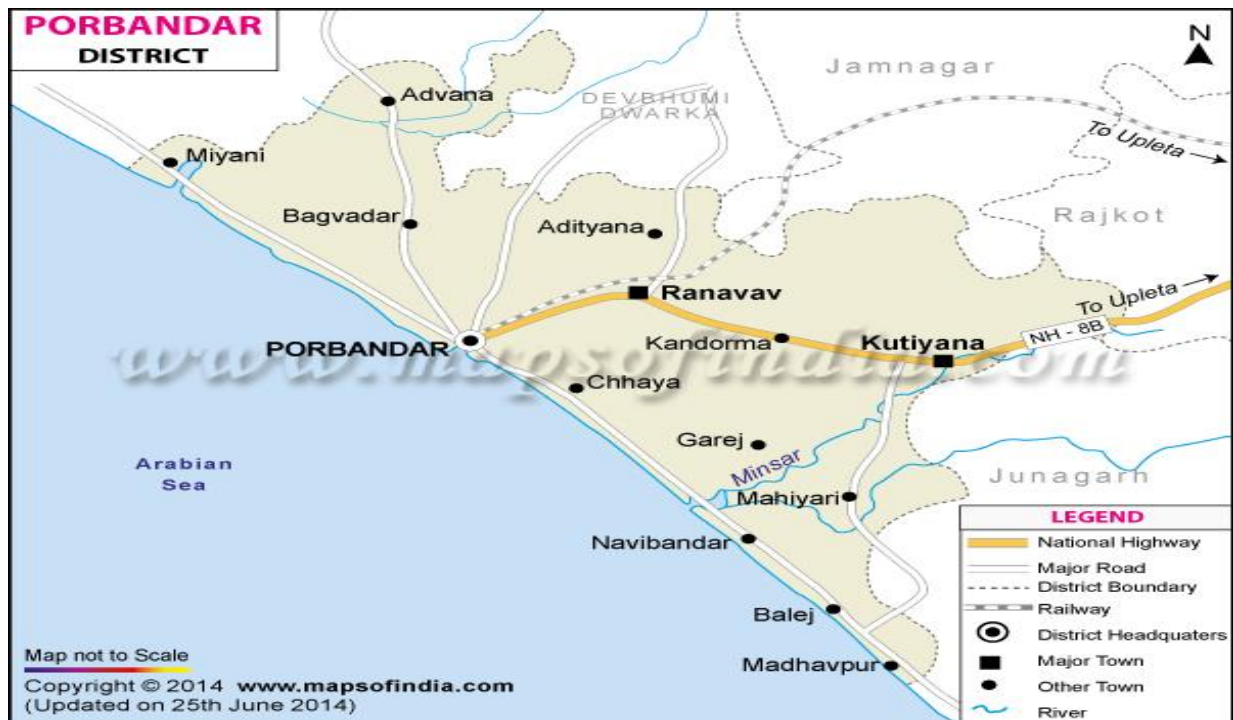




## DISTRICT DISASTER MANAGEMENT PLAN PORBANDAR DISTRICT- 2024



Disaster Management Branch, Collector Office,  
Porbandar

Gujarat State Disaster Management Authority



# **District Disaster Management Plan**

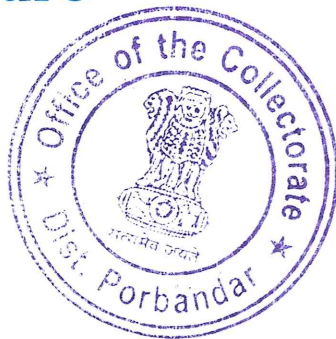
**Year: 2024**

**Name of District : Porbandar**

**Name of Collector : Shri K.D.LAKHANI, IAS**

**Date of Submission : 30/04/2024**

**Signature :**



**COLLECTOR  
Porbandar**

**Disaster Management Branch**

**Collector office**

**Porbandar**

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A disaster refers to a catastrophe, mishap, calamity or grave occurrence from natural or man-made causes, which is beyond the coping capacity of the affected community. Disaster management involves a continuous and integrated process of planning, organizing, coordinating and implementing measures which are necessary and expedient for:

- Prevention of danger or threat of any disaster.
- Mitigation or reduction of risk of any disaster or its severity or consequences.
- Capacity building including research and knowledge management.
- Preparedness to deal with any disaster.
- Prompt response to any threatening disaster situation or disaster.
- Assessing the severity or magnitude of effects of any disaster.
- Evacuation, rescue and relief.
- Rehabilitation and reconstruction.

India is vulnerable, in varying degrees, to a large number of natural as well as man-made disasters. 58.6 percent of the landmass is prone to earthquakes of moderate to very high intensity; over 40 million hectares (12 percent of land) is prone to floods and river erosion; of the 7,516 km coastline, close to 5,700 km is prone to cyclones and Tsunami; 68 percent of the cultivable area is vulnerable to drought and hilly areas are at risk from landslides and avalanches. Further, the vulnerability to disasters of Chemical, Biological, Radiological and Nuclear origin and Terrorism also exists.

Gujarat is prone to multiple natural and human induced hazards. Gujarat has the longest coastline of 1600 km in the country which makes it highly vulnerable to cyclone generated in Arabian sea and associated hazards i.e floods and storm surge. Gujarat state has a long history of earthquakes and in the recent past, it witnessed a major earthquake (6.9 on Richter scale) which had caused widespread loss of human lives and property.

Porbandar district is also prone to multiple natural hazards such as Cyclone, Flood, Storm surge, Tsunami and Earthquake and various human induced hazards. Porbandar has the coastline of 108 km stretching from Madhapur to Miyani and has low lying area called as “Ghed”. In the recent past, Tropical cyclones such as MAHA, VAYU generated in the Arabian Sea were likely to affect the district. So, Porbandar district administration has used a multi-disaster management approach (all disasters covered in single specific plan) while developing disaster management plan for the district.

## **1.1 Aims and Objectives of the DDMP**

- To assess the hazard, vulnerability, capacity and risk associated with Porbandar district.
- To prevent and minimize the loss of lives and damage to properties by developing appropriate strategies for preparedness, prevention and mitigation of disasters.
- To provide clarity on roles and responsibilities for all stakeholders concerned with various phases of disaster management.



- To build the capacity of all stakeholders in the district to cope with the disasters and promote community based disaster management.
- To mainstream the disaster management practices into the developmental planning process.
- To develop efficient, streamlined and rapid disaster response and relief mechanism in the district.
- To ensure coordination and promote partnership with all other agencies related to disaster management.
- To commence recovery programme as an opportunity to build back better in case of a future disaster by involving community in the programmed.

## **1.2 Evolution of the Plan**

Gujarat Act No. 20 of 2003, The Gujarat State Disaster Management Act, 2003 clearly stated to mandatory provision of the DM plan as per the following clause & sections:

Clause 15 of Chapter VI of Gujarat Disaster Management Act, 2003

1. The Authority shall develop or cause to be developed guidelines for the preparation of disaster management plans and strategies and keep them update and shall assist such departments of Government, local authorities and person, as may be specified by the Authority in preparation of plans and strategies and coordinate them.
2. The plan preparing authority while preparing the plan under sub section (1) shall make suitable provisions in the plan after considering the following, namely:-
  - (a) the types of disaster that may occur and their possible effects;
  - (b) the communities and property at risk;
  - (c) provision for appropriate prevention and mitigation strategies;
  - (d) inability to deal with disasters and promote capacity building;
  - (e) the integration of strategies for prevention of disaster and mitigation of its effects with development plans, programmes and such other activities in the State;
  - (f) provision for assessment of the nature and magnitude of the effects of a disaster;
  - (g) contingency plans including plans for relief, rehabilitation and reconstruction in the event of a disaster, providing for-
    - (i) allocation of responsibilities to the various stakeholders and coordination in carrying out their responsibilities;
    - (ii) procurement of essential goods and providing essential services;
    - (iii) establishment of strategic communication links;
    - (iv) dissemination of information; and
    - (v) Other matters as may be provided for in the regulations.
  - (h) Any other matter required by the Authority.
3. The Authority shall prepare, or cause to be prepared, and maintain a master plan for the State/District.

### 1.3 How to use the Plan

The DDMP can help the officials in taking important decisions and also provide guidance to direct subordinates in emergency. It helps to effectively mitigate the different types of disasters with locally available persons and resources. It also ensures a checklist for action oriented response structure and to study their preparedness level. Ultimately, Plan can be used for making district safer by responding quickly in a coordinated manner in a disaster situation and mitigating potential impact of disasters in order to save lives of people and property of the Porbandar dist.

### 1.4 Authority for the plan

As per the Disaster Management Act, 2005, the District Disaster Management Authority to be formed in each district and it will be nodal agency for preparation, functioning and review of the District Disaster Management Plan (DDMP).

The Gujarat State Disaster Management Act of 2003 authorizes the collector to secure cooperation and assistance from other parties to prevent or reduce the impact of disasters.

The collector (specifically) and the Government authorities (generally) are responsible for managing potential hazards and disasters with the support from GSDMA, the Relief Commissioner and other public and private parties as may be needed.

### 1.5 Stakeholders and their responsibilities

At the district level, District Collector is responsible for responding any disaster situation in consultation with other line departments to deal with all phases of disaster management within district. When an area is declared disaster affected area the Collector may issue directions to the officers of the departments of the Government and the local authority in the affected area, to provide emergency relief in accordance with the disaster management plans.

Sr No	Stakeholders/Line departments	Responsibilities
I	<ol style="list-style-type: none"><li>1. Mamlatdar (Porbandar, Ranavav and Kutiyana)</li><li>2. Executive Engineer, Irrigation dept. (State/Panchayat), Porbandar</li><li>3. Executive Engineer, Salinity Control dept., Porbandar</li><li>4. Superintendent Engineer, PGVCL, Porbandar</li><li>5. Chief Officers (Porbandar, Chhaya, Ranavav and Kutiyana)</li><li>6. Port officer, GMB,</li></ol>	<ul style="list-style-type: none"><li>• Ensure operation of the control room at the concerned office from 1<sup>st</sup> June every year and Mamlatdar must ensure operational of taluka control room throughout the year.</li><li>• Physical verification of the disaster management equipments such as Boat, de-watering pumps, Electric Generator, Emergency vehicles, life jackets, life buoy ring etc. All the mentioned resources/equipments must be in working conditions.</li><li>• All control room must inform and report district control room (DEOC) any incident of mishap/emergency/disaster/heavy rainfall/loss of life/damage to property.</li></ul>

	Porbandar 7. Assistant director of fisheries, Porbandar	
II	1. Executive Engineer, Irrigation dept.(State/Panchayat), Porbandar 2. Executive Engineer, Salinity Control dept., Porbandar 3. Executive Engineer, Salinity Control dept., Porbandar 4. Executive Engineer, GWSSB, Porbandar	<ul style="list-style-type: none"> <li>• Ensure 24*7 operational of dam sites control room and daily reporting to district control room on dam level, inflow and outflow of water.</li> <li>• Communicate to DEOC before opening of dam gate and any flood warning messages with list of villages which can be affected at downstream.</li> </ul>
III	1. Executive Engineer, Road and Building dept (State/Panchayat) Porbandar 2. Project Director, NHAI (Rajkot, Veraval & Khambaliya) 3. Superitendent Engineer, PGVCL, Porbandar 4. B.S.N.L. Dept.	<ul style="list-style-type: none"> <li>• Keep a list of earth moving and cleaning vehicles/equipments ready.</li> <li>• Putting signage of flood level and vulnerable road, repair of bridges and culvert.</li> <li>• Inspection and emergency repair of shelter homes.</li> <li>• Inspection and health-check ups of roads/bridges, public utilities &amp; buildings.</li> <li>• Repair and restoration of road inundated due to flood or blocked for uprooted tree, electric pole and communication line due to cyclone.</li> <li>• Restoration of power-supply and communication line.</li> </ul>
IV	Executive Engineer, GWSSB, Porbandar	<ul style="list-style-type: none"> <li>• Prior arrangement of water tankers and means of distribution and storage of water.</li> <li>• Ensure chlorinated drinking water supply to every household and at shelter homes.</li> <li>• Adequate arrangement to provide halogen tablets.</li> </ul>
V	Superitendent Engineer, PGVCL, Porbandar	<ul style="list-style-type: none"> <li>• Repair of electric poles at low lying area (Ghed vistar).</li> <li>• Restoration of electric supply dammges due to flood or cyclone.</li> <li>• Daily reporting to DEOC on electric supply cut off villages or any regions.</li> </ul>

VI	District Education officer and DPEO, Porbandar	<ul style="list-style-type: none"> <li>Physical inspection of shelters cum School buildings. Ensure cleanliness and availability of kitchen, drinking water, toilet, bath room and lighting before any disaster.</li> </ul>
VII	Civil surgeon, Bhavsinhji Hospital, Porbandar	<ul style="list-style-type: none"> <li>Forming Rapid Response Team for medical response to disaster victims.</li> <li><b>Adequate supply of medicines/medical equipments for covid-19, life saving drugs.</b></li> <li>Medical team mobilization plan.</li> <li>Arrangements of standby generator at Hospitals.</li> <li><b>Isolation facility in shelter-homes.</b></li> <li><b>Blood donor list (Covid-19 screening)</b></li> </ul>
VIII	Chief District Health Officer, Porbandar	<ul style="list-style-type: none"> <li>Ensuring public health facilities with essential medicines at water logging villages of Ghed area.</li> <li>Chlorination of drinking water, contaminated flooded places and distribution of chlorine tablets to victims or necessary action to be taken for containing the epidemic.</li> <li>Deployment of medical check-up teams at different shelter homes.</li> <li><b>Testing/Screening in low lying areas. (Ghed)</b></li> <li>Preposition of mobile van for primary health care at vulnerable and strategic point.</li> <li><b>Immunity drive for people who are likely to be affected during flood.</b></li> </ul>
IX	General Manager, State Transport (GSRTC), Porbandar	<ul style="list-style-type: none"> <li>Informing district control room regarding closed route and water logging villages and alternate route for same.</li> <li>Arrangement for buses which can be used for transporting victims to shelter homes and for any vehicle requirement for NDRF or SDRF team.</li> <li>Sharing information to R&amp;B regarding damaged roads.</li> <li><b>Sanitization of vehicles used.</b></li> <li><b>In order to maintain social distancing during evacuation, more number of buses will be required for evacuation.</b></li> </ul>

