimpore	Pataliya, Vankad, Bhimpore	2221127
4	Kachigam Complain Center	Kachigam, Somnath,	2242802
5	Somnath Complain Center, Opp Somanth Temple	Somanth, Dabhel	2241500
6	Varkund Sub Station, Near Govt College, Varkund Center	Varkund, Dunetha, Bhenslore	2261067
7	Dabhel Sub Station, Complain Center	Dabhel, Hingraj	2242794
8	Moti Daman Complain Centre, Opp DMC office	Full Moti Daman	2230837

### **3.2.4:-ROLE OF THE DIRECTOR, MEDICAL & HEALTH SERVICES, DAMAN.**

Disaster may create work pressure on existing Health infrastructure, but Health infrastructure is used to this type of exigencies. Health Department has prepared **Crisis Management Plan** for Daman. In this plan in detail role and responsibility of Health Department is given. Some important points are given here:

#### **1. Tagging:**

Tagging is a process of prioritizing transfer of injured, based on first hand assessment of the medical officer on the Crisis site. It is based on the medical criterion of chance of survival. Decision is made regarding cases which can wait for treatment, those which should be taken to more appropriate medical units and those which have no chance of surviving. The grouping is based on the benefit that the casualties can expect to derive from medical care, not on the seriousness of injuries.

- **Red Tag**

This tag signifies that the **patient has first priority for evacuation**. Red – tagged patients need immediate care and fall into one of the following categories:

1. Breathing problems that cannot be treated at the site
2. Cardiac arrest (Witnessed).
3. Appreciable loss of blood (more than a liter).
4. Loss of consciousness.
5. Thoracic perforations or deep abdominal injuries
6. Certain serious fractures.
  - Pelvis
  - Thorax
  - Fractures of cervical vertebrae
  - Fractures or dislocations in which no pulse can be detected below the site of the fracture or dislocation.
  - Severe concussion
  - Burns (complicated by injury to the air passages).

- **Yellow Tag**

Identifies those patients who will have **second priority for evacuation**. Such patients need care, but the injuries are not life – threatening. They fall into the following categories:

1. Second degree burns covering more than 30 percent of the body.
2. Third – degree burns covering 10 percent of the body.
3. Burns complicated by major lesions to soft tissue or minor fractures.
4. Third – degree burns involving such critical areas as hands, feet, or face but with no breathing problems present.
5. Moderate loss of blood (500 – 1000 cc)
6. Dorsal lesions, with or without injury to the spinal column.
7. Conscious patients with significant craniocerebral damage (serious enough to cause a subdural hematoma or mental confusion). Such patients will show one of the following signs:
  - a) Secretion of spinal fluid through ear or nose.
  - b) Rapid increase in systolic pressure.
  - c) Projectile vomiting.
  - d) Changes in respiratory frequently.
  - e) Pulse below 60ppm
  - f) Swelling or bruising beneath the eyes
  - g) Anisocoric pupils
  - h) Collapse.
  - i) Weak or no motor response
  - j) Weak reaction to sensory stimulation (profound stupor).

- **Green Tag**

Used on patients who are given **third priority** for evacuation and who fall into the following categories.

- **Minor lesions:**

1. Minor fractures (fingers, teeth, etc)
2. Other minor lesions, abrasions, contusions.
3. Minor burn
  - a) Second – degree burns covering less than 15percent of the body
  - b) Third – degree burns covering less than 2percent of the body surface.
  - c) First – degree burns covering less than 20 percent of the body, excluding hands, feet, and face.

- **Fatal injuries:**

1. Second and third – degree with burns over than 40percent of the body, with death seeming reasonably certain.
2. Second and third - degree burns over more than 40percent of the body, with other major lesions, as well as major fractures, major craniocerebral lesions, thoracic lesions, etc.
3. Cranial lesions with brain tissue exposed and the patient unconscious.
4. Craniocerebral lesions where the patient is unconscious and has major fractures.
5. Lesions of the spinal column with absence of sensitivity and movement.
6. Patient over 60 years old with major lesions.

[It should be noticed that the line separating these patients from red – tag casualties is very tenuous. If there are any red – tag patients, this system will have to be followed. If there are none, the yellow – tag patients with apparently fatal injuries become red – tag candidates. The reason is simple; of there are many red – tag patients with a chance to survive and there are yellow – tag patients who apparently cannot be saved because of their injuries, the time spent on the dying wounded could be better spent on the patients with a chance to survive.

- **Black Tag**

Black tags are placed on the dead, i.e. casualties without a pulse or respiration who have remained in that condition for over 20 minutes, or whose injuries render resuscitation procedures impossible.

Evacuation Procedures under the following conditions

- 1) **Casualties not trapped** or buried. Evacuate in the following order:

- Red – Tag casualties
  - Yellow – Tag casualties
  - Green - Tag casualties
- 2) **Casualties trapped or buried.** Evacuate in the following order:
- Red – Tag casualties
  - Green – Tag casualties
  - Yellow - Tag casualties
  - Black – Tag casualties not trapped or buried
  - Trapped black – Tag casualties

## 2. Crisis Management Committee

A Crisis management committee has been constituted which includes Doctors, specialists and other officers. The Crisis Management Committee will be responsible for management of casualties arising out of any Crisis. The structure of the committee is as follows: -

- Chairman - Dr K. Y. Sultan.  
Director of Medical & Health Services,  
Daman & Diu, Daman
- Vice chairman - Dr. Sunil Amonkar,  
M.medical Superintendent.  
Govt. Hospital, Daman
- Member Secretary - Dr. Shailesh Arlekar,  
Jr. Gynecologist,  
Govt. Hospital, Daman.

**Members: -** The following are the Members of Crisis Management Team.

### **TEAM 'A' SURGICAL:**

- |  |            |
|--|------------|
| 1. Dr. Sunil P. Amonkar (Anesthetist)    | 9879141800 |
| 2. Dr. Ojas Modi (Surgeon)               | 9727729497 |
| 3. Dr. C A Jog (Surgeon)                 | 9426821180 |
| 4. Dr. Sudhir Nair (Medical Officer)     | 9909943025 |
| 5. Dr. Madhuri Agrawal (Ophthalmologist) | 9824108354 |
| 6. Smt. Anita Abraham, Staff Nurse       | 9898143506 |
| 7. Rosa Pereira, Ward Sister             | 9825519962 |



- |                                   |            |
|-----------------------------------|------------|
| 8. Smt. Chaya Patel (Staff Nurse) | 9712420384 |
| 9. Smt. Jancy John (Staff Nurse)  | 9426321328 |
| 10. Mr.Natwar Mitna (Attendent)   | 9979428380 |

**TEAM 'B' MEDICAL:**

- |  |            |
|--|------------|
| 1. Dr. Nitin Modi (Anesthetist)              | 9825130429 |
| 2. Dr. Mayur Modasia (Physician)             | 9099119187 |
| 3. Dr. Dhanvidya Prabhakar (Medical Officer) | 9998754459 |
| 4. Smt. Induben Patel, (Ward Sister)         | 9879269498 |
| 5. Smt. Archana Vyas, (Staff Nurse)          | 8000009221 |
| 6. Smt. Rakesh Meena                         | 9727011734 |

**TEAM 'C' TRAUMA (ORTHOPAEDICS) :**

- |   |            |
|---|------------|
| 1. Dr. Shailesh Arlekar (Sr.Gynecologist)   | 9925047850 |
| 2. Dr. Sunita Ajani (Anesthetist)           | 9879148001 |
| 3. Dr. S.G. Rathod ( Chief Medical Officer) | 9925679231 |
| 4. Mr. Vinod Surti (Staff Nurse)            | 9427870962 |
| 5. Shri Indraj Yadav (Staff Nurse)          | 9510055552 |
| 6. Smt. Bella Joshi (Staff Nurse)           | 9429115528 |

2. (A) **Mobile Unit/QRT of CHC, Moti Daman for Crisis Management:** for entire Moti Daman and areas of Nani Daman except Kachigam, Dabhel and Ringanwada, and Varkund.

**TEAM I**

- |                         |   |                 |
|-------------------------|---|-----------------|
| 1) Dr. H.K. Vaidya      | - | Medical Officer |
| 2) Smt. Veena Korah     | - | Staff Nurse     |
| 3) Shri. Lallu Halpati  | - | Attendant       |
| 4) Shri Dinesh Bhandari | - | Driver          |

**TEAM II**

- |                          |   |                 |
|--------------------------|---|-----------------|
| 1) Dr. Suhash Solanki    | - | Medical Officer |
| 2) Shri Francisco Colaco | - | Staff Nurse     |
| 3) Shri. Dhiru Halpati   | - | Attendant       |

4) Shri Chhotu Damania - Driver

(B) **Mobile units/QRT for PHC, Kachigam:** for areas of Kachigam, Dabhel and Ringanwada, and Varkund.

#### **TEAM I**

- |                           |   |                      |
|---------------------------|---|----------------------|
| 1) Dr. Devendra K Makwana | - | I/c. Medical Officer |
| 2) Dr. pratap Sonane      | - | Medical Officer      |
| 3) Smt. Daxa Ahir         | - | Staff Nurse          |
| 4) Shri Ramesh Halpati    | - | Attendant            |
| 5) Shri Daya Patel        | - | Driver               |

#### **TERMS AND REFERENCE OF THE TEAMS:**

1. The team in the respective areas will work with the composite team constituted for the purpose of search and rescue operations by the Police Department and PWD by pooling all the medical equipments, life saving medicines etc. as listed in the enclosed Notes under their disposal.
2. The team shall execute the instructions on Crisis preparedness measures in the Pre-Crisis phase and post Crisis rehabilitation passed on to them by the Union Territory Crisis Management Authority.
3. The team members shall participate in the Training Programmes organized for the purpose of Search and Rescue Operations during calamities.
4. The team shall function as a cohesive team and shall extend fullest cooperation for the composite team during the calamity.

Administrative measures:-

#### ➤ **Health Education :-**

During the time of pre-disaster period, mass media like Radio, News Paper, Pamphlets, Leaflets containing small repeated messages on personal hygiene, water consumption, use of boiled water and chlorine tablets need to be distributed.

Food consumption: - To avoid use of cheap ice creams, candles, food prepared and stored in open, non consumption of stale and overnight food etc. will be printed and distributed among the population.

#### ➤ **Preventive measures against disease :-**

- Disinfection of water sources

- Necessary vaccine, medicines and ORS packets will be keep ready for any preventable epidemic in high risk groups of population.
  - Necessary instruction and guidelines may be issued to Daman Municipality and Gram Panchayat in affected area for proper disposal of water and excreta.
  - Health checkup for high risk group i.e. children below 5 years, pregnant and lactating mothers in Anganwadi, Balwadi, Checkpost and school to be done and required immunization treatment so be carried out.
  - Control room to be established at the affected area, affected PHC and District Headquarter to provide necessary information, Health Education and guidance to the population.
- Identification of target groups
  - Procurement of Medical stores
  - Establishment of Medical Camp
  - Setting up of Epidemiological Surveillance: - Epidemiological Surveillance to be set up through Sub-Centre, PHC and Government and Private Hospital.

Incidence of epidemic prone diseases will be notified to Health Authority regularly.

- Monitoring and Review:-
  - A monitoring cell will established under the charge of Senior Doctor to exclusively monitor and review the public health measures in the affected area in the District.
  - Epidemiological cell of the Directorate of Health Services will be alerted and asked to keep itself ready for any eventuality. If any epidemic disease break-out, the unit will be asked to take anticipatory preventive measures in the form of obtaining information in respect of epidemic prone disease immunization of preventable diseases etc. The emergency drugs, vaccines etc. should be procured and kept ready.
  - One Doctor is identified at District level to co-ordinate and monitor all public health measures for flood/cyclone affected area in the District.

- The Directorate of Health services will send regular information to officer who is earmarked to receive all the information and process the same to the Department of Health in the Directorate General of Health Services, New Delhi.

### Resources available with Health Department

#### **HEALTH INFRASTRUCTURE:**

<b>Infrastructure</b>	<b>No.</b>
Hospital (Govt.)	1
Community Health Centre	1
Primary Health Centre	2
Sub – Centres	20
Hospital (Private)	9
Bed Strength (Govt.)	202
Blood Bank (Govt.)	1
Integrated Counseling & Testing Centre (Govt.)	3
RTI/STI Clinics (Govt.)	2

#### **HEALTH MANPOWER SANCTIONED STRENGTH:**

<b>Manpower</b>	<b>Sanctioned under UT fund No.</b>
Specialist	18
Medical Officer	20

Public Health Dentist	4
Asstt. Matron / Ward Sister / Sister in Charge / PHN	10
Staff Nurse	45
Pharmacist	10
X – Ray Technician	6
Lab. Technician / Lab. Assistant	10
Health Worker (F) / ANM	25
Health Worker (M) / BHW	16
Extension Educator / Health Educator	2
Health Assistant (F) / LHV	2
Health Assistant (M) / SI	1
Para Medical Worker (Leprosy)	4
OT Technician / Anesthetist Asstt / ECG Technician	3

**Bed Strength in Hospitals / CHCs / PHCs**

Name of the hospital	Bed Strength
Govt. Hospital	130
CHC, Moti Daman	30
PHC, Moti Daman	20
PHC, Kachigam (including Manochiktsa Kendra)	22
<b>TOTAL</b>	<b>202</b>

**Availability of Ambulance & Mobile vans:**

Type of Ambulance	Vehicle Registration No.	Name of Institution
Maruti Van	DD – 03 – H – 101	CHC, Moti Daman
	DD – 03 – C – 108	CHC, Moti Daman
	DD – 03 – A – 127	Govt. Hospital, Daman
TATA Sumo (Under National Ambulance Service)	DD – 03 – E – 107	CHC, Moti Daman
	DD – 03 – E – 109	CHC, Moti Daman
	DD – 03 – E – 108	Govt. Hospital, Daman
Medium Size Vehicle (Force / Swaraj Mazda)	DD – 03 – G – 109	PHC, Kachigam
	DD – 03 – G – 104	Cardiac Ambulance (MPLAD Scheme)
	DD – 03 – G – 106	Mobile Medical Unit
	DD – 03 – G – 146	Community Health Centre, Daman
	DD – 03 – H – 104	Govt. Hospital, Daman
Mortuary Van	GDB – 60	Govt. Hospital, Daman
Blood Transportation Van	DD -03 – G – 0012	Community Health Centre, Daman
Vaccine Van	DD – 03 – 105	Community Health Centre, Daman

**LIST OF HOSPITAL IN PUBLIC AND PRIVATE SECTOR  
IN DAMAN DISTRICT**

Sl. No.	Hospital	Address	Phone No.	Name of in-charge
<b><u>PUBLIC (GOVT.) SECTOR</u></b>				
1	Govt. Hospital	Marwad, Nani Daman	0260 – 2254266 0260 – 2251691	Dr B R Chand Medical Superintendent
2	Community Health Centre	Fort Area, Moti Daman	0260 – 2230470	Dr H K Vaidya
3	Primary Health Centre	Near Power House, Kachigam	0260 – 2242814	Dr Devendra K Makwana
<b><u>PRIVATE SECTOR</u></b>				
1	Sai Sarvodaya Hospital	Near Daman Talkies, Prabhu Falia, Nani Daman	0260 – 3295109	Dr R M Jariwala
2	Ashok Hospital	Tin Batti, Nani Daman	0260 – 6546133	Dr Ashok Dhanwani
3	Jog Hospital	Main Road, Dunetha	9426821180	Dr Sushma Jog
4	Hansa Hospital	Plot No. 681/1 &2, Amaliya, Dabhel	0260 – 2242379	Dr Pankaj Desai
5	Ashwini Hospital	Vishweshari Apptt., Nani Daman	0260 – 2260260	Dr Ramdas B
6	Life Care Hospital	Behind Sarvajanic School, Near Dhobi Talav, Khariwad, Nani Daman	0260 – 2250050 9825149662	Dr Bijal Kapadia
7	Doctor House	Tin Batti, Nani Daman	0260 – 6547834	Dr Ashok Dhanwani

8	Care & Cure Hospital	Main Road, Dunetha	9099119187 9978817892	Dr Uday Trivedi
<b>MEDICAL EDUCATIONAL INSTITUTE :</b>				
1	Vaidik Dental College & Research Centre	Near Basukinath Temple, Main Road, Dalwada	0260 – 2220455	Shri Anton Misquista

### LIST OF DOCTORS IN DAMAN DISTRICT

#### GOVERNMENT SECTOR:

Sl. No.	Name	Address	Phone No.	Remarks
1	Dr K Y Sultan	CHC Moti Daman	9978930867	
2	Dr Sangeeta Joshi	CHC Moti Daman	9978930863	
3	Dr K G Rathod	NVBDCP, Moti Daman	9978930860	
4	Dr H K Vaidya	CHC Moti Daman	9978930857	
5	Dr Suhash Soalnki	CHC Moti Daman		
6	Dr Hiren Patel	CHC Moti Daman	9979995524	
7	Dr Tapan Desai	CHC Moti Daman	9723326768	
8	Dr Meghal D Shah	CHC Moti Daman	9712983313	
9	Dr Amit Jog	CHC Moti Daman	02602262190	
10	Dr Pragnesh Desai	CHC Moti Daman	9824302088	Pediatrician Visiting Mon-Fri 2.30 – 5.30 pm
11	Dr Ashish Gusani	CHC Moti Daman	02602422550	Ophthalmologist



Sl. No.	Name	Address	Phone No.	Remarks
				Visiting Fri 2.30 – 5.30 pm
12	Dr Niyut Shah	CHC Moti Daman		Surgeon Visiting
13	Dr Nimesh Shah	CHC Moti Daman	9825499570	Dermatologist Visiting Wed 2.30–5.30pm
14	Dr Usha Hiranjal	CHC Moti Daman	9898053726	Ophthalmologist Visiting Mon, Tue, Wed 9.00 am – 1.00pm
15	Dr Krishna Damania	CHC Moti Daman		Ophthalmologist Visiting Thu, Fri, Sat 9.00 am – 1.00pm
16	Dr Chandrika Arlekar	CHC Moti Daman		Gynecologist Visiting Mon-Fri 2.30 – 5.30 pm
17	Dr Hitendra Patel	CHC Moti Daman	9825188935	Radiologist Visiting Mon – Fri 9.00-1.00pm

Sl. No.	Name	Address	Phone No.	Remarks
18	Dr Ivan Vas	CHC Moti Daman	9824140477	Dentist
19	Dr Lovelina Dias	CHC Moti Daman	9879374647	
20	Dr Kajal Vaidya	CHC Moti Daman	9558824458	Dentist Visiting Mon - Sat
21	Dr Thakur Sahu	CHC Moti Daman	9427577451	AYUSH
22	Dr Devendra K Makwana	PHC, Kachigam	9824718218 8980004210	
23	Dr Pratap U Sonane	PHC, Kachigam	9687119400	
24	Dr Rizwana M Pradhan	PHC, Kachigam	9558825649	
25	Dr Sonal Sachdev	PHC, Kachigam	9825879556	
26	Dr Manisha N Shah	PHC, Kachigam	9427112620	Gynecologist Visiting Mon – Fri 2.30 pm– 5.30 pm Sat – 9.00 – 1.00
27	Dr Sachin Joshi	PHC, Kachigam		Pediatrician Visiting Tue - Fri 2.30 pm– 5.30 pm
28	Dr Sachin Raj Marjara	PHC, Kachigam	9601484419	Dentist
29	Dr Jaymin C Patel	PHC, Kachigam	9879933600	AYUSH Visiting Mon – Sat

Sl. No.	Name	Address	Phone No.	Remarks
30	Dr Kuntal N Chudasama	PHC, Kachigam	9429117831	AYUSH Visiting Mon – Sat
31	Dr Sunil Amonkar	Govt. Hospital, Daman	9979141800	Medical Superintendent
32	Dr Shailesh Arlekar	Govt. Hospital, Daman	9925047850	Gynecologist
33	Dr S G Rathod	Govt. Hospital, Daman	9925679231	
34	Dr Sudhir Nair	Govt. Hospital, Daman	9909943025	
35	Dr N N Singh	Govt. Hospital, Daman	9574662202	
36	Dr C A Jog	Govt. Hospital, Daman	9426821180	Surgeon
37	Dr Mayur Modasia	Govt. Hospital, Daman	9099119187	Physician
38	Dr Paresh Tandel	Govt. Hospital, Daman	9824302088	Physician
39	Dr Pravin Pancholi	Govt. Hospital, Daman	9712799457	Gynecologist
40	Dr Nitin Modi	Govt. Hospital, Daman	9825130429	Anesthetist
41	Dr Saurabh Modasia	Govt. Hospital, Daman		Pediatrician
42	Dr Sunita Ajani	Govt. Hospital, Daman	9824148001	Anesthetist
43	Dr Madhuri Gupta	Govt. Hospital, Daman	9824108354	Ophthalmologist
44	Dr Ojas Modi	Govt. Hospital, Daman	9727729497	Surgeon
45	Dr Mithun Jain	Govt. Hospital, Daman	9727771073	ENT Surgeon
46	Dr Sudarshan Thakur	Govt. Hospital, Daman	9427577451	
47	Dr Dhanvidya P	Govt. Hospital, Daman	9998754459	
48	Dr Preeti C Halpati	Govt. Hospital, Daman	7567509260	
49	Dr Zankita Shah	Govt. Hospital, Daman	8000173186	
50	Dr Navin Shirodkar	Govt. Hospital, Daman	9428151028	

Sl. No.	Name	Address	Phone No.	Remarks
51	Dr Prashant R Sagar	Govt. Hospital, Daman	9033711468	
52	Dr Keyur Desai	Govt. Hospital, Daman	9824103526	Dentist
53	Dr Yashwant Lokadia	Govt. Hospital, Daman	9979052182	AYUSH – visiting  Mon – Sat
54	Dr Meghana Par	Govt. Hospital, Daman	9426779095	
55	Dr Pinal Patel	Govt. Hospital, Daman		
56	Dr Rajesh S Halpati	Govt. Hospital, Daman	9898097242	Dentist (Visiting)  Mon – Sat
57	Dr Nimesh Shah	Govt. Hospital, Daman		Dermatologist  Visiting  (Mon / Fri) 2.30pm-5.30pm
58	Dr Snehal Trivedi	Govt. Hospital, Daman	9925046864	Pathologist  Visiting  (Mon / Fri) 2.30pm-5.30pm
59	Dr Siddharth Jain	Govt. Hospital, Daman		Nephrologists  Visiting  (Sat)  2.30pm-5.30pm
60	Dr Yeshwant V Sathaye	Govt. Hospital, Daman		Laparoscopic Surgeon  Visiting  First / Second week of every

Sl. No.	Name	Address	Phone No.	Remarks
				month

**PRIVATE SECTOR :**

Sl. No.	Name	Address	Phone No.	
1	Dr Sushma Jog	Jog Clinic, KK Marg	9426821180	
2	Dr Ramdas B	Ashwini Hospital, Vishweshari Apptt., Nani Daman	9328214026	
3	Dr Pankaj Desai	Hansa Hospital, Amaliya, Dabhel	9909012179	
4	Dr Meena Desai	Hansa Hospital, Amaliya, Dabhel	9909012179	
5	Dr S J Ahluwalia	Near Daman Talkies, Nani Daman	98252 55282	
6	Dr Arun Supekar	Near Mashal Chawk, Nani Daman	9824387750	
7	Dr Ashok Dhanwani	Ashok Hospital, Tin Batti, Nani Daman	9825779724 0260 6546134	
8	Dr Usha Heranjal	Anu Eye Care, Main Road, Khariwadi, Nani Daman	9824153126	
9	Dr Rashmi Trivedi	Opp. Basukinath Temple, Dalwada, Nani Daman	9978440061	
10	Dr Sarosh Lath	Opp. Seva Medical Store, Main Road, Nani Daman	9978353611	
11	Dr B Hansraj	Main road, Ambawadi,	0260 2231372	

Sl. No.	Name	Address	Phone No.	
		Moti Daman		
12	Dr M R Prabhakar	Opp. CP Shah Petrol Pump, Main Road, Nani Daman	9427140043	
13	Dr Hitendra Patel	Sea Face Road, Nani Daman	9825188935	
14	Dr Arvind Gori	Somnath	9824460288	
15	Dr Ramji Chudasma	Opp. Sai Kripa Society – 2, Near Mashal chowk, Nani Daman	-	
16	Dr Bijal Kapadia	Life Care Hospital, Dhobi Talav, Nani Daman	9925012662	
17	Dr Jayshree Kapadia	Life Care Hospital, Dhobi Talav, Nani Daman	9925012662	
18	Dr R M Jariwala	Sai Sarvodaya Hospital Near Daman Talkies, Prabhu Falia, Nani Daman	9377855809	
19	Dr J S Prabhakar	Opp. Municipal Market, Nani Daman	0260-2254456 9227221888	
20	Dr Krishna Damania	Ophthalmologist	9825330113	
21	Dr S S Vaishya	Zapa Bar, Main Road, Nani Daman	9974041822 9879475555	
22	Dr Manisha Rana	Vegetable Market, Nani Daman	9898071793	<b>AYUSH</b>
23	Dr Paramjeet Kaur	Bhimpore	9898026873	<b>AYUSH</b>

Sl. No.	Name	Address	Phone No.	
24	Dr Upadhyay Dharmesh	Vasumati Clinic, Somnath	9825224258	<b>AYUSH</b>
25	Dr Vishal Patel	Organ on, Daman Kunta Road, Nani Daman	9537334332	<b>AYUSH</b>
26	Dr Hemant Vani	Gokul Clinic, Bhimpore	9727236005	<b>AYUSH</b>
27	Dr Kailash Patil	Shri Krishna Clinic, Varkund	9427947172 8530988797	<b>AYUSH</b>
28	Dr Parimal Lad	Arogya Niketan	9725726353	<b>AYUSH</b>
29	Dr Deepali Birari	Sai Shradha, Ringanwada	9925679248	<b>AYUSH</b>
30	Dr Kuntal Chudasma	Dunetha	-	<b>AYUSH</b>
31	Dr Wasim	Nani Daman	9824964072	<b>AYUSH</b>
32	Dr Uday Trivedi	Bhathela Business Centre, Sea Face Road, Nani Daman	9879999264	<b>AYUSH</b>
33	Dr Paresh Shah	Sagar Appartment, Tin Batti, Nani Daman	0260 2254951	<b>AYUSH</b>
34	Dr Gaurang Dixit	Bhenslore, Nani Daman	9173866797 9925127900	<b>AYUSH</b>
35	Dr Roshni Shah	Dilip Nagar, Nani Daman	-	<b>AYUSH</b>
36	Dr Shasikant Patil	Mashal Chowk, Nani Daman	9924331556	<b>AYUSH</b>
37	Dr Ajay Patil	Ghelwad Falia, Dabhel	9998423188	<b>AYUSH</b>
38	Dr Madhukar	Dabhel	9327320566	<b>AYUSH</b>

### 3.2.5:-ROLE OF POLICE, DAMAN.

#### Warning System:-

As soon as warning about disaster is received through disaster warning system, all concerned authority of Daman District i.e. Collector, Port Officer, Superintendent Custom, Mamlatdar etc. are informed and wide publicity is done in a district by Police and all out posts are alerted immediately on the wireless.

#### Deployment of Force:-

At the time of disaster following staff can be deployed to help the disaster affected persons, prevent any theft, prevent entering of public in house likely to cause injuries to their life, maintenance of law and order etc.

#### LIST OF SANCTIONED/PRESENT STRENGTH FOR POLICE, RANK WISE

Daman & Diu (till date 31/08/2013)

	DIG/ IG	SP	ASP	COP /SDPO	PI	PSI	ASI	HC	PC	Driver
Sanctioned Strength	01	02	-	02	06	21	21	92	265	07
Present Strength	01	04	01	02	06	12	21	77	132	08

	Steno	Head Cook	Asst.Cook	Sweeper	Mess servant	Skipper mate	Sukhani	UDC	LDC	Home Guard
Sanctioned Strength	01	01	02	01	01	04	08	02	02	225



Present Strength	01	01	02	01	01	03	05	02	02	225
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**Daman District**

	DIG/ IGP	SP	ASP	COP/ SDPO	PI	PSI	ASI	HC	PC	Driver
Sanctioned Strength	01	01	-	01	03	08	06	30	110	05
Present Strength	01	02	01	01	03	08	15	46	122	07

	Head Cook	Asst. Cook	Sweeper	Mess servant	Skipper mate	Sukhani	Steno	UDC	LDC	Home Guard
Sanctioned Strength	01	01	-	01	02	04	01	01	02	148
Present Strength	01	01	-	01	02	03	01	01	02	148

**LIST OF WIRELESS SETS/CALL SIGNS**

H.F. SETS	VHF STATIC SETS	VHF MOBILE SETS	TOTAL	HAND HELD SETS	CALL SIGN
02	13	59	72	83	List attached

**CALL SIGN LIST OF OFFICERS**

1	IGP	Lion
2	SP, Daman	Tiger
3	SP, (Crime & Traffic Daman)	Tiger-1
4	ASP, Daman	Golf
5	SDPO, Daman	Panther
6	PI (Crime Branch)	Delta-1
7	I/c. Police Staion, Nani Daman	Delta-10
8	I/c. Coastal Police Station, Moti Daman	Delta-5
9	I/c. Control Room Daman	Delta-6
10	I/c. MT section	Delta-7
11	PSI- Suresh Shah	Delta-20
12	PSI-U.R. Kale	Delta-22
13	PSI-R.N.Solanki	Delta-16
14	PSI-Balraj Singh (Coastal Boat Staff)	Delta-29
15	PSI-Vajish Pundhir (Coastal Boat Staff)	Delta-30
16	ASI- Magan L. Vala	Delta-26
17	ASI-K.B. Chauhan	Delta-25

**CALL SIGN LIST OF STATIC STATION**

1	Police Control Room	Delta-50
2	Coastal Police Station, Moti Daman	Delta-60
3	Out Post Moti Daman	Delta-51
4	Out Post Kalaria	Delta-52
5	Outpost Kachigam	Delta-53
6	Outpost Bhimpore	Delta-54
7	Outpost Dabhel	Delta-59
8	Check Post Dabhel	Delta-55
9	Check Post, Patalia	Delta-56
10	Fire Station, Daman	Foxtrot-50

**PARTICULARS OF IR BATALION****1. Rank Wise strength**

Sr. No.	Particulars	A/C	Insp.	PSI	ASI	HC	Const	G&D	Total
1	Sanctioned	1	1	3	1	20	91	9	126
2	Posted	--	1	3	--	26	119	4	153

**Rehabilitation of Civil Facility after disaster is over:-**

Above force will be used for rehabilitation of civil facility to the disaster affected area after disaster is over. They will help the disaster affected area for supplying of essential commodity like milk, restoration of drinking water, medicine etc.

**3.2.6:-ROLE OF DAMAN MUNICIPAL COUNCIL, DAMAN**

For the precaution measures during monsoon season, two teams of Municipal field workers is constituted for emergency duty at Nani Daman and Moti Daman Municipal area separately for the purpose of rescue operation and removal of debris / fallen structure etc. as under:-

1. In charge Authority : (i) **Shri. Derick Anthony Francis Colimao,**  
Mob. 9033459153
- (ii) **Shri. Dhirubhai R. Halpati**  
I/c. of Nani Daman  
Mob. 9925738029
- (iii) **Shri. Bharat B. Patel,**  
I/c. of Moti Daman  
Mob. 9712276977

**2. A. TEAM FOR NANI DAMAN MUNICIPAL AREA**

- In charge of circle (i) **Shri. Dhirubhai R. Halpati**  
Mob. 9925738029
- (II) **Sunil C.Patel**  
Site Supervisor  
(M) 9898888249
- (III) **Ramesh D. Tandel**

Site Supervisor  
(M) 7874497822

Vehicles kept ready in emergency (I) **Tractor No. DD 03 D 0102** (with Driver)  
(II) **Tractor No. DD 03 E 2017** (with Driver)

**B. TEAM FOR MOTI DAMAN MUNICIPAL AREA**

In charge of circle (i) **Shri. Bharat B. Patel**  
Supervisor  
Mob. 9712276977

(ii) **Shri Santosh G. Mangela**  
Asst. Municipal Inspector  
(M)- 9825257887

Vehicles kept ready in emergency: Tractor No. DD 03 C 0762 (With Driver)

Shri. Suresh M. Patel, Sr. Supervisor, Shri Champak B. Patel Sr. Supervisor, Santosh G. Mangela, AMI should always be in touch with the President, the Chief Officer and the Municipal Engineer and have to strictly follow the instructions.

**Pre-Cyclone or any other Disaster Planning:-**

- Cleaning all existing drainage systems and road culvert to facilitate speedy drainage of water.
- Maintenance of vehicle undertaken (Heavy & Light).
- The stock of cleaning equipment must be maintained as per requirement.
- Good Stocks of Street lights are to be maintained for usage at later stage.
- Empty cement bags are to be collected.