X	<ol style="list-style-type: none"> <li>1. Port officer, GMB, Porbandar</li> <li>2. Assistant director of fisheries, Porbandar</li> </ol>	<ul style="list-style-type: none"> <li>• Communicating cyclone warning messages and sea conditions to DEOC.</li> <li>• Communicating signal hoisted at Porbandar port to DEOC.</li> <li>• Implement ban on fishing from June to end of the monsoon.</li> <li>• Communicating the following fishermen information to DEOC. <ol style="list-style-type: none"> <li>a. No of fishermen ventured into the sea and No of returned fishermen.</li> <li>b. Type of boat and No of boats ventured into the sea and returned numbers.</li> </ol> </li> </ul>
XI	Superintendent of Police, Porbandar	<ul style="list-style-type: none"> <li>• Maintaining law and order during evacuation of vulnerable populations to Shelter homes.</li> <li>• Undertaking strict action against spreading rumour during emergency situation and disseminating precautionary measures and sensitizing the people.</li> <li>• Liaisoning with Search and Rescue team such as NDRF, SDRF and Army and assisting the S&amp;R operation.</li> </ul>
XII	District Supply Officer, Porbandar	<ul style="list-style-type: none"> <li>• Distribution of relief materials such as food packets, rations, packaged water and food during disaster situation. Coordinating with NGOs/CBOs working in relief distribution. Food packets should consists of immunity boosting food items such as dates, roasted chana, lemon etc.</li> <li>• Make availability of two month advanced stock of rations in Ghed area prior to monsoon.</li> <li>• Supplying rations at kitchen in shelter homes.</li> <li>• It should be ensured that food packets are properly disinfected.</li> <li>• Distribution from FPS should be done with social distancing. Shops-keeper should use goggles, mask and head caps.</li> </ul>
XIII	<ol style="list-style-type: none"> <li>1. Area manager, BSNL, Porbandar</li> <li>2. All mamlatdars, TDOs</li> <li>3. All Prant officers</li> <li>4. District Panchayat Office</li> </ol>	<ul style="list-style-type: none"> <li>• Maintaining the Communication services such as telephone, fax, Wireless set, and internet in working conditions.</li> <li>• Maintaining list of vulnerable mobile towers and restoration of line if uprooted due to cyclone quickly.</li> </ul>

XIV	1. District Development Officer 2. All Mamlatdars, TDOs, COs	<ul style="list-style-type: none"> <li>Forming of various loss and damage assessment team and submitting loss and damage report due to impact of disaster to DEOC.</li> <li>Supervision of payment of compensation to beneficiaries.</li> <li><b>Capacity enhancement and identification of more shelter homes for maintaining social distancing.</b></li> <li><b>Creating quarantine facilities at shelter homes.</b></li> </ul>
XV	District Agriculture Office	<ul style="list-style-type: none"> <li>Adequate stocks of seeds and agro inputs.</li> <li>Strategy for quickly and timely assesment and reporting of crop loss.</li> <li><b>APMC sanitization and following social distancing.</b></li> </ul>
XVI	Dy director of Animal husbandry, Porbandar	<ul style="list-style-type: none"> <li>Disposal of animal deadbody and survey for animal death relief.</li> <li>Medical check-up for animal health evacuated at shelters.</li> </ul>
XVII	Assistant director of Information	<ul style="list-style-type: none"> <li>Dissemination of information to public regarding do's &amp; don'ts &amp; media management.</li> <li><b>Awareness generation for social distancing and use of sanitizer and mask.</b></li> </ul>
XVIII	NGOs/CBOs/Private organization/Volunteer organization	<ul style="list-style-type: none"> <li>Distribution of food packets and other relief materials.</li> <li>Helping district administration in disaster relief and response acivities.</li> </ul>

## 1.6 Approval of the Plan

The line departmennts and other stakeholders of the district submit a copy of updated departmental disaster management plan to the collector for approval of the plan.

The collector will submit a copy of updated district disaster management plan to the State Disaster Management Authority and Relief Commissioner for approval of the plan.

## 1.7 Plan review and Updation

All line departments and stakeholders of district should periodically review and update the disaster management plan and submit the updated plan to the collector office. The same compiled DDMA should be reviwed and updated periodically and a copy should be submitted to District Disaster Management Authority and State Relief Commissioner for review of the plan.

Normally, the District Disaster Management Plan is updated twice in a year for review and updation. It should be prepared in pre-monsoon phase in the month of May and it is to be updated in post-monsoon phases i, e in the month of November every year.



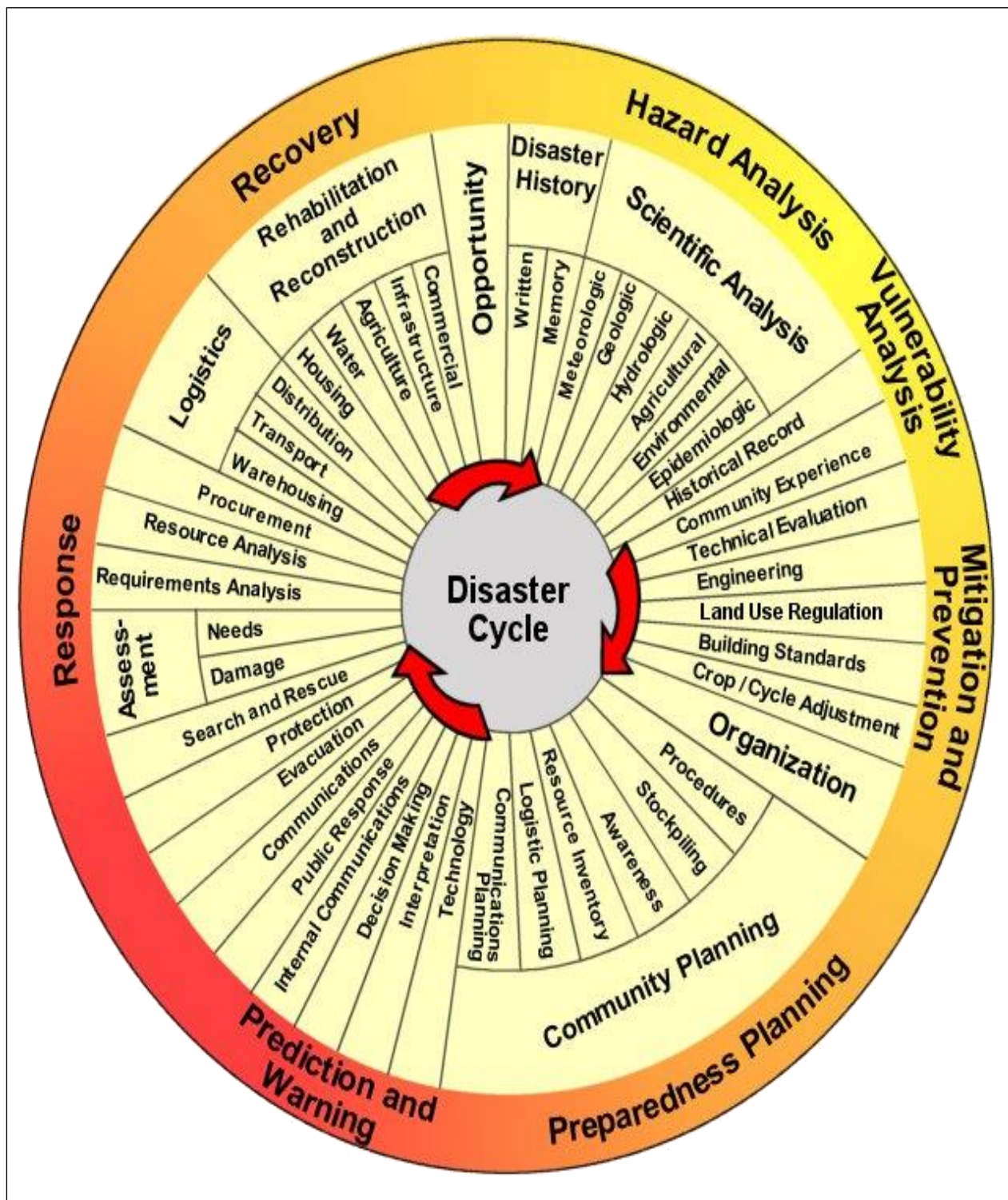


Figure 1.1: Showing Disaster Management Cycle

## **Chapter: II Hazard Vulnerability and Risk Assessment.**

### **2.1 Matrix of Past disasters in the district**

Porbandar district is located at the sea shore of Arabian Sea. The district is in multi hazard prone area. The threat (risk) and possible impact (vulnerability) which can be actualized from these hazards ranges from minor impacts affecting one village to events impacting larger than the district alone. The past disasters experienced by Porbandar district are mentioned in following tables.

#### **Past disaster history of Porbandar district: a statistical overview**

Sr No	Flood	Cyclone	Earthquake	Drought
1	1983	1918	2001	1987-1988
2	2007	1962		1998-1999
3	2013	1975		1999-2000
4	2019	1976		2000-2001
5		1978		2002-2003
6		1981		
7		1982-83		
8		1998		
9		2005		
10		2006		
11		2019 Vayu		
12		2021 Tauktae		
13		2023 Biparjoy		

#### **A. Report of damaged caused by severe cyclone storm in Porbandar district in 1998.**

Sr no	Year	Details of Cyclone	Details of damages & loss due to Cyclone						Damage to govt. property	Damage of property
			Total no.of human death	Paid Assistance	Cattle death	Paid Assistance	Damaged houses	Total assistance		
1	2	3	4	5	6	7	8	9	10	11
1	1998	Dt.9/6/98 with speed 80- 90km/ hour	27	24, 20,000/	737	12, 19,450	29369	207 lakh	10,341 Lakh	6,701 Lakh



Sr no	Date/Year	Category of cyclone	Landfall and relevant information
1	9-13 June, 1964	Severe Cyclonic Storm	Crossed Gujarat coast just west of Naliya during the late forenoon on 12 June. Maximum wind speed for Porbandar: 74 km/hr
2	19-24 October, 1975	Very Severe Cyclonic Storm	Crossed Saurashtra coast about 15 km to the northwest of Porbandar at 1500 hours IST of 22 October.  Maximum wind speed for Porbandar was 110 km/hr  Surge height: 4-6 mtr Loss and damage: People killed:85, several thousands of houses were damaged, many trees/electric/telephone poles/roof tops blew; a train was also blow off its rail, loss of property was estimated to be rs 75 crores.
3	4-10 June, 1998	Very Severe Cyclonic Storm	Crossed Gujarat coast near Porbandar between 0630 and 0730 hrs IST of 9 June Surge height: 2-3 mtr

Source: <http://www.rsmcnewdelhi.imd.gov.in/images/pdf/sop.pdf>

**B. Details about total assistance provided during drought in 2002-03**

Sr. no.	No. of affected villages			Total no. of human working days	Details of Completed work	Total grain distributed	Total no. of expenditure
	Totally affected villages	Partially affected	Total				
1	46	109	155	1807076	558	3365.65 tonne	576.11 Lakh

**Detail about Flood in 2013 Date:26/9/2013 and 27/9/2015**

Sr. no.	No of Taluka affected	Human death details	Animal Death	Normal damage to Houses	Assistance to affected People	Damage to Crops (in hectr.)
1	3	2 Ranavav-1 Kutiyana-1	12	22 14 - Kaacha 8 -Pucca	Human Death-4 Lacks Cash dolls-1600 Person Covered-Rs.120000/- In House damage-Rs-18400/- Paid in 14 cases.	Porbandar-1995 Ranavav -20 Kutiyana-4800

**Temporary evacuation at City and village level (27/9/2013)**

Sr. No	Name of Taluka	Name of Village/City	Total No of Person
1	Porbandar	Garej	200
2		Bhad	1200
3		Delodar	465
4		Erda	650
5		Keshod-Lusala	282
6		Mitralla	650
7	Kutiyana	Kachabad	250
8		Kotada	150
9		Amipur	22
10	Kutiyana-City Area	Chunala Vash	20
Total			3889

**C. Details about Earthquake – 2001 and assistance distributed during earthquake-2001.****Details about relief and assistance provided post earthquake-2001**

Sr. No.	Name of the Taluka	Death		Total	Assistance paid in Lakhs	No. of Injured Person	Assistance paid to injured persons	Cash dolls paid to beneficiaries	Fully damaged houses	Partially damaged	Assistance paid Rs. in Lakhs
		Adult	Minor								
1	2	3	4	5	6	7	8	9	10	11	12
1	Porbandar	2	1	3	2.60	31	2.04	21.63	1602	6379	467.23
2	Ranavav	1	2	3	2.20	10	0.37	16.87	534	6305	234.73
3	Kutiyana	3	-	3	3.00	38	0.98	15.49	1291	7815	301.75
	<b>Total</b>	<b>6</b>	<b>3</b>	<b>9</b>	<b>7.80</b>	<b>79</b>	<b>3.39</b>	<b>53.99</b>	<b>3427</b>	<b>20499</b>	<b>1003.71</b>

#### D. Evacuation details of Porbandar district during VAYU cyclone-2019

Sr n o	Dist.	Taluk a	No of evacuat ed villages					Provis ion of Food				
				M	F	C	Total		Cycl one shelt er	Scho ol	Others	Total
1	PBR	PBR	35	10235	9467	8641	28343	Provi ded food packet s	0	45	9	54
2		RNV	31	1663	1606	1204	4473		0	41	12	53
3		KTY	28	2852	2801	1754	7407		0	22	21	43
Total			94	14750	13874	11599	40223		0	108	42	150

\*\* M: Male, F: Female, C: Children

#### E. Evacuation details of Porbandar district during TAUKTAE cyclone-2021

S. N .	Talu ka	Villa ge	No of Vil lag e	Popul ation	likel y to be evac uate d	No of Evacuated population				Evacu ated at shelte rs	A t C C C	At othe r	Total evacu ated	No of Food packet s
						M	F	C	Total					
1	KTY	Vlg	29	71229	2550	1294	1029	921	3244	485	0	2759	3244	360
		City	1	14282	410	399	302	270	971	315	0	656	971	661
	Total		30	85511	2960	1693	1331	1191	4215	800	0	3415	4215	1021
2	RNV	Vlg	13	60350	862	876	781	425	2082	541	0	1541	2082	2082
		City	1	52000	140	131	105	78	314	30	0	284	314	314
	Total		14	112350	1002	1007	886	503	2396	571	0	1825	2396	2396
3	PBR	Vlg	29	111223	1137	2039	1850	1067	4956	4814	0	142	4956	1042
		City	1	223917	4554	5774	4904	2904	13582	13562	0	20	13582	13582
	Total		30	335140	5691	7813	6754	3971	18538	18376	0	162	18538	14624
Dist. Total			74	533001	9653	10513	8971	5665	25149	19747	0	5402	25149	18041

\*\* M: Male, F: Female, C: Children, CCC: Covid Care Centre

## F. Damage and Loss Assessment report of Porbandar district post Cyclone-TAUKTAE 2021

No	Affected taluka	Human deaths	Animal deaths	Human Injury	Power supply cut-off villages	Power supply restored villages	Blocked road	Motable road	Damaged Electric poles	Damaged Kutch a/pucca houses	Damaged govt. buildings	No of uprooted trees	Covid hospital	Power cutoff in hospital	Crop loss area (in ha)	Crop loss area (horticulture in Ha)
1	PBR	0	0	0	50	50	0	0	49	0	2	2	1	0	00	40
2	RNV	0	0	0	43	43	1	1	12	0	1	0	0	0	00	150
3	KTY	0	0	0	44	44	1	1	17	0	0	0	0	0	00	0
Total		0	0	0	137	137	2	2	78	0	3	2	1	0	00	190

\*\* PBR: Porbandar, RNV: Ranavav, KTY: Kutiyana, Ha: Hectare

## G. Evacuation details of Porbandar district during Biparjoy cyclone-2023

No.	Taluka	No of Evacuated population			Evacuated at shelters	At CCC	At other	Total evacuated
		Adults	Children	Total				
1	PBR	2176	1152	3328	2847	0	481	3328
2	RNV	825	523	1348	1348	0	0	1348
3	KTY	898	333	1231	851	0	380	1231
Total		3899	2008	5907	5046	0	861	5907

\*\* CCC: Covid Care Centre

## H. Damage and Loss Assessment report of Porbandar district post Cyclone-Biparjoy 2023

No	Affected taluka	Human deaths	Animal deaths	Human Injury	Power supply cut-off villages	Power supply restored villages	Blocked road	Motable road	Damaged Electric poles	Damaged Kutch a/pucca houses	Damaged govt. buildings	Power cutoff in hospital	Crop loss area (in ha)	Crop loss area (horticulture in Ha)
1	PBR	1	0	0	76	76	0	0	821	22	0	0	00	00
2	RNV	0	0	0	33	33	0	0	239	3	0	0	00	00
3	KTY	0	0	0	48	48	0	0	134	6	0	0	00	00
Total		1	0	0	157	157	0	0	1194	31	0	0	00	00

\*\* Ha: Hectare

## **2.2. Hazard, Vulnerability and Risk Assessment- Authority that carried out HVRA**

Porbandar district is prone to number of hazards like Cyclone, Flood, Tsunami, Fire, Lightning, Earthquake, Heat wave, Road accidents, Boat sinking, Epidemic and Industrial accidents which poses a potential risk for the vulnerable population.