**During Receiving Cyclone or any other Disaster Warning:-**

- Total staff is deputed for emergency, leaves cancelled, if any.
- Sand bags maintained for usage.
- Training of staff to be undertaken.

**Post Disaster:-**

- Cleaning of drainage, roads etc. of various sledges and other blocking materials.
- Fallen trees and poles to be removed.
- Disposal of dead bodies.
- Providing vehicles for transportation of proper food and other materials
- Give employment to people of affected areas to carry out necessary works as well as create livelihood for them.
- Repairing of roads, street light and other assets proper functioning of municipal market, vegetable market, fish market etc. Undertaken to fulfill basic necessities.

**3.2.7:- ROLE OF THE DCF, DAMAN FOR CYCLONE.**

During the cyclone the following staff will be on duty at the place/area shown against their names.

**Preliminary Works:-**

As soon as message is received, the DCF will communicate to all concerned officials and forest guards and the concerned officials will inform that they should inform Panchayat or leaders of the society that no one should remain under the tree which will cause the damage to life and property, and will take the further care.

After the Cyclone.

DCF will ensure that all forest personnel will take prompt action and patrol the area and remove the trees fallen on road. The priority of work will be:-

- Cleaning of roads and transporting of the material to depot.
- Assessment report of damage caused to the forest plantation and further operations.

Recruitment of Equipments & Labours:-

- Every forest guard will provide with 10 labourers (male) along with axe, saw, rope, etc.
- The department is having one electric saw and required to purchase one more (including generator). The appropriate cost will be Rs.60,000/- for equipments.
- The work of roadside clearance will be taken up jointly with PWD, Fire Brigade and Forest office.
- The Range Forest Officer will carry out the overall supervision.

**LIST OF OFFICERS/OFFICIALS**

Sr. No.	Name of Officer	Residence	Mobile No.
1.	Shri Arulrajan P. IFS Deputy Conservator of Forest, Daman & Diu	----	8980555551
2	Shri K. S. Gaikwad, Range Forest Officer, Daman.	----	9825133053
3.	Shri Pankaj Patel, Forest Guard	----	9824110917
4.	Shri Vanu Patel, Forest Sepoy	----	9825481057
5.	Shri Gurudas S. Gaonkar, Forest Sepoy	----	9898183707
6.	Shri Mukesh M. Patel, Forest Guard	----	9898304185

### **3.2.8:- ROLE OF THE SUPERINTENDENT FISHERIES.**

Fisheries department is mainly concerned with Cyclone ND Tsunami. In the coastal areas there may be condition of high wind and heavy sea waves but due to proper plantation of trees (casuarinas) will reduce the impact and there will be minimal impact on human lives and properties. In recent times, with the latest technological developments in the dissemination of cyclonic information, loss of life had been reduced to negligible on land. But we have to ensure that the information regarding cyclone must reach to the fishermen who would be on the sea at the time of cyclone.

#### **1. Provision of Life Jackets and Radio Transistor in the Fishing Vessels:-**

The Fisheries Department provides life jackets to the fishermen. The Department is trying that every fishing vessel should have a Transistor Radio so that they get timely information about the warning of cyclone.

#### **2. Establishment of VHF network and fishing vessels:-**

The radio Tran receiver were available in many frequency bands and could be classified broadly into three categories, viz. Short Range Communication (VHF and UHF) Medium Range Communication (MF and HF low power) and Long Range Communication (HF high power). The wireless planning and coordination cell in Ministry of Communication had allotted channel 15 and 16 for safety of life of fishermen when they were at sea, broadcasting weather bulletins and cyclone rescue operations during emergencies. The installation of 25W or 50W VHF mobile radio Trans receiver in the mechanised fishing boats for effective communication. We insisted the fishermen/owner of fishing vessels to keep VHF sets and made provision of 20% subsidies to the fishermen for purchase and installation of wireless/VHF equipment in their fishing vessels and planned to establish each aerial masts and control tower of VHF network at office of the Suptd. Of Fisheries, Daman.

#### **3. Improve Safety at sea for small Trawlers:-**

The following recommendations are to be made.



- (a) The maximum OAL limit of small fishing trawlers may be considered up to 24 mt. and should be fully harmonized with Merchant Shipping and Fisheries Acts and should be enacted to ensure that a safety equipment including life floats, life jackets, life buoys, torches, flares, fire extinguishers, a first aid kit, a two band transistor radio, a compass, an aneroid barometer and an emergency hull repair kit.
- (b) The necessary legal framework together with the appropriate implementing at sea of regulations pertaining to safety equipment.
- (c) All small mechanized fishing vessels below 20 mt. OAL should be registered and insured with the competent authority.
- (d) Awareness building and practical training with regard to all aspects of safety sea should be provided to owners, operators and crew of small mechanized fishing trawlers using appropriate media and demonstration equipment by fisheries department, coastguard and other interested organizations through fishermen's associations, co-operatives, social and culture organizations.
- (e) Small mechanized fishing trawlers should be equipped with a VHF radio set procedures and should be laid down by the competent authority to facilitate the allocation of a VHF license.
- (f) Storm safety action groups with volunteers of fisheries co-operative societies, fishermen associations, local mandal etc. are to be established in the fishing villages of the district to organize relief measures and equipped with disaster preparedness skills.

#### **LIST OF DIVERS**

SR. NO	NAME OF THE DIVERS	ADDRESS	CONTACT NO.
1.	Arvind Rama Tandel	Batlisheri, Nani Daman.	9824736900
2.	Prakash Thakor Tandel	Kolimar sheri, Nani Daman.	9825539117
3.	Keshu Lakhma	Parkota shri, Nani Daman.	9898685484
4.	Devchand Thakor Tandel	Navi ori, Nani Daman.	9825208381
5.	Arvind Mekan Tandel	Bodajiva sheri, Nani Daman.	9427189545

6.	Ashok Hari Tandel	Bodajiva sheri, Nani Daman	9898000038
7.	Rajesh Bhula Tandel	Parkota sheri, Nani Daman	9879677734
8.	Mahesh Soma Tandel	Motegam sheri, Nani Daman	2243560
9.	Dalpat Bhula Tandel	Parkota sheri, Nani Daman.	9925444388
10	Arvind Rama Tandel	Vaniawad, Nani Daman.	9723745622
11.	Mahendra Rama Tandel	Vaniawad, Nani Daman.	9979435766
12.	Vinesh Makan Tandel	Vaniawad, Nani Daman.	9374861475
13.	Mahendra Kanji Tandel	Dabha sheri, Nani Daman	9825630322
14.	Pinal Chandrakant Tandel	Motegam sheri, Nani Daman	9925996928
15.	Hansraj Bhagwan Tandel	Batli sheri, Nani Daman	9624447444

#### LIST OF CANOE OWNERS

01	Ishwar Chipka Tandel	Koda Falia, Nani Daman	--
02	Prema chipka Tandel	Holi Falia, Nani Daman	--
03	Yogesh Ramji Tandel	Holi Falia, Nani Daman	--
04	Kamlesh Jivan Tandel	Holi Falia, Nani Daman	--
05	Jayanti Ramji Tandel	Holi Falia, Nani Daman	--
06	Arvind Rama Tandel	Vaniawad, Nani Daman	9723745622
07	Kanti Rama Tandel	Vaniawad, Nani Daman	--
08	Ramesh Prema Tandel	Navi ori, Nani Daman	--
09	Kanji Narsi Tandel	Ambawadi, Moti Daman	9879683622
10	Kamlesh Madhav Tandel	Ambawadi, Moti Daman	--
11	Deepak Madhav Tandel	Ambawadi, Moti Daman	9925055381

12	Ravia Jivan Tandel	Ambawadi, Moti Daman	--
13	Morar Kika Tandel	Ambawadi, Moti Daman	--
14	Bhagan Kalan Tandel	Ambawadi, Moti Daman	--
15	Kanti Kalan Tandel	Ambawadi, Moti Daman	--
16	Prema Jivan Tandel	Ambawadi, Moti Daman	--
17	Ishwar Dahya Halpati	Ambawadi, Moti Daman	--

### **Role of Veterinary Office**

- All action is over all supervised by the Veterinary Officer.
- Maximum no. of staff will be available within 10 minutes of disaster notification.
- The Veterinary Officer & Veterinary Assistant will take a round in all areas to take care of ill feted animals as well as injured animals. They will be treated at the same time.
- Any dead carcasses will be informed to DMC or Gram Panchayat or NGO for proper disposal to prevent further disease spread.
- Vaccination after disaster to prevent further loss of animals is necessary. We may carry out vaccination against H.S. & F.M.D.
- We will keep ready all veterinary personnels with all first aid emergency treat along with medicine like Tine, Iodine, Beasoin, Wokadin, Plaster Bandage, Bandage, Cotton, Pel. Zinc Oxide, Boric acid, Inj. Terramycin, Inj. Novalgin, Inj. Avil, Inj. Gentamycin.
- Generally we face following type of emergency :
  1. Hemorrhages,
  2. Respiratory Distress,
  3. States of Shocks,
  4. Fractures,
  5. Dislocations,
  6. Drowsing,
  7. Burns,
  8. Skull Injuries,

9. Accidental Hypothermia.

So Veterinary Officer has to prepare to take care of these problems.

### **3.2.9:- ROLE OF PORT OFFICE, MARINE DEPARTMENT**

Port Office is mainly concerned with Cyclone and Tsunami.

#### **During first warning**

Telegraphically message received from IMD, Ahmedabad for hoisting of storm signals same will be hoisted on the mast at Daman Jetty for day and night purpose and also to circulate the information to the fishermen in the localities for not to go for fishing. The Port Officer should also ensure that fishermen should keep radio in their fishing boats especially during cyclone period i.e. April to June and October to November.

Responsible persons & Phone Nos. :

Shri K. Vaghela, (Port Officer) - Phone No.2230615 (M), 9825735098

#### **During Second Warning :-**

After receiving of second cyclone warning, following steps are required to be taken:

- To alert all the fishermen for proper beaching of their fishing vessels in safety place with proper ropes.
- To alert all the fishermen staying in lower area to keep ready for shelter area when ever any danger flood/ rain occurred.
- Be in continuous contact with control room to know about the position and intensity of cyclone so we can continue our further rescue work.
- If any vessels are in sea, the information about that to be collected from the local public and informed to the Collector for further necessary action to rescue them.
- The Port Officer will supervise all the area along the Coast and assign duties to personnels for round the clock duty of Port Office for receiving of cyclone message and hoisting of storm signals.
- After cyclone, a team will be ensured for inspection of different fishing area for damages of fishing vessels, and loss of lives etc. Also damage to the huts/ houses in port area.

- Prior to departure from a port of fishing hamlet of a small mechanized fishing trawler a certified crew member should file a departure report to be kept in a record maintained by the Port Office, Daman.

Port Office Daman Shall arranges training for fisherman in respect of Port Warning Signal in the month of April through fisherman Society.

Port office is intend to put siren of range of at least 7 K.m, radius on light house tower or on Port Warning Signal Mast in consultation with Director of Lighthouse & Lightships, Mumbai for early warning in case of Cyclone & Flood.

### **3.2.10:- ROLE OF THE ZONAL AGRICULTURAL OFFICER, DAMAN.**

As soon as warning of any type of disaster is received by this department, this office will be alert to take up any kind of rescue operation. The ZAO will ensure that all staffs will perform assigned duties at the time of natural calamities.

Name of Official	Designation	Telephone No.	
		Office	Residence
Shri K.S. Gaikwad	ZAO	2230856	9825133053

Preventive Measures will be Carried out during Disaster:-

- The total staff will be deputed for any kind of rescue operation.
- As soon as message received from respective department the concerned field staff will be deployed at their respective area with a view to inform the farmers not to go in their fields to restrict casualties.
- The service of departmental tractor will be provided for quick disposal of fallen trees.
- This office has casual labors which will be deployed for rescue operation in their residential area.

- The affected families will be listed-out and damages of crop production will be taken into consideration and will be reported to the Directorate of Agriculture, Daman for necessary assistance.
- The Office staff will keep constant touch with other offices to coordinate the work during calamities.

### 3.2.11:- ROLE OF THE DEPARTMENT OF TELECOMMUNICATION, DAMAN.

The following action will be taken as and when required:

- All line-staff are called on duty for 24 hours to restore outdoor network.
- Sufficient diesel kept in store for continuous running of engine (telephone service) during power failure.
- All technical staffs are called on duty for 24 hours.
- Control room will be open at district head quarter office.

Sr. No.	Name of Officers	Designation	Telephone No.		Mobile No
			Office	residence	
1	Shri V. K. Kapoor	D.E.Phones	2263897 2243000	2430060	09426110111
2	Shri H. M. Patel	S.D.E. Phones-I	2261777 2262000	2254349	09426844829
3	Shri V. D. Shahi	J. T. O.	2263000 2220000	2453377	09426872277
4	Shri K. S. Sapkale	J.T.O	2242000	2262222	----

		(I/DOOR)			
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### 3.2.12:- ROLE OF THE FIRE SERVICES, DAMAN

#### 1. GENERAL:

The Fire & Emergency Services is an essential department of Government Organization to save life and property from fire and various disasters and render Emergency Services in the U.T. of Daman & Diu. The duties of the Fire & Emergency Services are Fire Extinction, Fire Prevention and Rescue Operation in various disasters being first responder in the whole U.T. of Daman & Diu.



## **STANDARD OPERATING PROCEDURE OF A FIRE SERVICES IN CASE OF FIRE OR DISASTER.**

### **1. FIRE/EMERGENCY OR RESCUE CALL:**

Control Room In-Charge receives the fire/emergency call through telephone or other message of communication, Control room in charge inform the duty In charge with details of address and other information received by him. Thereafter, duties in charges simultaneously inform the Station In charge.

### **2. TURN OUT:**

The duty in charge along with water tender and duty crew leave the fire station followed by an ambulance.

### **3. REACHING AT THE SCENE OF FIRE:**

On reaching at the scene of fire, at first instance, the crew will start fire fighting operation meanwhile officer In charge ask details information of premises to presence responsible person and thereafter considering velocity of the fire or disaster, the Officer In charge shall inform the control room to acquaint the Station In charge and Director of Fire & Emergency Services along with details of Fire Call/Disaster and also intimate the Control Room to inform other utility services such as Police, Water Supply, Ambulance Service, Medical and Health, Electricity, Local Transport undertaking, Gas Authority, Inspector of Factories, Airport Authority, Port Authority and other relevant Govt. department.

### **4. INFORMATIVE MESSAGE:**

Officer in Charge shall also inform the control room regarding the type of fire/disaster and other details, etc.

### **5. RE-INFORCEMENT MESSAGE:**

If, required the In Charge of the operation shall also intimate the Control Room for the In turn out and call for other neighboring Fire Services for assistance, etc.

In the mean time the Fire Services shall also carry out the rescue operations and shifting of casualties if any due to Fire/Disaster to the hospital and also carry out the salvage operation.

### **6. FIRE/DISASTER OUT MESSAGE:**

On completion of fire fighting operation the Officer in Charge shall inform the control room that the operation is over.

### **7. RETURN BACK TO STATION:**



After completion of entire operation, the duty crew shall return – back to the station also sent-back the other agencies.

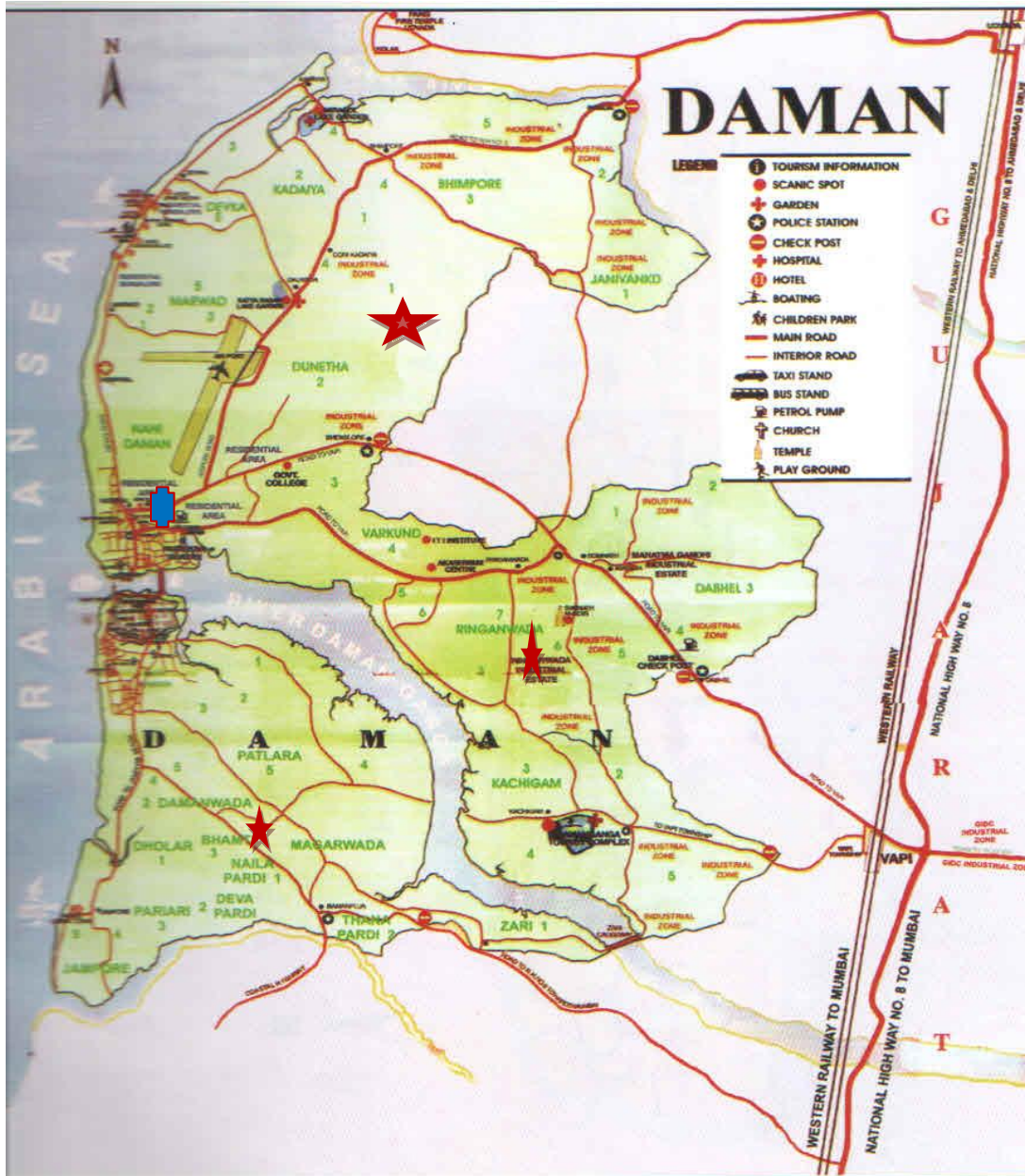
## 8. REACHING BACK TO FIRE STATION:

After reaching back to fire station, the crew shall clean and wash all the equipments/appliances and check fuel and oil of the vehicles and then report to the Station Fire Officer that the appliances is ready for next call.

## 2. INFRASTRUCTURE:

The Department of Fire & Emergency Services is headed by Inspector General of Police who is Ex-Officio Director of Fire & Emergency Services who is assisted by the Asstt. Divisional Officer.

Sr. No.	Name of Fire Station/Office	Postal addressed	Contact No.
1.	Fire & Emergency Services Headquarters. (Fire Station, somnath)	Fire & Emergency Services, Plot No.51, G.I.D.C. Ringanwada, Somnath, Nani Daman, Daman – 396 215.	Tel. No.0260-2242666 0260-2241101 0260-2241666/101
2.	Fire Station, Moti Daman.	Bhamti, Bamanpuja Main Road, Moti Daman, Daman 396 220.	Tel. No.0260-2230201
3.	Fire Station, Diu	Near be-otly, Main Road, Opp. District Court, Diu – 362 520.	Tel. No.02875-253039 02875-252475/101



Fire map

Sanctioned Fire Station 

Proposed Fire Station 

**NUMBERS OF APPLIANCE /VEHICLES**

Sr. No.	Types of Vehicle / Appliance	FIRE STATIONS				Total
		Somnath	Moti Daman	Diu	Bimpor e	
01.	Water Tender	00	--	01	--	01
02.	Foam tender	02	01	--	--	03
03.	Heavy Duty Water Bouser	01	--	--	--	01
04.	Rescue Tender	01	--	--	--	01
05.	Light water Tender	--	01	01	--	02
06.	Light Rescue tender	01	--	--	--	01
07.	Ambulance	--	01	01	01	03
08.	Modular Mobile Unit/AFT Water mist Fire Fighting System	01	--	--	--	01
09.	Fire Fighting Motor Bike with portable Water Mist-cum-CAFS Backpack Fire Fighting System mounted on Bullet Motor Cycle.	01	01	01	01	04
10.	Gypsy	--	01	--	--	01
11.	Bullet Motor Cycle	01	--	--	--	01
12.	Super Splendor Motor Cycle	01	01	01	01	04
	<b>Total...</b>	<b>09</b>	<b>06</b>	<b>05</b>	<b>03</b>	<b>23</b>

**Note: -** The above Fire Fighting appliances are inbuilt standard equipments/ accessories and in Emergency Rescue Tender are also inbuilt latest & modern types equipments accessories i.e. lifting/Cutting hydraulics tools, various cutters, breaking tools, etc.

**KEY PERSONNEL CHART**

Sl. No.	Designation	Function	Area	Telephone Numbers		
				Office	Residence	Mobile

1.	DIGP/Director	Chief Fire Controller	UT of Daman & Diu	0260-2220140	02602230488	7567966444
2.	Assistant Divisional Fire Officer	Deputy Chief Fire Controller	UT of Daman & Diu	0260-2244060	0260-2262055	9824194429
3.	(i) Station Fire officer, Fire Station, Somnath, Nani Daman	Incident Control Officers	Fire Station, Somnath	<b>As per Annexure – I</b>		
	(ii) Station Fire officer, Fire Station, Moti Daman	Incident Control Officers	Fire Station, Moti Daman			

FIRE CONTROL ROOM	PERSON TO BE CONTACTED		TELEPHONE NUMBERS				
	NAME	DESIGNATION	OFFICE	MOBILE	E-MAIL	FAX	RESIDENCE
Dept. Fire & Emergency Services	Shri Manish Kumar Agarwal, IPS	DIGP/Director	0260-2220140	7567966444	patoigp@gmail.com	0260-2220076	02602230488
Dept. Fire & Emergency Services	Shri A.K. Vala	Asstt. Divisional Fire Officer	0260-2244060	9824194429	<a href="mailto:daman.fes@gmail.com">daman.fes@gmail.com</a>	0260-2244111	0260-2262055
Fire Station, Somnath	Shri Canji Narane	Station Fire Officer	0260-2242666	9979200765	---	---	---

nath.							
Fire Station, Moti Dam an	Shri N.B. Fadra	Station Fire Officer	0260-2230201	9824599069	---	---	0260-2250158
Fire Station, Diu	Shri D.M. Vadhwana	Asstt. Station Fire Officer.	02875253039	9429381764	---	---	---

### DETAILS OF WATER SOURCES

Name of Fire Station	O H R	CAP	Place	G L R	CAP	PLACE	O W S	C A P	PLACE
Fire Station, Somnath	01	50000	Fire Station, somnath, Nani Daman.	02	300000	Fire Station, somnath, Nani Daman.	03	- - -	PWD treatment plant and pond each at Dabhel and Dunetha
Fire Station, Moti Daman									

### DETAILS OF PRIVATE WATER SUPPLIER

Sr. No.	Name of water supplier	Residential Address	Contact No.	No. of tankers	Capacity of tanker in lts.
01	Mr Lalubhai B. Patel Mr Gaurang Lalu Patel	Patel Faliya, Kachigam, Nani Daman	9825122858 9825282956	02	10,000 20,000
02	Mr. Mohanlal B. Patel,	Patel Faliya, Kachigam Nani Daman	9825164294	03	10,000 10,000 10,000
03	Mr. Chandubhai C. Patel, Mr. Rinkal Patel	Patel Faliya, Kachigam Nani Daman	9377004564 9327460456	03	10,000 10,000 10,000

04	Mr. Govindbhai D. Patel,	Bhimpore, Near Jalaram Tample, Nani Daman	9377946509	01	3,500
05	Mr. Rajubhai D Patel, Mr. Dharmeshbhai Patel	Bhimpore, Nani Daman	9824177170 9824063393	03	12,000 6,000 3,000
06	Mr. Rameshbhai D. Patel, Mr. Arvindbhai D. Patel,	Bhimpore, Near Jalaram Tample, Nani Daman	9898277284 9824592990	01	12,000
07	Mr. Chootubhai Patel,	Dalwada, Near Cost Guard School, Nani Daman	9825844810 9924123009	02	12,000 12,000 12,000
08	M/S. Saikripa Jalsager, Mr. Hemant V. Patel	Kalariya, Dabhel Nani Daman	9898728316	03	11,000 11,000 3,500
09	M/S. Patel Water Suppliers, Mr. Sanjay S. Patel	Ghelwad falia, dabhel, Nani Daman	9824134848	02	10,000 10,000
10	Mr. Kanubhai R. Patel Mr. Pankaj Patel	Ghelwad falia, dabhel, Nani Daman	9824136789 9904274000	03	11,000 11,000 8,000
11	Mr. Lalit B.Patel	Ghelwad falia, dabhel, Nani Daman	9824569999	02	10,000 10,000

### Role of Local Authority

- Provide assistance to UTDMA, COR and Collector in disaster management activities.
- Ensure training of its officers and employees and maintenance of resources so as to be readily available for use in the event of a disaster.
- Ensure that all construction projects under it conform to the standards and specifications lay down.
- Each department of the Government in a district shall prepare a disaster management plan for the district. Carry out relief, rehabilitation and reconstruction activities in the affected area within its jurisdiction.

### **Private Sector**

- The private sector should ensure their active participation in the pre-disaster activities in alignment with the overall plan developed by the UTDMA or the Collector.

### **Community Groups and Voluntary agencies**

- Local community groups and voluntary agencies including NGOs should actively assist in prevention and mitigation activities under the overall direction and supervision of the UTDMA or the Collector.
- They should actively participate in all training activities as may be organised and should familiarise themselves with their role in disaster management.

### **Citizen**

- It is a duty of every citizen to assist the Commissioner of Relief or the Collector or such other person entrusted with or engaged in disaster management whenever his aid is demanded generally for the purpose of disaster management.

### **3.3 DEALING WITH MEDIA DURING EMERGENCIES**

Liaison with the media on regular basis on any emergency is critical, so that rumors can be scotched and public awareness is correctly generated.

Media relations do not have to be adversarial and in fact should not be. Dealing with the media during emergencies is not different from any other emergency function, the better the result will be. This is not to suggest that effective media management will turn bad news, but it can prevent bad news from becoming worse.

Immediately following an emergency incident, or as soon as possible, the media should be notified, you will be judged to be forthcoming and credible if you talk to the media before they learn of the incident from other sources. One effective tool for providing information to the media is the press release. This can be distributed in person or by telex/telegram or mail. The fastest means of distribution is usually the most desirable.

A good emergency press release answers these basis questions concerning the event.

- Who is involved?
- What is taking place?
- Where did it happen?
- How did it happen?
- Why did it happen?

The release should then go on to provide the details and background information. Also, be sure to include the name and telephone number if additional information is required for your organization.

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## CHPTOR: 4 Disaster management plan for cyclone

According to Cyclone Hazard Map of India, Daman is located in the **moderate damage risk zone**, with probable maximum wind speed of 44 m/s. The coastal areas are subjected to severe cyclonic storms. The frequency of occurrence of cyclones on the different portions of the coast has been different. Even for the same design wind speed in same areas, the risk of damage for year will be higher, in areas subjected to more frequent cyclones. Daman lies in the latitude between 20° to 21 ° N. Thus, the cyclonic storms constitute a serious natural hazard in the territory. During last 150 years, Gujarat suffered more than 25 cyclones of varying intensity, lastly in the year 1999.

The areas likely to be affected by cyclone in Daman have been stated as under:-

Area	Map
•Kadaiya	<b>MAP OF REGIONAL PLAN OF DAMAN</b>
• Devka	
• Marwad	
• Nani Daman	
• Jetty	
• Moti Daman	
• Fort Area	
• Elephant Bagh	
• Dholar	
• Jampore	

### Plan Activation

The cyclone response structure will be activated on the receipt of cyclone warning by the Indian Meteorological Department (IMD). The occurrence of a cyclone may be reported by the IMD to the Commissioner of Relief/UTDMA by the fastest means. The Commissioner of Relief (COR) will activate all the Departments for emergency response including the UT and District Control room. He will issue instructions to include the following details:

- Specify exact resources (in terms of manpower, equipments and essential items from key dept. /stakeholders) required.
- The type of assistance to be provided
- The time limit within which assistance is needed
- Details of other Task/Response Forces through which coordination should take place

The control rooms at the state level as well as district control rooms should be activated with full strength. Coordination meeting (District Disaster Management Committee) will also ensure wide publicity of cyclone through local modes of dissemination, in vogue, so as to increase the alertness of the public particularly the fishermen community. The Committee will enforce the above said action through Line Departments.

### 4.1 Steps for Pre-Cyclone Phase

Collector remains at the pivot of district administration to monitor the course of action during cyclone. At District level, a **Control Room /DDC** with telephone and wireless system is to function round the clock. If possible, links should be established with Ham Radio Operators at remote areas. At the end of day, the relief medical rescue and construction teams should meet with Collector, to review the situation. Different departments operating at district level must be under constant watch and Collector to be in constant touch with state authorities to pass on the real figures to the Administration.

\* Keep sufficient stock of food grains, kerosene and other dry food commodities for distribution to the people and victims?

\* The Medical and Veterinary Departments are fully equipped with required drugs and vaccines for taking preventive steps after cyclone and to arrest the spread of epidemics?

\* Whether all the Government vehicles are kept in road-worthy condition for putting them to use in the emergency with drivers assigned?

\* Opening of cyclone stores for providing the following materials in adequate quantities.

- Hooks of the type available with the Fire Service Department for cleaning debris.
- Rubber tyres and tubes for using as floats in water.
- Tents.
- Kerosene lanterns.
- Large cooking vessels for use in relief camps.
- Identity slips to be issued to the victims in relief camps.
- Copies of maps.
- Ropes, wires, chains, lights with wire fittings, lead wires, torches, etc.
- Steel poles, bamboos, G.C. sheets and slotted stripes of metal (to be laid on slushy road surface for better transportation).
- Double handle saws (for cutting fallen trees), shovels, candles, loud hailers, hose pipes, first aid kits, cyclone duty sign boards, ropes, asbestos sheets, torch lights, jerry cans, empty oil drums, gunny bags and sand bags, polythene sheets, V.H.F. sets with batteries for use.
- Pumps for bailing out water along with hose, spades, crow bars, hand gloves, Eucalyptus oil, naphthalene balls, bamboo mats, phenyl, slate lime, etc. useful for burying dead bodies.

#### **4.2 After Cyclone – Responsibility of District Administration**

- Rescue the people who are stranded or otherwise affected.

- Restore the supply of power, and clear the roads (remove the fallen trees, etc.) as early as possible.
- Food and water should be supplied to the stranded people and those who are in shelters.
- Search and rescue operation to be initiated, if necessary, for the people (particularly, for the missing including fishermen).
- Check for the outbreak of epidemics. Appropriate measures for inoculation and vaccination must be undertaken to prevent any outbreak of epidemic.
- If there is serious disruption of the regular communication system, communication through HAM radios and/or wireless sets may be pressed into service.
- Supply of electricity must be restored by carrying out repairs to the dismantled wires, uprooted or damaged transformers and other switchgears.
- Help of voluntary organizations to be taken by the security aspect should not be ignored so as to prevent the entry of undesirable, anti-social elements. (Issue identity cards).
- Veterinary medical care should be made available, along with the provision of fodder to the displaced cattle.
- Minimum road communication in the affected districts should be restored on war footing.
- Use cycle and two wheelers - Bikes for transportation.
- Supply of all essential commodities, such as rice, wheat, pulses, salt, match-box, kerosene, diesel, etc. should be ensured to all the habitats in the disaster affected areas at concessional rates, or free of cost.
- Inundated land should be reclaimed by desalination.

- If the drinking water wells are inundated by saline water, bore wells are to be dug; pumps are to be installed for the supply of water to the public.
- Whether relief operations started effectively?
- Make arrangements for removal of dead bodies and carcasses of animals and waste disposal. (Dead bodies - take photos for identification).
- Take steps for the restoration of traffic?
- Provision of medical help to injured people.

#### Action Taken in Daman

In our plan we are proposing to set up **five relief camps** at the time of Disaster. These will be at following locations:-

- Navodaya Vidyalaya, Dunetha
- Directorate of Education Building
- Dabhel Multipurpose Shelter Point (proposed)
- Zari Ashramshala
- Bal Bhavan, Moti Daman

All the places identified as shelter point have enough space to accommodate evacuated people from affected areas. These shelter points have enough rooms and space to store food, kerosene, tent materials, medicines and other materials which will be required. All these shelter points are equipped with generator facilities and facility of drinking water.

Responsible officers of shelter points  
NavodayaVidyalaya

- I/c Mamlatdar
- Principal Navodaya Vidyalaya
- S.I. Civil Supply
- Talathi

2. Directorate of Education

- I/c Asstt. Director Education
- Section Officer, Red Cross
- Superintendent, Dept, of Education
- One UDC of Education Dept.

3. Bal Bhavan

- I/c City Survey Officer
- Director, Bat Bhavan
- Sr. Inspector, ARCS
- One UDC of Dept. of Personnel

4. Dabhel

- I/c BDO
- Sr. Auditor, ARCS
- Manager OIDC
- One Talathi

5. Zari Ashramshala

- **I/c Social Welfare Officer**  
**Labour Inspector**

- One UDC from **Secretariat**
- One Talathi

Apart from these officials there is a provision of following personnel at all shelter points:

1. One JE from PWD
2. One JE from Electricity Dept.
3. Three Doctors (one female)
4. One Head Constable with two Constables.

### **4.3 Rehabilitation**

The District Magistrate has to make teams immediately after cyclone for making **detail survey** to assess loss of human live & missing persons, damage to properties including fishing boats and agriculture. The teams have to calculate total damage and partial damage. The teams have to calculate the amount of material required for the rehabilitation of affected people.

It is also identified that the people from fragile communities like fishermen and agriculturist require emergent financial support to repair their houses and tools to continue their lives and businesses. The Co-ordination Committee will ensure that affected people shall get loan immediately from Banks (Nationalized, Private, and Co-operative) at the concessional rate of interest.

There is a provision for financial assistance from the Head of UT Disaster Response Fund. The detailed information regarding assistance is attached as Annexure 11

We have to take following steps to rehabilitate the people.

- Recourse the supply of power and clear the road of the fallen trees as early as possible.
- Restoration of regular water supply.
- Assistance in reconstruction and repairing of private houses and restoration of their Livelihood.
- The Public Relations Department shall make arrangements for photographic record of the

damage simultaneously, using services of the local officers or by employing local men for video recording.

#### **4.4 The Measures to be taken by people in post Cyclone Scenario**

After a cyclone passes, the public are advised to take the following safety measures:-

- They should remain in shelters until informed by those in charge that they may return home.
  
- They should get themselves inoculated against diseases immediately at the nearest hospital and seek medical care for the injured and sick.
  
- Any loose hanging wire from the lamp post should be strictly avoided. (A person should be kept to watch so that nobody goes near the wire and the nearest electrical authorities should be informed immediately).
  
- People should keep away from disaster areas, unless they are required to assist.
  
- Anti-social elements should be prevented from doing mischief.
  
- Houses and dwellings should be cleared of debris.
  
- The losses should be reported to the revenue authorities (proforma to be obtained from District Administration).
  
- Relatives should be promptly informed about the safety of persons in the disaster area.
  
- Evacuation Instructions
  - Head for the proper shelter or evacuation points indicated by your area.



- Do not worry about your left over property, as evacuated areas will be policed to prevent looting. - Arrange community policing.
- At the shelter, follow instructions of the personnel in charge.
- Remain in shelter until informed that you may leave.
- Keep calm at all times. If instructions are observed promptly, there is little personal danger involved.

**List of identified cyclone shelter points in Daman**

- i) Panchayat Ghar/Community Hall, Kadaiya
- ii) Bhimpore Ashramshala
- iii) Primary School, Janivankad
- iv) Navodaya Vidyalaya, Dunetha
- v) Government College
- vi) MachhiMahajan School
- vii) Directorate of Education
- viii) Red Cross Building
- ix) Bal Bhavan, Moti Daman
- x) Primary/ Middle School, Ambawadi
- xi) Circuit House Annexe, Dholar
- xii) High School, Pariyari
- xiii) Zari Ashramshala**
- xiv) Panchayat Ghar, Kachigam
- xv) ITI Institute
- xvi) Dabhel Multipurpose Shelter point (proposed)

**For better Execution of Plan**

- A good network of motorable roads should be constructed in all vulnerable coastal areas. This not only facilitates quick evacuation in the time of need, but also facilitates the supply of relief to the needy in the aftermath of the cyclone.

- Construct a high level coastal road with its top about one meter above the highest surge which should of course have adequate drainage openings to permit the flow of normal rain/flood waters across. Such a road should serve as the first line of defense against the surge waters permitting only limited entry of water through the openings.
- All Government officials may be trained in programmes related to the cyclone preparedness activities and relief works.
- In one of the recent surveys it came to the notice that some fishermen go for fishing at the time of cyclone with the hope of getting a big catch of fish, which is their livelihood. In order to prevent such incidents the proposal of supplying free dry rations to the fishermen likely to bear the brunt of the cyclones may be considered.
- The concept of Insurance is to be explained to the people.
- The fishermen may be advised to carry adequate water/food (dry) in case of eventualities.
- The range of All India broadcasts is limited to a certain range in the sea. Hence, this problem to be addressed.

#### 4.5 Roles and Responsibility

<b>Time Frame</b>	<b>Sr. No.</b>	<b>Task</b>	<b>Responsibility</b>	<b>Activity</b>
Time = 0-72	1.	Warning receipt and dissemination	IMD, COR, Revenue Department.	<ul style="list-style-type: none"> <li>• Report the generation of Cyclone in Arabian Sea/ Indian Ocean after getting information from IMD to following officials;</li> <li>- COR/DOR</li> <li>- Secretary (Revenue)</li> </ul>

Time Frame	Sr. No.	Task	Responsibility	Activity
				<ul style="list-style-type: none"> <li>- Chief Executive Officer, UTDMA</li> <li>- Administrator the UT</li> <li>- Members of Crisis Management Group</li> <li>- National Disaster Management Authority, GoI.</li> <li>- All concerned District Collectors as well as Control Rooms of the district/s likely to be affected as per preliminary warning of IMD.</li> <li>- Secretaries of all line departments.</li>   <li>• Instruct all Collectors (of the districts likely to be affected) to activate District Control Room at full strength.</li> <li>• Alert all response teams in the UT for deployment.</li> <li>• Remain in constant touch with control rooms at National &amp; State Level.</li> <li>• Instruct and alert all heads of departments of the key line departments to activate their departmental plan for Cyclone response.</li> </ul>

Time Frame	Sr. No.	Task	Responsibility	Activity
	2.	Interdepartmental Coordination.	COR UTDMA Revenue Dep.	<ul style="list-style-type: none"> <li>• Instruct all UT government officers and employees in the UT to report to their respective Head for emergency duties.</li> <li>• Alert the District Collectors of districts not likely to be affected to be prepared for providing: <ul style="list-style-type: none"> <li>➤ Additional manpower</li> <li>➤ Additional resources <ul style="list-style-type: none"> <li>- Machinery &amp; Equipment</li> <li>- Relief material to the districts likely to be affected.</li> </ul> </li> </ul> </li> </ul>
	3.	Establishment of lines of Communication.	COR UTDMA Revenue Dep.	<ul style="list-style-type: none"> <li>• Activate alternative communication equipments i.e. satellite phones, HF/VHF sets, Ham radio, VSAT in UT Control room as well as District Control Room.</li> <li>• Establish communication links with control room and Search &amp; Rescue Teams in Municipal Council and alert them to be in stage of readiness.</li> <li>• Establish communication links</li> </ul>

<b>Time Frame</b>	<b>Sr. No.</b>	<b>Task</b>	<b>Responsibility</b>	<b>Activity</b>
				with villages likely to be affected.
Time = 0-48 hrs.	1.	Review of situation and reporting.	COR UTDMA Revenue Dep. Science & Tech Dept.	<ul style="list-style-type: none"> <li>• Establish contact with IMD, CWC, and ACWC, ISRO and the defense ministry of GoI for aerial / satellites imageries of the latest Cyclone threat.</li> <li>• Get the latest weather report from IMD/other international Web Sites to know the exact location of Cyclone and the likely area where landfall will take place.</li> <li>• After reviewing the weather report and satellite images issue instructions and orders for emergency response to areas likely to be affected.</li> </ul>
	2.	Management of Control Room and Cyclone Response.	COR UTDMA Revenue Dep.	<ul style="list-style-type: none"> <li>• Take over full command of Control room.</li> <li>• Instruct line departments to depute representatives at the UT and District Control room.</li> <li>• Hold a meeting with leaders of task forces and entrust them their tasks.</li> <li>• Ensure that Cyclone information</li> </ul>

Time Frame	Sr. No.	Task	Responsibility	Activity
				<p>is disseminated to all who are at danger</p> <ul style="list-style-type: none"> <li>• Arrange emergency meeting with Crisis Management Group to devise a plan of action.</li> </ul>
			COR	<ul style="list-style-type: none"> <li>• Arrange dissemination of information through various means of communication such as Radio, TV, Cable Network, SMS about Cyclone warning to districts/areas which are likely to be hit by Cyclonic Storm.</li> </ul>
			Secretary Transport	<ul style="list-style-type: none"> <li>• Impose restriction on all transport activities heading towards coastal areas that are likely to be affected by Cyclone.</li> </ul>
			COR UTDMA Revenue Dep.	<ul style="list-style-type: none"> <li>• Alert following teams to remain in readiness: <ul style="list-style-type: none"> <li>➤ Evacuation</li> <li>➤ Emergency Medical Services</li> <li>➤ Search and Rescue</li> </ul> </li> <li>• Alert following emergency response forces to remain in readiness: <ul style="list-style-type: none"> <li>➤ Fire &amp; Emergency Services</li> <li>➤ NDRF</li> </ul> </li> </ul>

Time Frame	Sr. No.	Task	Responsibility	Activity
				<ul style="list-style-type: none"> <li>➤ Village Disaster Management Teams</li> <li>➤ Police, Home Guards</li> <li>➤ UT Reserve Police Force</li> <li>➤ Army (if required)</li> <li>➤ Air Force (if required)</li> </ul>
	3.	Cyclone Response to coastal areas (likely to be affected)	<p>COR</p> <p>Revenue Dept.</p> <p>Transport Dept.</p> <p>Local Bodies.</p>	<ul style="list-style-type: none"> <li>• Based on the warning issued by IMD, pin point the districts and villages likely to be affected by Cyclone and start the procedure for identifying safe places/shelters for evacuation in those villages.</li> <li>• Village wise data of safe sheltering for evacuation available should be referred and the Dist. Collectors/Village level officers should be contacted to know the status of the shelters with the capacity of the shelter and other available facilities at the site.</li> <li>• Make transport arrangement for mobilization of all emergency response teams.</li> </ul>
			Revenue Dept. Port, Fisheries.	<ul style="list-style-type: none"> <li>• Ensure arrangements are in place to evacuate fishermen if needed.</li> </ul>
			Tourism Dept.	<ul style="list-style-type: none"> <li>• Ensure safety of tourists visiting beaches along the coastline.</li> </ul>

Time Frame	Sr. No.	Task	Responsibility	Activity
			Home, Police Dept., Collector.	<ul style="list-style-type: none"> <li>• Cordoning off coastal areas for restricting entries of rail or road traffic.</li> <li>• Ensure law and order is maintained in areas likely to be affected.</li> </ul>
			Line Dept.	<ul style="list-style-type: none"> <li>• Ensure that all critical activities (mainly industrial production) in areas likely to be affected are shutdown.</li> </ul>
			Education Dept.	<ul style="list-style-type: none"> <li>• Ensure that the schools and colleges are closed in areas likely to be affected by Cyclone and associated hazards.</li> </ul>
			Collector, Municipal Council, District Panchayat, Information Dept.	<ul style="list-style-type: none"> <li>• Ensure dissemination of information to remote areas by local means.</li> <li>• Ensure that local help lines are opened and effectively managed for public information, guidance and rumor control.</li> <li>• Ensure that the information to public and media about the progress of Cyclone at periodic intervals is released.</li> <li>• Make arrangements for logistic support to all emergency response teams.</li> </ul>



Time Frame	Sr. No.	Task	Responsibility	Activity
			Health Dept.	<ul style="list-style-type: none"> <li>• Health Department to activate their Departmental Cyclone Disaster Management Plan and Departmental SOPs for Management of casualties.</li> </ul>
Time = 0-24 hrs	1.	Review of situation and reporting.	COR Revenue Dept.	<ul style="list-style-type: none"> <li>• Establish contact with IMD, CWC, ACWC, ISRO and the defense ministry of GoI for aerial / satellites imageries of the latest Cyclone threat.</li> <li>• After reviewing the weather report and satellite images issue instructions and orders for emergency response to areas likely to be affected areas.</li> </ul>
			COR Revenue Dept. Information Dept.	<ul style="list-style-type: none"> <li>• Review and monitor following activities:               <ul style="list-style-type: none"> <li>➤ Evacuation of people from coastal areas likely to be affected.</li> <li>➤ Positioning of Search and Rescue Teams.</li> <li>➤ Positioning of mobile communication units.</li> <li>➤ Positioning of quick medical response teams.</li> <li>➤ Mobilization of restoration teams of respective departments.</li> </ul> </li> </ul>

Time Frame	Sr. No.	Task	Responsibility	Activity
				<ul style="list-style-type: none"> <li>➤ Requirement of armed forces in rescue and relief operations.</li> <li>➤ Dissemination of information to the vulnerable areas.</li> <li>➤ All preparedness measures to be taken by various authorities.</li> </ul> <ul style="list-style-type: none"> <li>• Keep in touch with National, District Control Rooms.</li> <li>• Release information at appropriate time to media and public regarding response measures organized by the UT Administration.</li> </ul>
	2.	Emergency Response Management	<p style="text-align: center;">COR</p> <hr/> <p style="text-align: center;">Dis. Collector Municipal Council</p> <hr/> <p style="text-align: center;">COR Revenue Dept.</p>	<ul style="list-style-type: none"> <li>• If reports regarding striking of Cyclone are confirmed by IMD and other sources, start the emergency response and relief operations.</li> <li>• Divert the emergency services to areas likely to be affected as per the warning issued by IMD.</li> <li>• Inform the public residing in areas likely to be affected to evacuate through various means</li> </ul>

Time Frame	Sr. No.	Task	Responsibility	Activity
			Home Dept.	such as SMS, AIR, FM Radio, Doordarshan, etc. <ul style="list-style-type: none"> <li>• Start evacuation from the likely affected areas through Police support, if necessary.</li> </ul>
			Port, Fisheries, Coast Guard	<ul style="list-style-type: none"> <li>• To account for the exact number of fishermen in the sea and fishermen that has already reached the shore.</li> </ul>
	3.	Emergency Relief Management	COR	<ul style="list-style-type: none"> <li>• Ensure that the Relief Management work planned in the areas likely to be affected by the Cyclone are well organized.</li> <li>• Inform following agencies to be in a state of readiness for assisting in the Cyclone response measures (if required): <ul style="list-style-type: none"> <li>➤ Public sector agencies</li> <li>➤ Private sector agencies</li> <li>➤ NGOs</li> <li>➤ Volunteer Organizations.</li> </ul> </li> </ul>
			Dis. Collector, Municipal Council, Dis. Panchayat, PWD,	<ul style="list-style-type: none"> <li>• Ensure that the arrangement for basic amenities(shown below) at evacuation/relief centers are made by the respective departments: <ul style="list-style-type: none"> <li>➤ Drinking water</li> <li>➤ Food</li> </ul> </li> </ul>

Time Frame	Sr. No.	Task	Responsibility	Activity
			Health Dept., Revenue Dept.	<ul style="list-style-type: none"> <li>➤ Clothing</li> <li>➤ Sanitation and hygiene,</li> <li>➤ Lighting</li> <li>➤ Medicines and other Health Care.</li> </ul>
			Administrator UT DMA	<ul style="list-style-type: none"> <li>• Request for help (if needed) to MHA/National Disaster Management Authority.</li> </ul>
			Information Dept.	<ul style="list-style-type: none"> <li>• Make necessary arrangements for public information/guidance, public opinion and rumor control.</li> </ul>
			COR, Revenue Dept. Transport Dept. Local Bodies.	<ul style="list-style-type: none"> <li>• Restriction may be imposed for transportation in threatened areas.</li> </ul>
Time = 0 hours.	1.	Disaster Declaration	COR, Collector	<ul style="list-style-type: none"> <li>• When Cyclone makes a landfall, Cyclone affected Dist. Collectors should send a communication to the UT Administration to declare the area as disaster affected, if necessary, (depending upon the nature and intensity of impact).</li> </ul>
	2.	Preliminary assessment, deployment of emergency response teams and information dissemination	Collector DMC DP	<ul style="list-style-type: none"> <li>• Dist. Collector/s should send teams to the affected areas to take stalk of the effects of Cyclone and associated rain.</li> <li>• District Collector/s should send sector wise situation reports to: <ul style="list-style-type: none"> <li>➤ Control room/COR</li> <li>➤ UTDMA.</li> </ul> </li> </ul>

Time Frame	Sr. No.	Task	Responsibility	Activity
			COR Revenue Dept. Transport Dept. Local Bodies	<ul style="list-style-type: none"> <li>• Deployment of following teams to Cyclone affected areas:               <ul style="list-style-type: none"> <li>➤ Emergency Communication Teams</li> <li>➤ Emergency Medical Services Teams</li> <li>➤ Search and Rescue Teams (With Equipments)</li> <li>➤ Preliminary damage Assessment Teams</li> <li>➤ Need Assessment Teams.</li> </ul> </li> </ul>
			COR Revenue Dept. Information Dept. Local Bodies.	<ul style="list-style-type: none"> <li>• Establish communication link with affected districts by activating alternate communication equipments such as Satellite Phones, HF/VHF Sets, Ham Radio, V Set etc., in State/District Control Rooms.</li> <li>• Arrange dissemination of information about occurrence of Cyclone and areas that are affected by it to Media &amp; Public.</li> </ul>
Time = 0+24 hours.	1.	Mobilization and Deployment	COR Revenue Dept. Transport Dept. Local Bodies	<ul style="list-style-type: none"> <li>• Remain in constant touch with IMD for updates on weather forecast for the coming hours and plan accordingly.</li> </ul>

Time Frame	Sr. No.	Task	Responsibility	Activity
			Line Dept.	<ul style="list-style-type: none"> <li>• Immediate mobilization of following units/teams to areas affected by Cyclone and associated rains.</li>   <li>➤ S &amp; R Teams of Fire and Emergency Services.</li>   <li>➤ Quick Medical Response Teams.</li>   <li>➤ Quick Damage &amp; Loss Assessment Teams.</li>   <li>➤ Quick Need Assessment Teams.</li>   <li>➤ Road Clearance Teams.</li>   <li>➤ Teams for disposal of dead bodies.</li>   <li>➤ Teams for disposal of carcasses.</li>   <li>➤ Teams for debris clearance (if any).</li>   <li>➤ Teams for maintaining</li> </ul>

Time Frame	Sr. No.	Task	Responsibility	Activity
				<p>Law &amp; Order in the affected areas.</p> <p>➤ Arrange for S &amp; R teams of Air Force (If required).</p>
	2.	Majors for quick and organized response	COR, Revenue Dept. Local Bodies, Line Dept	<ul style="list-style-type: none"> <li>• Control room, the Collectors of the affected District/s Should ensure that the following response activities are carried out immediately:</li> </ul>
	a.	Clearance of access roads to reach at the sites of affected areas	COR, Revenue Dept. Transport Department, Railways	<ul style="list-style-type: none"> <li>• To survey the access roads/routes leading to the affected areas and manage traffic for mobilization of equipments, machinery and volunteers.</li> <li>• Identify alternate roads/routes for evacuation.</li> <li>• Undertake repairing/restoration of damaged roads leading to the affected areas.</li> <li>• Identify and declare unsafe buildings/structures in Cyclone affected areas.</li> <li>• Evacuate people from unsafe buildings/structures and shift them to relief camps/sites.</li> </ul>

Time Frame	Sr. No.	Task	Responsibility	Activity
				<ul style="list-style-type: none"> <li>• Divert/stop transport activities (Rail + Road) heading towards Cyclone affected areas.</li> </ul>
	b.	Necessary Arrangements at evacuation/relief centers	Revenue Dept. Civil supply Dept., PWD, Local Bodies, Home Dept., Health Dept., Police Dept.	<ul style="list-style-type: none"> <li>• To ensure that necessary arrangements at evacuation/relief centers is made with sufficient availability of:               <ul style="list-style-type: none"> <li>a. Food,</li> <li>b. Water,</li> <li>c. Blankets/Clothing</li> <li>d. Medicines</li> <li>e. Lighting</li> <li>f. Sanitation and hygiene etc.</li> </ul> </li> <li>• To ensure necessary security arrangements for the personals (Emergency responders/relief teams) who are working at Relief Centers and involved in distribution of Relief Materials.</li> <li>• To ensure that law and order is maintained at evacuation/relief centers and in the affected areas as well.</li> </ul>



Time Frame	Sr. No.	Task	Responsibility	Activity
	c.	Safety of fishermen and salt workers	COR, Revenue Dept., Fisheries Dept., Tourism Dept., Marine Police.	<ul style="list-style-type: none"> <li>• Immediate actions to be taken for safety of fishermen and visitors at Cyclone affected coastal areas.</li> <li>• Ensure that all the fishermen have returned from the sea or those who are in the sea are rescued and evacuated to safer places.</li> </ul>
	d.	Ensure immediate health and minimization of outbreak of disease.	Revenue Dept., Health Dept., Transport Dept.,	<ul style="list-style-type: none"> <li>• To establish camp hospitals near the affected areas.</li> <li>• To make transportation arrangements to shift seriously injured persons to nearest- <ul style="list-style-type: none"> <li>➤ Camp Hospitals,</li> <li>➤ Town and District Hospitals,</li> </ul> </li> <li>• Ensure that the Hospitals are well prepared to deal with seriously injured persons.</li> <li>• To ensure that the required medical assistance/aid and medicines are provided to the affected people at site as well as at evacuation/relief centers in the affected area and necessary</li> </ul>

Time Frame	Sr. No.	Task	Responsibility	Activity
				<p>records are maintained.</p> <ul style="list-style-type: none"> <li>• Take sanitation and epidemic control measures for preventing any water borne disease.</li> <li>• Keep adequate stock of essential medicines, first-aid etc. at Town/district hospitals.</li> <li>• Take steps to purify drinking water sources.</li> <li>• If required, take the help of doctors/paramedics from the list of doctors/paramedics available at the town/district level for immediate medical assistance.</li> </ul>
			Animal Husbandry Dept.	<ul style="list-style-type: none"> <li>• Assess need for fodder if required.</li> <li>• Keep ready teams for carcass disposal (if required).</li> </ul>
	e.	Information to public and media	Information Dept., COR.	<ul style="list-style-type: none"> <li>• Establish Media/Press Centre for media management and information dissemination</li> <li>• Ensure that the information to media/general public about the</li> </ul>

Time Frame	Sr. No.	Task	Responsibility	Activity
				<p>response of the UT Administration is released in an organized manner.</p> <ul style="list-style-type: none"> <li>• Organize media briefing twice a day at pre-determined intervals.</li> </ul>
	f.	Other important work related to immediate response	UTDMA, COR	<ul style="list-style-type: none"> <li>• Prepare quick need assessment report for planning of relief operation.</li> <li>• Additional assistance may be asked for emergency response/relief from GoI-NDMA (If needed).</li> </ul>
			COR, Revenue Dept.,	<ul style="list-style-type: none"> <li>• Prepare situation report and circulate it twice a day in the morning and evening to key Government functionaries.</li> <li>• Maintain constant touch with National, District and other control rooms.</li> <li>• Remain in constant touch with IMD for updates on weather forecast for the coming days and plan accordingly.</li> <li>• Conduct Arial survey of affected areas for taking a stalk of</li> </ul>

Time Frame	Sr. No.	Task	Responsibility	Activity
				<p>the situation.</p> <ul style="list-style-type: none"> <li>• Activate evacuation &amp; relief centers according to needs/situation.</li> <li>• Maintain record of persons admitted at evacuation/relief centers.</li> </ul>
Time = 0+24 to 48 hours.	1.	Review of situation and reporting.	COR Revenue Dept.	<ul style="list-style-type: none"> <li>• Establish contact with IMD, CWC, ACWC, ISRO and the defense ministry of GoI for aerial / satellites imageries about further weather condition and plan accordingly.</li> </ul>
	2.	Reconstruction of critical infrastructure /essential services.	COR, Local Bodies, PWD, Electricity, Telecommunication Dept. etc. Line Dept.	<ul style="list-style-type: none"> <li>• Ensure that the essential services/critical infrastructure of the affected areas have been restored or alternative arrangement is made for ensuring safety of people and smooth management of emergency response.</li> <li>• Ensure that key administrative and lifeline buildings are brought back to operation</li> </ul>

Time Frame	Sr. No.	Task	Responsibility	Activity
				<p>quickly.</p> <ul style="list-style-type: none"> <li>• Designate and deploy senior officers (as per the need) to worst affected area/s to oversee rescue/relief operation.</li> <li>• Ensure following primary necessities are restored <ul style="list-style-type: none"> <li>➤ Power</li> <li>➤ Water</li> <li>➤ Telecommunication</li> <li>➤ Roads</li> <li>➤ Bridges</li> </ul> </li> </ul>
	3.	Disposal of dead bodies	Revenue Dept., Local Bodies, Home Dept., Health Dept., Police Dept.	<ul style="list-style-type: none"> <li>• Ensure following procedure is followed before disposal/handing over of dead bodies: <ul style="list-style-type: none"> <li>➤ Photographs of the dead bodies are taken,</li> <li>➤ Identification of the dead bodies is done,</li> <li>➤ Post Mortem where ever necessary and possible is carried out,</li> <li>➤ Handing over dead bodies of persons known/identified to their</li> </ul> </li> </ul>

Time Frame	Sr. No.	Task	Responsibility	Activity
				<p>relatives,</p> <ul style="list-style-type: none"> <li>➤ Disposal of unclaimed and unidentified dead bodies.</li> </ul>
			<p>Animal Husbandry Dept., Health Dept.</p>	<ul style="list-style-type: none"> <li>• Animal Husbandry Department to ensure medical aid to cattle that are injured.</li> <li>• Disposal of animal carcasses with the help of local bodies/health dept.</li> </ul>
	4.	Public information and Media Management.	<p>Information Dept. COR, Revenue Dept. Local Bodies, Home Dept.</p>	<ul style="list-style-type: none"> <li>• Ensure that the information about progress of rescue and relief is provided to media/public in an organized manner at least twice a day.</li> <li>• Establish help lines for facilitating communication between the victims and their relatives residing outside the affected area/s.</li> <li>• Establish Information Centers at strategic locations for providing information about persons evacuated to the relief centers/hospitals.</li> </ul>

Time Frame	Sr. No.	Task	Responsibility	Activity
	5.	Miscellaneous rescue and relief works	COR, Revenue Dept., Local Bodies, Home Dept.	<ul style="list-style-type: none"> <li>Assess the situation and take appropriate action to accelerate the Search &amp; Rescue Operations.</li> <li>Depute additional officers and supporting staff to Cyclone affected areas from non-affected areas (if required) to accelerate the rescue and relief operations.</li> </ul>
			COR, Revenue Dept., Civil Supply Dept.	<ul style="list-style-type: none"> <li>Ensure that the relief assistance received from outside is centrally received, stored and sent for distribution to Cyclone affected areas according to their need and proper accounts are maintained about both receipt and distribution.</li> <li>District Collector may oversee the functioning of relief centers and ensure adequate supply of relief materials.</li> </ul>
Time = 0+48	1.		COR, Revenue Dept.,	<ul style="list-style-type: none"> <li>Remain in constant touch with IMD for updates on weather</li> </ul>

Time Frame	Sr. No.	Task	Responsibility	Activity
to 96 hours.			Civil Supply Dept.	<p>forecast for the coming days and plan accordingly.</p> <ul style="list-style-type: none"> <li>• Arrange for procurement of additional relief material required for relief operations (on the basis of need assessment).</li> <li>• Mobilize additional relief material required for relief operations.</li> <li>• Maintain constant touch with UT&amp; Districts Control Room.</li> </ul>
	2.		Revenue Dept. Health Dept. Transport Dept.	<ul style="list-style-type: none"> <li>• Arrange for transportation of injured from field hospital to base hospital.</li> <li>• Arrangement for transport of dead bodies to their native places.</li> </ul>
	3.		COR, Revenue Dept. Line Dept.	<ul style="list-style-type: none"> <li>• Ensure maintenance of record, timely reporting and information management.</li> <li>• Ensure maintenance of record and information database.</li> </ul>
Time	1.		COR,	<ul style="list-style-type: none"> <li>• Remain in constant touch with</li> </ul>



Time Frame	Sr. No.	Task	Responsibility	Activity
= 0+96 to 168 Hrs			Revenue Dept.	<p>IMD for updates on weather forecast for the coming days and plan accordingly.</p> <ul style="list-style-type: none"> <li>• Review the restoration of all the public and essential in Cyclone affected areas.</li> <li>• Review and follow-up all necessary arrangements for emergency response &amp; relief in the affected area/s.</li> </ul>
	2.		COR, IMD.	<ul style="list-style-type: none"> <li>• On receiving the message from IMD about degradation of Cyclone, inform the concern Dist. Collector.</li> </ul>
	3.		COR, Dis. Collector, PWD, & other Line Depts.	<ul style="list-style-type: none"> <li>• Organize a quick rapid visual survey of the affected areas (through a technical team of engineers) to ascertain the safety of the structures decide on giving the go-ahead to people to move back to their respective houses.</li> </ul>
	4.		COR, Collector, Home Dept.	<ul style="list-style-type: none"> <li>• After receiving the message of de-warning, ensure that people are moved back safely to their houses.</li> </ul>
	5.		Revenue Dept.	<ul style="list-style-type: none"> <li>• Ensure relief disbursement, allotment of funds and grants to line department and district</li> </ul>

<b>Time Frame</b>	<b>Sr. No.</b>	<b>Task</b>	<b>Responsibility</b>	<b>Activity</b>
				collectors for organizing emergency response, relief and evacuation arrangements.

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## **CHAPTER 5: Disaster Management Plan for Flood.**

### **5.1 Daman Scenario**

Daman has a major river namely **Daman Ganga** river which merges in the Arabian Sea. Daman has also two small rivers namely **Kolak and Kalai**. Daman Ganga River comes from Gujarat and it enters Daman from Vapi in Gujarat. On account of construction of Madhuban Dam in Vapi, there are minimal chances of floods in Daman. Though the chances of floods in Daman has become minimal on account of construction of Madhuban Dam, Damanganga River at Vapi in Gujarat, the UT Administration has opened a **Flood Control Room** in Collectorate which receives information regarding discharge of water from Madhuban Dam from time to time. The co-ordination Committee and various departments will have similar responsibility in floods as in cyclones.

Villages and streets of **Kachigam, Varkund, Khariwad, Ghanchiwad, and Kharawad** are identified to be affected by floods. The shelter points of cyclone will also work as shelter points for floods.