All the three taluka i.e. Porbandar, Ranavav and Kutiyana of the districts are vulnerable for the Cyclone and 28 coastal villages of Porbandar taluka are most vulnerable for Cyclone and Tsunami.

Mamlatdars, Taluka development Officers and Chief Officers of the taluka carried out the hazard, vulnerability and risk assessment considering the past disasters, field exposures and experiences. Resources mapping, identification of the safe infrastructure and vulnerable villages and cities are carried out by them.

## **2.3 Tools and methodology used for HVRA**

HVRA is being carried out by considering the past disasters, field exposure, resources mapping, identification of safe infrastructures and risk prone area by Mamlatdars, TDOs and COs.

All events or activities carry some risk and are associated with some level of vulnerability. Risk and vulnerability ranking is the process of assigning scores to the risk and possible impact of hazards to be able to compare the likely vulnerability and make informed management decisions about which hazards are of greatest concern and when planning and preparation efforts should be directed. A risk and vulnerability ranking process has accomplished in seven steps.

### Step 1: Identify the Hazards of Concern

Identify the hazards of the district considering the past experiences, history of disaster event and technological intervention. (Refers the table: 2.6)

### Step 2: Assign the Probability ratings

Assess the probability or "likelihood" of each hazard by reaching a consensus on probability and then assign each hazard a "Probability Level," as indicated in the following table. Enter the score for each hazard in the probability column of the table 2.6.

Probability	Score	Description
Almost certain	5	A regular event, on the average at least once in a 12 month period
Likely	4	Will occur at least once every two years.
Moderate	3	Will occur at least once every 5 years.
Unlikely	2	Will occur sometime in a 25 years period.
Rare	1	Can be expected to occur sometime in a 100 year period

### Step 3: Assign the Impact ratings

Assess the potential magnitude or impact of each hazard and assign each an "Impact Level" as in the following table. Enter the impact score for each hazard in the table 2.6.

Impact	Scope	Description
Catastrophic	5	Massive insecurity, substantial loss of life likely. Large and generalized assistance urgently needed for large segments of population. Additional management, administrative, and technical expertise urgently needed. Large volumes of materials inputs needed.
Major	4	Security threatened for large segments of population; substantial impacts on vulnerable groups likely. Some loss of life likely. Life-saving programs likely needed to handle impact of emergency situation. Large volumes of material inputs and additional administrative staff and technical expertise likely to be needed.
Moderate	3	Security is threatened for potential target groups, some interventions may be needed, particularly for groups who likely face increase in vulnerability. Organization can likely respond with existing country/regional management structures.
Minor	2	Momentary insecurity local groups able to respond adequately to those in need. Some technical assistance by organization may be helpful to local respondents, although not urgently needed.
Insignificant	1	Little or no significant change in conditions, no expected loss of life, injuries or significant loss of property for usual target groups as the result of the hazard Normal operations continue.

#### Step 4: Assign the "Vulnerability" Ranking

Multiply the probability and the impact scores to get the vulnerability ranking. The resulting score indicates crude vulnerability. Scores above 15 indicate high vulnerability; scores between 7 and 15 indicate medium vulnerability and scores below 7 indicate low vulnerability.

Probability Rating: Class and (score)	Impact Rating: Class and (score)				
	Insignificant (1)	Minor (2)	Moderate (3)	Major (4)	Catastrophic (5)
Almost certain (5)	Low-5	Moderate-10	Moderate -15	High-20	High-25
Likely (4)	Low-4	Moderate-8	Moderate -12	High-16	High-20
Moderate (3)	Low-3	Low-6	Moderate -9	Moderate - 12	Moderate -15
Unlikely (2)	Low-2	Low-4	Low-6	Moderate -8	Moderate -18
Rare (1)	Low-1	Low-2	Low-3	Low-4	Low-5

#### Step 5: Identify areas with highest Vulnerability

Once vulnerability ranks have been identified, the locations and populations considered most vulnerable should be identified. This aids in knowing where disaster assistance may be most needed, as well as providing a quick indication of where vulnerability reduction efforts could be most productive.

#### Step 6: Resource analysis and Capacity analysis

Once the vulnerability is assessed, Available disaster management resources and safe infrastructures are mapped. Resources inventory of disaster management equipments such as Boats, de-watering pumps, tree cutters, Emergency light, Evcavators, generators and other equipments are prepared. Availability of Human resources such as medical team, Search and Rescue team, Swimmers and volunteers are analysed.

The capacities of the people and the communities they live in are the basic building blocks for disaster preparedness, response and development. Capacities are the resources and skill people posses, can develop, mobilize or have access to, which allow them to have more control over shaping their own future. Facilities of critical safe infrastructures such as Hospitals, Shelters, Road and transport are being assessed. Trained and awared community who are the first responder to disaster situation are also considered for capacity analysis.

#### Step 7: Risk assessment

Risk is the measure of the expected loss due to a hazard event of a particular magnitude occurring in a given area over a specific period of time. Finally, Risk assessment of a region is done with multiplying the Hazard with Vulnerability and decreasing the risk considering the capacity and available resources inventory.

**So, Risk =Hazard \* Vulnerability/Capacity**

## **2.4. Hazard Analysis**

Because of its geographical location, Porbandar district is vulnerable to major natural hazards like Cyclone, Flood, Earthquake, Tsunami and Drought and other human made disasters like fire, road accident and epidemic like covid-19.

### **Cyclone:**

Porbandar district has coastline of 108 km extending from Madhapur to Miyani and located near to East Central Arabian Sea. In recent past, Tropical cyclone such as Vayu, Maha and Tauktae were formed in the Arabian Sea. There are 28 coastal villages of Porbandar taluka which are very likely to affect by impact of cyclone.

### **Flood:**

Porbandar district has low lying villages called as Ghed region which are drained by rivers such as Bhadar, Ozat, Minsar and Vartu-2. Most of the rivers drained water into the Creek which surround many villages and Porbandar city. Most of the rivers have narrow channel flowing through the coastal plains and small dams such as Bhadar 2, Vartu 2, Rana Khirosara and Amipur dam have been constructed on rivers to regulate the flow. Big dams are also located on the upper stream of the rivers. So, Porbandar is very likely to be affected by flood situation if there is heavy rainfall and over flow of dams located at the upper stream of neighborhood district such as Junagadh, Dev-bhoomi Dwarka and Rajkot.

### **Earthquake:**

Porbandar district comes under Earthquake Zone 3. City and crowded places having unplanned settlement without earthquake resistant housing structures are more likely to be affected by the impact of Earthquake.



## 2.5. Hazard seasonality mapping of the Porbandar district

Sr. no.	Hazard	Probable months of occurrence											
		Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sep	Oct	Nov	Dec
1	Flood						✓	✓	✓	✓			
2	Thunderstorm & Lightning					✓	✓	✓	✓	✓			
3	Cyclone				✓	✓					✓	✓	
4	Drought						✓	✓					
5	Earthquake	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓
6	Fire		✓	✓	✓	✓							
7	Tsunami	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓
8	Heat wave				✓	✓	✓						
9	Industrial disaster	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓
10	Epidemic (Covid-19)	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓

## 2.6. Vulnerability analysis

Hazards	Probability Rating	Impact Rating	Vulnerability Ranking	Vulnerable Areas/Taluka	Vulnerable Population
High Wind (Cyclone)	4	4	16 (high)	Very high damage risk zone B (50 m/s): Porbandar, Ramada & Koriyama.	3.15 lakh Population (79 villages in the district likely to be affected.), also 28 village near the sea-coast are the most vulnerable. (Including town Porbandar) and Porbandar port area, Birla factory and Super gas terminal at Zavar are also the most vulnerable location.
Flood	5	3	15 (moderate)	May occur due to heavy rain fall, cyclone, sea surge or dam failure	Mainly water logging problem found near wetland and marshy land of urban land rural region and at Ghed area comprised of 35 villages.
Sea surge	4	4	16 (high)	Coastal taluka i.e., Porbandar	2.50 lakh 38 villages
Thunder	5	3	15	Three taluka i.e.	Rural population

Hazards	Probability Rating	Impact Rating	Vulnerability Ranking	Vulnerable Areas/Taluka	Vulnerable Population
storm/lightning			(moderate)	Porbandar, Ranavav and Kutiyana	
Heat wave	5	3	15 (Moderate)	Urban slum pockets, all taluka	Both rural & urban population
Drought	4	3	12 (moderate)	whole district	
Fire	3	3	9 (moderate)	Mostly in urban pockets such as port area, industrial areas, ware-houses, God owns (including rural areas)	
Industrial Accidents	4	2	8 (moderate)		Tycoon and population residing near the Industries.
Earthquake	2	4	8 (moderate)	<b>Zone- III :</b> Porbandar Ranavav Kutiyana	Urban population are more vulnerable.
Boat sinking	2	1	2 (Low)	Porbandar taluka	Porbandar
Building collapse	1	2	2 (Low)		
Landslides / Mud flows	1	1	1 (Low)		
Epidemic	2	4	8 (Moderate)		Skin diseases are reported among Ghed people, due to water-logging problem. 5 positive cases of Covid-19 have been reported in district.
Animal disease	1	1	1 (Low)		
Food poisoning	1	1	1 (Low)		

Hazards	Probability Rating	Impact Rating	Vulnerability Ranking	Vulnerable Areas/Taluka	Vulnerable Population
Dam failure	1	1	1 (Low)	District has no major dams but has 6 medium / minor dams	
Civil unrest	1	1	1 (Low)		

The district has special plans for flood affected areas. There are 35 inaccessible villages during monsoon known as **durgam vistar in Ghed regions**. For these villages, food and **civil supplies are provided two months well in advance** before the onset of monsoon.

## 2.7. Resource analysis

Disaster management resources/equipments available at the various line departments are mentioned in the following table. (For details information refers annexure.) Capacities of the people and the communities they live in are the basic building blocks for disaster preparedness, response and development. Capacities are the resources and skill people posses, can develop, mobilize or have access to, which allow them to have more control over shaping their own future. Facilities of critical safe infrastructures such as Hospitals, Shelters, Road and transport are being assessed.

Sr No	Name of equipments	Porbandar	Ranavav	Kutiyana	District level	Total
1	Portable inflatable lighting system	02	02	02	03	09
2	Motor cycle mounted water mist	04	00	00	00	04
3	Trolley mounted water mist	01	00	00	00	01
4	Water bowser	03	01	00	00	04
5	Mini Fire Tenker	03	01	01	00	05
6	Life jacket	63	13	45	38	159
7	Boya	87	11	30	12	140
8	Rope	40	06	03	24	73
9	FRP Boat	01	00	00	00	01
10	Speed Boat	01	00	00	00	01
11	J.C.B. Excavator	05	01	00	06	12
12	Tractor	10	02	02	00	14
13	Tree cutter	03	00	00	04	07
14	Generator	01	01	01	02	05
15	Loader Truck	04	00	00	10	14

## **Chapter: III Institutional Arrangements**

### **3.1 Organizational structure in the state**

The GSDMA (Gujarat State Disaster Management Authority) is the apex body for disaster management at state level headed by the Chief Minister. It lays down policies, plans and guidelines for disaster management and coordinates their enforcement and implementation for timely and effective disaster response and also promotes good disaster management and mitigation practices in the state. Government of Gujarat has established a framework for implementing the disaster management activities which required multi-coordination of stake holders and agencies. (Refers the figure: 3.2)

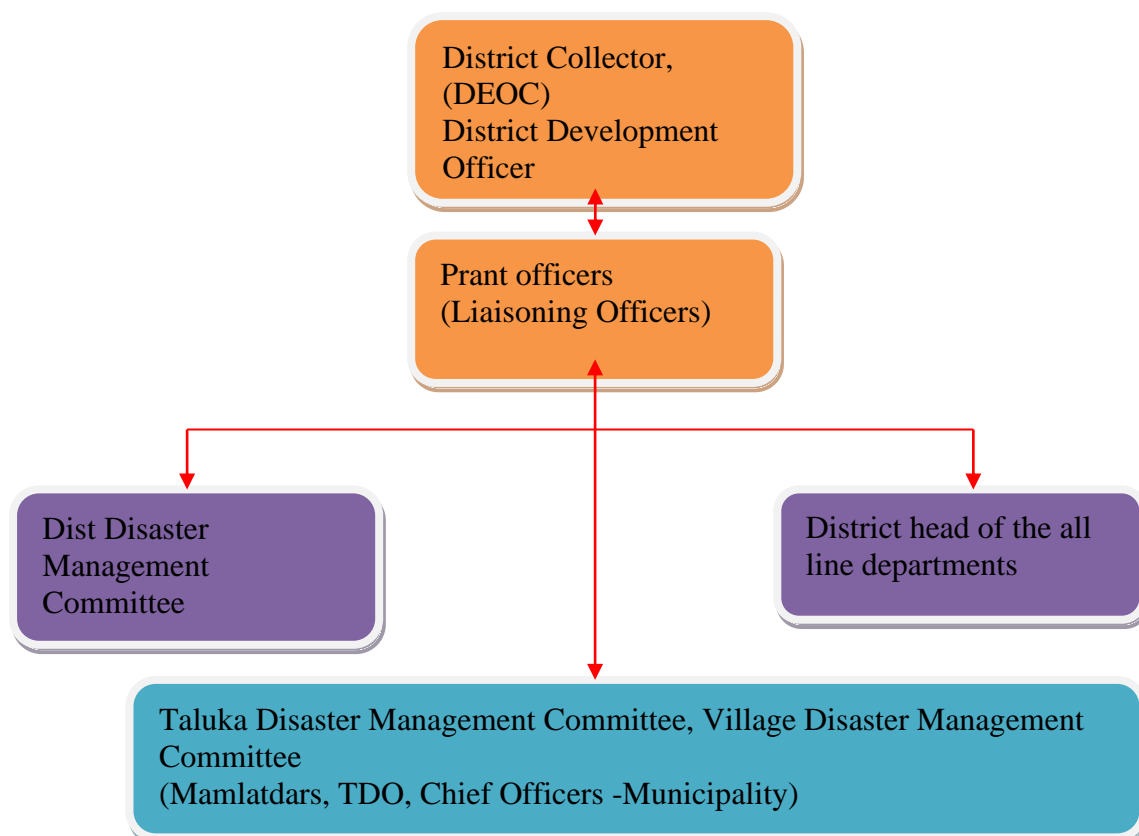
### **3.2 DM organizational structure at district level**

Porbandar district has District Disaster Management Authority chaired by the District Collector, Porbandar. District Disaster Management Committee is also working under District Collector where all line department are members. The District Search and Rescue team consists of members belonging to various departments is also set up in the district.