Flood Prone Areas:

F

G

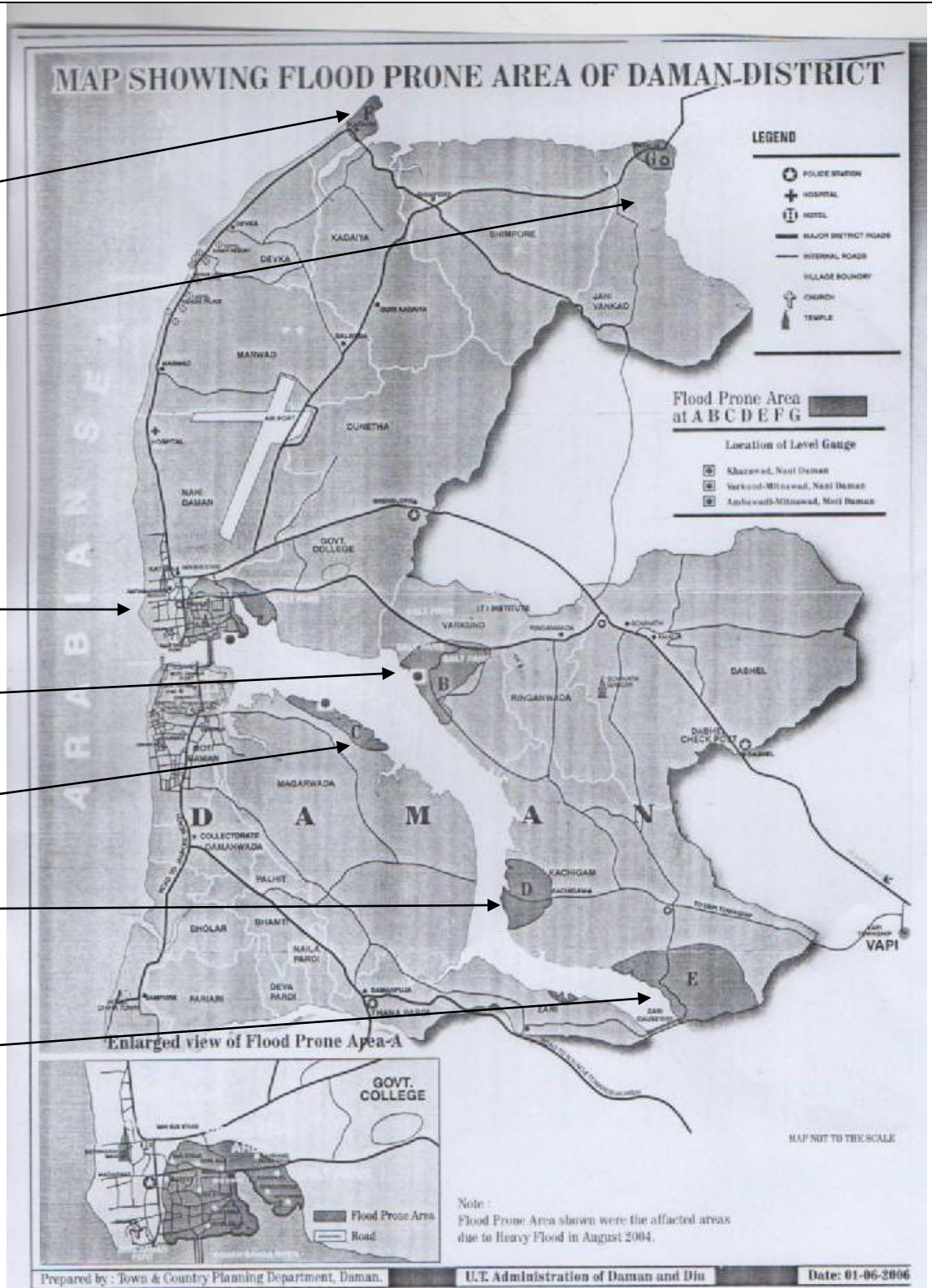
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All the Department of Daman District shall prepared for flood from the month of May. The Control room in Collector office Daman shall be open from 15`x' June and will work round the Clock. The A.D.M/Deputy Collector will interact with the Executive Engineer, Madhuban Dam. As soon as the warning of release of water from Madhuban Dam is received, the Control room will informed the same to the Police, Fisheries Department, Port officer, P.W.D, D.M.H.S. The Supdt. of fisheries with help of Machhi Mahajan and other NGO's announce the information of release of water.

The **Action Plan** will consist of the following activities:

1. Flood disaster
2. Flood Forecasting and Warning
3. Trigger mechanism
4. Response mechanism of the concerned line departments along with the roles and responsibilities
5. Relief

## **5.2 Flood Forecasting and Warning**

The main components of a **national flood forecasting and warning system** are as follows:

- Collection of real-time data and prediction of flood severity and time of onset of particular levels of flooding.
- Preparation of warning messages, describing what is happening, predictions of what will happen and expected impact. Messages can also include what action should be taken.
- The communication and dissemination of such messages.
- Interpretation of the predictions and other flood information to determine flood impacts on communities.
- Response to the warnings by the agencies involved and communities.

- Review of the warning system and improvement in the system after flood event.
- If predictions fail, the reasons of prediction failure should be communicated to communities in order to establish trust.

### **Community based flood forecasting and warning systems**

At community level, it is important that warnings are received by all individuals. The way in which messages are disseminated in communities will depend on local conditions, but may include some or all of the following:

- Media warnings (print and electronic)
- General warning indicators, for example sirens
- Warnings delivered to areas by community leaders or emergency services
- Dedicated automatic telephone warnings to at-risk properties
- Information about flooding and flood conditions in communities upstream. One approach to disseminating messages is to pass warning messages from village to village as the flood moves downstream
- Keep watch and be regularly informed about the river level and embankment conditions in the local area. The monitoring of the river and embankment should be increased as the water level increases and crosses the critical danger level
- A community-based warning system to pass any information about an approaching flood to every family.

### **Procedure for disseminating warnings to remote areas**

Communities in remote areas may not be able to receive the types of warnings described in the previous section. Responsibilities need to be defined clearly for lower tiers of administration and the emergency services to have predefined links with communities in remote areas.

This should include;

- Local radio, which should be supplied with clear and accurate information

- Local means of raising alarms, for example church bells, sirens, loud hailers, loudspeakers etc. The latter could be the responsibility of selected individuals or wardens, who need to be provided with equipment and transport, for example motor cycles or bicycles;
- High Priority Telegram
- Doordarshan and the local cable channels (TV channels & radio Channels including FM radio)
- Bulletins in the Press
- Satellite Based disaster Warning Systems
- Fax
- Telephone

### **5.3 Trigger Mechanism: Plan Activation**

The flood response system will be activated on the occurrence of a heavy rain. The commissioner of Relief (**COR**)/ District Collector will activate all the Departments for emergency response including the UT Control room. He will issue instructions to include the following details:

- Specify exact resources required
- The type of assistance to be provided
- The time limit within which assistance is needed
- The UT, district or other contact persons/agencies for the provision of the assistance
- Other Task Forces with which coordination should take place

The UT Control room and other control rooms should be activated with full strength.

Once the situation is totally controlled and normalcy is restored, the COR declares End of Emergency Response and issues instructions to withdraw the staff deployed in emergency duties.

### 5.4 Roles and Responsibilities

S. No.	Response To be Taken	Responsible Department
1.	Reporting the occurrence of flood to CoR, UTDMA, and Heads of line departments, Administrator and National Disaster Management and GoI.	District Collector.
2.	Establish communication links by alternate communication equipment like phone; radio etc. in state/district control rooms.	District Collector
3.	Deployment of Mobile Emergency Communication Units to affected areas for establishing communication links.	COR, Revenue Dept.
4.	Verifying authenticity of flood from agencies like IMD and also from Districts control room.	COR, Revenue Dept.
5.	Contact the Heads of all the line departments to reach Control room	COR, Revenue Dept.
6.	Dispatch of Search & Rescue teams to the affected areas.	COR, Revenue Dept.
7.	Make arrangements for the aerial survey of affected areas.	COR, Revenue Dept.
8.	Instruct local administration to evacuate victims to safer sites.	COR, Revenue Dept.
9.	Assess the condition of road and rail network for quick mobilization of Emergency teams and resources to affected areas and take follow up steps.	COR, Revenue Dept., Transport Dept.
10.	Maintain constant touch with National/District Control room	COR, Revenue Dept.



**Distribution of activities among various state agencies in UT Administration during Relief.**

<b>S. No.</b>	<b>Response To be Taken</b>	<b>Responsible Department</b>
1.	Providing temporary shelters to evacuated persons	COR, Revenue Dept., PWD
2.	Providing food materials to the victims	COR, Revenue Dept., Civil Supply Dept.
3.	Providing safe drinking water to the victims	COR, Revenue Dept., PWD
4.	Provision of hygienic sanitation facilities	Health Dept. NGOs, Community groups
5.	Provision of health assistance	Health Dept.
6.	Clothing and utensils	PWD, Civil Supply Dept.
7.	Relief camps	COR, Revenue Dept.
8.	Providing transport services to shelter sites	COR, Revenue Dept., Transport Dept

**5.5 Relief****Short-term relief measures**

- **Food & nutrition:** - In an extreme flood situation, people lose standing crops and stored food grains. In such cases, free distribution of foods shall be made to avoid hunger and malnutrition. Wherever possible, dry rations should be distributed for home cooking.
- **Water:** - Water supply is invariably affected in natural disasters. Availability of safe drinking water is very challenging particularly during floods. It must be ensured that affected people have adequate facilities and supplies to collect, store and use clear and safe water for drinking, cooking and personal hygiene.

- **Health:** - During post disaster phase many factors increase the risk of diseases and epidemics because of overcrowding, inadequate quantity and quality of water, poor environmental and sanitary conditions, decaying biological matter, water stagnation, and inadequate shelter and food supplies. There should be adequate supply of medicines, disinfectants, fumigants etc. to check outbreak of epidemics. It should be ensured that the medicines have not reached expiry date.
- **Clothing & Utensils:** - The people affected by the disaster shall be provided with sufficient clothing, blankets etc. to ensure their safety and well-being. Each disaster-affected household shall be provided with cooking and eating utensils.
- **Shelter:** - In case of flood, a large number of people are rendered homeless. In such situations shelter becomes a critical factor for survival and safety of the affected population. In view of this, flood affected people who have lost their houses, shall be provided sufficient covered space for shelter.
- **Relief camp:** - Relief camps also provide *good temporary arrangements* for people affected by flood. Adequate numbers of buildings or open space should be identified where relief camps can be set up during emergency. The use of premises of educational institutions for setting up relief camps should be encouraged. The requirements for operation of relief camps should be worked out in detail in advance. The temporary relief camps should have adequate provision of drinking water and bathing, sanitation and essential health-care facilities.
- **Sanitation and Hygiene:** - Sanitation services are crucial to prevent an outbreak of epidemics in post disaster phase. Therefore a constant monitoring of any such possibilities needs to be carried out. It should be ensured that disaster-affected households have access to sufficient hygiene measures.

#### **Interim Relief Measures**

- Arrangements to be made for quick identification and maintenance of the records of disposal of dead bodies in the affected areas (**PWD Dept., Revenue Dept., Health Dept. and Local Authorities**).

- Arrangements to be made to record the complaints of all persons reported missing. Follow up action in terms of verification of the report also needs to be made. (**Home Dept., Revenue Dept.**)
- District Magistrates and sub-divisional magistrates to be empowered to exempt the requirement of identification and post-mortem in case of mass casualties. Revenue Dept may depute additional sub-divisional magistrates to expedite disposal of the dead bodies. (**Revenue & Home Dept.**)
- Unclaimed/unidentified dead bodies to be disposed off with the help of pre identified voluntary Agencies at the earliest after keeping their records. (**Home Dept., Revenue Dept., Health Dept. & Local Bodies**)
- Additional manpower to be deployed in the affected areas for supplementing the efforts of the local administration. (**GAD**).
- Regular meetings of the different stakeholders/departments should be organized at UT level for sharing information, developing strategies for relief operations. (**Commissioner of Relief & Collectors at District Level**).
- **Information & Public Relation Dept** to coordinate with the media to play a positive role in disseminating appropriate information to public and the government in order to facilitate the speedy recovery.

#### **Assessment of Damage/Loss and Relief needs**

- The Administrator to issue instructions to the district collectors to provide the ‘**Need Assessment Report**’. The Commissioner of Relief should consolidate the same and to prepare “**UT’s Need Assessment Report**”.
  - The Administrator to issue instructions to the District Collectors to provide the “**Damage and Loss Assessment Report**”. The Administrator to consolidate the same and to prepare “**State’s Damage and Loss Assessment Report**” which will be useful in planning and implementing the relief operations for disaster victims.
  - Adequate manpower, vehicles, stationery etc. should be provided to supplement the efforts for need/loss assessment. (**Commissioner of Relief & Revenue Dept.**)
  - The relief need assessment report should be provided by the Collectors. (**Commissioner of Relief & Collectors**)
  - Identification and demolition of dangerous structures in the affected areas to minimize further loss of life and injuries. (**Revenue Dept and Local Bodies**)
  - Arrangements to be made for survey of human loss and distribution of ex-gratia relief to the families of deceased persons. (**Revenue Dept.**)
  - Teams to be formed and dispatched to the affected areas for detailed assessment of houses and property damage assessment. (**Revenue Dept. and Local authorities**)
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## **CHAPTER 6:- Action Plan for Tsunami**

**The Nodal Department** for controlling, monitoring and directing measures for organizing rescue, relief and rehabilitation is **the Revenue Department** of the district. All other concerned Departments should extend full cooperation in all matters pertaining to the management of the Tsunami disaster whenever it occurs. Departments like Revenue, Home including Transport, Ports & Fisheries, and R & B, Power, Finance, Information and Broadcasting etc. shall have a major role in emergency response during occurrence of Tsunami generating earthquake and Tsunami hitting the shore.

### **6.1 Early Warning**

Public may be able to protect themselves from the Tsunami emergency if they are informed and educated before an emergency. Most of the time tsunami hazard is predictable so warning to public is important part of Action Plan.

Decision Support system is the set of rules to be followed for issue of tsunami bulletins. These rules are appropriately coded in the form of software that automatically generates bulletins by accessing the real-time data from the observing network as well as the model scenario database. The Action Plan is the **set of routine activities** to be followed by the staff at the tsunami warning centre for observation, evaluation, confirmation, and dissemination of bulletins.

The Early Warning Centre continuously monitors the seismic activity in the two tsunami genie source regions of the Indian Ocean through the network of national and international seismic stations. This network enables us to detect any tsunami genie earthquakes within a time period of 10 minutes of occurrence. Tsunami bulletins are then generated based on pre-set decision support rules and disseminated to the concerned authorities for action, following the Standard Operating Procedures.

The criteria given below is followed for generation of different types of advisory bulletin messages (**Warning/Alert/Watch**) for a particular region of the coast based on the earthquake parameters, available warning time (i.e. time taken by the tsunami wave to reach the particular coast) and expected run-up from pre-run model scenarios.

### **Warning/ Alert / Watch:**

**The warning criteria** are based on the premise that coastal areas falling **within 60 minutes** travel time from a tsunami genic earthquake source need to be warned based solely on earthquake information, since enough time is not available for confirmation of water levels from BPRs and Tide Gauges. Those coastal areas falling **outside the 60 minutes** travel time from a tsunami genic earthquake source are put under a **watch status** and upgraded to a warning only upon confirmation of water-level data, e.g. If a tsunami genic earthquake happens in the coast of the Northern Indonesia, parts of the Andaman & Nicobar Islands falling within 60 minutes travel time of a tsunami wave are put under „Warning“ status. Other areas are put under „Watch“ Status and upgraded to a „Warning“ only if the BPRs or tide gauges reveal significant change in water level. This implies that the possibility of false alarms is higher for areas close to the earthquake source; however for other regions since the warnings are issued only after confirmation of water-level data, the issue of false alarms doesn't arise. To reduce the rate of false alarms even in the near source regions, **alerts** are generated by analyzing the pre-run model scenarios, so that warnings are issued only to those coastal locations that are at risk.

## **6.2 Plan Activation**

The tsunami response structure will be activated on the occurrence of a major tsunami. The commissioner of Relief (COR) will activate all the Departments for emergency response including the Control room. He will issue instructions to include the following details:

- Specify exact resources required.
- The type of assistance to be provided.
- The time limit within which assistance is needed.

- The state, district or other contact persons/agencies for the provision of the assistance.
- Other Task Forces with which coordination should take place.

The UT EOC and other control rooms at the state level as well as district control rooms should be activated with full strength.

### 6.3 Roles and Responsibility

#### Task and Responsibilities of different stake holders during Emergency Response Phase.

Time Frame	Sr. No	Task	Responsibility	Activity
0 to (-) 60 Minutes	1.	Warning receipt and dissemination	IMD, COR	<ul style="list-style-type: none"> <li>• Report the occurrence of Tsunami generating earthquake to following officials;                             <ul style="list-style-type: none"> <li>➤ COR/COLLECTOR</li> <li>➤ Secretary (Revenue)</li> <li>➤ Chief Executive Officer, UTDMA</li> <li>➤ Members of Crisis Management Group</li> <li>➤ All concerned District Collectors as well as Control Rooms of the district/s likely to be affected as per preliminary warning of IMD.</li> </ul> </li> <li>• Instruct Collectors to activate District Control Room at full strength.</li> <li>• Alert all response teams in the State for deployment.</li> <li>• Remain in constant touch with control rooms</li> </ul>

Time Frame	Sr. No	Task	Responsibility	Activity
				<p>at National &amp; UT Level.</p> <ul style="list-style-type: none"> <li>• Instruct and alert all heads of departments of the key line departments to activate their departmental plan and SOPs for Tsunami response.</li> </ul>
	2.	Interdepartmental Coordination	COR, GAD, Collector	<ul style="list-style-type: none"> <li>• Instruct all UT government officers and employees in the UT to report to their respective Head for emergency duties (Only if the warning is of a level 2 disaster or as per the decision taken in the meeting of the Crisis Management Group headed by Administration).</li> <li>• Alert the District Collectors of districts not likely to be affected to be prepared for providing: <ul style="list-style-type: none"> <li>➤ Additional manpower</li> <li>➤ Additional resources <ul style="list-style-type: none"> <li>- Machinery &amp; Equipment</li> <li>- Relief material to the districts likely to be affected.</li> </ul> </li> </ul> </li> </ul>
	3.	Establishment of lines of Communication	COR	<ul style="list-style-type: none"> <li>• Activate alternative communication equipments i.e. satellite phones, HF/VHF sets, Ham radio, VSAT in UT EOC.</li> <li>• Establish communication links with EOC and Search &amp; Rescue Teams in all Municipal Corporations and alert them to be in stage of readiness.</li> </ul>



Time Frame	Sr. No	Task	Responsibility	Activity
				<ul style="list-style-type: none"> <li>Establish communication links with villages likely to be affected as per the contact details.</li> </ul>
0 to (-) 60 Minutes	1.	Review of situation and reporting	COR	<ul style="list-style-type: none"> <li>Establish contact with IMD, INCOIS, ISRO and the defense ministry of GoI for aerial / satellites imageries.</li> <li>After reviewing the satellite images issue instructions and orders for emergency response to areas likely to be affected.</li> </ul>
	2.	Management of EOC & Control Room and Tsunami Response	COR, UTDMA, Collector	<ul style="list-style-type: none"> <li>Take over full command of UT EOC.</li> <li>Instruct line departments to depute representatives at the UT and District EOCs.</li> <li>Hold a meeting with leaders of task forces and entrust them their tasks.</li> <li>Ensure that Tsunami information is disseminated to all who are at danger.</li> <li>Arrange emergency meeting with UT Crisis Management Group to devise a plan of action.</li> </ul>
			COR, Collector	<ul style="list-style-type: none"> <li>Arrange dissemination of information through various means of communication such as Radio, TV, Cable Network, and SMS about Tsunami to districts/areas which are likely to be hit.</li> </ul>
			Secretary	<ul style="list-style-type: none"> <li>Impose restriction on all transport activities</li> </ul>

Time Frame	Sr. No	Task	Responsibility	Activity
			Transport Dept.	heading towards coastal areas that are likely to be affected by Tsunami.
			COR, UTDMA	<ul style="list-style-type: none"> <li>• Mobilize following teams: <ul style="list-style-type: none"> <li>➤ Evacuation</li> <li>➤ Emergency Medical Services</li> <li>➤ Search and Rescue</li> </ul> </li> <li>• Mobilize following emergency response forces: <ul style="list-style-type: none"> <li>➤ Fire &amp; Emergency Services</li> <li>➤ NDRF</li> <li>➤ Police, Home Guards</li> <li>➤ Reserve Police Force</li> <li>➤ Army (if required)</li> <li>➤ Air Force (if required).</li> </ul> </li> </ul>
	3.	Tsunami response to coastal areas (likely to be affected)	COR, Transport Dept., Collector, Local Bodies PWD Dept.	<ul style="list-style-type: none"> <li>• Based on the warning issued by IMD, pin point the districts and villages likely to be affected by Tsunami and start the procedure for identifying safe places/shelters for evacuation in those villages .</li> <li>• Village wise data of safe sheltering for evacuation should be referred and the Dist. Collectors/Village level officers should be contacted to know the status of the shelters with the capacity of the shelter and other available facilities at the site.</li> </ul>

Time Frame	Sr. No	Task	Responsibility	Activity
				<ul style="list-style-type: none"> <li>• Make transport arrangement for mobilization of all emergency response teams.</li> </ul>
			Port Dept. Fisheries Dept. Revenue Dept.	<ul style="list-style-type: none"> <li>• Ensure arrangements are in place to evacuate fishermen if needed.</li> </ul>
			Tourism Dept.	<ul style="list-style-type: none"> <li>• Ensure safety of tourists visiting beaches along the coastline.</li> </ul>
			Home Dept., Collector, Local Bodies.	<ul style="list-style-type: none"> <li>• Cordoning off coastal areas for restricting entries of rail or road traffic.</li> <li>• Ensure law and order is maintained in areas likely to be affected.</li> </ul>
			Line Dept., Industries etc...	<ul style="list-style-type: none"> <li>• Ensure that all critical activities (mainly industrial production) in areas likely to be affected are shutdown.</li> </ul>
			Collector, Local Bodies, Information Dept.	<ul style="list-style-type: none"> <li>• Ensure dissemination of information to remote areas by local means.</li> <li>• Ensure that local help lines are opened and effectively managed for public information, guidance and rumor control.</li> <li>• Ensure that the information to public and media about the progress of Tsunami at periodic intervals is released.</li> </ul>
			Health Dept.	<ul style="list-style-type: none"> <li>• Health Department to activate their Departmental Tsunami Disaster Management Plan and Departmental SOPs for Management of casualties.</li> </ul>

Time Frame	Sr. No	Task	Responsibility	Activity
0 to (-15) minutes	1.	Review of situation and reporting	COR, Revenue Dept. Information Dept.	<ul style="list-style-type: none"> <li>• Review and monitor of following activities:               <ul style="list-style-type: none"> <li>➤ Evacuation of people from coastal areas likely to be affected.</li> <li>➤ Positioning of Search and Rescue Teams.</li> <li>➤ Positioning of mobile communication units.</li> <li>➤ Positioning of quick medical response teams.</li> <li>➤ Mobilization of restoration teams of respective departments.</li> <li>➤ Requirement of armed forces in rescue and relief operations.</li> <li>➤ Dissemination of information to the vulnerable areas.</li> <li>➤ All preparedness measures to be taken by various authorities.</li> </ul> </li> <li>• Release information at appropriate time to media and public regarding response measures organized by the Government.</li> </ul>
	2.	Emergency Relief Management.	COR	<ul style="list-style-type: none"> <li>• Ensure that the Relief Management work planned in the areas likely to be affected by the Tsunami are well organized.</li> </ul>
			COR, Civil Supply Dept. Revenue Dept.	<ul style="list-style-type: none"> <li>• Ensure that the arrangement for basic amenities(shown below) at evacuation/relief centers are made by the respective departments:               <ul style="list-style-type: none"> <li>➤ Drinking water</li> </ul> </li> </ul>

Time Frame	Sr. No	Task	Responsibility	Activity
			Collector Local Bodies PWD Health Dept.	<ul style="list-style-type: none"> <li>➤ Food</li> <li>➤ Clothing</li> <li>➤ Sanitation and hygiene,</li> <li>➤ Lighting</li> <li>➤ Medicines and other Health Care.</li> </ul>
			COR UTDMA	<ul style="list-style-type: none"> <li>• Inform following agencies to be in a state of readiness for assisting in the Tsunami response measures (if required): <ul style="list-style-type: none"> <li>➤ Public sector agencies</li> <li>➤ Private sector agencies</li> <li>➤ NGOs</li> <li>➤ Volunteer Organizations.</li> </ul> </li> <li>• Request for help (if needed) to MHA/National Disaster Management Authority.</li> </ul>
			Information Dept.	<ul style="list-style-type: none"> <li>• Make necessary arrangements for public information/guidance, public opinion and rumor control.</li> </ul>
<b>Time = 0 Hour</b>	<b>1.</b>	Disaster Declaration	COR, UTDMA Collector	<ul style="list-style-type: none"> <li>• Record the reports in detail with time, source of reports etc. and declare the area as disaster affected, if necessary, ( depending upon the nature and intensity of impact)</li> </ul>
	<b>2.</b>	Preliminary assessment, deployment of	COR, Collector,	<ul style="list-style-type: none"> <li>• Dist. Collector/s should send teams to the affected areas to take stock of the effects of Tsunami.</li> </ul>

Time Frame	Sr. No	Task	Responsibility	Activity
		emergency response teams and dissemination of information.	Revenue Dept.	<ul style="list-style-type: none"> <li>• District Collector/s should send sector wise situation reports to:               <ul style="list-style-type: none"> <li>➤ UT EOC/COR</li> <li>➤ UTDMA</li> </ul> </li> </ul>
COR, Collector, Local Bodies, Line Dept.	<ul style="list-style-type: none"> <li>• Deployment of following teams to Tsunami affected areas:               <ul style="list-style-type: none"> <li>➤ Emergency Communication Teams</li> <li>➤ Emergency Medical Services Teams</li> <li>➤ Search and Rescue Teams (With Equipments)</li> <li>➤ Preliminary damage Assessment Teams</li> <li>➤ Need Assessment Teams</li> </ul> </li> </ul>			
Collector, Municipal Council, District Panchayat, Information Dept. & Other Line Dept.	<ul style="list-style-type: none"> <li>• Establish communication link with affected district by activating alternate communication equipments such as Satellite Phones, HF/VHF Sets, Ham Radio, V Set etc., in UT/District EOC.</li> <li>• Arrange dissemination of information about occurrence of Tsunami and areas that are affected by it to Media &amp; Public.</li> </ul>			

Time Frame	Sr. No	Task	Responsibility	Activity
Time = 0 + 24 Hours.	1.	Mobilisation and deployment.	Collector, Municipal Council, District Panchayat, Information Dept. & Other Line Dept.	<ul style="list-style-type: none"> <li>• Immediate mobilization of following units/teams to areas affected by Tsunami. <ul style="list-style-type: none"> <li>➤ S &amp; R Teams of Fire and Emergency Services</li> <li>➤ Quick Medical Response Teams</li> <li>➤ Quick Damage &amp; Loss Assessment Teams</li> <li>➤ Quick Need Assessment Teams</li> <li>➤ Road Clearance Teams</li> <li>➤ Teams for disposal of dead bodies</li> <li>➤ Teams for disposal of carcasses</li> <li>➤ Teams for debris clearance (if any)</li> <li>➤ Teams for maintaining Law &amp; Order in the affected areas</li> <li>➤ Arrange for S &amp; R teams of Air Force (If required).</li> </ul> </li> </ul>
	2.	Measures for quick and organized response	Collector, Municipal Council, District Panchayat, Information Dept. & Other Line Dept.	<ul style="list-style-type: none"> <li>• UT EOC, &amp; the Collectors of the affected District/s Should ensure that the following response activities are carried out immediately:</li> </ul>
	A	Clearance of access roads to	Collector, Municipal	<ul style="list-style-type: none"> <li>• To survey the access roads/routes leading to the affected areas and manage traffic for</li> </ul>

Time Frame	Sr. No	Task	Responsibility	Activity
		reach at the sites of affected areas	Council, District Panchayat, Transport Dept. PWD, Information Dept. & Other Line Dept.	<p>mobilization of equipments, machinery and volunteers.</p> <ul style="list-style-type: none"> <li>• Identify alternate roads/routes for evacuation.</li> <li>• Undertake repairing/restoration of damaged roads leading to the affected areas.</li> <li>• Identify and declare unsafe buildings/structures in Tsunami affected areas.</li> <li>• Evacuate people from unsafe buildings/structures and shift them to relief camps/sites.</li> </ul>
	B	Necessary Arrangements at evacuation/relief centers	COR Civil Supply Dept. PWD, Health Dept. Electricity Dept. ,Revenue Dept. Collector, Municipal Council, District	<ul style="list-style-type: none"> <li>• To ensure that necessary arrangements at evacuation/relief centers is made with sufficient availability of: <ul style="list-style-type: none"> <li>➤ Food,</li> <li>➤ Water,</li> <li>➤ Blankets/Clothing</li> <li>➤ Medicines</li> <li>➤ Lighting</li> <li>➤ Sanitation and hygiene etc.</li> </ul> </li> <li>• To ensure necessary security arrangements for the personnels (Emergency responders/relief teams) who are working at Relief Centers and involved in distribution of</li> </ul>



Time Frame	Sr. No	Task	Responsibility	Activity
			Panchayat, Home Dept.	relied materials.  <ul style="list-style-type: none"> <li>● To ensure that law and order is maintained at evacuation/relief centers and in the affected areas as well.</li> </ul>
	C	Safety of fishermen and salt workers	COR, Port Dept. , Fisheries, Tourism Dept.	<ul style="list-style-type: none"> <li>● Immediate actions to be taken for safety of fishermen and visitors at Tsunami affected coastal areas.</li> <li>● Ensure that all the fishermen have returned from the sea or those who are in the sea are rescued and evacuated to safer places.</li> </ul>
	D	Ensure immediate health and minimization of outbreak of disease.	COR, PWD, Health Dept. ,Revenue Dept. Collector,, Home Dept.	<ul style="list-style-type: none"> <li>● To establish camp hospitals near the affected areas.</li> <li>● To make transportation arrangements to shift seriously injured persons to nearest- <ul style="list-style-type: none"> <li>➤ Camp Hospitals,</li> <li>➤ District Hospitals, PHC, SUB CENTER</li> </ul> </li> <li>● Ensure that the Hospitals are well prepared to deal with seriously injured persons.</li> <li>● To ensure that the required medical assistance/aid and medicines are provided to the affected people at site as well as at evacuation/relief centers in the affected area and necessary records are maintained.</li> </ul>

Time Frame	Sr. No	Task	Responsibility	Activity
				<ul style="list-style-type: none"> <li>• Take sanitation and epidemic control measures for preventing any water borne disease.</li> <li>• Keep adequate stock of essential medicines, first-aid etc. at TOWN/district hospitals.</li> <li>• Take steps to purify drinking water sources.</li> <li>• If required, take the help of doctors/paramedics from the list of doctors/paramedics available at the town /district level for immediate medical assistance.</li> </ul>
			Animal Husbandry Dept.	<ul style="list-style-type: none"> <li>• Assess need for fodder if required.</li> <li>• Keep ready teams for carcass disposal (if required).</li> </ul>
	E	Information to public and media	Information Dept., COR, Revenue Dept.	<ul style="list-style-type: none"> <li>• Establish Media/Press Centre for media management and information dissemination.</li> <li>• Ensure that the information to media/general public about the response of the UT Administration is released in an organized manner.</li> <li>• Organize media briefing twice a day at pre-determined intervals.</li> </ul>

Time Frame	Sr. No	Task	Responsibility	Activity
	F	Other important work related to immediate response	COR, UTDMA, Revenue Dept.	<ul style="list-style-type: none"> <li>• Prepare quick need assessment report for planning of relief operation.</li> <li>• Additional assistance may be asked for emergency response/relief from GoI-NDMA (If needed).</li> <li>• Maintain constant touch with National, District EOC and other control rooms.</li> <li>• Conduct Arial Survey of affected areas for taking a stalk of the situation.</li> </ul>
Time = 0 + 24 to 48 Hrs.	1.	Restoration of critical infrastructure/essential services	COR, Civil Supply Dept. PWD, Electricity Dept. ,Revenue Dept. Collector, Municipal Council, District Panchayat, Home Dept.	<ul style="list-style-type: none"> <li>• Ensure that the essential services/critical infrastructure of the affected areas have been restored or alternative arrangement is made for ensuring safety of people and smooth management of emergency response.</li> <li>• Ensure that key administrative and lifeline buildings are brought back to operation quickly.</li> <li>• Ensure following primary necessities are restored: <ul style="list-style-type: none"> <li>➤ Power</li> <li>➤ Water</li> <li>➤ Telecommunication</li> <li>➤ Roads</li> <li>➤ Bridges</li> </ul> </li> </ul>

Time Frame	Sr. No	Task	Responsibility	Activity
	2.	Disposal of Dead Bodies.	COR Health Dept. ,Revenue Dept. Collector, Municipal Council, District Panchayat, Home Dept.	<ul style="list-style-type: none"> <li>• Ensure following procedure is followed before disposal/handing over of dead bodies: <ul style="list-style-type: none"> <li>➤ Photographs of the dead bodies are taken,</li> <li>➤ Identification of the dead bodies is done,</li> <li>➤ Post Mortem where ever necessary and possible is carried out,</li> <li>➤ Handing over dead bodies of persons known/identified to their relatives,</li> <li>➤ Disposal of unclaimed and unidentified dead bodies.</li> </ul> </li> </ul>
			Animal Husbandry Dept. Local Bodies, Health Dept.	<ul style="list-style-type: none"> <li>• Animal Husbandry Department to ensure medical aid to cattle that are injured.</li> <li>• Disposal of animal carcasses with the help of local bodies/health dept.</li> </ul>
	3.	Public Information and Media Management	COR, Collector, Information Dept.	<ul style="list-style-type: none"> <li>• Ensure that the information about progress of rescue and relief is provided to media/public in an organized manner at least twice a day.</li> <li>• Establish help lines for facilitating communication between the victims and their relatives residing outside the affected area/s.</li> <li>• Establish Information Centers at strategic locations for providing information about</li> </ul>