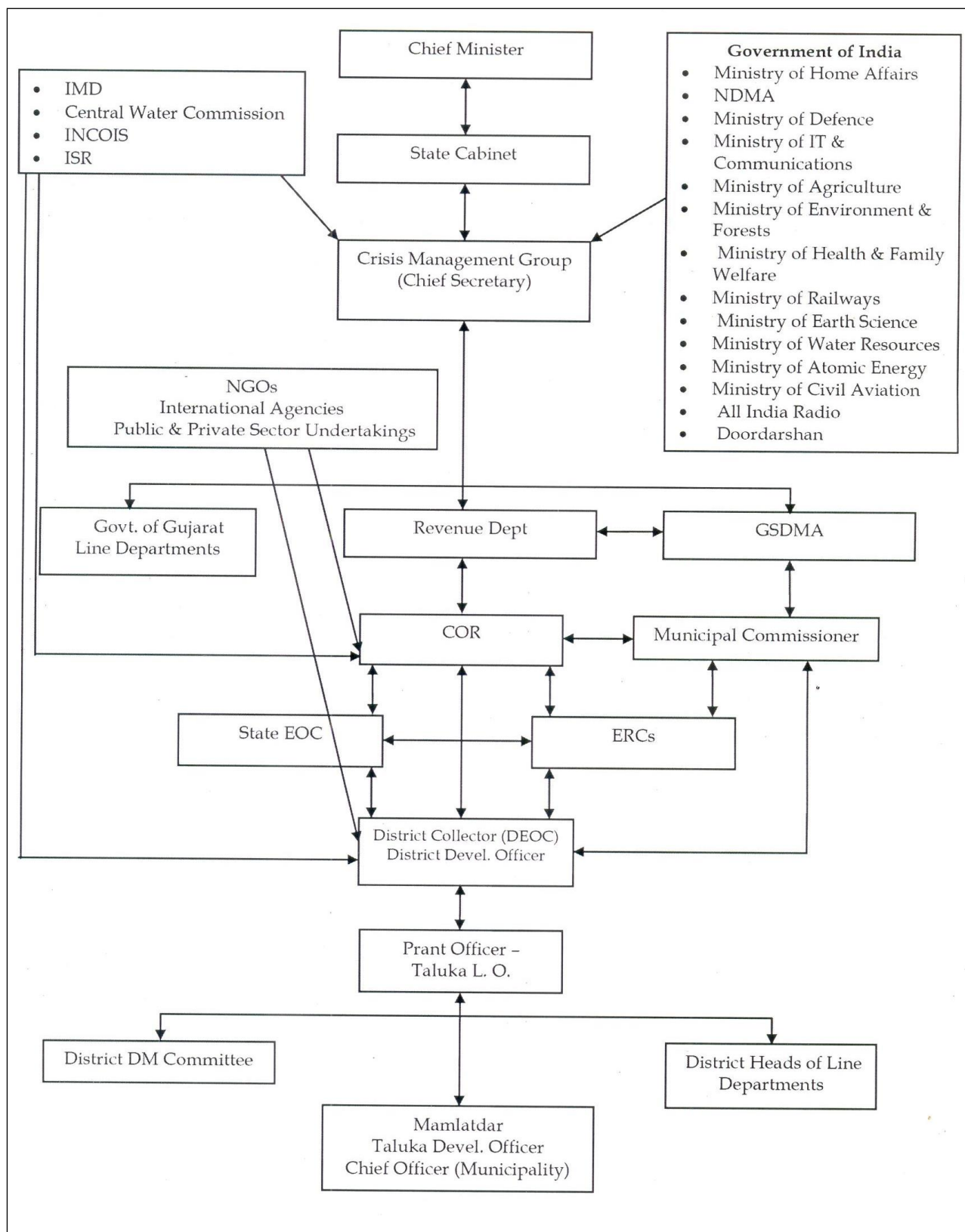
At taluka level, Taluka Disaster Management Committee is headed by the Mamlatdar. As said above all line departments at taluka level are its members. Also, a search and rescue team, as well as first aid team, have been formed at taluka level.

At village level, every village has a village disaster management committee chaired by Sarpanch includes Panchayat talati, teacher, health worker, Anganwadi worker, SHGs members and ward members.

**Figure 3.1: DM organizational structure at district level**



**Figure 3.2: Disaster Management Structure at the State**



### 3.3 District Crisis Management Group (Taskforce)

District Crisis Management Group (Taskforce) is provided with responsibility for specific functional tasks such as Search & Rescue operation, Shelter management and providing facilities for drinking water supply and providing relief materials. Porbandar district has identified 16 Task forces to carry out the tasks.

Sr. No.	Emergency Taskforces	Functions and Responsibility
1	Coordination and Planning	Coordinate early warning, response and recovery operation.
2	Administration and Protocol	Support disaster management operation by efficiently completing paper work and other administrative work needed for effective response to disaster.
3	Warning	Collection and dissemination of warning of probable disaster.
4	Law and Order	Ensure the execution of all laws and orders in the area affected with disaster.
5	Search and Rescue	Provide human and material resources needed for local evacuation, search and rescue operation.
6	Public work (Reconstruction)	Provide the human and material resources for re-constructing the damaged critical infrastructures.
7	Water supply	Ensure the adequate drinking water facilities for the human and animal consumption. If required, make provision of water for agricultural and industrial use.
8	Food and relief supplies	Ensure the provision of basic food and relief supplies in the affected area.
9	Power supply	Provide human and material resources to restoration of power supplies in the affected communities.
10	Public health, Sanitation and Hygiene	Provide human and material resources for setting temporary medical camp, health care and sanitation facilities for affected communities.
11	Animal health and welfare	Provision of health care facilities to animals affected by a disaster.
12	Shelter management	Provide materials and resources for setting temporary shelter for affected communities.
13	Logistics	Provide air, water and land transport facilities for evacuation activities and for the storage facilities and for distribution of relief supplies in

		coordination with other taskforces and competent authorities.
14	Damage survey and assessment	Collect and analyses data on the impact of disaster, develop estimates of required resources and relief plans and compile reports on disaster as required for district and state authorities and other agencies.
15	Telecommunications	Coordinate and make sure the operation of all communication systems (Radio, Telephones, T.V. wireless) required for early warning and post disaster operation.
16	Media	Coordinate and communicate with the print and electronic media on early warning and post disaster reporting concerning to disaster.

The specific response roles and responsibilities of the taskforces indicated above is that these roles and responsibilities will be executed and coordinated through the Incident Response System. For example, in flood, search & rescue would come under the Operations section, Transport would come under the Logistics Section and Public Information under the Public Information Unit.

#### **District Crisis Management Group and Composition of the Taskforces**

Sr. no.	Taskforce	Taskforce leader	Supporting members/organizations
1	Planning and Coordination	Collector	DDO, DSP,RAC, Mamlatdar and Chief officer
2	Administration and Protocol	Collector	DDO, DSP,RAC, Mamlatdar and Chief officer
3	Warning	RAC	Disaster mamlatdar, DEOC, Dist. Information Officer
4	Law and Order	DSP	Dy. SP, Home Guards Commandant, NGOs, Paramilitary and Armed Forces
5	Search and Rescue	Dy Collector	Mamlatdar, TDO, Police, Executive Engr., Fire Brigade, RTO, State transport, Health Dept.
6	Public works	Ex. Engr. R&B (State)	Ex. Engr.R&B (panchayat), Irrigation, GWSSB, Panchayat, municipalities, Home guards and Police.
7	Water supply	Ex. Engineer, GWSSB	Dy. Ex. Engr., Mamlatdar, TDO, Health and Talati



8	Food and Relief supply	Dist. Supply Officer	FPS holder, Mamlatdar, NGOs, RTO, State Transport, Municipality, DRDA, Police, Home guard
9	Power supply	Superintendent Engineer, PGVCL	BSNL, Mamlatdars, TDOs, Cos
10	Public health, sanitation and hygiene	Chief District Health Officer	Superintendent Govt. hospitals, Municipality, PHCs, CHCs, Indian Red Cross Society, Fire brigade, Civil defense, R&B, NGOs, Doctors, TDO and Mamlatdar
11	Animal health and welfare	Dy Director, Animal husbandry	Veterinary Inspector, NGOs
12	Shelter management	Dist. Primary Education Officer	School's principal, Teachers, Health dept, PHC, State transport, RTO, Water supply, Mamlatdar, TDO
13	Logistics	DDO	RTO, DSO, FPS, Public and Private sector, Mamlatdar, Municipal water supply board, Dist. Supply Mamlatdar
14	Damage survey and assessment	Collector	District Industries Centre, Dy.DDO, Ex. Engineer R&B, DAO, Fisheries dept
15	Telecommunications	RAC	Dy Mamlatdars, Mobile operators, TV, Radio, Port officer, GMB, Police, Forest department
16	Media	District Information Officer	Information department, Print media, Electronic media, Journalists, NGOs

### 3.4 District Disaster Management Committee

Sr. No.	Designation	Position in DDMC
1	Collector/ District Magistrate	Chairman
2	District Development officer	Member
3	District Superintendent of Police	Member
4	Deputy Conservator of Forest	Member
5	Resident Additional Collector	Member Secretary
6	District Supply Officer	Member
7	Executive Engineer, Road & Building dept. (State)	Member
8	Ex. Engineer, Road & Building dept. ( Panchayat)	Member

9	Executive Engineer, Irrigation dept (state)	Member
10	Ex. Engineer, Irrigation dept (Panchayat)	Member
11	Ex. Engineer, Salinity control dept.	Member
12	Ex. Engineer, GWSSB	Member
13	Superintendent Engineer, PGVCL	Member
14	District Home guard commandant	Member
15	Civil surgeon, Bhavsinhji General Hospital	Member
16	Chief District Health Officer	Member
17	Port Officer, Gujarat Maritime Board	Member
18	Assistant Director of Fisheries	Member
19	Dy. Director, Information Department	Member
20	Dy director of Animal Husbandry	Member
21	Regional Officer-GPCB	Member
22	District Agriculture Officer	Member
23	S.D.M., Porbandar	Member
24	S.D.M., Kutiyana	Member
25	Manager, S.T. Depot, GSRTC	Member
26	A.R.T.O., Porbandar	Member
27	District Education Officer	Member
28	District Primary Education officer	Member
29	NGO representative	Member

There will be also formulation of disaster management committee at taluka, city and village level. All this committee works under the instruction of Chairman (District Collector) before, during and post disaster activities. The disaster management committee at taluka, city and village level is described below:

#### **Taluka Disaster Management Committee (TDMC)**

- Taluka in charge Dy. Collector/Dy. District Development Officer
- Mamlatdar
- Taluka Development Officer
- Dy. Executive Engineer- R & B (State)
- Dy. Executive Engineer- R & B (Panchayat)
- Dy. Executive Engineer – Irrigation
- Dy. Executive Engineer –PGVCL
- Dy. Executive Engineer – Water Supply
- Junior Engineer-Telecom
- Medical Officer (PHC)
- Police Inspector/ Police Sub Inspector
- Taluka Home Guard Commandant
- Taluka Education Officer
- Godown Manager- Civil Supply Corporation
- Depot Manager – S.T.

- Port Officer
- Range Forest Officer (Head Quarter)
- Pramukhshri-Taluka Panchayat.
- MLA
- Chairman- Social Justice Committee (Taluka Panchayat)
- Woman member - Taluka Panchayat
- NGO representative
- 

**CDMC-: City Disaster Management Committee (CDMC)**

- Dy. Collector/ SDM/Dy. DDO
- Chief Officer
- Chief fire officer
- Mamlatdar
- Town planning Head
- Dy. Exe. Engineer-R&B state
- Dy. Exe. Engineer-State-Irrigation
- Dy. Exe. Engineer- PGVCL
- Dy. Exe. Engineer-GWSSB
- Junior Engineer Telecom
- Medical Officer-C.H.C.
- Medical Officer Municipality Health Centre
- Head Transport committee
- PI/PSI
- Taluka Home Guard Commandant
- Education Officer Municipality Education committee
- Port officer
- Range forest Officer-Extension
- President Municipality
- Member of Parliament
- Member of Legislative assembly
- Chairman- Standing Committee
- Chairman-Water Supply committee
- Chairman City planning committee
- Chairman Construction Committee
- Women member of Municipality
- Scheduled caste member of municipality
- Local N.G.O.
- Other members as decided by CDMC

## **Village Disaster Management Committee (VDMC)**

- Sarpanch
- Talati
- School teacher
- PHC Doctor/Health worker
- Chairmen, Milk Cooperative
- Chairman, Seva Cooperative
- Gram Sevak
- Aaganwadi worker
- Community Rep 1
- Community Rep 2
- Community Rep 3
- Fair Price shop holder