Time Frame	Sr. No	Task	Responsibility	Activity
				persons evacuated to the relief centres/hospitals.
	4.	Miscellaneous rescue and relief work.	COR, Revenue Dept. Collector, Municipal Council, District Panchayat,	<ul style="list-style-type: none"> <li>• Assess the situation and take appropriate action to accelerate the Search &amp; Rescue Operations.</li> <li>• Depute additional officers and supporting staff to Tsunami affected areas from non-affected areas (if required) to accelerate the rescue and relief operations.</li> </ul>
			COR, Revenue Dept. Civil Supply Dept.	<ul style="list-style-type: none"> <li>• Ensure that the relief assistance received from outside is centrally received, stored and sent for distribution to Tsunami affected areas according to their need and proper accounts are maintained about both receipt and distribution</li> </ul>
			COR, CIVIL SUPPLY	<ul style="list-style-type: none"> <li>• District Collector may oversee the functioning of relief centers and ensure adequate supply of relief materials</li> </ul>

Time Frame	Sr. No	Task	Responsibility	Activity
Time = 0 + 48 to 96 hrs,			COR, Civil Supply, Local Bodies	<ul style="list-style-type: none"> <li>• Arrange for procurement of additional relief material required for relief operations (on the basis of need assessment).</li> <li>• Mobilize additional relief material required for relief operations.</li> <li>• Maintain constant touch with UT &amp; District EOC.</li> </ul>
			COR, Revenue Dept. Health Dept. Transport Dept.	<ul style="list-style-type: none"> <li>• Arrangement for transportation of injured from field hospital to base hospital.</li> <li>• Arrangement for transport of dead bodies to their native places.</li> </ul>
			Collector, COR, Information Dept.	<ul style="list-style-type: none"> <li>• Ensure maintenance of record, timely reporting and information management.</li> <li>• Ensure maintenance of record and information database.</li> </ul>
Time = 0 + 96 to 168 Hrs.			COR, Revenue Dept.	<ul style="list-style-type: none"> <li>• Review the restoration of all the public and essential in Tsunami affected areas.</li> <li>• Review and follow-up all necessary arrangements for emergency response &amp; relief in the affected area/s.</li> </ul>

Time Frame	Sr. No	Task	Responsibility	Activity
				<ul style="list-style-type: none"> <li>• After receiving the message of de-warning, ensure that people are moved back safely to their houses.</li> </ul>
			COR, Revenue Dept. Local Bodies.	<ul style="list-style-type: none"> <li>• Organize a quick rapid visual survey of the affected areas (through a technical team of engineers) to ascertain the safety of the structures decide on giving the go-ahead to people to move back to their respective houses.</li> </ul>
			Revenue Dept.	<ul style="list-style-type: none"> <li>• Ensure relief disbursement, allotment of funds and grants to line department and district collectors for organizing emergency response, relief and evacuation arrangements.</li> </ul>

## 6.4 Relief Measures

### Short-term relief measures

- (1) Provide temporary shelter to affected people
- (2) Temporary shelter site should be safe, and easily accessible.
- (3) Continue to provide essential services to the affected people.
  - food,
  - water,
  - clothing,
  - sanitation
  - medical assistance

- power

The COR, Secretaries of Line Departments and concerned Collector to ensure the following in the relief camps:-

- Special emphasis on Hygiene and sanitation aspects should be given in relief camp sites. **(Health Dept.)**
- Separate area should be earmarked within the relief camp for storage of relief materials. **(Civil Supply & PWD Dept.)**
- Adequate manpower and transport facilities for the camp site. **(Transport Department)**
- Arrangements to be made for trauma management. **(Health Department)**
- Mobile medical units to be sent to remote areas with a view to provide medical assistance to the victims/injured. **(Health Dept.)**
- Information centre should be established by the administration. **(Information Dept. & PWD Department)**

### **Interim Relief Measures**

- Arrangements to be made for quick identification and maintenance of the records of disposal of dead bodies in the affected areas **(Home, Revenue, Health Dept., Local Authorities)**.
- Arrangements to be made to record the complaints of all persons reported missing. Follow up action in terms of verification of the report also needs to be made. **(Home Dept.)**
- District Magistrates and sub-divisional magistrates to be empowered to exempt the requirement of identification and post-mortem in case of mass casualties. Revenue Dept may depute additional sub-divisional magistrates to expedite disposal of the dead bodies. **(Revenue & Home Dept.)**
- Unclaimed/unidentified dead bodies to be disposed off with the help of pre identified voluntary Agencies at the earliest after keeping their records. **(Home, Revenue, Health Dept. & Local Bodies)**



- Additional manpower to be deployed in the affected areas for supplementing the efforts of the local administration. **(GAD)**.
- Separate Cell to be established at UT/district/Village level to coordinate with the NGOs and outside donor/aid agencies. **(Revenue Dept.)**
- Regular meetings of the different stakeholders/departments should be organized at UT level for sharing of information, developing strategies for relief operations.  
**(Commissioner of Relief & Collector at District Level)**.
- Information & Public Relation Dept to coordinate with the media to play a positive role in disseminating appropriate information to public and the government in order to facilitate the speedy recovery.

#### **Assessment of Damage/Loss and Relief needs**

- The Commissioner of Relief to issue instructions to the district collector to provide, “the need assessment report”. The Commissioner of Relief should consolidate the same and to prepare “UT need assessment report”.
- The Commissioner of Relief to issue instructions to the District Collector to provide the damage and loss assessment report. The Commissioner of Relief to consolidate the same and to prepare “UT’s damage and loss assessment report” which will be useful in planning and implementing the relief operation after the disaster for the victims of the disaster.
- Adequate manpower, vehicles, stationery etc should be provided to supplement the efforts for need/loss assessment. **(Commissioner of Relief & Revenue Dept.)**
- The relief need assessment report should be provided by the Collector. **(Commissioner of Relief & Collector)**.
- The damage assessment Performa is also attached in the annexure. **(COR & Collector)**.

- Identification and demolition of dangerous structures in the affected areas to minimize further loss of life and injuries. (**Revenue Dept and Local Bodies**).
  
  - Arrangements for distribution of gratuitous relief and cash doles. (**Revenue Dept., Panchayat & Rural Housing Dept., UD&UHD Dept. and Collector**).
  
  - Arrangements to be made for survey of human loss and distribution of ex-gratia relief to the families of deceased persons. (**Revenue Dept.**).
  
  - Teams to be formed and dispatched to the affected areas for detailed assessment of houses and property damage assessment. (**Revenue Dept and Local authorities**).
  
  - As reconstruction of houses will take a long period, arrangements to be made to provide interim shelters to the affected. (**Revenue Dept and Line Departments like Water Supply Dept., etc**).
- Identification of the site for interim shelter
  - Allocation of areas to affected families
  - Providing appropriate shelters to the affected families
  - Providing essential services as under in the interim shelter sites.
    - Water
    - Transportation
    - Power
    - Road
    - Drainage/Sanitation
    - School
    - PDS Shops
    - Health/ Protection.
-

## CHAPTER 7

### Action plan for earthquake

#### 7.1 Daman & Diu Scenario

The UT of Daman is geographically part of Gujarat on the Arabian Sea Coast. During last 200 years, Gujarat recorded 9 earthquakes of moderate to severe intensity in the years 1819, 1845, 1847, 1848, 1864, 1903, 1938, 1956, 2001. The last one of the worst earthquakes in the history was in 2001 with death toll of 26. On 4 October, 1851, **Daman suffered moderate earthquake**. According to one recorded version, it sounded like underground explosions and heavy rumblings which continued for some seconds. According to earthquake hazard map of India, Daman falls under **Seismic Zone III** and is located in the **moderate damage risk zone** with probable earthquake of 5.0 to 6.0 magnitudes on Richter scale.

**The Action Plan** will consist of the following five activities:

- i) Declaration of earthquake disaster.
- ii) Institutional mechanism of the UT Administration to respond to earthquake disaster.
- iii) Trigger mechanism on receiving the report of occurrence of an earthquake
- iv) Response mechanism of the concerned line departments along with the roles and responsibilities of each one of them and
- v) Immediate relief to be provided to the affected population.

#### 7.2 Declaration of earthquake disaster

The UTDMA will declare any area where earthquake has occurred as **disaster affected area** on the recommendations of the Relief Commissioner or the District Collector. The purpose of declaration of disaster is to organize effective response and mitigating the earthquake effects.

#### 7.3 Institutional mechanism to respond to earthquake disaster

The Revenue department is primarily responsible for emergency response and relief in the District, while the UT Disaster Management Authority (UTDMA) is designated as the nodal

agency for formulation of policies, long term planning, coordination and monitoring body for mitigation, reduction and preparedness for disasters in the UT.

## **7.4 Trigger mechanism**

An earthquake of magnitude 5 or more is likely to cause deaths and injuries to human beings and damage to all kinds of property, both private and public. Unfortunately there is very little warning available before the earthquake. Therefore planning should cater for a quick response at all levels to reduce the effects of the earthquake to the minimum.

**The Revenue department** of the District will be the **nodal department** for formulating, controlling, monitoring and directing measures for earthquake preparedness, organizing rescue, relief and rehabilitation. All other concerned departments should extend full cooperation in all matters pertaining to the management of the earthquake disaster whenever it occurs.

The occurrence of an earthquake may be reported by the Indian Meteorological Department (IMD) / National Geophysical Research Institute (NGRI) / Institute of Seismological Research (ISR) to the Commissioner of Relief by the fastest means. Besides these, the Control Room/EOC receives reports on the earthquake from village levels. On receipt of the information, the EOC verifies the authenticity of the reports and will inform the real situation to concerned authorities.

### **7.4.1 Information and reporting:**

- The agencies who provide information to the EOC about the occurrence of an earthquake in the UT are as shown below:
  - IMD, Ahmadabad / New Delhi
  - ISR
  - NGRI
  
- The EOC/Control Room should be activated for emergency response on the occurrence of any major earthquake. The EOC should initiate following activities:
  - i) EOC should report the occurrence of a major earthquake to the following:

- Commissioner of Relief
- Secretary (Revenue)
- Chairperson, UT Disaster Management Authority
- Members of Crisis Management Committee
- National Disaster Management EOC at MHA, GoI
- Vice Chairman, National Disaster Management Authority (NDMA)
- Secretary, MHA

ii) EOC to alert District search and rescue machinery for emergency response as also fire brigade personnel.

iii) EOC to verify the authenticity of the information from authorized scientific agencies as well as district control rooms.

iv) EOC to contact its regular and emergency staff to report immediately.

v) All Secretaries of the UT Departments to be contacted to be available in the EOC immediately.

vi) EOC to remain in constant touch with control rooms at national and district level.

vii) Overall management of UTEOC/DEOC shall be taken over by the Commissioner of Relief.

#### **7.4.2 Restoration of lines of communications and essential services to facilitate emergency response:**

- Establishment of Emergency Communication
- Restoration of Communication Links (Rail, Road & Air)
- Restoration of power and electricity
- Supply of safe drinking water
- Restoration of essential lifeline infrastructure

#### **7.4.3 Search, rescue and medical assistance**

- Identification of areas where SAR Teams to be deployed,
- Coordination of SAR teams for their quick deployment in allotted areas,
- Provision of quick transport of SAR teams to affected areas,

- The department of PWD/OIDC/Transport to evolve a mechanism for clearing access routes and debris in order to facilitate search and rescue operations,
- Mobilization of specialized equipments and machinery to affected areas,
- Cordoning of affected areas with control of entry and exit,
- Traffic Management by establishment of traffic points and check-posts,
- The Home Department to evolve a mechanism for providing security of properties of government and public in the affected areas,
- Setting up of field hospitals in the affected areas and deployment of mobile hospitals,
- Arrangements to be made for quick transportation of injured victims to the hospitals,
- Secretary (Health) to evolve a mechanism for speedy treatment of casualties.

#### 7.4.4 Emergency relief (shelter, food, clothing, etc.)

(a) Establishment of Temporary shelters for evacuees.

(b) Ensuring provision of essential services as under:

- Arrangement for food, clothing, blanket/bedding, drinking water, sanitation and hygiene, lighting arrangements and essential medicines.
- Deployment of mobile hospitals in affected areas for treatment of victims.
- Providing counseling services to the earthquake victims and their relatives.

(c) Arrangement for providing transport facility to send dead bodies of non-locals to their natives. The administration should also ensure Law and Order during shifting of the dead bodies.

(d) Ensure establishment of communication link between the affected people and their relatives outside.

#### 7.4.5 Task & Responsibility Matrix for Emergency Response Phase (First 72 Hours of the Incident)

Time Frame	Sr. No.	Task	Responsibility
0 + 15	1.	<ul style="list-style-type: none"> <li>• Report the occurrence of earthquake to COR, Sec (Rev. Dept), Chairperson- UTDMA, Heads of all line departments, and National Disaster</li> </ul>	EOC, Revenue Dept., Collector, Mamlatdar

<b>Time Frame</b>	<b>Sr. No.</b>	<b>Task</b>	<b>Responsibility</b>
<b>Minutes</b>		Management EOC at MHA, GoI .	
<b>0 + 30 Minutes</b>			
	2.	Establish communication link by activating alternate communication equipment i.e. satellite phone, HF / VHF set, HAM Radio, VSAT etc. in District EOC/ control rooms.	EOC, Revenue Dept., Collector, Mamlatdar
	3.	Instruct deployment of Mobile Emergency communication Units to affected areas for establishing communication link	COR, Revenue Dept., Collector, Mamlatdar
	4.	Verify the authenticity of the incident from agencies like IMD, ISRO, SSNNL and also from District control rooms, Police and Fire Brigade control rooms	EOC, Revenue Dept., Collector, Mamlatdar
	5.	In case of <b>L-2 level event</b> , overall management of EOC shall be taken over by COR	COR
	6.	Instruct duty officers of line departments to report in EOC	COR
	7.	Hold first meeting with duty officers	
	8.	Contact the Heads of all line departments including the Information Department to reach EOC	COR
<b>0 + 1 Hour</b>			
	11.	Instruct both regular and emergency staff of EOC to report for duty.	COR/ Collector
	12.	Dispatch of Search & Rescue teams to the affected areas.	COR/ Collector

<b>Time Frame</b>	<b>Sr. No.</b>	<b>Task</b>	<b>Responsibility</b>
	13.	Instruct Quick Assessment Task Force to submit preliminary need and loss assessment report of the affected areas.	COR/Collector
	14.	Alert Quick Medical Response Teams to the affected areas.	COR/Collector
	15.	Make arrangements for aerial survey of the affected areas.	COR/Collector
	16.	Instruct local administration to evacuate victims to safer sites.	COR/Collector
	17.	Contact Administrator for deciding on time and venue for holding Crisis Management Group (CMG) meeting at the earliest.	COR/Collector
	18.	Inform all CMG members to attend CMG meeting in designated venue to assess situation and review emergency measures.	COR/Collector
	19.	Instruct concerned authorities or Agencies to shut down critical operations.	COR/Collector
<b>0 + 2 Hours.</b>			
	20.	Inform GAD to ensure all UT Administration employees report for emergency duties within half an hour.	COR, Collector
	21.	CMG to assess situation, delegate responsibilities for organizing rescue and relief operations.	COR, Collector
	22.	Senior UT level officers to be deputed to the affected areas.	COR
	23.	Assess the conditions of road, rail and air communication link for quick mobilization of Emergency Teams and resources to affected areas	COR, Collector, PWD, OIDC, Local Bodies, Transport Dept.



<b>Time Frame</b>	<b>Sr. No.</b>	<b>Task</b>	<b>Responsibility</b>
		and take follow up actions.	
	24.	Director, Information and Secretary - (I & B) to establish media management / information cell for public information, guidance and rumor control.	COR
	25.	Request may be made for assistance from Central Government (MHA and MOD) if required.	COR, UTDMA
	26.	Request the nearest headquarters of the Armed Forces to render assistance in emergency search, rescue and relief operations	UTDMA, COR
	27.	Contact private / public sector agencies in the UT to assist in emergency rescue and relief operations.	COR
	28.	Inform Secretaries of the departments to provide necessary logistics support to emergency operation task forces.	COR
	29.	If necessary, assistance may be asked from neighbouring UT and outside agencies.	COR
	30.	Set up separate desks for each operation task force and NGO coordination desk in the EOC for coordinating emergency operations.	COR
	31.	Provide security in affected areas and maintain law and order situation.	Home Dept. Police
	32.	Mobilize Medical First Response Teams to affected areas.	Health Dept.
	33.	Mobilize SAR Teams and search & rescue equipment and machinery to affected areas.	COR, PWD, Home Dept. Civil Supply Dept.
	34.	Instruct district information officers to establish	COR, Information Dept

<b>Time Frame</b>	<b>Sr. No.</b>	<b>Task</b>	<b>Responsibility</b>
		information centre near affected areas to provide guidance to volunteers and aid agencies.	
<b>0 + 3 Hours</b>			
	35.	Make suitable transportation arrangement for mobilization of quick response teams to the affected areas.	Transport Dept. COR
	36.	Maintain constant touch with the National / District EOC.	COR, Collector
	37.	Establish Press / Media Centre for media management and information dissemination.	Information Dept. COR
	38.	Arrange for press / media release for rumor control and public information and guidance.	Information Dept. COR
	39.	Alert all major hospitals to make necessary arrangement for treatment of injured.	Health Dept. COR
<b>0 + 6 Hours</b>			
	40.	Establish relief coordination centre at the airport, railway station, etc. for arrival of Search @ Rescue and Medical Teams coming for humanitarian aid.	COR
	41.	Instruct to cordon affected areas and setting up of check posts to control entry and exit.	Home Dept.
	42.	Open access routes and manage traffic for mobilization of equipment, machinery and volunteers to the affected areas.	Transport Dept. Home Dept. Police Dept., PWD
	43.	Conduct aerial survey and also mobilize quick assessment teams to affected areas.	COR
	44.	Establish information centers at the arrival and departure points especially at the airports, railway	COR, Information Dept.

<b>Time Frame</b>	<b>Sr. No.</b>	<b>Task</b>	<b>Responsibility</b>
		stations and interstate bus terminus.	
<b>0 + 12 Hours</b>			
	45.	Mobilize relief materials i.e. tents, food materials, water, essential medicines, blankets, etc. to the affected districts and village Level.	COR, Collector, Line Departments
	46.	Arrange to shift evacuated persons to temporary shelters and ensure provision of food, water facilities, blankets and storage of relief materials.	COR, Collector, Line Departments
	47.	Arrange road, rail and air transport at UT/ District headquarters for dispatch of relief materials to the affected areas.	COR, Collector, Line Departments
	48.	Set up field hospitals near the affected areas.	Health Dept.
	49.	Arrange to shift injured persons to field hospitals.	Health Dept. Transport Dept.
	50.	Instruct district collectors to establish relief coordination centre and godowns near affected area and provide full security cover as well.	COR, Sec. Civil Supply Dept.
	51.	Prepare quick need assessment report for planning of relief operation and mobilization of resources to the affected areas.	COR, Revenue Dept, Civil Supply Dept. Collector
<b>0 + 24 Hours</b>			
	53.	Hold review meetings with Duty Officers in every 12 hours.	COR
	54.	Prepare and circulate the situation report.	COR, EOC
	55.	Prepare press notes twice a day.	COR Information Dept

<b>Time Frame</b>	<b>Sr. No.</b>	<b>Task</b>	<b>Responsibility</b>
	56.	Depute additional officers and supporting staff to affected areas from non-affected areas.	COR, GAD
<b>0 + 48 Hours</b>			
	57.	Ensure safety and security of personnel deputed in affected areas for emergency response operation.	Home Dept.
	58.	Earmark storage point for medical supplies at affected sites.	Health Dept
	59.	Arrange for identification, photograph, post mortem and maintenance of records for disposal of dead bodies.	Home Dept. COR
	60.	Arrange information centre at shelter site for maintaining records of victims and to provide guidance to relatives, NGOs, etc.	COR, Collector
	61.	Arrange for complaints regarding missing persons and initiate search in shelters, hospitals and police records.	COR, Home Dept. Collector
	62.	Arrange for additional manpower if necessary for disposal of dead bodies.	COR, Collector, GAD
	63.	Arrange for transportation of dead bodies to their native places if so required.	Health Dept. Transport Dept.
<b>0 + 72 Hours</b>			
	64.	Arrange for disposal of unidentified and unclaimed dead bodies.	COR, Home Dept.
	65.	Arrange for transportation of injured from field hospitals to base hospitals.	Transport Dept. Health Dept.
	66.	Activate short and interim relief measures.	COR, Line Depts.

<b>Time Frame</b>	<b>Sr. No.</b>	<b>Task</b>	<b>Responsibility</b>
	67.	Arrange for distribution of cash doles to the victims.	COR, Collector

## **7.5 Immediate relief to be provided to the affected population**

### **Short-Term Relief Measures**

- (1) Provide temporary shelter to affected people
- (2) Evacuation site should be safe, and easily accessible.
- (3) Continue to provide essential services to the affected people i.e. food, water, clothing, sanitation and medical assistance

The COR to ensure the following in the relief camps:

- Special emphasis on Hygiene and sanitation aspects should be given in relief camp sites.
- Separate area should be earmarked within the relief camp for storage of relief materials.
- Adequate manpower and transport facilities for the camp site.
- Arrangements to be made for trauma management.
- Mobile medical units to be sent to remote areas with a view to provide medical assistance to the victims/injured.
- Information centre should be established by the administration.

### **Interim Relief Measures**

- Arrangements to be made for identification and maintenance of the records of disposal of dead bodies in the affected areas.
- Arrangements to be made to record the complaints of all persons reported missing. Follow up action in terms of verification of the report also needs to be made.

- Sub-divisional magistrates to be empowered to exempt the requirement of post-mortem in case of mass casualties. Revenue Dept may depute additional SDMs to expedite disposal of the dead bodies.
- Unclaimed/unidentified dead bodies to be disposed off at the earliest after keeping their records.
- Additional manpower to be deployed in the affected areas for supplementing the efforts of the local administration.
- Separate Cell to be established at UT/district level to coordinate with the NGOs and outside donor/aid agencies.
- Regular meetings of the different stakeholders/departments should be organized at state level for sharing of information, developing strategies for relief operations.
- Information & Broadcasting Dept to coordinate with the media to play a positive role in disseminating appropriate information to public and the government in order to facilitate the speedy recovery.

#### **Assessment of Damage / Loss and Relief needs**

- The COR to issue instructions to the district collector provide „the need and loss assessment“.
- Adequate manpower, vehicles, stationery etc should be provided to supplement the efforts for need/loss assessment.
- Identification and demolition of dangerous structures in the affected areas to minimize further loss of life and injuries.
- Arrangements for debris removal and its appropriate disposal.
- Arrangements for distribution of gratuitous relief and cash doles.
- Arrangements to be made for survey of human loss and distribution of ex-gratia relief to the families of deceased persons.
- Teams to be formed and dispatched to the affected areas for detailed assessment of houses and property assessment.
- As reconstruction of houses will take a long period, arrangements to be made to provide interim shelters to the affected
- Identification of the site for interim shelter
- Allocation of areas to the affected families.

- Providing essential services at the interim shelter sites such as water, power, drainage / sanitation, PDS shops, etc.
  - Distribution of shelter materials to individual families.
-

## **CHAPTER: 8**

### **ACTION PLAN FOR INDUSTRIAL DISASTER.**

#### **8.1 Background**

In the UT of Daman & Diu, Daman, being a highly industrialized District is prone to chemical and industrial hazards. There are located Major Accident Hazard (MAH) units mostly at **Somnath, Dabhel, Kadriya, Kacchigam** etc. There are over **2500 factories** including 400 MAH units in Daman, handling a large number of units as raw materials, in processes, products, and wasters, with flammable, explosive, corrosive, toxic and noxious properties. Any accident involving these may have an adverse impact on both the community and the environment.

#### **Sources of Industrial Disasters**

Industrial & Chemical accidents may originate in:

1. Manufacturing and formulation installations including during commissioning and process operations; maintenance and disposal.
2. Material handling and storage in manufacturing facilities, and isolated storages; warehouses and godowns and fuel depots.
3. Transportation (road, rail, air, water, and pipelines).

#### **Causative Factors Leading to Industrial Disasters**

Industrial & Chemical disasters, in general, may result from:

1. Fire
2. Explosion
3. Toxic release



4. Poisoning
5. Combinations of the above

### **Initiators of Industrial Accidents**

A number of factors including human errors could spark off chemical accidents with the potential to become chemical disasters. These are:

#### **Process and Safety System Failures:**

1. Technical errors: design defects, fatigue, metal failure, corrosion etc.
2. Human errors: neglecting safety instructions, deviating from specified procedures etc.
3. Lack of information: absence of emergency warning procedures, nondisclosure of line of treatment etc.
4. Organizational errors: poor emergency planning and coordination, poor communication with public, noncompliance with mock drills/exercises etc., which are required for ensuring a state of quick response and preparedness.

#### **Natural Calamities:**

The UT of Daman & Diu is highly prone to natural disasters, which can also trigger Industrial disasters.

### **8.2 Flow of Information (Communication)**

A procedure has to be laid out to communicate the accident / attack to the **District Control Room** (DCR) giving details such as location of incident, chemical(s) involved, severity of incident, casualties (if any), etc. The person in-charge at DCR shall then **inform the first three responders** i.e. Police, Fire & Emergency Services and Medical Department. He will then inform the District Collector and all other members of the District Crisis Group. The District

Collector, in turn, would inform the UT Disaster Management Authority (UTDMA) about the incident and ask for additional help in terms of resources and manpower (if at all required) after assessing the situation on site.

The UTDMA would then inform the **Central Crisis Group** (CRG) about the incident along with other relevant details on hand. The first responders, after reaching the site, will secure more information about the incident and try to establish communication with the concerned agencies / departments for deploying resources / personnel as per the need of the situation.

### **8.3 Trigger Mechanism for Industrial (Chemical) Disasters**

On getting the first hand information about an emergency/disaster, the in-charge of the DCR/DEOC should immediately inform the District Collector and the first three responders i.e. Police, Fire & Emergency Services and Medical Services. Informed District Collector then runs down to DCR/DEOC.

The notification should specify the location of the incident, the type of chemical released/used (if known), possible consequences and provide written reports on actions taken and on health effects. The District Collector should then inform the UT Control Room (UTCR)/UTEOC and the Chairman of the UTDMA about the incident.

The UTCR/UTEOC will then issue alert or direct all the Emergency Responder Agencies at the UT and District level for providing their services immediately. The UTCR/UTEOC will immediately take decision to deploy UT Level Response Teams (UTRTs) in the affected area/s.

During the initial stages of the emergency it is likely that the reports may be unclear and conflicting. Therefore, the first responders conducting the on-site assessment should secure reliable sources of information to allow an objective assessment of the situation. The assessment should include casualty, material damages, and the likely health consequences. It should also

suggest antidotes and treatment regimes for those affected by medical care if the type/nature of chemical released/used during the attack is known.

The District Crisis Group (DCG), after analyzing the information received from the District Collector and the first responders would then decide on mobilization of additional resources, medical aid and rescue equipment as required through various sources.

The DCG should also instruct the Fire & Emergency/Rescue Services and Hospitals of the neighbouring districts to be on alert in case their services are needed.

The Team Commander of the ERT should cordon off the affected area. He should instruct the neighbouring population to stay away from the site. He should instruct the medical unit to detect the substances used during the attack through the available equipment/kit. He should also decide the place for establishing the decontamination unit at an appropriate location in consultation with doctors and paramedics. The Search & Rescue unit of the ERT should rescue and evacuate the affected people to a safe location.

#### **8.4 Response for Industrial (Chemical) Disasters**

Response measures are those which are taken instantly prior to, and following, a Industrial (Chemical) emergency/attack aimed at limiting injuries, loss of life and damage to property and the environment and rescuing those who are affected or likely to be affected by it.

DCG will ensure that the functions and responsibilities of the chemical facility operators and response organizations are clearly defined and understood by all stakeholders.

For the fastest response, it is very important that the person who is receiving the information shall immediately pass on to the first responders, Dist. Collector, Sub Div. Magistrate (chairman for LCG) and other members of DCG. If he receives, further information after making the first call, he will convey that also in same order. Alternatively, if the information is more relevant to any particular department, he will first pass that information to its head.

The specific activities and role & responsibilities are as under:

### 8.4.1 Response to Off-site emergency

Sr. No	Task	Responsibility	Activity.
1.	Disaster declaration and Plan Activation	COR, Collector	<ul style="list-style-type: none"> <li>• Declare an off-site emergency in consultation with DCG and activate an off-site emergency plan.</li> <li>• Activate LCG.</li> <li>• Establish immediate communication with LCG, DCG, DEOC, UTEOC and UTDMA .</li> </ul>
2.	Mobilization & Deployment	COR, Collector, Revenue Dept, Home Dept, Health Dept., Industries Dept. Industrial Association.	<ul style="list-style-type: none"> <li>• Arrange an immediate deployment of various ERTs in affected sector(s). (Police, Fire, S&amp;R, Medical etc.)</li> <li>• Based on the emergency monitoring teams from off-site areas initiate countermeasures (such as sheltering and medical help).</li> <li>• Arrange an evacuation of the affected/likely to be affected workers and population to safer places.</li> <li>• Activate systems of the UT machinery to meet the necessary requirements of the public in the camp till the people are in a position to go back to their homes after the affected areas are cleared and declared safe.</li> <li>• Deploy QRMTs consisting of physicians, triage officer, nurses and paramedical staff.</li> </ul>

Sr. No	Task	Responsibility	Activity.
		COR, Collector, Revenue Dept. PWD, Civil Supply Dept. Health Dept. Electricity Dept. Home Dept., Local Bodies	<ul style="list-style-type: none"> <li>• To ensure that necessary arrangements at evacuation/relief centers is made with sufficient availability of: <ul style="list-style-type: none"> <li>➤ Food,</li> <li>➤ Water,</li> <li>➤ Blankets/Clothing</li> <li>➤ Medicines</li> <li>➤ Lighting</li> <li>➤ Sanitation and hygiene etc.</li> </ul> </li> <li>• To ensure necessary security arrangements for the personals (Emergency responders/relief teams) who are working at Relief Centers and involved in distribution of Relief Materials.</li> <li>• To ensure that law and order is maintained at evacuation/relief centers and in the affected areas as well.</li> </ul>
3.	Addressing Health related issues	Health Dept.	<ul style="list-style-type: none"> <li>• Ensure that the required medical assistance/aid and medicines/antidotes are provided to the affected people at site as well as at evacuation/relief centers in the affected area and necessary records are maintained.</li> <li>• Ensure that the Hospitals are well prepared to deal with seriously injured persons.</li> </ul>

Sr. No	Task	Responsibility	Activity.
			<ul style="list-style-type: none"> <li>• Keep adequate stock of essential medicines, antidotes, first-aid etc. at Village/district hospitals.</li> <li>• If required, take the help of doctors/paramedics from the list of doctors/paramedics available at the Village/district level for immediate medical assistance.</li> </ul>
4.	Information to public and media	Information Dept, COR, Collector	<ul style="list-style-type: none"> <li>• Make an arrangement for providing useful, timely, correct, consistent, and appropriate information to the public and media in the event of a chemical attack/disaster.</li> <li>• Ensure that the information to media/general public about the coordinated response is released in an organized manner.</li> </ul>
5.	Disposal of Dead bodies	Home Dept. Revenue Dept. COR, Health Dept. Industries Dept. Industrial Associations.	<ul style="list-style-type: none"> <li>• Ensure following procedure is followed before disposal/handing over of dead bodies: <ul style="list-style-type: none"> <li>➤ Photographs of the dead bodies are taken,</li> <li>➤ Identification of the dead bodies is done,</li> <li>➤ Post Mortem where ever necessary and possible is carried out,</li> <li>➤ Handing over dead bodies of persons known/identified to their relatives,</li> </ul> </li> <li>• Disposal of unclaimed and unidentified dead bodies</li> </ul>

Sr. No	Task	Responsibility	Activity.
		Animal Husbandry, Health Dept, Local Bodies	<ul style="list-style-type: none"> <li>• Animal Husbandry Department to ensure medical aid to cattle that are injured.</li> <li>• Disposal of animal carcasses with the help of local bodies/health dept.</li> </ul>
<b><i>Roles and Responsibility of some of the First Responders during chemical attack/emergency;</i></b>			
1.	Police	UTDMA Home dept. Collector	<ul style="list-style-type: none"> <li>• Control and divert the traffic near the affected areas.</li> <li>• Ensure law and order at the incident site during chemical emergency/disaster and at evacuation centers too.</li> <li>• Provide security in evacuated areas.</li> </ul> <p><b>In case of Chemical attack;</b></p> <ul style="list-style-type: none"> <li>• Collector and Superintendent of Police (SP) will direct the participation of police in the emergency response. Collector and Superintendent of Police will constitute an <b>integrated command.</b></li> <li>• Collector and SP will report to the UT Level Control Room immediately upon the receipt of information about the disaster.</li> </ul>

Sr. No	Task	Responsibility	Activity.
			<ul style="list-style-type: none"> <li>• The SP will establish contact with the District Police Control Room immediately. He will get a situation estimate and assess the operational requirements for the police.</li>   <li>• The SP will direct all the police officials and forces in adjacent Districts to be deployed if necessary. The SP will ensure that the police forces required for traffic management, evacuation and law and order are available with the District administration.</li>   <li>• The SP will review the dissemination of warning and the need for evacuation. He will help the Fire &amp; Emergency Services and the Deputy Director, Industrial Safety and Health with Police Wireless sets, so that there is continuous communication among the first responders in the emergency situation.</li>   <li>• The SP will ensure that the police force will not enter the area under disaster without the permission of the Fire &amp; Emergency Services and Health officials.</li>   <li>• In case of big explosion and fire, the SP will assess the situation and suggest a Plan of Action based on his assessment of the immediate causation.</li>   <li>• The SP will order deployment of the police force for</li> </ul>



Sr. No	Task	Responsibility	Activity.
			<p>evacuation of the people from the zone of the danger.</p> <ul style="list-style-type: none"> <li>• The SP will send instructions for the cordoning off of the area. People should not be allowed access anywhere close to the site of the disaster.</li> <li>• The SP will review the traffic management in the area. The primary aim would be to ensure the transport of the injured to the hospital, easy access for emergency responders and safe evacuation of the people from the danger zone.</li> <li>• The SP will also issue directives that all the Private and Public Transport (trains and buses) be diverted from the disaster area.</li> <li>• The SP will contact the SP and ask him to organize the deployment of police force from other District, based on the need assessment. The UTDMA/IGP will also contact the Central Industrial Security Forces, and other paramilitary force to seek their deployment, if needed.</li> <li>• The SP will supervise law and order situation. He will take all the possible precautions to ensure that public order is maintained, and no one takes undue advantage of the situation.</li> </ul>

Sr. No	Task	Responsibility	Activity.
2.	Fire and Search & Rescue	Secretary, Industry & Fire Dept.	<ul style="list-style-type: none"> <li>• Reach at the site soonest possible and assess the situation. (information about the chemical leak/spill, the action taken and current status)</li>   <li>• In case of fire, start fire fighting with suitable media and also take care of surrounding storages/tanks to be over heated so that reduce the chances of ‘domino effect’.</li>   <li>• In case of chemical leak, try to plugging/stopping of leak with the use of proper PPE.</li>   <li>• Secretary, Industries will coordinate redeployment of Fire Tenders from other places, as required.</li>   <li>• Secretary, Industries will also coordinate with the Private and Public Sector industries for deployment of their Fire Brigades to the site of the disaster.</li>   <li>• The <b>District Crisis Group</b>, in consultation with the District Collector and other local officials will ensure that CFO Fire Services, Dy. Director - Industrial Safety and Health, Officer in charge Police and Health Personnel all work closely with full coordination.</li>   <li>• Search and identify the risk and nullify the sources of</li> </ul>

Sr. No	Task	Responsibility	Activity.
			<p>leak / toxic release. If any unclear or unidentified substance or source is identified or detected, the team should send them immediately to the laboratory for further investigation / analysis.</p> <ul style="list-style-type: none"> <li>• To search and evacuate the affected population from the site of the incident.</li> </ul>
3.	Medical Services	UTDMA, DDMA, Health Dept. Family Welfare Dept. Revenue Dept.	<ul style="list-style-type: none"> <li>• The Secretary - Health and emergency medicine experts will provide the necessary expertise and specialized services to the DCG.</li> <li>• The DCG will consider the level of exposure on the basis of situation estimate received from the District administration. It will consider the intrinsic toxic potential of the chemical, its concentration, the duration of exposure, and the health status of the people exposed.</li> <li>• Based on the information upon the level and extent of contamination, the UTDMA will decide on the issue of alert and warning to the people in the affected areas through the All India Radio, Doordarshan, and Cable TV.</li> <li>• The DCG will contact the Civil Surgeon and the District Health Officer of the concerned district and ask them to deploy all the necessary medical facilities including doctors, nurses, medicines, and ambulances.</li> </ul>

Sr. No	Task	Responsibility	Activity.
			<ul style="list-style-type: none"> <li>• The DCG will alert major hospitals in the area, and ask them to be in readiness for receiving patients.</li>   <li>• In case the nature of contamination requires much greater intervention, the DCG will inform the DDMA and ask for the necessary medical assistance of experts, doctors and equipments. The relevant agency for emergency medicine in the Government of India is the Directorate General of the Health Services (DGHS) in the Ministry of Health and Family Welfare. The DGHS has set up the Emergency Medical Relief cell, for dealing with these contingencies.</li>   <li>• The DCG will review the diagnostic support services: clinical laboratory, blood banks, radiology, pathology, pharmacy, paramedics, Red Cross, NGOs and volunteer personnel. It will seek all the steps to organize the necessary medical help through the deployment of doctors, paramedics, and provision of blood and medicines, as required.</li>   <li>• The DCG will review the administrative support required for the situation, which includes communications, transport of the victims and of the personnel, feeding of the personnel and patients and</li> </ul>

Sr. No	Task	Responsibility	Activity.
			<p>supplies.</p> <ul style="list-style-type: none"> <li>• The DCG will collect information on the number of deaths and persons injured; the nature of injuries and the likely long-term consequences.</li> <li>• The DCG must assess the medical needs of the area on the basis of likely long-term consequences and take steps to equip local medical facilities for treating people on a long-term basis. The DCG must also make financial provision for spending on long-term treatment.</li> </ul>

## 8.5 Responsibilities after the disaster

Once the situation at the site is under control, fire has been extinguished; the emission of vapours to the atmosphere has been effectively checked, the following actions have to be performed by various sub-teams of the SRT and the respective line departments as well as the district administration:

**Search & Detection of Leak / Toxic Release** - The Search & Detection Team would identify the risk and nullify the sources of leak / toxic release. If any unclear or unidentified substance or source is identified or detected, the team should send them immediately to the laboratory for further investigation / analysis. The Team should also preserve the samples from the site of the

incident such as sand, water, air and other infected substances for further investigation which could aid in strengthening the case later on.

Technical expertise of Fire & Emergency Services and the Health Department may be used by the Search & Detection Team in carrying out the activities if required.

**Structural Inspections After Fires or Explosions** - A major explosion could damage or destroy numerous buildings and any nearby bridges or tunnels. Similarly large fires can have major effects on buildings and other infrastructure facilities over a vast surrounding area. In either case, residents / owners of the partially damaged buildings will want to know if the structures are safe to occupy while they await repairs. Questions pertaining to the safety of highway or railway bridges must also be resolved quickly to avoid traffic complications. It must be ensured that the inspection personnel have special precautions (i.e., chemical protective gear) in addition to normal safety equipment in those cases where the structure may still be contaminated by hazardous residues.

Fire & Emergency Services personnel along with the structural experts from the PWD/OIDC/DMC Department shall be responsible for inspecting the structural integrity of damaged buildings, bridges, or other structures in the aftermath of a fire or explosion.

**Search, Rescue And Evacuation** - After getting the go ahead from the technical personnel responsible for ensuring structural safety of the buildings in and around the incident site, the Search & Evacuation Team should carry out their job and evacuate the affected population from the site of the incident. They should brief the Information Officer about the rescue and evacuation status (including the place of temporary shelter) to ensure that no rumors are spread to avoid any panic amongst the general public. The Team, with the help of Police personnel should also stop general public from moving towards the danger zone. The Team should provide guidance to people regarding evacuation route, first aid and decontamination area. They should also help the Medical Team in rushing the victims to nearby hospitals.

**Post-Incident Testing for Contamination** - The De-contamination Team would be responsible to decontaminate the affected area, population, members of the SRT and equipment used during the operation on the site of the incident. In addition, the Team should also be responsible for

erecting the decontamination chambers for the affected population. After the operation is completed in all respects, the Team should ensure that the site is totally decontaminated from the toxic substances. The Team should also ensure that the water that was used for decontamination is properly discharged preferably to a sewerage system outlet.

Technical personnel from the UT Pollution Control Board (UTPCB), Fire & Emergency Services and the nearby industrial units as well as the personnel from the Medical Team should help the De-contamination Team to carry out their duty. Further, the Team shall also check crops, water (ground & surface), homes, stored foods, and animals for possible chemical contamination.

**Providing Medical And First Aid To The Victims** - The Medical Team should provide first aid to the victims of the incident. If need arises, the Team should also help the hospital staff of the hospital where the victims would be transported from the incident site. They should monitor the level of triage of the victims through checking their breathing and pulse. They should also decide on the type of decontamination (either wet or dry) depending upon the substances / chemicals used during the disaster. The Team should also identify the trauma cases and counsel them appropriately.

**Provision of Alternate Water Supplies** - There are a number of circumstances under which a potable water supply may become unfit for human consumption for a time and require replacement. This is most commonly accomplished by bringing in supplies of bottled water and / or tankers / trailers capable of carrying water. The district administration must ensure the availability of potable water for consumption of affected population as well as first responders engaged at the incident site.

**Re-Entry Into Evacuated Areas** - Based on the assessment of the situation at the site, the DCG would take a decision on the termination of emergency. However, before taking this decision, several other actions needs to be ascertained such as restoration of electricity, gas, and water supplies in the affected areas / buildings, transport arrangements for bringing the affected population back from the temporary shelters, restoration of law & order in the affected area /s, etc. through the concerned Teams / departments.

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## **CHAPTOR: 9**

### **DISASTER ACTION PLAN FOR EPIDEMICS.**

Though, Daman does not have a history of any epidemic since 1947, the Disaster Management Plan has been prepared to take care of any unforeseen eventuality.

During epidemics the foremost responsibilities lies on individuals and concerned Departments (Health & Sanitation). The action cards are prepared describing in detail the responsibilities and actions to be taken by each member of the District Health Organization and key Hospital staff involved in disaster management such as Chief Medical Officer, Superintendent of Government Hospital, Medical Officer, Nursing personnel, Health supervisors and Health Workers.

All action should be listed in chronological order: Following are the silent points:

#### **9.1 Initial Alerts:**

Superintendent of the hospital/CMO need to get alerted by the casualty itself, if the area affected is nearby or he may get information on telephone or through a person. The person receiving the information should gather details regarding the persons affected the nature of effect and the population at risk. This will be useful for preparations required.

#### **9.2 Preparation of Hospital for Medical Relief:**

Key personnel from departments like Radiology, OT, Blood Bank, Laboratory, Medical Stores, and Ambulance etc. have been notified. The 165 maximum numbers of staff should be available in 10 minutes of disaster. The matron or senior nursing staff should arrange ward for receiving the affected. Following actions may be taken for expansion of beds facility.

- Utilize all available space such as corridors, lecture hall etc.
- Discharging minor cases.
- Transfer cases to other hospitals.



- Occupying building in close proximity.

The command nucleus should be formulated immediately, which include Hospital Superintendent, Matron or Senior Nursing Staff, R.M.O. and casualty officer. Key persons should know following clinical principles for management of cases.

- **Admission of Patients:** - The patients may be kept in the same ward irrespective of age and sex so that whole attention can be concentrated and resources optimally utilized.
- **Clinical Services:** - Radiological and pathological examinations should not be done as routine for all patients.
- **Triage:** - This should be done to give priority for treatment by sorting out and classifying the cases into priority I, II and III such as critical and severely ill, moderately ill and minor illness respectively.

### 9.3 Visit of Affected Area

Director (Medical & Health Services) CMO should immediately visit the affected area with necessary medical paramedical manpower, medicines and material depending upon the nature and extent of Biological disaster. Team of physician, pathologist and epidemiologist may accompany him for clinical diagnosis and epidemiological analysis.

#### **Checklist of Personnel includes: -**

- Doctors including specialists,
- Nurses
- Pharmacists,
- Laboratory Technicians,
- Ward Boys, Aaya, Sweepers,
- Drivers, Clerical Staff,
- Field personnel like Health Workers and Supervisors, Entomologists, Biologist, Insect Collectors.

Health Department has constituted a **Rapid Response team** which will take steps to eradicate the epidemic and investigate the cause of its outbreak.

The composition of Rapid Response Team District is as follows:-

1. Director, DMHS
  2. Deputy Director, DMHS
  3. PD (AIDS)
  4. S.S.O. (IDPS)
  5. Food Inspector
  6. Junior Chemist, Food Laboratory
  7. Entomologist (IDPS)
  8. LHV/ANM/BHW OF the affected areas.
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## **ANNEXURE: I**

### **Do's and Don'ts for various Hazards**

#### **Cyclone Safety:**

##### **Do's before and during a cyclone**

- Have your dwellings checked before a cyclone season starts and carry out whatever repairs that are needed.
- Talk to children and explain about cyclones without scaring them.
- Create storm awareness by discussing effects of a cyclonic storm with family members so that everyone knows what one can and should do in an emergency. This helps to remove fear and anxiety and prepares everyone to respond to emergencies quickly.
- Keep your valuables and documents in containers, which cannot be damaged by water.
- Keep information about your blood group.
- Keep lanterns filled with kerosene, torches and spare batteries. These must be kept in secure places and handy.
- Make plans for people who are either sick, suffer from disabilities, aged and children.
- Store up at least seven-day stock of essential food articles, medicines and water supply.
- Keep blankets & clothes ready for making beds. Also keep cotton bandages.
- Store some wooden boards so that they can be used to cover windows.
- Keep trees and shrubs trimmed. Remove damaged and decayed parts of trees to make them resist wind and reduce the potential for damage. Cut weak branches and make winds blow through.
- All doors, windows and openings should be secured.
- Continue to listen to warning bulletins and keep in touch with local officials. Keep radio sets in working condition. Battery powered radio sets are desirable.
- Evacuate people to places of safety when advised.
- Take steps to protect your assets.
- Store extra drinking water in covered vessels.

- Remain calm.

### **Don'ts during a Cyclone**

- During the storm do not venture out unless advised to evacuate.
- If you have a vehicle and wish to move out of your house, leave early before the onset of a cyclone. It is often best to stay at home.
- Avoid remaining on the top floor of dwellings. Stay close to the ground.
- Fishermen are advised not to venture out into the sea. They should keep boats and rafts tied up in a safe place.
- Avoid taking shelters near old and damaged buildings or near trees.
- Do not touch power lines. One may get electrocuted.
- 

### **Do's after the Cyclone**

- Watch out for broken glass and other sharp items in debris.
- Watch out for snakes and insects. Try to call for help.
- Listen to the advice of local officials and emergency workers.
- Be sure that the storm has subsided before venturing out.
- It is advisable to wait for the "all clear message" on radio and TV networks.
- Wait for emergency relief teams to arrive. It may take a little time before relief becomes effective.
- Stay away from flooded areas.
- Fishermen should wait for at least 24 hours before resuming fishing.
- Volunteer to help people who may need assistance like:
  - Bringing evacuated people back home and in recording damages suffered
  - Rendering first aid to the wounded
  - Donating blood
  - Locating places where dead bodies can be kept until they are disposed off
  - Organizing clearing-up so that normalcy returns as soon as possible

## **Earthquake safety:**

### **Do's and don'ts before Earthquake**

- Tell the facts about earthquake to your family members.
- Construct new buildings with earthquake resistant method and strengthen the old buildings.
- Insure your house and family members.
- Take the training for first aid and fire fighting.
- Do not keep cots near the glass window.
- Do not keep heavy and fragile things in the selves.
- Do don't hang photo frames, mirrors, or glasses up your bed?
- Keep your important documents, some cash and necessary articles ready in a bag.
- Get your house insured before the earthquake.
- Identify special skills of neighbor (medical, technical) so that it can be utilized in emergency.

### **Do's and don'ts during Earthquake**

- Do not panic.
- If already inside, than Stay indoors! Get under a heavy desk or table and hang on to it.
- If fire breaks out, drop on the floor and crawl towards the exist.
- If you are out doors during the quake, keep away from buildings, trees and electricity lines. Walk towards open places, in a calm and composed manner.
- If you are driving, quickly but carefully move your car as far out of traffic as possible and stop. Do not stop on or under a bridge or overpass or under trees, light posts, power lines, or signs. Stay inside the car until shaking stops.
- If you are in a school, get under a desk or table and hold on.

### **Do's and don'ts after the Earthquake**

- Do not be afraid of the aftershocks.
- Listen to radio-TV and other media for Government Announcement.
- Check for injuries to yourself and those around you. Take first aid where you can.

- Extinguish fire, if any.
- Examine walls, floors, doors, staircases and windows to make sure that the building is not in danger of collapsing.
- Do not enter into the unsafe or risky houses or buildings.
- Inspect for Gas leaks-If you smell gas or hear blowing or hissing noises, open a window and quickly leave the building. Don't light your kitchen stove if you suspect a gas leak.
- Do not keep telephone lines busy unnecessarily.
- Switch off electric lines.

### **Fire safety:**

#### **Do's**

- Buy Fireworks from the licensed shop.
- Keep fireworks in a closed box
- Store crackers away from source of fire or inflammation
- Follow all safety precautions issued with the fire works
- Go to open spaces like playgrounds, fields
- Light them at arm's length using a taper.
- Stand back while lighting the crackers
- Discard used fireworks in a bucket of water
- Keep buckets of water and blankets ready, in case a firebreaks out.
- Wear thick cotton clothes for maximum safety from fire.
- If clothes catch fire, Stop, Drop and Roll
- In case of uncontrolled fire wrap the victim in a blanket, till it stops.
- In case of burns splash tap water (not ice water), the process may be repeated till the burning sensation reduces.
- If fingers or toes are burned, separate them with dry, sterile, non-adhesive dressings.
- Make sure the burn victim is breathing, if breathing has stopped or if the victim's airway is blocked then open the airway and if necessary begin rescue breathing.
- Elevate the burned area and protect it from pressure and friction.

- Cover the area of the burn with a moist sterile bandage, or clean cloth (do not use blanket or towel for healing burns).
- Consult the doctor as soon as possible for the proper medication.
- Consult an ophthalmologist immediately in case of eye injuries.
- Do contact at the Fire Brigade (Tel. No. 101), for getting the details of the doctors on duty during the festival.
- **Don'ts**
- Don't burn crackers in crowded, congested places, narrow lanes or inside the house.
- Don't let children burst crackers unaccompanied by an adult
- Don't put fireworks in your pocket or throw them
- Don't cover crackers with tin containers or glass bottles for extra sound effect
- Don't dare to examine unburst crackers...leave it.
- Don't show the Dare-devilry of lighting crackers on own hands.
- Don't use fireworks inside a vehicle.
- Avoid long loose clothes, as they are fast in catching fire.
- Don't remove burnt clothing (unless it comes off easily), but do ensure that the victim is not still in contact with smoldering materials.
- Don't apply adhesive dressing on the burnt area.
- Don't break the burst blister.

## **Flood Safety**

### **Do's and Don'ts after flood**

- There is a possibility of spread of water borne diseases after flood, and hence medical treatment should be taken immediately.
- Do not enter deep, unknown waters.
- Do not go near the riverbank even after the floodwater has receded.
- Sprinkle medicines in the stagnant dirty water.
- Inspect your house for any cracks or other damage. Check all the walls, floor, ceiling, doors and windows, so that any chance of house falling down can be known and you can be aware about the immediate danger.

- If the floodwater has entered the house or has surrounded the house, then it is advisable not to enter such house.
- Keep listening to weather forecast on radio and television. Move to your residence only when instructed by the competent authority. It is not safe to believe that the problems have ended after the flood water have receded
- Inform the competent authority/officer for restoration of the necessary connections like gas, electricity, telephone, drainage, etc.
- Beware of the various insects or poisonous snakes that may have been dragged inside the house along with the floodwater.
- Destroy the food commodities that have been affected by floodwater.
- Check properly all the electric circuits, floor level furnace, boilers, gas cylinders, or electric equipments like motor pump etc. Check whether any inflammable or explosive item has not entered along with the floodwater.
- Switch off the main electric supply, if any damage is noticed to the electric equipments.
- If you find any breakage in the drainage system stop using latrines and do not use tap water.
- Do not use polluted water.
- Sewerage system should be checked and any damage should be repaired immediately so as to curtail spread of diseases.
- Empty the water clogged in the basement slowly with help of water pump so that damage to infrastructure can be minimized
- Check gas leakage which can be known by smell of gas or by hearing the sound of leakage; immediately open all windows and leave the house.
- Boil drinking water before usage and drink chlorinated water.
- Eat safe food.
- Rescue work should be undertaken immediately after flood situation as per the instruction. Do not follow any shortcut for rescue work.
- Do not try to leave the safe shelter to go back home until the local officials declare normalcy after flood and instruction to return home are not given.



### **Tsunami Safety:**

#### **Do's and Don'ts before Tsunami**

- Be familiar with the tsunami warning signals. People living along the coast should consider an earthquake or a sizable ground rumbling as a warning signal. A noticeable rapid rise or fall in coastal waters is also a sign that a tsunami is approaching.
- Make sure all family members know how to respond to a tsunami. Make evacuation plans. Pick an inland location that is elevated.
- After an earthquake or other natural disaster, roads in and out of the vicinity may be blocked, so pick more than one evacuation route.
- Teach family members how and when to turn off gas, electricity, and water
- Children should be taught in advance about the evacuation plans.
- Prepare emergency kit beforehand. The emergency kit should contain Flashlight and extra batteries, battery-operated radio and extra batteries, First aid kit Emergency food and water, Essential medicines etc.

#### **Do's and Don'ts during Tsunami**

- Listen to a radio or television to get the latest emergency information, and be ready to evacuate if asked to do so.
- If you hear a tsunami warning, move at once to higher ground and stay there until local authorities say it is safe to return home.
- Move in an orderly, calm and safe manner to the evacuation site
- Stay away from the beach. Never go down to the beach to watch a tsunami come in.
- If you can see the wave you are too close to escape it.
- Return home only after authorities advise it is safe to do so.

#### **Do's and Don'ts after Tsunami**

- Stay tuned to a battery-operated radio for the latest emergency information.
- Help injured or trapped persons.
- Stay out of damaged buildings. Return home only when authorities say it is safe.

- Enter your home with caution. Use a flashlight/torch when entering damaged buildings. Check for electrical shorts and live wires.
  - Do not use appliances or lights until an electrician has checked the electrical system.
  - Open windows and doors to help dry the building.
  - Shovel mud while it is still moist to give walls and floors an opportunity to dry.
  - Check food supplies and test drinking water.
  - Fresh food that has come in contact with flood waters may be contaminated and should be thrown out.
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## ANNEXURE: 2

### Composition of the LOCAL CRISIS GROUPS

1. Deputy Collector - **Chairperson**
2. Inspector of Factories
3. Industries in the District/industrial area/industrial pocket
4. Transporters of hazardous chemicals (2 numbers)
5. Fire officer
6. Station House Officer (Police)
7. Block Development Officer
8. One representative of Civil Defense
9. Primary Health Officer
10. Editor of local news paper
11. Community leader/sarpanch/village pradhan nominated by Chairperson
12. One representative of non-government organization to be nominated by the chairperson
13. Two Doctors eminent in the local areas to be nominated by Chairperson
14. Two Social Workers to be nominated by chairperson.

Local Crisis Group **shall meet every month** and forward a copy of the proceedings to the **District Crisis Group.**

### Functions of the Local Crisis Group:-

- To deal with chemical accidents in industrial pocket and coordinate efforts in planning, preparedness and mitigation of a chemical accident.
  - Prepare local emergency plan for the industrial pocket.
  - Ensure dovetailing of local emergency plan with that of district off-site emergency plan.
  - Train personnel involved in chemical accident management.
  - Educate the population.
  - Conduct **mock- drill every six months.**
-

**ANNEXURE 3**  
**INDEX OF THE LIST OF THE EQUIPMENTS FOR ONE TEAM/ COMPANY FOR THE**  
**DISASTER RESPONSE**

<b>Sl. No.</b>	<b>Name of the Team/ Company</b>	<b>Annexure</b>
1.	Medical First Responders Team/ Company Equipments for One Team/ Company	3
2.	Search & Rescue Responders Team/ Company Equipments for One Team/ Company	4
3.	Fire Fighting Responders Team/ Company Equipments for One Team/ Company	5
4.	Hazardous Material Emergency Responders Team/ Company Equipments for One Team/ Company	6
5.	Weapons of Mass Destructions Responders Team/ Company Equipments for One Team/ Company	7
6.	Flood Rescue Responders Team/ Company Equipments for One Team/ Company	8

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**ANNEXURE – 4****EQUIPMENTS FOR MEDICAL FIRST RESPONDERS FOR ONE COMPANY****A. Recommended Medical Personnel requirements**

Medical Officer	-	2
Paramedics	-	8
Drivers	-	4

**B. First Aid Equipments for Responders Bag**

1.	Stretcher foldable light weight	20
2.	Spinal Stretcher	10
3.	Cramer wire Splints	10 Set
4.	Cervical collar (assorted)	30 Set
5.	Blanket Woolen	20
6.	First Aid Kit	30 Set

**Recommended Contents for a First Aid Kit**

Sl. No.	Item	Quantity
1.	Activated Charcoal (for poisoning emergencies) Flask	20
2.	Adhesive strip bandages – assorted sizes (packs of 20)	2
3.	Adhesive tape (leucoplast, 2")	2
4.	Adhesive tape (leucoplast, 4")	2
5.	Airway – Oral (80 mm)	2
6.	Airway – Oral (60 mm)	2
7.	Airway – Oral (40 mm)	2
8.	Alcohol – rubbing 70%	100 ml

Sl. No.	Item	Quantity
9.	Alcohol – wipes	10
10.	Ambu Bag (adult)	1
11.	Ambu Bag (pediatric)	1
12.	Antacid tablets	20
13.	Antibiotic ointment (soframycin)	1
14.	Antiseptic spray	1
15.	Artery forceps	1
16.	Aspirin tablets	20
17.	Bandages Elastic 3”	2
18.	Bandages Elastic (crepe, 6”)	2
19.	Bandages roll 3”	10
20.	Bandages roll 6”	10
21.	Bandages Triangular	10
22.	Blanket woolen	1
23.	Blood Pressure instrument	1
24.	Burn Spray	1
25.	Calamine lotion	100 ml
26.	Cotton roll 500 Gm	2
27.	Cotton swabs	20
28.	Disposable latex or vinyl gloves (6” & 7”)	10
29.	Eye pads	10
30.	Face mask for CPR (Adult)	2
31.	Face mask for CPR (Child)	2
32.	First aid guide	1
33.	Flashlight	1

<b>Sl. No.</b>	<b>Item</b>	<b>Quantity</b>
34.	Forceps (stainless steel, non toothed) 12.5 cm	1
35.	Gauze pads (sterile cotton) 2" x 4"	20
36.	Gauze pads (sterile Vaseline)	10
37.	Hot water bottle	1
38.	Oxygen Cylinder, lightweight Aluminium 110 lit. (optional)	1
39.	Oxygen canola Nasal	5
40.	ORS sachet	5
41.	Pain Spray	1
42.	Paper writing pad & pencil	1
43.	Paper drinking cups	5
44.	Pneumatic Splint set	1
45.	Safety pins	10
46.	Scissors (stainless steel) 12.5 cm	1
47.	Soap	1
48.	Slings (elbow, shoulder)	5
49.	Stethoscope	1
50.	Sugar or glucose solution	100 gm
51.	Thermometer – oral	1
52.	Tongue Depressor (disposable)	5
53.	Torch	1
54.	Tourniquet (elastic)	1
55.	Triage ribbon (green/ red/ black/ yellow) 5 each	20
56.	Bite sticks	5
57.	Goggles of eye protection	1
58.	Medical Equipment carrying box	2

**C. I) Medical Equipments for Base Camp**

1.	Ventilator 1. Preferred Model: PAC-22	1
2.	Suction Machine – Battery mains operated	1
3.	Blood Pressure Apparatus – Mercury and Aneroid	1
4.	Laryngoscope with Diagnostic set	1
5.	Ophthalmoscope	1
6.	Ambu Bag with Mask	4
7.	Air way – metal and Plastic	4
8.	Oxygen Nasal Catheters and masks	10
9.	Endotracheal tubes (Pediatric/ Adult)	6
10.	Suction Catheters	10
11.	Light weight automatic Oxygen Cylinders 680 liters. Capacity with Oxygen Cylinder trolley	1
12.	Light weight automatic oxygen cylinders (110 liters)	4
13.	Ryles tube No.18	3
14.	Urinary Catheters Foleys, Medium and plain	3 each
15.	Torch	3
16.	Thermometer	3
17.	Tongue depressor	3
18.	Brief case for emergency medicaments and instruments	3
19.	IV sets	12
20.	Venflon No.18, 20, 22 (four each)	12



21.	Syringes 2 ml, 5 ml, 10 ml (10 each)	30
22.	Sterile disposable Needles 21, 22, 23, 24, 26 (10 each)	50
23.	Stretcher (foldable, light weight, biver glass)	1
24.	Spinal stretcher	1
25.	Crammer Wire Splints	10
26.	Pneumatic splints	1 set

## II) Medicines

### I-a) Topical Spray

1.	Pain Spray	10
2.	Burn Spray	10
3.	Antiseptic Spray	10

### II-b) Inhalers

1.	Asthalin inhaler	10
2.	Budecart inhaler	10

### II-c) Injectables

1.	Ringer Lactate	30
2.	Normal Saline	10
3.	Haemaccel	10
4.	Efficorlin	10
5.	Decadron	10
6.	Atropine	10
7.	Aminophylline	10

8.	Asthalin	10
9.	Deriphylline	10
10.	Adrenaline	10
11.	Pethidine	10
12.	Morphine	10
13.	Voveran	30
14.	Dopamine	10
15.	Potassium Chloride	10
16.	Sodium Bicarbonate	10
17.	Stemetil	10
18.	Perineum	30
19.	Avil (25 mg)	30
20.	Phenergan	30
21.	Paracetamol	30
22.	Compose	30
23.	Ranitidine	30
24.	Buscopan	30
25.	2% Xylocard	10
26.	Anti – snake venom and Anti Sera	10

#### II-d) Tablets

1.	Crocin	500
2.	Nimulid	500
3.	Perineum	100
4.	Avil	500
5.	Prednisolone (5 mg, 10 mg)	100

6.	Sorbitrate (5 mg, 10 mg)	100
7.	Depine Capsules (5 mg, 10 mg)	100
8.	Domstal (10 mg)	100
9.	Alprax (0.25 mg)	100
10.	Norflox TZ	100
11.	Metronidazole	500
12.	Furoxone	500
13.	Digene	500
14.	Buscopan (10 mg)	100
15.	Ciplox (500 mg)	300
16.	Septran	500
17.	Amoxicillin	500
18.	Oral Rehydration Salt (ORS)	500

II-e) Miscellaneous

1.	Soframycin Ointment	10
2.	Silver sulfadiazine cream	10
3.	Sterpack (cotton gauze)	30
4.	Eye drops 0 ciplox	30
5.	Ear drops 0 Otek – AC	30
6.	Band Aid (assorted – two packets)	30
7.	Sprit	3 bottles
8.	Tr. Benzoin. Co.	3 bottles
9.	Savlon	3 bottles
10.	Betadine	3 bottles
11.	Sterile Cotton (200 gm)	30

12.	Cotton gauze (3' x 3')	100
13.	Cotton roll (big size)	30
14.	Cotton bandage	100
15.	Leucoplast	30
16.	Eye pads	30
17.	Crepe Bandage (6"/ 3")	30
18.	Tominquettes (clastic)	30
19.	Slings – Elbow/ Shoulders	30
20.	Gloves (size 6 1/2, 7, 7 1/2)	30

D. Instruments

1.	Chattel's forceps	3
2.	Artery Forceps	6
3.	Kidney tray	3
4.	Disposable cut down set	6
5.	Dressing scissors	6
6.	Stainless steel drums – medium	6

E. Furniture

1.	Patient examination table	1
2.	Screen/ curtain	3
3.	Patient bed	1
4.	Refrigerator 165 liters Auto defrost	1
5.	Steel Almirah	1
6.	Bed Sheets	4
7.	Blankets	6