### **3.5 Incident Response System in state**

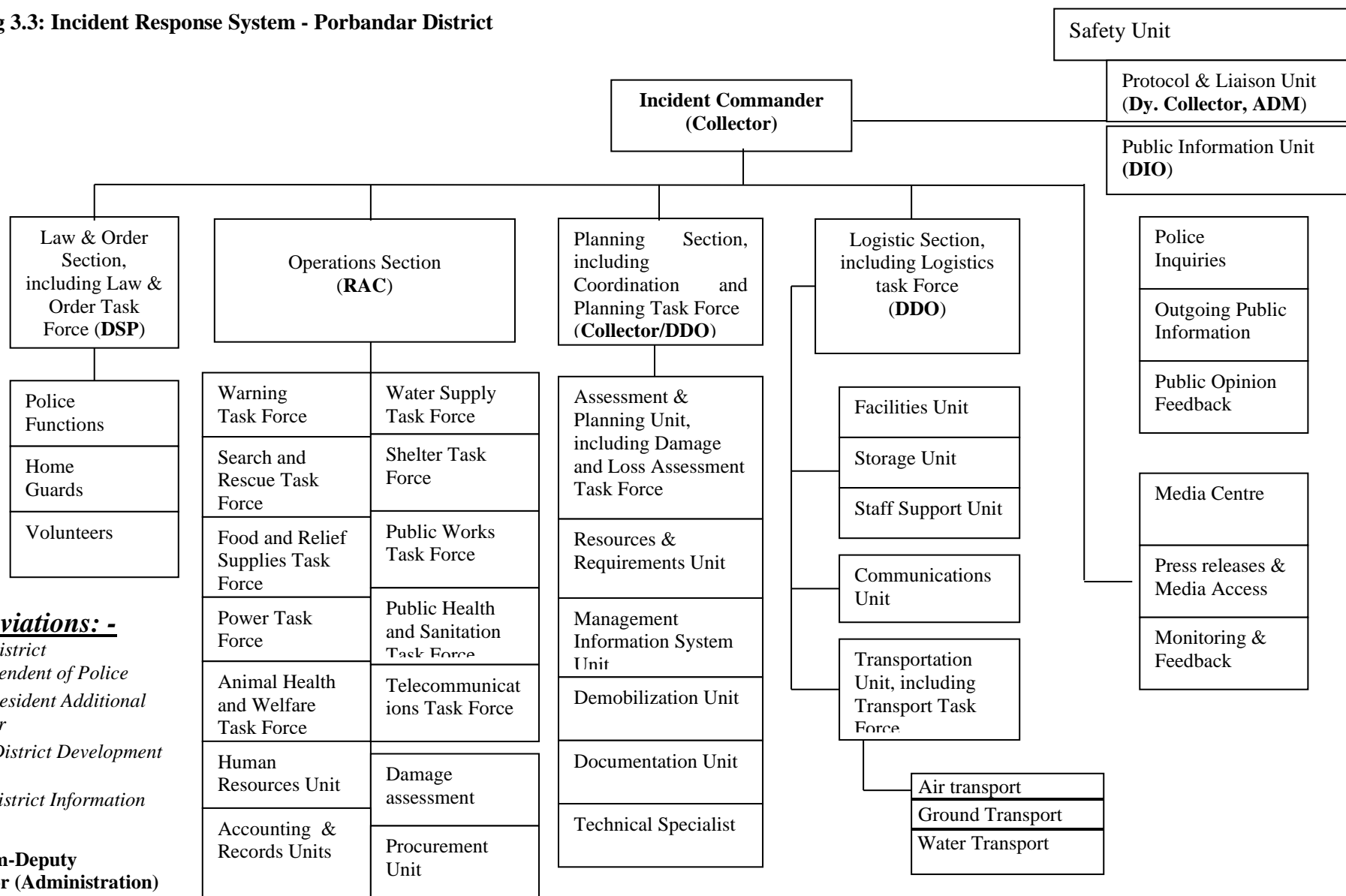
In any disaster response, the initial efforts would always be taken by the district administration. However, when Districts are overwhelmed in any situation, the support necessarily has to come from the State level. There is a formal Incident Response System in the State. The GSDM Act 2003 empowers Commissioner of Relief to be the Incident Commander in the State and District Collector in the respective districts.

### **3.6 Incident Response System in district**

The ICS (Incident Command System) is a management system and on-scene, all risk, flexible modular system adaptable for natural as well as manmade disasters. The primary ICS management function includes:

- Command
- Operations
- Logistics
- Planning
- Finance / Administration

**Fig 3.3: Incident Response System - Porbandar District**

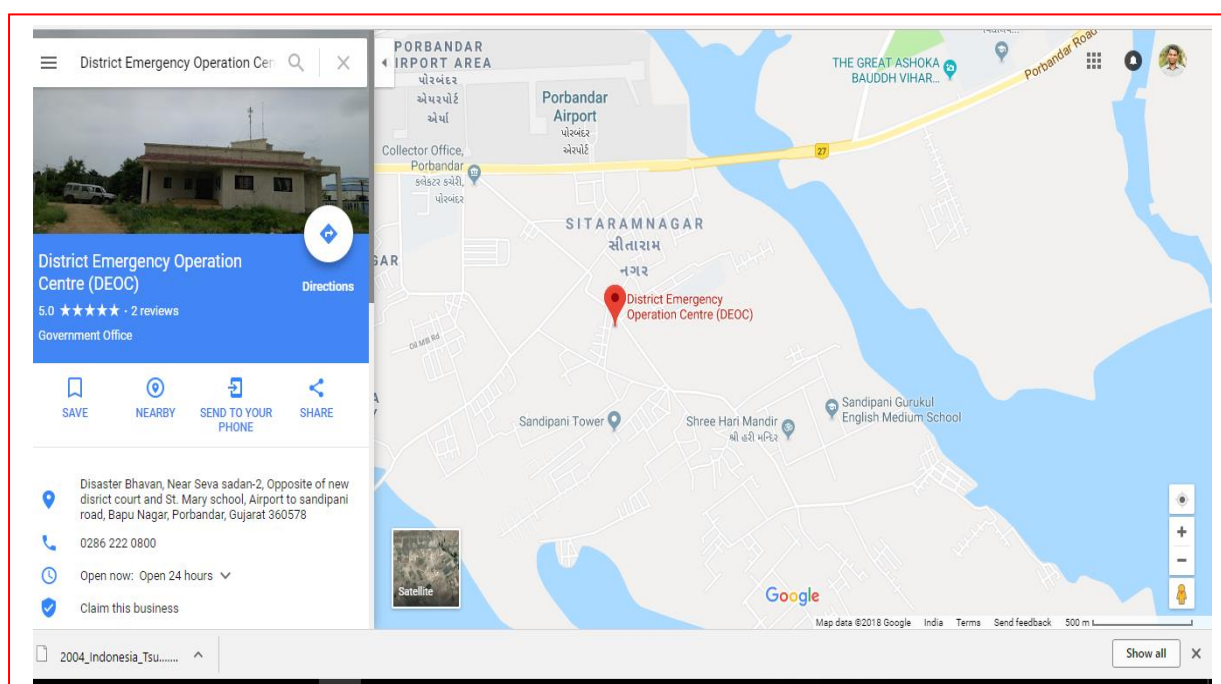


### 3.7 EOC set up and facilities available with the location

#### District Emergency Operation Centre (DEOC)

The DEOC normally called as District Control Room is located at District Collector's Office. DEOC, Porbandar is located near Seva sadan 2. (Refers the map) It is also the central point for information gathering, processing and decision making more specifically to combat the disaster. Most of the strategic decisions are taken in this control room with regard to the management of disaster based on the information gathered and processed. The Incident Commander takes charge at the District Control Room and commands the emergency operations as per the Incident Command System organizational chart.

All the task force leaders shall take position in the District Control Room along with Incident Commander to enable one point coordination for decision-making process.



### 3.8 Facilities available at District Emergency Operation Centre

District Emergency Operation centre is equipped with the following items:

- 2 Telephone lines and 1 Fax machine
- Portable Radio set and Base stations and T.V
- One Isatphone-2 (immersed) satellite phone (in working condition)
- Three PC with internet connection and 3 printers
- Conference table with Chairs and white board
- Two portable emergency light
- Scanner-1
- Laptop-1
- Two projector with white screen
- 2 Vehicles (Tata Sumo and Bolero)
- District Disaster Management Plan and other relevant documents.

### 3.9 Alternate EOC if available and its location

#### Taluka Level Control Room (TLCR)

Taluka level control rooms are located at the Office of Mamlatdar. The Liaison Officers of the respective Taluka take charge of the Control Room. The respective Liaison Officers shall coordinate between the task group members working at disaster sites and Taluka Flood Control Room/ Taluka Emergency Operation Centre for mobilization of resources and dissemination of instructions received from DEOC.

### 3.10 Public and Private emergency service facilities available in the district

Porbandar district has the following public and private emergency service facilities:

- 108 EMRI Ambulance service has deployed the ambulance services at every taluka headquarter and at the towns. 108 ambulance emergency services in district are as mentioned in the table below.

Sr. No.	Deployed station	No of 108 ambulances
1	Porbandar city	02
2	Porbandar boat ambulance	01
3	Madhavpur ghed	01
4	Advana	01
5	Balej	01
6	Kutiyana city	01
7	Ranavav city	01
8	Mahiyari	01
Total		<b>09</b>

- Three municipalities have fire-fighting equipments and staffs.
- Other departments such as Road and Building, State Transport, Forest, GWSSB, Irrigation, Health and Police department have limited emergency services to coordinate during any kind of emergency situations.

### 3.11 Forecasting and Warning Agencies

On the receipt of warning of alert from any such agency which is competent to issue such warning, or on the basis of reports from District Collector of the occurrence of a disaster, all community preparedness measures including counter-disaster measures will be put into operation. The Chief Secretary/ Relief Commissioner will assume the role of the Chief of Operations for Disaster Management.

It is assumed that the district administration would be one of the key organizations for issuing warnings and alert. Additionally, the following agencies competent for issuing warning or alert are given below.

Sr No	Disaster	Agency
1	Earthquakes	IMD/Institute of Seismological Research (ISR) <a href="https://isr.gujarat.gov.in/">https://isr.gujarat.gov.in/</a> <a href="http://www.imdahm.gov.in/">http://www.imdahm.gov.in/</a>
2	Floods	IMD/Irrigation department/CWC <a href="https://mausam.imd.gov.in/">https://mausam.imd.gov.in/</a> <a href="http://www.imdahm.gov.in/">http://www.imdahm.gov.in/</a>
3	Cyclones	IMD <a href="https://mausam.imd.gov.in/">https://mausam.imd.gov.in/</a> <a href="http://www.imdahm.gov.in/">http://www.imdahm.gov.in/</a>
4	Heat wave	IMD <a href="https://mausam.imd.gov.in/">https://mausam.imd.gov.in/</a> <a href="http://www.imdahm.gov.in/">http://www.imdahm.gov.in/</a>
5	Road accidents	Police/RTO/NHAI
6	Industrial and chemical accidents	Industry and DISH
7	Fire	Fire brigade/Police
8	Epidemic	Public Health Department <a href="https://gujhealth.gujarat.gov.in/">https://gujhealth.gujarat.gov.in/</a>
9	Thunderstorm	IMD <a href="https://mausam.imd.gov.in/">https://mausam.imd.gov.in/</a> <a href="http://www.imdahm.gov.in/">http://www.imdahm.gov.in/</a>
10	Drought	Agriculture and Revenue Dept.
11	Tsunami	Indian National Centre for Ocean Information Services (INCOIS), IMD <a href="https://incois.gov.in/">https://incois.gov.in/</a> <a href="http://www.imdahm.gov.in/">http://www.imdahm.gov.in/</a>



## **Chapter: IV** **Prevention and Mitigation measures**

### **4.1 Prevention measures in development plans and programs**

#### **Sujalam Sufalam Jal Abhiyan**

The water conservation programmed recently launched by the Honorable Chief minister in Gujarat for the one-month i.e. before the monsoon season is implemented in Porbandar district. The activities under Sujalam Sufalam Jal Abhiyan includes de-silting and reviving of existing water bodies such as dam, pond, river channel by excavating with human and material resources so that these water bodies collect more rain water. The programmed is implemented with efforts and contribution from government, NGOs and community. Desalting and Excavation of water bodies will help to increase the water storage capacity, Groundwater recharge and will reduce the dam overflow. The long-term implementation of the programmed directly or indirectly helps to reduce the water crisis which leads to drought like situation.

#### **Mahatma Gandhin National Rural Employment Guarantee Schemes (MGNREGS)**

The MGNREGS is the flagship scheme for rural development and employment. The MGNREGS activities such as water conservation and harvesting, forestation, rural connectivity, flood control and protection such as construction and repair of embankments will help for disaster risk reduction. Digging of new tanks/ponds, percolation tanks and construction of small check dams are also given importance, which can reduce the water crisis. The job holders are provided work such as land leveling, tree plantation, etc. which can be used for the benefit of the population that are vulnerable and are likely to be affected with disasters. Following are the key points mentioned for disaster risk reduction.

- Construction of elevated tube wells can be done.
- Building of Roads for places which are not connected to other parts of the district.
- Leveling of low lying areas during flood to a higher level to prevent those areas.
- Construction of check dams and embankments and drainage systems to prevent flooding of those areas.

#### **Pradhan Mantri Awaas Yojana (PMAY)**

Under this Programme, the construction of pucca houses with safety norms and building codes considering the disaster vulnerability will help the community for safe shelter during cyclone and earthquake at village and urban level. This Programme can be also used for the rehabilitation of disaster affected community.

## At individual or community level

An individual or community is the first responder to any disaster situations. Community must be self motivated and aware on do and don'ts of various disasters. Community must participate in training programmed like First aid training, Search and Rescue training programmed on disaster management. Vulnerable community residing in low-lying and coastal villages must help district administration in evacuating safe shelters during flood situation and Cyclone. Community must be prepared with emergency survival kit before any disasters warning. Emergency survival kit may includes foods (non-perishable and easy to prepare food), portable water, first-aid box, torch light with extra batteries, Radio with extra batteries, multipurpose tool, Mobile phone with charger, sanitation and personal hygiene items and extra-cash.

## 4.2 Special Projects proposed for preventing the disasters

### National Cyclone Risk Mitigation Project (NCRMP)

The Government of India has initiated the National Cyclone Risk Mitigation Project (NCRMP) to address cyclone risks in the country. Gujarat State Disaster Management Authority (GSDMA) is nodal authority for implementing the NCRMP in Porbandar district. Porbandar district has completed the construction of Multi-purpose cyclone shelters at Tukda Gosa, Gorsar, Untada and Palakhada of Porbandar taluka. Each multi-purpose cyclone shelter has accommodation capacity of more than 500 persons.

## 4.3 Hazard wise Structural and Non-structural mitigation measures

The structural and non-structure measures are significant for prevention and mitigation of any kind of disaster at different level. Structural mitigation measures include the construction of engineering and non-engineering structure to reduce hazard risk. While, Non-structural mitigation measures includes inculcating the culture of preparedness and safety measures into the community, officials and other stakeholders through community outreach programmes , Awareness generation programme, First aid training, Search and Rescue training, Early warning communication training and other disaster management orientation programme.

### Mitigation Measures

#### Structural mitigation measures for Flood (Identified works of concerned departments)

Structural measures	Implementing departments	Convergence with scheme/ programme
Desilting and deepening of water channel and dam.	Irrigation department, Salinity Control dept, Water Supply dept (GWSSB) , DRDA	Departmental Scheme and Sujalam Sufalam Jal Abhiyan.
Construction of embankments/ protection wall	Irrigation department,DRDA, Forest department	Departmental programme & MGNREGS, watershed project

<b>Structural measures</b>	<b>Implementing departments</b>	<b>Convergence with scheme/ programme</b>
Repair of embankments/ protection wall	DRDA, Road & Building dept, Irrigation department and other concerned department	Departmental scheme and MGNREGS
Repair and maintenance of flood Channels, canals, natural drainage, storm water drainage	Irrigation department, Water supply dept. (GWSSB), DRDA, Chief officers (Municipality)	Departmental schemes
Construction of multi purpose cyclone shelters	Collectorate and Road & Building department (State)	NCRMP (total 10 villages are selected under this programme and Construction of 4 MPCS has been completed)
Protection wall and planting of mangroves and vegetative cover against sea level intrusion and land erosion	Forest department and DRDA and NGOs	Department schemes, MGNREGS
Desilting of water bodies like river and ponds	Irrigation department, DRDA	MGNREGS and Sujalam Sufalam Jal Abhiyan

#### **Non-structural mitigation measures for Flood**

<b>Non-Structural measures</b>	<b>Implementing Departments</b>	<b>Convergence with agency/program</b>
Safety audit of existing and proposed housing stock in risk prone areas	DDO, DRDA & Municipality	Sardar Patel Awaas Yojanan and other rural housing schemes included in annual budget.
Promotion of traditional, local and innovative practices like bamboo/plastic bottle rafts etc	DDMC, SHGs and Youth groups, NGOs	Training and capacity building programme on disaster management and under ATVT Programme.
Capacity building of volunteers and technicians	DDMC	Training and capacity building programme on disaster management and ATVT programme.
Awareness generation on health and safety of livestock	veterinary officer, DRDA	Concerned departmental scheme and collaboration with NGO.

### Structural mitigation measures for Cyclone

Structural measures	Identified Locations and Villages	Implementing Departments	Convergence with Scheme/Program
Plantations of mangroves and Shelter belt in the coastal area	Cyclone prone villages (Total 28 villages and 2 city area)	Forest department, Port (GMB), DIC, TDO, DRDA/NGOs	Departmental schemes, MGNREGS and Environment Protection Scheme
Identification and repair/ retrofitting of houses and buildings unsafe for cyclone		R & B (Zila Panchayat) and ATVT Programme officer	Departmental Scheme/ under development work plan
Construction of Cyclone shelters (MPCS)	NCRMP Total 10 villages are selected for MPCS. Construction of 4 MPCS has been completed.	Collectorate and R&B department (State)	NCRMP

### Non-structural mitigation measures for Cyclone

Non-Structsral measures	Location/ coverage area	Implementing Departments	Convergence with agency/ program
Strengthening of early warning mechanisms	Cyclone prone villages	DDMC	Port Area Development Scheme and Development Scheme. NCRMP
Training and awareness generation for use of safety jackets/life-buoys/rope etc for fisher folks		DDMC, TDMC, VDMC	Disaster Risk Manangement Programme
Enforcing strict compliance to coastal regulation zone		Forest Department	Environment protection programme and developmental work
Registration of fishing boats		Fisheries Department	As per the provision
Regulate and issue orders for poor quality hoardings/buildings or any other objects		R & B department and Chief officers, TDOs	As per annual budget and developmetal grant and ATVT programme

### Structural mitigation measures for Earthquake

Structural measures	Implementing Departments	Convergence with Scheme/ Program
Retrofitting (if required) of public utility buildings like offices, schools/ banks/ hospitals/markets etc	R & B (State and Panchayat), DDO, DRDA	Provision should be made under annual Budget and ATVT Programme
Retrofitting of unsafe rural houses	DDMC	Rural housing schemes and departmental programs
Identifying and safely dismantling and demolishing unsafe structures	R & B department	Under annual budget and ATVT programme

### Non-structural mitigation measures for Earthquake

Non-Structural measures	Implementing Departments	Convergence with agency/program
Capacity building of architects, engineers and masons on earthquake resistant construction	R & B (State and Panchayat), DDMC	Under Annual budget and ATVT programme and disaster risk management programme
Registration of trained and certified mason	R & B (State and Panchayat), DDMC	Under annual budget and ATVT programme and disaster risk management programme
Strict enforcement of guideline pertaining to seismic safety for government on rural housing	DDO, DRDA	Under Annual budget and ATVT programme and disaster risk management programme and rural housing scheme
Mock-drills for Schools, Hospitals and, Public Buildings and trainings for mason, engineers and architects	DDMC, Schools	DDMC/TDMC/CDMC

### Structural mitigation measures for Drought

Structural measures	Implementing Departments	Convergence with Scheme/ Programme
Development of Pasture land in common property and seed farming	Forest department, DRDA	Departmental scheme, DAO

<b>Structural measures</b>	<b>Implementing Departments</b>	<b>Convergence with Scheme/ Programme</b>
Rain water harvesting storage tanks at household level and at public buildings	GWSSB, WASMO, DRDA	MGNREGS, Swajaldhara Yojana
Structures for water harvesting and Ground water recharging measures for wells, ponds, checkdams, farm ponds, etc	DDO, DRDA, Irrigation department	MGNREGS , Watershed programme, departmental schemes
Development of fodder plots/banks, Setting of Fodder camps	DDMC, Forest department, Animal husbandry department	
Repair and maintenance, de-silting of water bodies, check dams, hand pumps etc.	Irrigation department, DRDA	MGNREGS, Watershed programme

#### **Non-Structural Mitigation Measures for Drought**

<b>Non-structural measures</b>	<b>Implementing Departments</b>	<b>Convergence with agency/ programme</b>
Farmer education to practice drought resistant crops and efficient water use.	District Agriculture Office & Horticulture department	Departmental schemes
Set up control mechanism for regulated water use (ponds, small dams, check dams)	Gram Panchayat	

#### **Structural Mitigation Measures for Tsunami**

<b>Structural measures</b>	<b>Implementing Departments</b>	<b>Convergence with Scheme/ Program</b>
Constructing shelter belts in coastal areas and planting of mangroves.	Forest department, DRDA	Departmental programs, MGNREGS

#### **Non-Structural Mitigation Measures for Tsunami**

<b>Non-Structural measures</b>	<b>Locations / coverage area</b>	<b>Implementing Departments</b>
Provisions of Coastal Regulation Zone to be effectively implemented	Tsunami prone 16 villages	Forest department and Environment protection programme
Capacity building of task forces in coastal villages		DDMC/TDMC/TDMC/VDMC

## 4.4 Specific projects for vulnerable groups

### National Cyclone Risk Mitigation Project (NCRMP)

Gujarat is being prone to cyclones, it is the topmost priority of the State Government to reduce the vulnerability to cyclone and minimize the loss to property and lives in the coastal regions of the state through building disaster resilient infrastructure and also making people resilient to disaster. Gujarat has therefore been included in the NCRMP initiated by the National Disaster Management Authority and funded by the World Bank. The list of villages where Cyclone shelters will be constructed or construction in progress is mentioned below:

Sr.No.	Taluka	Village name of NCRMP site	VRTs member
1	Porbandar	Tukada Gosa	75
2		Gorsar-Mocha	45
3		Palkhada	75
4		Balej	50
5		Pata	50
6		Untada	25
7		Mander	0
8		Miyani Bhavapara	0
9		Ratiya	0
10		Kadach	0

### Gujarat School Safety Programme

Gujarat School Safety Programme is a capacity building programme which aims at strengthening of the capacity of the school community and it further builds a disaster safety culture among the most vulnerable section of the society i.e children. Under this programme, GSDMA has provided all the government schools (Primary, Secondary and Higher Secondary) of Porbandar district with ISI marked portable water and Co2 type fire extinguishers. For the fire safety, students and teachers are made aware with awareness video, poster, pamphlets and fire-safety demonstration and mock-drill.

Every year, Gujarat celebrates the School Safety Week to inculcate the culture of preparedness and safety to different disasters in to the daily life of students and teachers. In this Programme, Student and Teachers are oriented and aware to do and don'ts of various disasters through disaster management activities and trained them through mock-drill such as shake-out and Fire safety mock drill. School disaster management plan is also made as per the preparedness to any kind of disasters. Last year, School Safety Week was successfully celebrated in the 444 schools of the Porbandar district both in primary and secondary schools (Government and Private). Details of Gujarat School Safety Week-2019 celebrated in Porbandar district is mentioned in the following table.

<b>No.</b>	<b>Particulars</b>	<b>Number</b>
1.	Government Primary Schools	318
2.	Private Primary Schools	126
3.	Teachers trained during ToT	888
4.	School Disaster Management Plan prepared	444
5.	Mock drills conducted by Fire Department	5 (fire evacuation mock drill)
6.	Demonstration conducted by Fire Department	8
7.	Mock drills conducted by NDRF (Mention Disaster also)	5 (Shake-out mockdrill)
8.	Demonstrations conducted by NDRF	20
9.	Demonstrations conducted by Indian Red Cross Society	5
10.	Demonstrations conducted by GVK EMRI 108	15
11.	Road safety awareness programme by RTO, Porbandar	5
12.	No of Fire safety demonstration by Pvt. industry (Supergas pvt ltd)	4
13.	No of orientation programme by Aapda Mitra and Search and Rescue Trainer	1



**5.1 Identification of stakeholders involved in disaster response**

Preparedness measures are the activities and measures taken in advance to ensure effective response to the impact of hazards, including the issuance of timely and effective early warnings and the temporary evacuation of people and property from risk prone area.

The stakeholders/departments involved in disaster response are identified in Porbandar district as per the mentioned table.

Sr No	Name of the stakeholders/departments	Disaster response preparedness activities
1	DM & Collector	<ul style="list-style-type: none"><li>• Ensure regular meeting of District Disaster Management Authority.</li><li>• Responsible officer for the Incident response system, Coordinate the activities of various departments.</li><li>• Keep a list of contacts of Emergency control rooms, nodal officer of different departments and important stakeholders</li></ul>
2	Superintendent of Police	<ul style="list-style-type: none"><li>• Ensure functioning of the warning system such as VHF sets.</li><li>• Evacuation of the incident areas</li><li>• Formation of response team and delegation of areas</li></ul>
3	SDM & Mamlatdar	<ul style="list-style-type: none"><li>• Ensuring regular review meeting at taluka level.</li><li>• Physical inspection of disaster management equipments and make ready to use.</li><li>• Arrangement of transport and route for evacuation on the basis of risk assessment.</li><li>• Arrangement of Search and Rescue kit at risk prone area.</li><li>• Formation of response team and delegation of areas.</li></ul>
4	CDMO	<ul style="list-style-type: none"><li>• Disaster management plans for mass casualty management &amp; Safety plans for Hospitals</li><li>• Capacity building of Medical and Para-medical staffs</li><li>• Strengthen capacity of hospitals with advanced medical equipments, proper manning and disaster resilient infrastructures</li><li>• Keep stock of the essential medicines.</li><li>• Arrange mobile vehicles like ICU on wheel for inaccessible areas.</li></ul>

5	CDHO	<ul style="list-style-type: none"> <li>• Training of para-medical staffs/ANMs/Male Health Workers/Volunteers/Task forces/Anganwadi workers regarding community health service during emergency.</li> <li>• Keep stock position of PHC/CHC/Sub-centres.</li> <li>• Arrangement of mobile health unit for inaccessible areas.</li> <li>• Health awareness campaign</li> <li>• Registration of no of pregnant women, birth and death.</li> <li>• Dis-infection of drinking water sources before monsoon and flood season.</li> </ul>
6	Executive Engineer, Irrigation	<ul style="list-style-type: none"> <li>• Arrangement of sand bags in risk prone areas.</li> <li>• Arrangement of dewatering pump and other equipments and vehicle and make ready to use.</li> <li>• Formation of response team and delegation of areas.</li> </ul>
7	Executive Engineer, GWSSB	<ul style="list-style-type: none"> <li>• Supply of drinking water during emergency</li> <li>• Repair of drinking water supply pipeline</li> <li>• Chlorination of drinking water sources</li> <li>• Installation of DG sets</li> </ul>
8	Executive Engineer, R&B (Panchayat)	<ul style="list-style-type: none"> <li>• Route plan for evacuation and marking of shelters with signage board.</li> <li>• Demolition of weak/damaged buildings</li> <li>• Clearance of blocked village roads</li> <li>• Marking of disaster risk prone roads with signage</li> </ul>
9	Executive Engineer, R&B (State)	<ul style="list-style-type: none"> <li>• Route plan for evacuation and marking of shelters with signage board.</li> <li>• Demolition of weak/damaged buildings</li> <li>• Clearance of blocked state roads.</li> <li>• Marking of disaster risk prone roads with signage</li> </ul>
10	Dist. Agriculture Officer	<ul style="list-style-type: none"> <li>• Identification of crops and plantation which likely to be damaged with disasters</li> <li>• Effective transport, storage and distribution of seeds/fertilizers/pesticides</li> <li>• Formation of damage assessment team for crop and plantation</li> </ul>
11	Dy director, Animal Husbandry	<ul style="list-style-type: none"> <li>• Vaccination of cattle populations</li> <li>• Availability of fodder/food for the animals</li> <li>• Arrangement of check-up of animals by mobile health unit</li> <li>• Carcass disposal</li> </ul>

12	Dy Conservator of Forest	<ul style="list-style-type: none"> <li>• Arrangement of Tree cutters</li> <li>• Repair of check dams in Barada hills</li> </ul>
13	Superintendent Engineer, PGVCL	<ul style="list-style-type: none"> <li>• Regular identification of faults</li> <li>• Repair of poles, transformers located in water logged area and restoration of power supply</li> <li>• Stockpiling of equipments/accessories</li> <li>• Response team formation and delegation of area</li> </ul>
14	Fire brigade Porbandar	<ul style="list-style-type: none"> <li>• Formation of Search and Rescue Team</li> <li>• Make ready to use of Boats, Tree cutters, Emergency lights.</li> </ul>
15	ARTO	<ul style="list-style-type: none"> <li>• Enlisting various classes of vehicles available and arranging vehicles for evacuation and for Search and Rescue team</li> </ul>
16	Area manager, BSNL	<ul style="list-style-type: none"> <li>• Inspection and repair of poles and communication line</li> </ul>
17	DEO/DPEO	<ul style="list-style-type: none"> <li>• Repairing of school buildings</li> <li>• Repairing of roads and approaches to school buildings</li> <li>• Awareness generation among student and parents on do and don'ts of disasters.</li> </ul>
18	District Supply Officer	<ul style="list-style-type: none"> <li>• Arrangement of essential commodities</li> <li>• Advanced supply of ration at FPS of low lying villages</li> </ul>
19	NGOs	<ul style="list-style-type: none"> <li>• IEC activities on disaster management</li> <li>• Community mobilization</li> <li>• Formation of Search and Rescue team</li> <li>• Preparation of Food packets and other essential items</li> </ul>

## 5.2 Formation of Persons and training for:

Porbandar district has identified various stakeholders from the line departments, Ex-army servicemen, NGOs, Community club and volunteers in disaster risk management activities. Aapda Mitra, Homeguards, Students, Police personnel, NCC and NSS students were also involved in disaster management training. Besides, Government officials and community were also oriented to disaster management. So, during the disaster emergency all the stakeholders will contribute for effective disaster response and management.