8.	Emergency light	1
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F. Vehicles

- 1. Ambulance : 2
  - 2. Heavy Vehicle (6 ton) : 1
  - 3. Light vehicles modified : 1
- for surgical treatment
-

**ANNEXURE – 5****EQUIPMENTS FOR SEARCH & RESCUE FOR ONE COMPANY****A. Personal Equipment (each member)**

- i) Helmet/ Mardhat
- ii) Water bottle with sling
- iii) Eye Protection
- iv) Ear Protection
- v) Safety steel-toe boots
- vi) Safety Whistle
- vii) Knee pads
- viii) Work gloves
- ix) Work Cloth
- x) Cap or hat
- xi) Water proof flash light

**B. Search & Rescue Equipment**

- |        |                                      |    |
|--------|--------------------------------------|----|
| i)     | Iron shod levers, 10 ft long         | 10 |
| ii)    | Heavy Block for Fulcrum              | 10 |
| iii)   | Crowbars                             | 20 |
| iv)    | Picks                                | 20 |
| v)     | Shovels (or Phawrahs)                | 20 |
| vi)    | Half Round files                     | 10 |
| vii)   | Sledge hammer                        | 20 |
| viii)  | Heavy Axe                            | 10 |
| ix)    | Light Axe                            | 10 |
| x)     | Two handled cross cut- saw           | 10 |
| xi)    | Hand saw                             | 10 |
| xii)   | 100 ft length 16 mm BOB rope         | 10 |
| xiii)  | 100 ft length 5/8 in wire rope       | 10 |
| xiv)   | 40 ft length 12 mm BOB lashing lines | 20 |
| xv)    | chain tackle                         | 10 |
| xvi)   | single sheave snatch block           | 10 |
| xvii)  | Petromax lamp                        | 10 |
| xviii) | Torches Electric water proof         | 20 |
| xix)   | Hurricane Lanterns                   | 20 |
| xx)    | Tarpaulin 12 ft x 12 ft              | 20 |

xxi)	Set of rope tackle (3 sheave – 2 sheave)	10
xxii)	Jack with 5 ton lift	10
xxiii)	20 ft length of BOB ropes 10 mm	20
xxiv)	Rubber gloves (pair) Tested upto 25,000 voltage)	10
xxv)	200 ft length BOB rope 16 mm	10
xxvi)	Stretcher harness (set)	10
xxvii)	Scaffold poles for sheer legs	20
xxviii)	Debris baskets	20
xxix)	Fireman’s Axe (with carrying pouches)	10
xxx)	Short ladder (8 or 10 ft) Aluminium	10
xxxi)	Buckets	20
xxxii)	Leather gloves (pairs)	20
xxxiii)	Extension ladder 35’ Aluminium	10
xxxiv)	First Aid pouches	10

Contents:

- (a) Bandages Triangular
- (b) Canes for tightening improvised tourniquets
- (c) Dressing shells
- (d) Dressing first aid
- (e) Labels, casualty identity (packet of twenty)
- (f) Safety pins large (cards of six)
- (g) Scissors
- (h) Tourniquet

**C. Specialized Rescue Equipments**

**D.**

a)	Electric Powered	
i)	Electric Drill	4
ii)	Circular Saw with Diamond Blade	4
iii)	Chipping Hammer	4
iv)	Smoke Blower & Exhauster	2
v)	Electric Generator (10 kv)	2
vi)	Diamond Chain Saw	4
vii)	Bullet Chain Saw	4

b)	Pneumatic (Air Powers)	
i)	Pneumatic Chisel	4
ii)	Air lifting Bags (different capacity)	2 Sets
viii)	Jumping Cushions	2
c)	Hydraulic Powered	
i)	Spreaders	4
ii)	Cutters	4
iii)	Combi tool	4
iv)	Rescue Rams	4
v)	Glass remover (Punch Mark)	10
d)	Other supporting equipment & accessories	
i)	Sat phone	1
ii)	Wireless VHF 150w	1
iii)	Search light	10
iv)	Walkie Talkies	20 Sets
v)	Search Camera	4
vi)	Video Camera	2
vii)	Tape Recorder	2
viii)	Loud hailers battery operated	2
ix)	Pipe wrenches	4
x)	Crescent/ adjustable wrenches	4
xi)	Slotted Screwdrivers	4 Sets
xii)	Files	4
xiii)	Hand Drills	4
xiv)	Orange paint cans	4
xv)	Flash lights	4
xvi)	Traps 4 x 4 meters	4
xvii)	Measuring Tapes, 3 meters	4
xviii)	Wood Blocks (10 x 10 x 45 cm)	32
xix)	Wood beams (10 x 10 cm x 3 m)	2
xx)	Wood beams (10 x 10 cm x 5 m)	7
xxi)	Wood beams (5 x 10 cm x 5 m)	8
xxii)	Plywood Board 12 mm tick 1.25 x 5 m	1



xxiii)	Wood shims	48
xxiv)	Wood wedges	32
xxv)	Nails	200
xxvi)	Stretcher	10
xxvii)	Blankets	10
xxviii)	Bolf cutters (Shears)	4
xxix)	Ceiling Hooks	10
xxx)	3 ton lifting tackle	5
xxxi)	6 ft. Chains (3 ton lift)	5
xxxii)	Portable acetylene cutting set with	3
xxxiii)	Aspects Blanket	2
xxxiv)	Shocking Kit	10

D. FIRST AID KIT

**Recommended Contents for a First Aid Kit**

Sl. No.	Item	Quantity
1.	Activated Charcoal (for poisoning emergencies) Flask	20
2.	Adhesive strip bandages – assorted sizes (packs of 20)	2
3.	Adhesive tape (leucoplast, 2")	2
4.	Adhesive tape (leucoplast, 4")	2
5.	Airway – Oral (80 mm)	2
6.	Airway – Oral (60 mm)	2
7.	Airway – Oral (40 mm)	2
8.	Alcohol – rubbing 70%	100 ml
9.	Alcohol – wipes	10
10.	Ambu Bag (adult)	1
11.	Ambu Bag (pediatric)	1
12.	Antacid tablets	20
13.	Antibiotic ointment (soframycin)	1

Sl. No.	Item	Quantity
14.	Antiseptic spray	1
15.	Artery forceps	1
16.	Aspirin tablets	20
17.	Bandages Elastic 3"	2
18.	Bandages Elastic (crepe, 6")	2
19.	Bandages roll 3"	10
20.	Bandages roll 6"	10
21.	Bandages Triangular	10
22.	Blanket woolen	1
23.	Blood Pressure instrument	1
24.	Burn Spray	1
25.	Calamine lotion	100 ml
26.	Cotton roll 500 Gm	2
27.	Cotton swabs	20
28.	Disposable latex or vinyl gloves (6" & 7")	10
29.	Eye pads	10
30.	Face mask for CPR (Adult)	2
31.	Face mask for CPR (Child)	2
32.	First aid guide	1
33.	Flashlight	1
34.	Forceps (stainless steel, non toothed) 12.5 cm	1
35.	Gauze pads (sterile cotton) 2" x 4"	20
36.	Gauze pads (sterile Vaseline)	10

Sl. No.	Item	Quantity
37.	Hot water bottle	1
38.	Oxygen Cylinder, lightweight Aluminium 110 lit. (optional)	1
39.	Oxygen canola Nasal	5
40.	ORS sachet	5
41.	Pain Spray	1
42.	Paper writing pad & pencil	1
43.	Paper drinking cups	5
44.	Pneumatic Splint set	1
45.	Safety pins	10
46.	Scissors (stainless steel) 12.5 cm	1
47.	Soap	1
48.	Slings (elbow, shoulder)	5
49.	Stethoscope	1
50.	Sugar or glucose solution	100 gm
51.	Thermometer – oral	1
52.	Tongue Depressor (disposable)	5
53.	Torch	1
54.	Tourniquet (elastic)	1
55.	Triage ribbon (green/ red/ black/ yellow) 5 each	20
56.	Bite sticks	5
57.	Goggles of eye protection	1
58.	Medical Equipment carrying box	2

E. Vehicles

1.	Rescue Tender (Without equipment)	4
2.	Ambulance	2
3.	Mobilization Truck	2

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**ANNEXURE - 6****EQUIPMENTS FOR FIRE FIGHTING FOR ONE COMPANY****A. Personal Equipment (each member)**

- i) Helmet
- ii) Water bottle with sling
- iii) Eye Protection
- iv) Ear Protection
- v) Safety steel-toe boots
- vi) Safety Whistle
- vii) Knee pads
- viii) Work gloves
- ix) Overalls
- x) Personal Safety Line (sash cord) 15' length
- xi) Gum boot

**B. Personnel Protective Equipments**

- |     |   |          |
|-----|---|----------|
| 1.  | Fire Entry Suits  | 10       |
| 2.  | Fire proximity suit   | 10       |
| 3.  | Fire approach suit  | 20       |
| 4.  | Chemical protective clothing  |          |
|     | Level A   | 2        |
|     | Level B   | 2        |
|     | Level C   | 2        |
| 5.  | NBC Suit  | 2        |
| 6.  | self contained Breathing Apparatus<br>with Spare Cylinder (Positive Pressure) | 30       |
| 7.  | B. A. Compressor  | 1        |
| 8.  | leather Gloves  | 50 Pairs |
| 9.  | Personnel Line 5m. long   | 50       |
| 10. | Guide line 3 m. long  | 50       |

**C. Fire Fighting Equipments**

1.	Delivery Hose 15 m. long	63 mm	40
		38 mm	10
2.	Suction Hose 2.5 m. long		20
3.	Branches all types (Acron Branch, Multipurpose)		20
4.	Foam branch (5 x 10 x FB 10)		10
5.	Suction Adoten		5
6.	Female & male deliver adaptors		10
7.	Suction collecting head		5
8.	Dividing breeching		5
9.	Collecting breeching in the control		5
10.	Suction wrenches		10 pairs
11.	Suction Steiner		5
12.	Bucket stainer		5
13.	Long line 30 m. long 25 m nylon		5
14.	Rescue line 30 m. long 25 m nylon		5
15.	Short line 30 m. long 25 m nylon		5
16.	10 Kg DCP Foam Compatible		5
17.	9 liters AFFF Fire Extinguishers		5
18.	9 liters Water CO2 Fire Extinguishers		5
19.	CO2 7 kg Fire Extinguishers		5
20.	Foam (AFFF) Container 20 liter capacity		20
21.	35 feet aluminium Extension ladder		5
22.	Small gear set		5
23.	Torch light		5
24.	B. A. Set		5
25.	Portable High Pressure Pump		6
D.	<b><u>FIRST AID KIT</u></b>		10

**Recommended Contents for a First Aid Kit**

Sl. No.	Item	Quantity
1.	Activated Charcoal (for poisoning emergencies) Flask	20
2.	Adhesive strip bandages – assorted sizes (packs of 20)	2
3.	Adhesive tape (leucoplast, 2")	2
4.	Adhesive tape (leucoplast, 4")	2

Sl. No.	Item	Quantity
5.	Airway – Oral (80 mm)	2
6.	Airway – Oral (60 mm)	2
7.	Airway – Oral (40 mm)	2
8.	Alcohol – rubbing 70%	100 ml
9.	Alcohol – wipes	10
10.	Ambu Bag (adult)	1
11.	Ambu Bag (pediatric)	1
12.	Antacid tablets	20
13.	Antibiotic ointment (soframycin)	1
14.	Antiseptic spray	1
15.	Artery forceps	1
16.	Aspirin tablets	20
17.	Bandages Elastic 3”	2
18.	Bandages Elastic (crepe, 6”)	2
19.	Bandages roll 3”	10
20.	Bandages roll 6”	10
21.	Bandages Triangular	10
22.	Blanket woolen	1
23.	Blood Pressure instrument	1
24.	Burn Spray	1
25.	Calamine lotion	100 ml
26.	Cotton roll 500 Gm	2
27.	Cotton swabs	20

Sl. No.	Item	Quantity
28.	Disposable latex or vinyl gloves (6" & 7")	10
29.	Eye pads	10
30.	Face mask for CPR (Adult)	2
31.	Face mask for CPR (Child)	2
32.	First aid guide	1
33.	Flashlight	1
34.	Forceps (stainless steel, non toothed) 12.5 cm	1
35.	Gauze pads (sterile cotton) 2" x 4"	20
36.	Gauze pads (sterile Vaseline)	10
37.	Hot water bottle	1
38.	Oxygen Cylinder, lightweight Aluminium 110 lit. (optional)	1
39.	Oxygen canola Nasal	5
40.	ORS sachet	5
41.	Pain Spray	1
42.	Paper writing pad & pencil	1
43.	Paper drinking cups	5
44.	Pneumatic Splint set	1
45.	Safety pins	10
46.	Scissors (stainless steel) 12.5 cm	1
47.	Soap	1
48.	Slings (elbow, shoulder)	5
49.	Stethoscope	1
50.	Sugar or glucose solution	100 gm



Sl. No.	Item	Quantity
51.	Thermometer – oral	1
52.	Tongue Depressor (disposable)	5
53.	Torch	1
54.	Tourniquet (elastic)	1
55.	Triage ribbon (green/ red/ black/ yellow) 5 each	20
56.	Bite sticks	5
57.	Goggles of eye protection	1
58.	Medical Equipment carrying box	2

E. Vehicles

1.	Fire Tender (Type ‘B’) (with all accessories)	2
2.	Foam Tender	1
3.	Rescue Tender	1
4.	Control Van	1
5.	Ambulance	1
6.	Mobilization Truck (medium)	2

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**ANNEXURE – 7**

**EQUIPMENTS FOR HAZARDOUS MATERIAL EMERGENCY FOR FIRST  
RESPONDERS FOR ONE COMPANY**

- A. Personal Equipment (Level D) (each member)
  - 1. Overall
  - 2. Gloves
  - 3. Shoes chemical resistant, steel toe & shank
  - 4. Boots, outer, chemical – resistant (disposable)
  - 5. Safety glasses or chemical splash, goggles, poly carbonate lenses.
  - 6. Helmet
  - 7. Water bottle with sling
- B. Personal Protective Equipment
  - I. Level A (20 Sets)
    - 1. Self contained Breathing Apparatus
    - 2. Total – encapsulating chemical protective suit
    - 3. Gloves, outer, chemical – resistant
    - 4. Gloves, inner, chemical – resistant
  - II. Level B (20 Sets)
    - 1. Self Contained Breathing Apparatus (SCBA)
    - 2. Hooded chemical resistant clothing with elastic wrist and booties
    - 3. Gloves inner chemical resistant
    - 4. Gloves outer chemical resistant
    - 5. Boot covers outer, chemical resistant (Disposable)
  - III. Level C (20 Sets)
    - 1. Air purifying respirators with spare

2. Hooded chemical resistant clothing with elastic wrist and ankles
3. Gloves inner chemical resistant
4. Gloves outer chemical resistant

IV. NBC Suits (20 Sets)

C. **NBC Specialized Equipments**

Sl. No.	Equipment	Number
1.	Teletector (uR/h to 1000R/h range)	1
2.	GM survey meter	6
3.	Contamination monitor	6
4.	Mini Rad meter	6
5.	Portable alpha monitor	6
6.	Direct reading dosimeter (one per member)	30
7.	TLD (one per member)	30
8.	Plastic bags/ cordoning tape, minimum	6 sets
9.	Decontamination kit	5 sets
10.	Iodate tablets (KIO <sub>3</sub> )	1000
11.	Battery operated Air Sampler with filter papers	6
12.	C. D. Kit danger make	6
13.	Poison in water detecting kit	2
14.	LEL meter (Explosive meter)	6
15.	PH Tester	6
16.	PH paper	6 box
17.	Distress signal unit (DSU)	40

Sl. No.	Equipment	Number
18.	First Aid Kit NBC Type 'A'	10
19.	First Aid Kit NBC Type 'B'	10
20.	Leak tester for B. A. Set	2
21.	Portable decontamination apparatus	10
22.	Decontamination solution	10 lts
23.	Decontamination gears (plastic sheets, brushes, buckets, fire hose, containers, portable pump)	10 sets
24.	Body bags	30
25.	Emergency Response Guide Book	10
26.	Safety Torch	30
27.	Safety line with chemical resistant 30 meter long.	30
28.	High visibility vest	30
29.	Traffic cones	20
30.	20 kg containers of soda ash & Soda Hydroxide	10
31.	20 liters container of AFFF	10
32.	Plastic drums 20 lts	4
33.	Pipe squeezer	10
34.	Leak storing devices	4 sets
35.	Chlorine leak capping kit	2 sets
36.	Non sparking tool (pipe nrinekes, hammer, curate opener, screw drivers set)	5 sets
37.	Non sparking brush, brooms shovels & Crow bar	5 sets
38.	Medical tag	50
39.	Multi gas detector with cut gum bottle	6

Sl. No.	Equipment	Number
40.	First Aid Kit (as per MFR)	5
41.	Chemical agent monitor	3
42.	Cotton soaps for sample collection (20 Nos. in each packet)	10 packets
43.	Sample collecting plastic bad big size (20 Nos. in each packet)	10 packets
44.	Sample collecting plastic bad small size (20 Nos. in each packet)	10 packets
45.	Latex gloves disposable (100 in each packet)	10 packets
46.	Flame ionization detector	2
47.	Ultra violet photo – ionization detector	2

**D. FIRST AID KIT**

10

**Recommended Contents for a First Aid Kit**

Sl. No.	Item	Quantity
1.	Activated Charcoal (for poisoning emergencies) Flask	20
2.	Adhesive strip bandages – assorted sizes (packs of 20)	2
3.	Adhesive tape (leucoplast, 2")	2
4.	Adhesive tape (leucoplast, 4")	2
5.	Airway – Oral (80 mm)	2
6.	Airway – Oral (60 mm)	2
7.	Airway – Oral (40 mm)	2
8.	Alcohol – rubbing 70%	100 ml
9.	Alcohol – wipes	10
10.	Ambu Bag (adult)	1

Sl. No.	Item	Quantity
11.	Ambu Bag (pediatric)	1
12.	Antacid tablets	20
13.	Antibiotic ointment (soframycin)	1
14.	Antiseptic spray	1
15.	Artery forceps	1
16.	Aspirin tablets	20
17.	Bandages Elastic 3"	2
18.	Bandages Elastic (crepe, 6")	2
19.	Bandages roll 3"	10
20.	Bandages roll 6"	10
21.	Bandages Triangular	10
22.	Blanket woolen	1
23.	Blood Pressure instrument	1
24.	Burn Spray	1
25.	Calamine lotion	100 ml
26.	Cotton roll 500 Gm	2
27.	Cotton swabs	20
28.	Disposable latex or vinyl gloves (6" & 7")	10
29.	Eye pads	10
30.	Face mask for CPR (Adult)	2
31.	Face mask for CPR (Child)	2
32.	First aid guide	1
33.	Flashlight	1

Sl. No.	Item	Quantity
34.	Forceps (stainless steel, non toothed) 12.5 cm	1
35.	Gauze pads (sterile cotton) 2" x 4"	20
36.	Gauze pads (sterile Vaseline)	10
37.	Hot water bottle	1
38.	Oxygen Cylinder, lightweight Aluminium 110 lit. (optional)	1
39.	Oxygen canola Nasal	5
40.	ORS sachet	5
41.	Pain Spray	1
42.	Paper writing pad & pencil	1
43.	Paper drinking cups	5
44.	Pneumatic Splint set	1
45.	Safety pins	10
46.	Scissors (stainless steel) 12.5 cm	1
47.	Soap	1
48.	Slings (elbow, shoulder)	5
49.	Stethoscope	1
50.	Sugar or glucose solution	100 gm
51.	Thermometer – oral	1
52.	Tongue Depressor (disposable)	5
53.	Torch	1
54.	Tourniquet (elastic)	1
55.	Triage ribbon (green/ red/ black/ yellow) 5 each	20
56.	Bite sticks	5

Sl. No.	Item	Quantity
57.	Goggles of eye protection	1
58.	Medical Equipment carrying box	2

E. Vehicles

1.	Equipment Toeing Tender	4
2.	Ambulance	2
3.	Mobilization Truck	2

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**ANNEXURE – 8**

**EQUIPMENTS FOR WEAPONS OF MASS DESTRUCTIONS FOR FIRST  
RESPONDERS FOR ONE COMPANY**

**A. Personal Equipment (Level D) (each member)**

1. Overall
2. Gloves
3. Shoes chemical resistant, steel toe & shank
4. Boots, outer, chemical – resistant (disposable)
5. Safety glasses or chemical splash, goggles, poly carbonate lenses.
6. Helmet
7. Water bottle with sling

**B. Personal Protective Equipment**

**I. Level A (10 Sets)**

1. Self contained Breathing Apparatus
2. Total – encapsulating chemical protective suit
3. Gloves, outer, chemical – resistant
4. Gloves, inner, chemical – resistant

**II. Level B (10 Sets)**

1. Self Contained Breathing Apparatus (SCBA)
2. Hooded chemical resistant clothing with elastic wrist and booties
3. Gloves inner chemical resistant
4. Gloves outer chemical resistant
5. Boot covers outer, chemical resistant (Disposable)

**III. Level C (10 Sets)**

1. Air purifying respirators with spare
2. Hooded chemical resistant clothing with elastic wrist and ankles
3. Gloves inner chemical resistant
4. Gloves outer chemical resistant

IV. NBC Suits (60 Sets)

C. **NBC Specialized Equipments**

Sl. No.	Equipment	Number
1.	Teletector (uR/h to 1000R/h range)	1
2.	GM survey meter	6
3.	Contamination monitor	6
4.	Mini Rad meter	6
5.	Portable alpha monitor	6
6.	Direct reading dosimeter (one per member)	30
7.	TLD (one per member)	30
8.	Plastic bags/ cordoning tape, minimum	6 sets
9.	Decontamination kit	5 sets
10.	Iodate tablets (KIO <sub>3</sub> )	1000
11.	Battery operated Air Sampler with filter papers	6
12.	C. D. Kit danger make	6
13.	Poison in water detecting kit	2
14.	LEL meter (Explosive meter)	6
15.	PH Tester	6
16.	PH paper	6 box
17.	Distress signal unit (DSU)	40

Sl. No.	Equipment	Number
18.	First Aid Kit NBC Type 'A'	10
19.	First Aid Kit NBC Type 'B'	10
20.	Leak tester for B. A. Set	2
21.	Portable decontamination apparatus	10
22.	Decontamination solution	10 lts
23.	Decontamination gears (plastic sheets, brushes, buckets, fire hose, containers, portable pump)	10 sets
24.	Body bags	30
25.	Emergency Response Guide Book	10
26.	Safety Torch	30
27.	Safety line with chemical resistant 30 meter long.	30
28.	High visibility vest	30
29.	Traffic cones	20
30.	20 kg containers of soda ash & Soda Hydroxide	10
31.	20 liters container of AFFF	10
32.	Plastic drums 20 lts	4
33.	Pipe squeezer	10
34.	Leak storing devices	4 sets
35.	Chlorine leak capping kit	2 sets
36.	Non sparking tool (pipe nrinekes, hammer, curate opener, screw drivers set)	5 sets
37.	Non sparking brush, brooms shovels & Crow bar	5 sets
38.	Medical tag	50
39.	Multi gas detector with cut gum bottle	6

Sl. No.	Equipment	Number
40.	First Aid Kit (as per MFR)	5
41.	Chemical agent monitor	3
42.	Cotton soaps for sample collection (20 Nos. in each packet)	10 packets
43.	Sample collecting plastic bad big size (20 Nos. in each packet)	10 packets
44.	Sample collecting plastic bad small size (20 Nos. in each packet)	10 packets
45.	Latex gloves disposable (100 in each packet)	10 packets
46.	Flame ionization detector	2
47.	Ultra violet photo – ionization detector	2

**D. FIRST AID KIT**

10

**Recommended Contents for a First Aid Kit**

Sl. No.	Item	Quantity
1.	Activated Charcoal (for poisoning emergencies) Flask	20
2.	Adhesive strip bandages – assorted sizes (packs of 20)	2
3.	Adhesive tape (leucoplast, 2")	2
4.	Adhesive tape (leucoplast, 4")	2
5.	Airway – Oral (80 mm)	2
6.	Airway – Oral (60 mm)	2
7.	Airway – Oral (40 mm)	2
8.	Alcohol – rubbing 70%	100 ml
9.	Alcohol – wipes	10
10.	Ambu Bag (adult)	1

11.	Ambu Bag (pediatric)	1
12.	Antacid tablets	20
13.	Antibiotic ointment (soframycin)	1
14.	Antiseptic spray	1
15.	Artery forceps	1
16.	Aspirin tablets	20
17.	Bandages Elastic 3"	2
18.	Bandages Elastic (crepe, 6")	2
19.	Bandages roll 3"	10
20.	Bandages roll 6"	10
21.	Bandages Triangular	10
22.	Blanket woolen	1
23.	Blood Pressure instrument	1
24.	Burn Spray	1
25.	Calamine lotion	100 ml
26.	Cotton roll 500 Gm	2
27.	Cotton swabs	20
28.	Disposable latex or vinyl gloves (6" & 7")	10
29.	Eye pads	10
30.	Face mask for CPR (Adult)	2
31.	Face mask for CPR (Child)	2
32.	First aid guide	1
33.	Flashlight	1
34.	Forceps (stainless steel, non toothed) 12.5 cm	1

35.	Gauze pads (sterile cotton) 2" x 4"	20
36.	Gauze pads (sterile Vaseline)	10
37.	Hot water bottle	1
38.	Oxygen Cylinder, lightweight Aluminium 110 lit. (optional)	1
39.	Oxygen canola Nasal	5
40.	ORS sachet	5
41.	Pain Spray	1
42.	Paper writing pad & pencil	1
43.	Paper drinking cups	5
44.	Pneumatic Splint set	1
45.	Safety pins	10
46.	Scissors (stainless steel) 12.5 cm	1
47.	Soap	1
48.	Slings (elbow, shoulder)	5
49.	Stethoscope	1
50.	Sugar or glucose solution	100 gm
51.	Thermometer – oral	1
52.	Tongue Depressor (disposable)	5
53.	Torch	1
54.	Tourniquet (elastic)	1
55.	Triage ribbon (green/ red/ black/ yellow) 5 each	20
56.	Bite sticks	5
57.	Goggles of eye protection	1
58.	Medical Equipment carrying box	2

**E. Vehicles**

- |    |                         |   |
|----|-------------------------|---|
| 1. | Equipment Towing Tender | 4 |
| 2. | Ambulance               | 2 |
| 3. | Mobilization Truck      | 2 |
-

**ANNEXURE – 9**

**EQUIPMENTS FOR FLOOD RESCUE FOR ONE COMPANY**

A. Personal Equipment (each member)

- a) Helmet
- b) Water bottle with sling
- c) Eye Protection
- d) Ear Protection
- e) Safety steel-toe boots
- f) Safety Whistle
- g) Knee pads
- h) Work gloves
- i) Overalls
- j) Personal Safety Line (sash cord) 15' length

B. Specialized Flood Rescue Equipment

1.	Rescue back boards	20
2.	Light weight high pressure pumps	10
3.	Diving suit	10
4.	Under water BA set	10
5.	Floating Pump	05
6.	Inflatable boat (12 persons)	20
7.	Fiber boat (12 persons)	10
8.	Lifebuoy	30
9.	Life Jackets	100
10.	Multicable winch	10
11.	Karabiners	30
12.	Basket Stretcher	10
13.	Portable Generator with flood light	4
14.	Portable Shelter 10' x 14', 10' x 23'	10



15.	Pneumatic Rope Launcher	2
16.	Out Board Motor	10
17.	Loudhailer/ Megaphone	2
18.	Walkie – Talkie	20

C. Miscellaneous Flood Rescue Equipment

i)	Picks	10
ii)	Shovels (or Phawrahs)	10
iii)	Sledge hammer	10
iv)	Light Axe	10
v)	100 ft length 12 mm BOB rope	
vi)	Torches Electric water proof	20
vii)	Hurricane Lanterns	20
viii)	Tarpaulin 12 ft x 12 ft	10
ix)	Set of rope tackle (3 sheave – 2 sheave)	
x)	20 ft length of BOB ropes 1 ½ inch	20
xi)	Rubber gloves (pair) Tested upto 25,000 voltage)	10
xii)	Scaffold poles for sheer legs	10
xiii)	Debris baskets	20
xiv)	Buckets	20
xv)	Leather gloves (pairs)	30
xvi)	First Aid pouches	20 sets

CONTENTS:

i)	Bandages Triangular	
ii)	Canes for tightening improvised tourniquets	
iii)	Dressing shells	
iv)	Dressing first aid	
v)	Labels, casualty identity (packet of twenty)	
vi)	Safety pins large (cards of six)	

- vii) Scissors
- viii) Tourniquet

**D. FIRST AID KIT**

10

**Recommended Contents for a First Aid Kit**

Sl. No.	Item	Quantity
1.	Activated Charcoal (for poisoning emergencies) Flask	20
2.	Adhesive strip bandages – assorted sizes (packs of 20)	2
3.	Adhesive tape (leucoplast, 2")	2
4.	Adhesive tape (leucoplast, 4")	2
5.	Airway – Oral (80 mm)	2
6.	Airway – Oral (60 mm)	2
7.	Airway – Oral (40 mm)	2
8.	Alcohol – rubbing 70%	100 ml
9.	Alcohol – wipes	10
10.	Ambu Bag (adult)	1
11.	Ambu Bag (pediatric)	1
12.	Antacid tablets	20
13.	Antibiotic ointment (soframycin)	1
14.	Antiseptic spray	1
15.	Artery forceps	1
16.	Aspirin tablets	20
17.	Bandages Elastic 3"	2
18.	Bandages Elastic (crepe, 6")	2
19.	Bandages roll 3"	10

Sl. No.	Item	Quantity
20.	Bandages roll 6"	10
21.	Bandages Triangular	10
22.	Blanket woolen	1
23.	Blood Pressure instrument	1
24.	Burn Spray	1
25.	Calamine lotion	100 ml
26.	Cotton roll 500 Gm	2
27.	Cotton swabs	20
28.	Disposable latex or vinyl gloves (6" & 7")	10
29.	Eye pads	10
30.	Face mask for CPR (Adult)	2
31.	Face mask for CPR (Child)	2
32.	First aid guide	1
33.	Flashlight	1
34.	Forceps (stainless steel, non toothed) 12.5 cm	1
35.	Gauze pads (sterile cotton) 2" x 4"	20
36.	Gauze pads (sterile Vaseline)	10
37.	Hot water bottle	1
38.	Oxygen Cylinder, lightweight Aluminium 110 lit. (optional)	1
39.	Oxygen canola Nasal	5
40.	ORS sachet	5
41.	Pain Spray	1
42.	Paper writing pad & pencil	1

Sl. No.	Item	Quantity
43.	Paper drinking cups	5
44.	Pneumatic Splint set	1
45.	Safety pins	10
46.	Scissors (stainless steel) 12.5 cm	1
47.	Soap	1
48.	Slings (elbow, shoulder)	5
49.	Stethoscope	1
50.	Sugar or glucose solution	100 gm
51.	Thermometer – oral	1
52.	Tongue Depressor (disposable)	5
53.	Torch	1
54.	Tourniquet (elastic)	1
55.	Triage ribbon (green/ red/ black/ yellow) 5 each	20
56.	Bite sticks	5
57.	Goggles of eye protection	1
58.	Medical Equipment carrying box	2

E. Vehicles

- |    |                         |   |
|----|-------------------------|---|
| 1. | Equipment Towing Tender | 4 |
| 2. | Ambulance               | 2 |
| 3. | Mobilization Truck      | 2 |
-

**ANNEXURE - 10****REVISED LSIT OF ITEMS AND NORMS OF EXPENDITURE FOR ASSISTANCE FROM STATE DISASTER RESPONSE FUND (SDRF) AND NATIONAL DISASTER RESPONSE FUND (NDRF)**

( Period 2010-2015, MHA Letter No. 32-7/2011-NDM-I Dated 16<sup>th</sup> January 2012, modified vide letter No. 32-3/2012-NDM-I Dated 28<sup>th</sup> September 2012, modified vide letter No. 32-3/2013-NDM-I Dated 21<sup>st</sup> June 2013 )

<b>Sr. No.</b>	<b>ITEM</b>	<b>NORMS OF ASSISTANCE</b>
1	2	3
1	<b>GRATUITOUS RELIEF</b>	
	(a) Ex-Gratia Payment to families of deceased persons.	<p>Rs. 1.50 Lakh per deceased person including those involved in relief operations or associated in preparedness activities, subject to certification regarding cause of death from appropriate authority.</p> <ul style="list-style-type: none"> <li>- In the case of an Indian citizen who loses his life due to a notified natural calamity in a foreign country, his family, would not be paid this relief.</li> <li>- In the case of a foreign citizen who loses his life due to a notified natural calamity within the territory of India, his family, would also not be paid this relief.</li> </ul>
	b) Ex-Gratia payment for loss of a limb or eye(s).	<p>Rs. 43,500/- per person, when the disability is between 40% and 80%.</p> <p>Rs. 62,000/- per person, when the disability is more than 80%.</p> <p>Subject to the certification by a doctor from a hospital of dispensary of government, regarding extent and cause of disability.</p>

Sr. No.	ITEM	NORMS OF ASSISTANCE
	c) Grievous injury requiring hospitalization.	Rs.9,300/- per person requiring hospitalization for more than a week.  Rs.3,100/- per person requiring hospitalization for less than a week.
	d) Clothing and utensils/household goods for families whose houses have been washed away/fully damaged/severely inundated for more than a week due to a natural calamity.	Rs.1,300/- per family, for loss of clothing.  Rs.1,400/- per family, for loss of utensils/household goods
	e) Gratuitous relief for families in dire need of immediate sustenance after a calamity.  GR to be provided to those who have no food reserve, or whose food reserves have been wiped out in a calamity, and who have no other immediate means of support.	Rs. 40/- per adult, Rs. 30/- per child, not housed in relief camps. State Government will certify that (i) these persons have no food reserves, or their food reserves have been wiped out in a calamity, and (ii) identified beneficiaries are not housed in relief camps. Further State Government will provide the basis and process for arriving at such beneficiaries district-wise.  Period for providing gratuitous relief will be as per assessment of the State Executive Committee (SEC) and the Central Team (in case of NDRF). The default period of assistance will up to 30 days, which may be extended up to 60 days in the first instance, if required, and subsequently up to 90 days in case of drought/pest attack.
2.	<b>SEARCH &amp; RESCUE OPERATIONS</b>	
	(a) Cost of search and rescue measures/evacuation of people affected/likely to be affected.	As per actual cost incurred, assessed by SEC and recommended by the Central Team (in case of NDRF).  - By the time the Central Team visits the affected area, these activities are already over. Therefore, the State Level Committee and the Central Team can recommend actual/near-actual costs.