### 5.2.1 Search & Rescue:

It is the duty of the DDMA to provide specialized life saving assistance to district and local authorities. In the event of a major disaster or emergency its operational activities include locating, extricating and providing on site medical treatment to victims trapped in collapsed structures. In the event of any disaster the Home Guards along with the support of the Police

dept. form teams to locate injured and dead and try to rescue the ones in need. There are other bodies too that help these departments in this work, like the PWD, Health dept, Fire dept and also the people that voluntarily form teams to help the ones in need. Proper training for search and rescue process needs to be undertaken so as to minimize the time taken in rescuing someone. Proper methodology and resources are also needed to carry out a search & rescue operation.

The tactics used in the search & rescue process vary accordingly with the type of disaster that we are dealing with. In case of flood, a boat and trained swimmers are a must while in case of an earthquake sniffer dogs and cutting tools with trained manpower is a binding requirement. The household register that is maintained by the warden should be maintained for every village as it proves to be of great help in case of a disaster like an earthquake. Because in case of the aforementioned disaster people get trapped in the debris of buildings and houses and it becomes difficult to estimate how many people are present in the debris. But if a household register is maintained then the task becomes quite easy and effective to find out almost correctly that how many people would be present in any building/house at any given time. Thus, the resources can be justifiably distributed and more lives can be saved. This kind of process is highly recommended in this particular district which lies in moderate earthquake prone region.

For the flood situation, it is recommended that the boats that are used should be light weight (Inflatable boat) and the motor should be of 'luma' type, so that it becomes easy for the rescue team to lift the boat and carry it to the spot.

### **Search & Rescue Team**

Formation of Search and Rescue team is essential to response disaster quickly and to carry out S&R operation effectively. S&R team must be formed at the district and taluka level as per the following criteria:

<b>Designation of trained S&amp;R Team member</b>
<p>The Search &amp; Rescue team is formed as and when required and the members &amp; equipments are taken according to the nature of the disaster (and also on their availability).</p> <ul style="list-style-type: none"> <li>• Police Officers (2 or more)</li> <li>• Home guards (2 or more)</li> <li>• Swimmers (In case of flood)</li> <li>• A construction engineer (From P.W.D.)</li> <li>• Driver (For Every vehicle)</li> <li>• Any person with the prior experience of the disaster (From Home Guard/Police Dept.)</li> <li>• A doctor or nurse or at least a person having first aid training</li> <li>• A Class IV Officer (Health Dept.)</li> </ul>

There is Search and Rescue team comprised of trained personnel from Fire brigade, Home guard, Police and volunteers like Aapda Mitra in Porbandar district. There are 20 Aapda Mitra volunteers trained on S&R operation at SRP camp.

### **5.2.2 Early Warning:**

The early warning systems for different disasters should be in place so that the concerned administrative machinery and the communities can initiate appropriate actions to minimize loss of life and property. These should give an indication of the level of magnitude of the mobilization required by the responders. The goal of any warning system is to maximize the number of people who take appropriate and timely action for the safety of life and property. All warning systems start with the detection of the event and with their timely evacuation. Warning systems should encompass three equally important elements viz early detection of warning, dissemination of warning down to the community level and the subsequent quick response.

The State acknowledges the crucial importance of quick dissemination of early warning of impending disasters and every possible measure will be taken to utilize the lead-time provided for preparedness measures. As soon as the warning of an impending calamity is received, SEOC, DEOC and TEOC will be on a state of alert. The Incident Commander will take charge of the DEOC and oversee the dissemination of warning to the community. The District Collector will inform the District Disaster Management Committees who will alert their concerned departments and Talati cum Mantri will disseminate the warning to the community at village level. On the basis of assessment of the severity of the disaster, the State Relief Commissioner (Incident Commander) shall issue appropriate instructions on actions to be taken including evacuation to the District Collector, who will then supervise evacuation. In situations of emergency, the District Collector will use his own discretion on the preparedness measures for facing the impending disaster. Nowadays, Social media like whatsapp, Facebook and Twitter are being used for disseminating disaster warning down to the community level.

### **5.2.3 Evacuation:**

Evacuation is a risk management strategy, which may be used as a means of mitigating the effects of an emergency or disaster on community. It involves the movement of people to a safer location. However, to be effective, it must be correctly planned and executed.

The following factors may be considered for effective evacuation:

- Identification of appropriate shelter areas based on safety, availability of facilities, capacity and number of victims.
- Approaches to the shelter location in light of disruption due to hazard impact and traffic blockades.
- Temporary accommodation
- Provision of essential facilities like drinking water, food, clothing, communication, medical, electrical and feeding arrangements, etc.
- Security
- Financial and immediate assistance
- First-aid and psycho-social counseling

## Types of evacuation

For the purpose of planning, all evacuations may be considered to be one of two generic types:

- (a) Immediate evacuation, which allows little or no warning and limited preparation time as in the case of earthquakes and air accident.
- (b) Pre-warned evacuation resulting from an event that provides adequate warning and does not unduly limit preparation time as in the case of flood and cyclones.

## Principles of Evacuation Planning

- Establishment of a management structure for organization, implementation, coordination and monitoring of the plan.
- Determination of legal or other authority to evacuate.
- Clear definition of rules and responsibilities.
- Development of appropriate and flexible plans.
- Effective warning and information system.
- Promoting awareness and encouraging self-evacuation.
- Assurance of movement capability.
- Building confidence measures and seeking cooperation of the affected community.
- Availability of space for establishment of relief camps having requisite capacity and facilities.
- Priority in evacuation to be accorded to special need groups like women, old and sick, handicapped and children.
- For effective evacuation, organization and running of relief centers, cooperation and involvement of all agencies viz. Community, volunteers, NGOs, NCC / NSS, Home guards and civil defense, district and village bodies to be ensured.
- Security arrangement and protection of lives and property.
- Preparation and updating of resource inventories.
- Appropriate welfare measures throughout all stages
- Mock exercise of prepared plans and recording of lessons learnt
- Documentation.

**Formation of Evacuation team and their tasks will be in the following way:**

Evacuation team	Tasks
Dy S.P. (Rural), Executive Engineer, Road and Building (Panchayat), SDM, Mamlatdar, Police Inspector, TDO, RFO, Taluka Health Officer, Fire brigade, Sarpanch, Talati	<ul style="list-style-type: none"><li>• Shift the injured and affected population from disaster site to safe shelters</li><li>• Employ adequate manpower and material resources, vehicles for immediate evacuation</li><li>• Pre-planned of Evacuation route and clearance of blocked road</li></ul>

### 5.2.4 Damage & Loss Assessment

Immediately after the disaster there is an urgent need of damage assessment in terms of loss of life, injury and loss of property. The objectives of damage assessment are to mobilize resources for better rescue and relief, to have detailed information of damage extent and severity of disaster and to develop strategies for reconstruction and restoration facilities.

Damage is assessed with regard to building stock, standing crops, agricultural area, livestock lost, forest cover decimated, vital installations etc. In damage assessment of building stock, generally three types of flags are used; green, yellow and red. The green colour is given to the buildings that are safe and require 2-3 days to return to their original function. Yellow flags depict the considerable damage to the buildings and considered to be unsafe for living, as they require proper structural repairs and careful investigation. The red flag is assigned to buildings that are partially or completely collapsed. Immediately after a disaster event, damage assessment will be conducted in two phases i.e Rapid Damage Assessment and Detailed Damage Assessment.

**Damage assessment team can be formed in the following way:**

Damage assessment team members	Tasks
TDO, Dy Engineer, R&B (Panchayat), DAO, Dy Director, Animal Husvandry, ADF	<ul style="list-style-type: none"><li>• Assessment of damages to buildings</li><li>• Assessment of Crop Loss</li><li>• Assessment of loss of livestock</li><li>• Assesment of damages to fishing boat</li></ul>

### 5.3 Training need analysis

Training need analysis is most often used as part of the system development process. Due to the close tie between the design of the system and the training required, in most cases it runs alongside the development to capture the training requirements. GIDM has analysed education, training and information needs through interviews and conversations with stakeholders in different parts of Gujarat. The training need analysis is done considering variable factors of intensity, affected population and severity of damage need to be quickly assessed based on which government and non-government agencies can allocate and deploy relief. All the government line departments who have a stake in different phases of the disaster management will have to identify their roles and carry out training need analysis of their personnel.

### 5.4 Arrangement of Training and Capacity building:

Training on search and rescue, rehearsals, evaluation and inventory updation for response activities will be carried out during normal time. District collector will ensure that all the DDMC members acquire knowledge and skills to perform their assigned role through regular refresher trainings. Basic and detailed training modules in disaster preparedness have been incorporated along with training methodologies for trainers, for community preparedness and manuals for

training at district, block, panchayat and village levels. For capacity building several Search & Rescue and First aid trainings organized for beneficiaries, disaster management teams and committee members to be trained at district, taluka, and village and city level. The following table describes the training needs and responsibility of department who should provide the training.

No.	Task	Activity	Trainers/Resource persons
1	Training	Search and Rescue operation, Response and Evacuation Training to police	<ul style="list-style-type: none"> <li>• Fire Brigade team</li> <li>• District Home Guards Commandant</li> </ul>
2		Search and Rescue Operation training to Homeguard personnels	<ul style="list-style-type: none"> <li>• District Home Guards Commandant</li> <li>• Fire Brigade team</li> </ul>
3		S&R, First aid training to NCC and NSS Students	<ul style="list-style-type: none"> <li>• Indian Red Cross Society</li> <li>• Fire Brigade team</li> </ul>
4		First aid training for volunteers from College/Schools	<ul style="list-style-type: none"> <li>• Indian Red Cross Society</li> </ul>
5		Emergency Coordination Training to civil society, CBOs, NGOs and corporate entities	<ul style="list-style-type: none"> <li>• DDMC</li> </ul>
6		First aid training for Fire-Brigade team	<ul style="list-style-type: none"> <li>• Indian Red Cross Society</li> </ul>
7		Response and Evacuation training for Traffic police	<ul style="list-style-type: none"> <li>• Police dept</li> </ul>
8		Media management training to media persons	<ul style="list-style-type: none"> <li>• DDMC</li> <li>• Information dept</li> </ul>
9		Emergency coordination and Disaster preparedness training to line depts.	<ul style="list-style-type: none"> <li>• DDMC</li> </ul>
10		Training to engineers, architects, structural engineers, builders and masons in various aspect of disaster management	<ul style="list-style-type: none"> <li>• Ex Engineer, R&amp;B</li> </ul>
11		Mass casualty management training to medical, paramedical and supportive staffs	<ul style="list-style-type: none"> <li>• Health Dept</li> <li>• Indian Red Cross Society</li> </ul>



## **5.5 Protocol for seeking help from other agencies-example-state government, government of india, other state governments, NDRF, SDRF, Army, Navy and Air Force**

For the management and control of the adverse consequences of any disaster will require coordinated, prompt and effective response systems at the central and state government levels, especially at the district and the community levels.

There are various agencies / organizations / departments and authorities that constitute a core network for implementing various disaster management related functions / activities. It also includes academic, scientific and technical organizations which have an important role to play in various facets of disaster management. These agencies (State Government, Govt. of India, NDRF, SDRF, Army, Navy and Air Force) shall be called upon to assist the civil administration only when the situation is beyond the coping capability of the State Government.

## **5.6 Operational check-up for Emergency Operation Centre**

At the district level, Porbandar district has a District Emergency operation Centre (DEOC) located at near seva sadan-2, opposite to new district court, airport to ssandipani road, Chhaya which is 24\*7 operational and equipped with sophisticated communication equipments and required technology for disaster management. The Resident Additional Collector (RAC) of the Porbandar is empowered as Nodal officer of DEOC and is responsible for operational check-up for Emergency Operation Centre which includes following points:

- Ensure that all equipments in the EOC are in working condition.
- Collection data on routine basis from line departments for disaster management.
- Develop status reports of preparedness and mitigation activities in the district.
- Ensure appropriate implementation of District Disaster Management Plan.
- Maintenance of disaster data base with regular updating.
- Activate the Response mechanism on receipt of disaster warning/occurrence of disaster.

## **5.7 NGOs and other stakeholders coordination**

Local community groups and voluntary agencies including NGOs should actively assist in prevention and mitigation activities under the overall direction and supervision of the Collector. They should actively participate in all training activities as may be organised and should familiarise themselves with their role in disaster management. It is a duty of every citizen, NGOs and stakeholders to assist 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. NGOs of District are working on targeted community or limited to certain specific areas. They are coordinating with district EOC only on direct approach or on allocation of specific tasks. On the basis of their fundamental function of NGOs and Community Based Organizations; they are supporting the district administration for relief and rehabilitation activities. **(Sources: Annexure-16)**

## 5.8 Seasonal preparedness for seasonal disasters like flood and cyclone

According to the history of floods and cyclones and past disaster experiences, Community develops the seasonality calendar for the possibility of occurrence of seasonal disasters. The following table shows the seasonality calendars for Cyclone and Flood monthwise.

Month	Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sept	Oct	Nov	Dec
Flood						√	√	√	√			
Cyclone				√	√	√				√	√	

### Seasonal Preparedness measures are:

- Putting the signage of HFL (Highest Flood Level) and flood prone area mapping make aware the community to be prepare for Flood situation.
- A hazard map for the cyclone at vulnerable villages and town with the map showing the evacuation plans, location of the shelters.
- Land use regulation will reduce risk of damages of property and human loss. Flood plain must be avoided for human settlement or activities instead of it wetland conservation should be given importance with planting trees, mangroves. In areas where people already have built their settlements, measures should be taken to relocate to better sites so as to reduce vulnerability. No major development should be permitted in the areas which are subjected to high flooding.
- Construction of engineered structures in the flood plains and strengthening of structures to withstand flood forces and seepage. The buildings should be constructed on an elevated area. If required build stilts or elevated platform. They should be wind and water resistant. Protect river embankments. Communication lines should be installed underground. Provide strong halls forcommunity shelter in vulnerable locations.
- Flood Control aims to reduce flood damage. Measures such as reforestation, protection of vegetation, clearing of debris, conservation of ponds and lakes, etc.
- Structural measures include storage reservoirs, flood embankments, drainage channels, anti-erosion works, detention basins, etc. and non-structural measures include flood forecasting, flood proofing, disaster preparedness, etc

## 5.9 Community awareness, Education and Preparedness

Community is the first responder to any disasters so; they must be oriented, aware about the potential disasters where they live. Mainly community awareness programme involves disaster management awareness stall at the local village fair, awareness about do and don'ts of disaster through poster, hoarding and pamphlets, exhibition, demonstration, street play, campaigning in schools such as this year the disaster branch set up a disaster management awareness stall at five days Madhavpur mela.