Sr. No.	ITEM	NORMS OF ASSISTANCE
	(b) Hiring of boats for carrying immediate relief and saving lives.	<p>As per actual cost incurred, assessed by SEC and recommended by the Central Team (in case of NDRF).</p> <p>The quantum of assistance will be limited to the actual expenditure incurred on hiring boats and essential equipment required for rescuing stranded people and thereby saving human lives during a notified natural calamity.</p>
3	<b>RELIEF MEASURES</b>	
	(a) Provision for temporary accommodation, food, clothing, medical care, etc. for people affected/evacuated and sheltered in relief camps.	<p>As per assessment of need by SEC and recommendation of the Central Team (in case of NDRF), for a period up to 30 days. The SEC would need to specify the number of camps, their duration and the number of persons in camps. In case of continuation of a calamity like drought, or widespread devastation caused by earthquake or flood etc., this period may be extended to 60 days, and up to 90 days in cases of severe drought.</p> <p>Medical care may be provided from National Rural Health Mission (NRHM).</p>
	(b) Air dropping of essential supplies.	<p>As per actual, based on assessment of need by SEC and recommended by the Central Team (in case of NDRF).</p> <ul style="list-style-type: none"> <li>- The quantum of assistance will be limited to actual amount raised in the bills by the Ministry of Defense for airdropping of essential supplies and rescue operations only.</li> </ul>
	(c) Provision of emergency supply of drinking water in rural areas and urban areas.	<p>As per actual cost, based on assessment of need by SEC and recommended by the Central Team (in case of NDRF), up to 30 days and may be extended up to 90 days in case of drought.</p>
4.	<b>CLEARANCE OF AFFECTED AREAS</b>	

Sr. No.	ITEM	NORMS OF ASSISTANCE
	a) Clearance of debris in public areas.	As per actual cost within 30 days from the date of start of the work based on assessment of need by SEC for the assistance to be provided under SDRF and as per assessment of the Central team for assistance to be provided under NDRF.
	b) Draining off flood water in affected areas.	As per actual cost within 30 days from the date of start of the work based on assessment of need by SEC for the assistance to be provided under SDRF and as per assessment of the Central team for assistance to be provided under NDRF.
	c) Disposal of dead bodies/Carcasses.	As per actual, based on assessment of need by SEC and recommendation of the Central Team (in case of NDRF).
5.	<b>AGRICULTURE</b>	
(i)	Assistance to small and marginal farmers.	
A.	Assistance for land and other loss	
	a) De-silting of agricultural land (where thickness of sand/ silt deposit is more than 3", to be certified by the competent authority of the State Government.)	Rs. 8,100/- per hectare for each item.
	b) Removal of debris on agricultural land in hilly areas.	(Subject to the condition that no other assistance/ subsidy has been availed of by/ is eligible to the beneficiary under any other Government Scheme)
	c) De-silting/Restoration/ Repair of fish farms	
	d) Loss of substantial portion of land caused by landslide, avalanche, change of course of rivers.	Rs. 25,000/- per hectare to only those small and marginal farmers whose ownership of the land is legitimate as per the revenue records.
B.	<b>Input subsidy (where crop loss is 50% and above)</b>	
	a) For agriculture crops, horticulture crops and annual plantation crops	Rs. 4,500/- per ha. in rain fed areas and restricted to sown areas.



Sr. No.	ITEM	NORMS OF ASSISTANCE
		Rs. 9,000/- per ha. in assured irrigated areas, subject to minimum assistance not less than Rs. 750 and restricted to sown areas.
	b) Perennial crops	Rs. 12,000/- ha. for all types of perennial crops subject to minimum assistance not less than Rs. 1500/- and restricted to sown areas.
	c) Sericulture	Rs. 3,200/- per ha. for Eri, Mulberry, Tussar Rs. 4,000/- per ha. for Muga.
(ii)	Input subsidy to farmers other than small and marginal farmers.	Rs. 4,500/- per hectare in rain fed areas and restricted to sown areas. Rs. 9,000/- per hectare for areas under assured irrigation and restricted to sown areas. Rs. 12,000/- per hectare for all types of perennial crops and restricted to sown areas.  - Assistance may be provided where crop loss is 50% and above, subject to a ceiling of 1 ha. per farmer and up to 2 ha. per farmer in case of successive calamities irrespective of the size of holding being large.  -
6.	<b>ANIMAL HUSBANDRY – ASSISTANCE TO SMALL AND MARGINAL FARMERS</b>	
	i) Replacement of milch animals, draught animals or animals used for haulage.	<b>Milch animals-</b> Rs. 16,400/- Buffalo/ cow camel/ yak etc. Rs. 1,650/- Sheep/ Goat <b>Draught animals-</b> Rs. 15,000/- Camel/ horse/ bullock, etc. Rs. 10,000/- Calf/ Donkey/ Pony/ Mule

Sr. No.	ITEM	NORMS OF ASSISTANCE
		<p>- The assistance may be restricted for the actual loss of economically productive animals and will be subject to a ceiling of 1 large milch animal or 4 small milch animals or 1 large draught animal or 2 small draught animals per household irrespective of whether a household has lost a larger number of animals. (The loss is to be certified by the Competent Authority designated by the State Government).</p> <p><b>Poultry:-</b></p> <p>Poultry @ 37/- <b>per bird</b> subject to a ceiling of assistance or Rs. 400/- per beneficiary household. The death of the poultry birds should be on account of a natural calamity.</p> <p><b>Note:</b> - Relief under these norms is not eligible if the assistance is available from any other Government Scheme, e.g. loss of birds due to Avian Influenza or any other diseases for which the Department of Animal Husbandry has a separate scheme for compensating the poultry owners.</p>
	<p>ii) Provision of fodder/feed concentrates including water supply and medicines in cattle camps.</p>	<p>Large animals- Rs. 50/- per day. Small animals- Rs. 25/- per day.</p> <p>Period for providing relief will be as per assessment of the State Executive Committee (SEC) and recommendation of the Central Team. (In case of NDRF) consistent with estimates of cattle as per Livestock Census and subject to the certificate by the competent authority about the requirement of medicine and vaccine being calamity related.</p>
	<p>iii) Transport of fodder to cattle outside cattle camps.</p>	<p>As per actual, cost of transport, based on assessment of need by SEC and recommendation of the Central Team (in case of NDRF) consistent with estimates of cattle as</p>

Sr. No.	ITEM	NORMS OF ASSISTANCE
		per Livestock Census.
7.	<b>FISHERY</b>	
	i) Assistance to Fisherman for repair/ replacement of boats, nets – damaged or lost <ul style="list-style-type: none"> <li>- Boat</li> <li>- Dugout-Canoe</li> <li>- Catamaran</li> <li>- Net</li> </ul> (This assistance will not be provided if the beneficiary is eligible or has availed of any subsidy/assistance, for the instant calamity, under any other Government Scheme.)	Rs. 3,000/- for repair of partially damaged boats only.  Rs. 1,500/- for repair of partially damaged net.  Rs. 7,000/- for replacement of fully damaged boats.  Rs. 1,850/- for replacement of fully damaged net.
	ii) Input subsidy for fish seed farm.	Rs. 6,000/- per hectare.  (This assistance will not be provided if the beneficiary is eligible or has availed of any subsidy/assistance, for the instant calamity, under any other Government Scheme, except the one time subsidy provided under Scheme of Department of Animal; Husbandry, Dairying and Fisheries, Ministry of Agriculture.)
8	<b>HANDICRAFTS/HANDLOOM—ASSISTANCE TO ARTISANS</b>	
	i) For replacement of damaged tools/ equipment.	Rs. 3,000/- per artisan for equipments.  - Subject to certification by the competent authority designated by the Government about damage and its replacement.
	ii) For loss of raw material/ goods in process/ finished goods	Rs. 3,000/- per artisan for raw material.  Subject to certification by the competent authority designated by the Government about loss and its replacement.

Sr. No.	ITEM	NORMS OF ASSISTANCE
9	<b>HOUSING</b>	
	<b>a) Fully damage/destroyed houses</b>	
	i) Pucca House	Rs. 70,000/- per house
	ii) Kutcha House	Rs. 15,000/- per house
	<b>b) Severely damaged house</b>	
	i) Pucca House	Rs. 6,300/- per house
	ii) Kutcha House	Rs. 3,200/- per house

**Illustrative list of activities identified as of an immediate nature.**

**1. Drinking Water Supply :**

- i) Repair of damaged platforms of hand pumps/ring wells/ spring-tapped chambers/ public stand posts, cisterns.
- ii) Restoration of damaged stand posts including replacement of damaged pipe lengths with new pipe lengths, cleaning of clear water reservoir (to make it leak proof).
- iii) Repair of damaged pumping machines, leaking overhead reservoirs and water pumps including damaged intake-structure, approach gantries/jetties.

**2. Roads :**

- i) Filling up of braches and potholes, use of pipe for creating waterways, repair and stone pitching of embankments.
- ii) Repair of breached culverts.
- iii) Providing diversions to the damaged/washed out portions of bridges to restore immediate connectivity.
- iv) Temporary repair of approaches to bridges/embankments of bridges., repair of damaged railing bridges, repair of causeways to restore immediate connectivity, granular sub base, over damaged stretch or roads to restore traffic.

**3. Irrigation :**

- i) Immediate repair of damaged canal structures and earthen/masonry works of tanks and small reservoirs with the use of cement, sand and stones.
- ii) Repair of weak areas such as piping or rat holes in dam walls/ embankments.
- iii) Removal of vegetative material/building material/debris from canal and drainage system.

**4. Health:**

Repair of damaged approach roads, buildings and electrical lines of PHCs/ community Health Centres.

**5. Community assets of Panchayat**

- a) Repair of village internal roads.
  - b) Removal of debris from drainage/ sewerage lines.
  - c) Repair of internal water supply lines.
  - d) Repair of street lights.
  - e) Temporary repair of primary schools, Panchayat ghars, community halls, *anganwadi*, etc.
-

## ANNEXURE 11

### General Terminology Used in Weather Bulletins

	(A). Intensity of Rainfall		Terminology Used
1	0.1.mm to 2.4 mm	(24 hrs)	Very light rain
2	2.5 mm to 7.5 mm	"	Light rain.
3	7.6 mm to 34.9 mm	"	Light to Moderate rain
4	35.0 mm to 64.9 mm	"	Moderate rain
5	65.0 mm to 124.9mm	"	Heavy rain
6	Exceeding 125 mm	"	Very Heavy rain.

### (B) Special distribution of weather phenomenon.

	Percentage Area Covered	Terminology Used
1	1 to 25	Isolated
2	26 to 50	Few Places
3	51 to 75	Many Places
4	76 to 100	At most Places

### (C) Emergency Situation

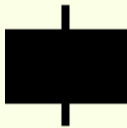
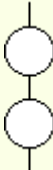

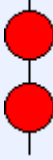

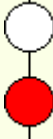






1. When water level is rising above the danger of H.F.L
2. When intensity of rainfall is above 65 mm /hr
3. When breaches are anticipated and may lead to disaster.
4. When water levels are rising alarmingly.



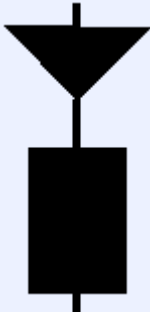

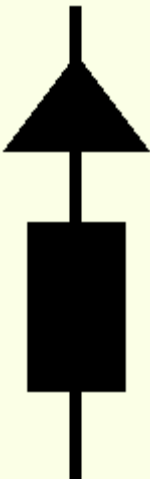


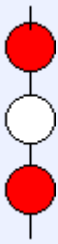
### (D) Evacuation

- (1) White Signal - Alert condition
- (2) Blue Signal - Ready for Evacuation
- (3) Red Signal - Immediate Evacuation.



## ANNEXURE 12

## PORT STORM WARNING SIGNALS

SIGNAL NUMBER	DAY SIGNAL	NIGHT SIGNAL	MEANING
1			DISTANT CAUTIONARY <i>(There is a region of squally weather in which a storm may be forming.)</i>
2			DISTANT WARNING <b>(A storm has formed.)</b>
3			LOCAL CAUTIONARY <b>(The port is threatened by squally weather.)</b>
4			LOCAL WARNING <b>(The port is threatened by a storm but it does not appear that the danger is as yet sufficiently great to justify extreme measures of precaution.)</b>
5			<b>DANGER</b> <b>(The port will experience severe weather from a cyclone expected to move keeping the port to the left of its track.)</b>
6			<b>DANGER</b> <b>(The port will experience severe weather from a cyclone expected to move keeping the port to the right of its track.)</b>

<p>7</p>			<p style="text-align: center;"><b>DANGER</b></p> <p>(The port will experience severe weather from a cyclone expected to move <b>over or close</b> to the port.)</p>
<p>8</p>			<p style="text-align: center;"><b>GREAT DANGER</b></p> <p>(The port will experience severe weather from a severe cyclone expected to move keeping the port to the <b>left</b> of its track.)</p>
<p>9</p>			<p style="text-align: center;"><b>GREAT DANGER</b></p> <p>(The port will experience severe weather from a severe cyclone expected to move keeping the port to the <b>right</b> of its track.)</p>
<p>10</p>			<p style="text-align: center;"><b>GREAT DANGER</b></p> <p>(The port will experience severe weather from a severe cyclone expected to move <b>over or close</b> to the port.)</p>



<p>11</p>	 A black inverted triangle with a vertical line extending upwards from its top vertex.	 A solid red circle with a vertical line extending downwards from its bottom center.	<p><b>FAILURE OF COMMUNICATIONS</b> <b>(Communications with the Meteorological Warning center have broken down and the local officer considers that there is danger of bad weather.)</b></p>
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**ANNEXURE 12**

<b>Sr. No.</b>	<b>Name &amp; Address of NGOs' Of UT of Daman &amp; Diu No</b>	<b>Contact Person</b>	<b>Telephone No.</b>
<b>1.</b>	<b>Indian Red Cross Society</b> Daman & Diu Branch Red Cross Bhavan, Near Bus Stand, Nani Daman.	Chanchal Yadav Hon. Secretary	2230689 (O) 2230922 (O) 9978440877 (M) 2230202 (R)
		Shri. V. P. Upadhyay Section Officer.	2255099 (O) 2255705 (R) 9825538974 (M)
		Smt. P. T. Patel (UDC)	2255099 (O) 6945040 (R) 9327018728 (M)
<b>2.</b>	<b>Daman Muslim Association</b>	Shri. Bilban President	9825454298 (M)
		Shri. Khursheed Manjara Secretary	2255734 (O) 9824117861 (M)
<b>3.</b>	<b>Shia Jafaari Mashayakhl</b> Momin Jamaat	Shri Shabbir Momin President	9824791109 (M)
		Shri Ramzan Momin Secreatry	9898615587 (M)

4.	<b>Daman Dawoodi Bohra Jamaat</b>	Shri Ammar Bhaisaheb (President)	9879274347 (M)
		Shri Mohmed H. Mithani (Vice President)	9377177830 (M)
5.	<b>Daman Ismailiya Khoja Society</b>  The Highness Co-op Society, Khariwad, Nani Daman	Shri Kamaruddin A. Zalani  (President)	9824700632 (M)
		Shri Mohmed H. Mithani (Vice President)	9377177830 (M)
6.	<b>Daman Rana Samaj</b> Rana Samaj Wadi, Nani Daman	Shri Pravinbhai D. Rana  (President)	9429117943 (M)
7.	<b>Kansarwad Yuvak Mandai</b> Kansarwad, Nani Daman	Shri. Rameshbhai Tandel (President )  Shri. Umeshbhai Damania	2261291 (0)
8.	<b>Daman Jilla Mochi Nati, Panch</b> 'Accord', G-2, Cross Lane 5, Dilip Nagar, Nani Daman	Chandrakant Parmar President	2255025 (0) 2250525 (R) 9825157436 (M)
		Shri Shashikant Parmar	2254168 (0)
9.	<b>Rotary Club</b>	Shri Abhishek Agrawal (President)	2464707 (R) 9824704737 (M)
		Shri Nitin Rungta Secretary.	9825143871 (M)
10.	<b>Daman Malayali Association</b>	Shri. Lloyd Anthony President	9898888855 (M)

<b>11.</b>	<b>Dilip Nagar Development Association</b> Dilip Nagar, Nani Daman	Shri. Vinay Desai President	9998414636
<b>12.</b>	<b>Sant Nirankari Mandai</b> Mota Faliya, Varkund, Nani Daman.	Shri. Govindbhai Sarot (Secretary)	2244713 (O) 984071203 (M)
		Yogesh Mahyavanshi Member	9377890004 (M)
<b>13.</b>	<b>Shree Machhi Mahajan Trust,</b> Satyanarayan Mandir, Kathiriya, Nani Daman.	Shri. Shagwan S. Damania President,	2255129 (R) 9427575697 (M)
		Shri. Vallabhbai S. Machhi Secretary. .	2262106 (R) 9913663226 (M)
<b>14.</b>	<b>Daman Industries Association</b> Somnath, Nani Daman.	Shri. Vijay Mishra President	9377021041 (M)  2221171 (O)  2220571 (O)
		Shri. K.C. Parekh Secretary	2241933 (O)  2241934 (O)  9377055321 (M)
		Shri. Sharad Mistry Executive Secretary	2240917 (O)  2242917 (O)  9377008512 (M)
<b>15.</b>	<b>Lions Club of Daman (Lions Parivar including Leo Club &amp; Lioness Club)</b>  Kathiria, Devka Road, Nani Daman.	Shri. Bharat G. Tandel President	2255992 (R) 9825872372 (M)
		Shri. Pravin Patel Secretary	9374404747 (M)
<b>16.</b>	<b>Nehru Yuva Kendra</b>  Below Education Office,  Nani Daman Jetty, Nani Daman.	Shri. S. S. Paul  Co-ordinator	2255776 (O)

17.	<b>Daman Jilla Anavil Mandal</b>	Shri Kishorchandra D. Desai Secretary	2220319 (R)
18.	<b>Mota Gachiwad Muslim Association</b>  Ghachiwad, Nani Daman.	Shri Ali Raza Plasterwalla (President)	9824460022 (M)
		Shri Shaukat Ahmed Ghaswalla, Secretary	9824171419 (M)
19.	<b>Mota Ghachiwad Sunnat Jamaat</b> Ghachiwad, Nani Daman	Shri Ibrahim Hussein Sadhal, President	9825361013 (M)
20.	<b>Daman Halpati Samaj</b> Hotel Bali, Kumbharwad, Opp. Biblos Market Nani Daman.	Shri. Manllal Halpati President	9898001593 (M) 2260849 (0)
		, Shri Kaushik Halpati	9898390066 (M)
		Shri. Vijay Halpati, Vice President	9824711533 (M)
21.	<b>Sanjivan The Human Welfare Society</b>	Shri. Dharmesh Agrawal Vice President	9824500354 (M)
		Shri Sanjiv Kumar Pandya (President)	9824512354 (M) 2260110 (0)
		Shri. Dudresh Tandel Secretary	9879005508 (M)
22.	<b>Bhartiya Vadar Samaj</b>	Ambash Kurade	

	<b>SevaSangh</b> Opp. Coast Guard Bldg Dunetha, Nani Daman.	Vice President Shri. Raju Gunjo Secretary,	
<b>23.</b>	<b>Mahyavanshi Samaj</b> Schedule Caste Daman  Mahyavanshi Faliya, Kathiria, (M) Nani Daman.	Shri Ranjit D. Damania (President)  Shri Manilal G. Contractor (Vice President)	9824776543 (M)  9898060514
<b>24.</b>	<b>PARIARI</b>  <b>MAHYAVANSHI MANDAL</b>  Pariari, Moti Daman.	Shri. Pratap Ravji Solanki (President)  Shri. Jagdish B. Rathod (Secretary)	--  9879541804 (M)
<b>25.</b>	<b>Anushuchit Jati Morcha</b>	Shri naginbhai Kabiria President	9327055413 (M)
<b>26.</b>	<b>Our Lady of Remedios</b> Church, Main Road, Moti Daman	Fr. Brian Rodrigues President	9898281599 (M)
<b>27.</b>	<b>Holy Name Church</b> Fort Area, Moti Daman	Fr. Peter Matthias Parish Preist	2230935 (0)
<b>28.</b>	<b>Our Lady of Sea Church</b>  Near Jetty, Nani Daman	Fr. Joseph Dias Parish Priest	2255183 (0) 2255184 (0)

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**Annexure: - 14****Emergency Contact Directory****1. UT Administration of Daman & Diu.**

<b>No.</b>	<b>Department</b>	<b>Phone</b>	<b>Fax</b>
<b>1.</b>	Ministry of Home Affairs, New Delhi	011 23092923 011 23093054 011 23092885 011 23093897	011-23092763 011- 23093750
<b>2</b>	Hon'ble Administrator, DD& DNH	0260-2230770  2230700	0260- 2230775
<b>3.</b>	Finance Sec, DD	0260-2231453	0260-2230771
<b>4</b>	Development Commissioner	0260-2230726	0260-2230550
<b>5</b>	Sec. Revenue Dept. DD	0260-2230726	0260-2230550
<b>6</b>	Sec. Health , Daman & Diu	0260-2230726	0260-2230550
<b>7</b>	Director Health & Medical PHC, Moti Daman	(O)- 2230470 2230518 (R)- 2254604	
<b>8</b>	Sec. Home Dept, Daman & Diu	0260-2230770  2230700	0260- 2230775
<b>9.</b>	IGP, Police	0260-2220140	0260-2220076
<b>10</b>	Sec. Information Dept	0260-2230088	0260-2231170
<b>11</b>	Sec. Transport Dept.	0260-2230698	
<b>12</b>	Sec. Civil Supply Dept	0260-2230698	
<b>13</b>	Collector Office (Daman)	0260-2230698	0260-2230689
<b>14</b>	Dy. Collector	0260-2231771	0260-2230689
<b>15</b>	Mamlatdar	<b>(O)-</b> 2230861	

No.	Department	Phone	Fax
		(R)- 2242522 (M) 9904411366	
<b>16</b>	Social Welfare Officer, Collectorate, Daman	2230854	
	Asst. Director Transport	(O) 2255140 (R) 2260766 (M) 9879125949	
<b>17</b>	Superintending Engineer PWD	0260-2230926  2230422	
<b>18</b>	Executive Engineer (Electrical)	(O)- 2240745 2255103  (R) 2992463 2261486 (M)- 94269820323	
<b>19</b>	DCF Office, Fort Area	2230974 2230978	
<b>20</b>	Fire	0260-2244060  2242101	0260-2244111
<b>21</b>	Civil Supply	0260-2230698  2230049	0260-2230689
<b>22</b>	Port	0260-2230615  (M) 9825735098	
<b>23</b>	Fisheries	0260-2255166 2230879 (R)- 2262915 (M)9824123816	
<b>24</b>	Member Secretary, Pollution Control. Committee, Daman.	2230975	
<b>25</b>	CIF&B, Labour Department, Daman	(O) 2254091	



No.	Department	Phone	Fax
		(R) 2231116	
26	Coastguard	0260-2260665 2260685	<b>0260-2261004</b>
27	Forest	0260-2230978	
28	Suptd. Customs, Opp. Labour Dept., Nani Daman	2254674	
29	CEO Panchayat/ Project Director RDA	2230440 2231059 2230782	
30	Chief Officer DMC	2230666	
<b>Other Important Agencies</b>			
1	Meteoro-logical Observator	2260862	
2	All India Radio, Aakashwani Kendra Daman	2243316 2243379	
3	Commanding Officer, Coast Guard Air Station	2260865 2260858 (R) 2261004	
4	JTO, Telephone Exchange	2260888 2261777 2250000 2263000	
5	Principal, Navodaya Vidyalay	2262903	
6	President, Daman Football Association	(O) 2242672 2242872 (R) 2254823	
7	President, Daman Cricket Association	2220401	
8	President, Daman Sports Club	2230470	
9	President, Matsya Udyog Vividh Karyakari Samiti, Nani Daman Jetty	2255013	
10	President, Daman Industries Association, Somnath, Daman	2221171 2220571	

**O = Office Number.**

**R = Residence Number.**

**M = Mobile Number.**

**2. Govt. of India (Home Ministry)**

<b>Sr. no.</b>	<b>Designation</b>	<b>Office</b>	<b>Resi.</b>	<b>Mobile</b>
<b>1</b>	Home Minister	011-23092462 011-23017256	-	-
<b>2</b>	Home Secretary	011-23092989 011-23093031 23093003 (F)	23013058	-
<b>3</b>	Secretary (BM)	011-23092440 23092717 (F)	24602518	-
<b>4</b>	Joint Secretary (DM)	011-24638206 24610906 (F)	24103663	-
<b>5</b>	Director (DM-1)	011-24642853	26266708	Director (DM-1)
<b>6</b>	Dy. Secretary (NDM-III)	011-24642381	26117043	Dy. Secretary (NDM-III)
<b>7</b>	Director (NDM-IV)	011-24622543	-	-
<b>8</b>	Under Secretary (NDM-III)	011-24642380 24640391	-	-
<b>9</b>	Under Secretary (NDM-IV)	011-24640391		
<b>10</b>	T.O.	011-24642379	-	-
<b>11</b>	National Seismic Advisor	011-23702442	-	9818997029
<b>12</b>	Consultant NDM	011-24642379	-	-

**India Meteorological Department and Observatories**

Sr. No.	Name	Designation	Office	Resi.	Fax
1	Dr. A.V. Tyagi	D.G.M., New Delhi	011-24611842	24633692	24611792
2	Dr. C.V.V. Bhadram	D.D.G.M.(C.W.) New Delhi-3	011-24611068	24644937	24619167
3	R.S. Dattatreyan	Director (Seismo)	011-24611305	2622827	
4	Surya Bali Jaiswar	D.D.G.M.(Seismo) New Delhi-3	011-24629770	24648067	24629770
5	A.K. Shukla	Director (EREC) New Delhi-3	011-24619943	24634714	
6	S.B. Yadav	Director (C.W.C) New Delhi	011-24631913, 24629798	26196225	24643128 246266815
7	B.K. Bandopadhyay	Director (N.H.A.C.) Delhi	011-24619167		246110068
8	Dr. R.D. Vashisth	D.D.G.M. (SI) Pune	020-25535411	27442954	25533201
9	Dr. R. P. Samui	DDGM (ag.) Pune	020-25533420	25535953	
10	Dr. R. V. Sharma	D.D.G.M. (RMC Mumbai-5)	022-22150517	22150517	22150517
11	M.S.Tomar	Dir. Meteorology Center Ahmedabad	22865165 (M)9978406424	26852615	22865449
11	M.S.Tomar	Dir. Meteorology Center Ahmedabad	22865165 (M)9978406424	26852615	22865449
13	Shri B K Rastogy	D G, Institute of Seismological Research, Gandhinagar	23252703 23259100 Fax 23259192		9824020907

**Tsunami Warning Centre, Hyderabad**

Name, designation & address of the officer	Telephone Number			Fax
	Office	Residence	Mobile	
Dr. Satheesh Sheno Dir. INCOIS Indian National Centre for Ocean	23895000 23886001	23894647	09441013377	23895001

Name, designation & address of the officer	Telephone Number			Fax
	Office	Residence	Mobile	
information services <a href="mailto:director@incois.gov.in">director@incois.gov.in</a> <a href="mailto:shenoi@incois.gov.in">shenoi@incois.gov.in</a>				
T.Srinivasa Kumar Scientist Incharge, ITWC (Interim tsunami warning centre) <a href="mailto:srinivas@incois.gov.in">srinivas@incois.gov.in</a>	23895006 23886006	23892022	09441229297	23895012
Dr. E.Pattabhi Ram Rao (Data Management Group) <a href="mailto:pattabhi@incois.gov.in">pattabhi@incois.gov.in</a>	23895008	23046412	09490191923	23895001
V.V. Satyanarayana (I/C) CWG	23895005	-	09490191670	23895001
Control Room Tsunami warning centre (Operation Centre)	23895011/19 23886064 23886034			23895012
National Institute of Ocean Technology (NIOT) NIOT Campus, Velachery-Tambarum main road, Narayanpuram, Pallikaranai, CHENNAI - 600100, TAMILNADU, INDIA Email:- postmaster@niot.res.in, Phone:-044-66783300, Fax:-044-22460275				
Dr. M.A.Atmanand Dir NIOT director@niot.res.in	044-66783301	044-22590391	09444399800	044-22460275

**Contact Details of NDMA Officers**

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Shri Sunil Kohli, FA	26701709	26133297	9868151472	<a href="mailto:skkohli@ndma.gov.in">skkohli@ndma.gov.in</a>

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Preeti Banzal , Dir(F)	26701823			<a href="mailto:preeti@ndma.gov.in">preeti@ndma.gov.in</a>
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Rajesh Kumar Singh , DS(CBT)	26701733			<a href="mailto:rksingh@ndma.gov.in">rksingh@ndma.gov.in</a>
<b>Control Room</b>	26701728		9868891803	<a href="mailto:info@ndma.gov.in">info@ndma.gov.in</a>

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## ANNEXURE – 15

### BIBLIOGRAPHY

1. Sample Resource material for natural Disaster Mitigation and Preparedness NDMD  
Ministry of Home Affairs  
Govt. of India
2. Material on pre-cyclone preparedness and disaster preparedness including contingency action plan for natural calamities prepared by Ministry of Agriculture, Government of India. Office of Director of Relief, Revenue Department, Government of Gujarat, 1995.
3. Sardar Patel Institute of Public Administration Government of Gujarat
4. Contingency Action Plan for Natural Calamities Ministry of Agriculture  
Deptt. Of Agriculture & Cooperation, S.R.  
Division December – 1993.
5. Training Workshop on Earth Quake Disaster Mitigation. National Centre for Disaster Management,  
Indian Institute of Public Administration, New Delhi
6. Training Programme on Floods & Landslides Management National Centre for Disaster Management,  
Indian Institute of Public Administration, New Delhi.
7. Pre-Cyclone exercise Government of India,  
Meteorological Deptt., Pune.

- |     |   |  |
|-----|---|--|
| 8.  | National Disaster Management Health Manual (Gujarat State)  | National District Management Cell, Sardar Patel Inst. Public Admn. Opp. ISRO, Satellite Road, Ahmedabad. |
| 9.  | Imperative in Natural Disaster Reduction  | National District Management Cell, Sardar Patel Inst. Public Admn Opp. ISRO, Satellite Road, Admedabad.  |
| 10. | Medical Relief in Flood Situation (Contingency Plan) Disaster Management Cyclone, Disaster Mitigation, Emergency Preparedness for transportation Hazards (Mock drill at Vishakhapatnam) | National District Management-Cell, Sardar Patel Inst. Public Admn. Opp. ISRO, Satellite Road, Admedabad. |
| 11. | Hazards of Cyclone  | Office of the Deputy Director General of Meteorology, Weather for.                                       |
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