If the preparedness measures are considered, then every year village disaster management plan is updated with information on disaster resources, contact information, health facilities, evacuation and shelter plans. It also includes role and responsibility of Village Response Teams and Village Disaster Management Committee. This plan must be implemented and preparedness measures should be included are construction of earthquake resistant buildings, construction of embankments in flood prone area, evacuation and shelter management plan, retrofitting of vulnerable buildings and rehabilitation of vulnerable population to a safer location. Preparedness to disaster includes:

- Orientation programme of key officer regarding need of plan and preparation of plan.
- Formation of committee at all levels (District /Taluka/city and Village level) (chapter:3)
- Preparation of manuals and guidelines (based on role and responsibility)
- Development of the Disaster Management Plan
- Use of IEC materials for awareness generation for preparedness, risk reduction and mitigation.
- Data updation on IDRN/SDRN website

Community awareness and training programme on disaster management (15 days programme) was organized by National Disaster Response Force coordinated with Porbandar district awareness programme are listed in following table:

### NDRF Team Disaster Management Awareness cum- training programme:

Sr. No.	Taluka	Village/City	Venue of Programme	Total Participants
1	Ranavav	Thoyana	Primary School Thoyana	161
2	Ranavav	Bordi	Primary School Bordi	370
3	Ranavav	Amardad	Primary School Amardad	492
4	Ranavav	Adityana	Primary School Adityana	346
5	Ranavav	Ranavav	Government High school,	327
6	Porbandar	Kuchhadi	Primary School, Kuchhadi	298
7	Porbandar	Bhad	Primary School, Bhad	322
8	Porbandar	Mitrada	Primary School, Mitrada	168
9	Porbandar	Keshod Lushada	Primary School, Keshod Lushada	111
10	Porbandar	Chhaya	Swaminarayan high school, Chhaya	383

11	Kutiyana	Chhatrava	Primary School Chhatrava	210
12	Kutiyana	Kutiyana	Government High school, Kutiyana	201
13	Kutiyana	Kasabad	Primary School Kasabad	169
14	Kutiyana	Pashvari	Primary School Pashvari	217
15	Kutiyana	Devada	Primary School Devada	251
15				4026

### Mock Drill on Disaster Management:

Mock drill is one of main component of disaster management. “Practice makes man perfect”. Mock drills are organized to sensitize, facilitate, and train each individual or a particular community, include school, college, high rise building, etc in order to test various elements included in their prepared Disaster Response Plan and in their Emergency Management Systems. Mock drills should ideally test all the phases of Disaster Management.

#### Objective: -

1. To know the response of district administration and different task force function
2. To find out the alertness and response time of the personnel involved in the Drill.
3. To find out the effectiveness of the communication system
4. To check the coordination of reactions and response of emergency services
5. To find out the clarity in role and responsibilities
6. To educate and create awareness among the villagers
7. Testing emergency support systems through standard operating procedures

### 5.10 Community Warning System-Early Warning System (EWS)

Community warning system includes:

- Intimation from SEOC/IMD/Media
- Developing of Warning message with easily understandable terminology
- Flash the emergency message/warning message by SDM/Mamlatdar/TDO/CO/Police to the targeted community using PA system.

It is often observed that communities living in remote and isolated locations do not receive timely and reliable warnings of impending disasters. Hence, it is necessary to have robust and effective early warning systems, which can play crucial role in saving lives and limiting the extent of damage to assets and services. Outreach and reliability of warnings are key factors for planning and implementing response measures. Post disaster advisories like information on rescue, relief and other services are important to ensure law, order, and safety of citizens.

## Early Warning Action Plan

Type of Action	Flood	Cyclone	Tsunami
Existing EWS	Irrigation department /dam authority/ IMD ↓ Collector ↓ Mamlatdar/TDO ↓ Villages	IMD ↓ Collector ↓ Mamlatdar/TDO ↓ Villages	IMD ↓ Collector ↓ Mamlatdar/TDO ↓ Villages
Responsible Agency for warning dissemination	Mamlatdar office/TDO	Mamlatdar office/TDO	Mamlatdar office/TDO
Trained personnel and operators available (Y/N)	Yes	Yes	No (Team to be formed and trained)
Village covered	All disaster risk prone villages		

## 5.11 IDRN/SDRN updation

### SDRN (State Disaster Resource Network)

The State Disaster Resource Network (SDRN) system has three document namely Village Disaster Management Plan (VDMP), Taluka Disaster Management Plan (TDMP) and City Disaster Management Plan (CDMP). The data are updated in this network after the collection of the data on a standard format provided by the GSDMA.

The centrally stored database in the server located at GSDMA, Gandhinagar can be accessed through the link <http://sdrn.gsdma.org/login.aspx> and GSDMA web site ([www.gsdma.org](http://www.gsdma.org)). Each user of all talukas of the State has been given unique username and password through which they can perform data entry, data updation on SDRN for their Village, Taluka or City. Status reports are also generated showing the status that how many forms, records are entered on SDRN. The Village level officers should be contacted to know the status of the shelters and capacity of shelters and other facilities available like toilet, electricity and drinking water supply.

## **IDRN (Indian Disaster Resource Network)**

IDRN is a web based information system, is a platform for managing the inventory of equipments, skilled human resources and critical supplies for emergency response. The primary focus is to enable the decision makers to find answers on availability of equipments and human resources required to combat any emergency situation. It is a nationwide district level resource database. Each user of all districts of the state has been given unique username and password through which they can perform data entry, data updation on IDRN for resources available in their district.

The IDRN network has functionality of generating multiple query options based on the specific equipment, skilled human resources and critical supplies with their location and contact details.

### **5.12 Protocol and arrangement for VIP Visit**

It is important to immediately inform VIPs and VVIPs on impending disasters and current situation during and after disasters. Appeals by VIPs can help in controlling rumours and chaos during the disaster. Visits by VIPs can lift the morale of those affected by the disaster as well as those who are involved in the response. Care should be taken that VIP visits do not interrupt rescue and life saving work. Security of VIPs will be additional responsibility of local police and Special Forces. It would be desirable to restrict media coverage of such visits, in which case the police will liaise with the government press officer to keep their number to minimum.

### **5.13 Media Management/information dissemination**

Media management is significant to disseminate the true information of the disaster impact and relief measures being taken and generate goodwill among community and other stakeholders. Ensure that the information about progress of rescue and relief is provided to media/public in an organized manner at least twice a day. Establish help lines for facilitating communication between the victims and their relatives residing outside the affected area/s. Establish Information Centers at strategic locations for providing information about persons evacuated to the relief centres/hospitals. Establish Media/Press Centre for media management and information dissemination. Ensure that the information to media/general public about the response of the State Government is released in an organized manner along with following points:

1. Broadcast programmes to public on preventive measures for disasters.
2. Develop news sources in emergency situation.
3. Publicize station frequency.
4. Broadcast public planning meetings.
5. Compile local knowledge on signs of impending disaster and share it with community
6. Broadcast emergency evacuation announcements.
7. Broadcast all the important announcement effectively and calmly without making any panic.

## **Chapter: VI** **Response measures (Multi-Hazard)**

### **6.1 Aim of the disaster response**

Disaster response is the second phase of the disaster management cycle. It consists of number of elements for examples; warning/evacuation, search and rescue operation, providing immediate assistance, damage assessment, immediate restoration of infrastructure. Immediate assistance can be evacuation of affected population to safe shelters, relief camp, food and medical check-up. It also may involve initial repairs to damage infrastructures.

Disaster response is aimed at:

- Saving and protecting human life
- Relieving suffering
- Containing the emergency: limiting its escalation or spread and mitigating its impacts
- Disseminate warning, advice and information to public
- Protecting health and safety of maintaining personnel
- Maintaining or restoring the critical infrastructures

## 6.2 Disaster Response flow chart

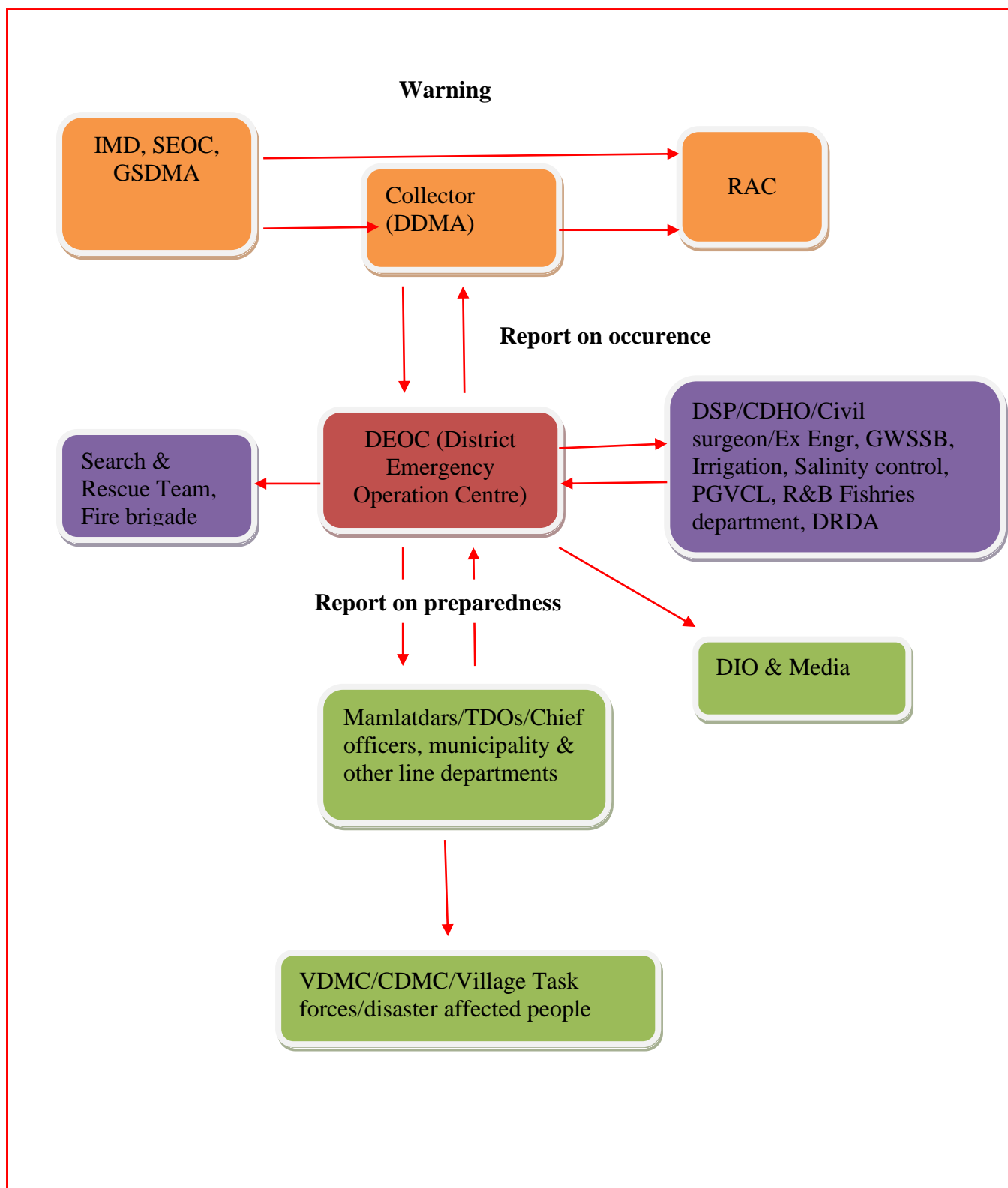
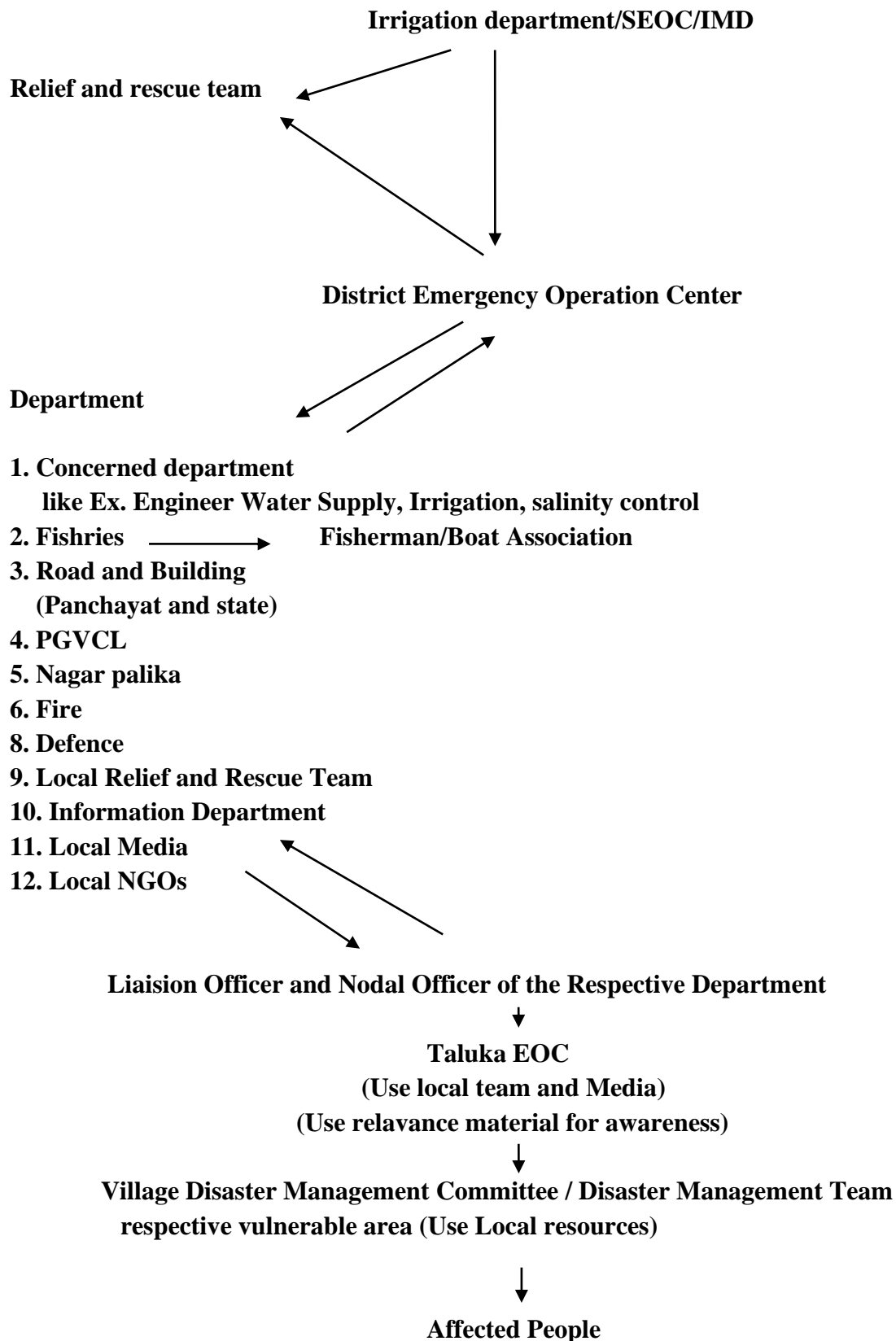


Fig: 6.1. Disaster Response Flow chart

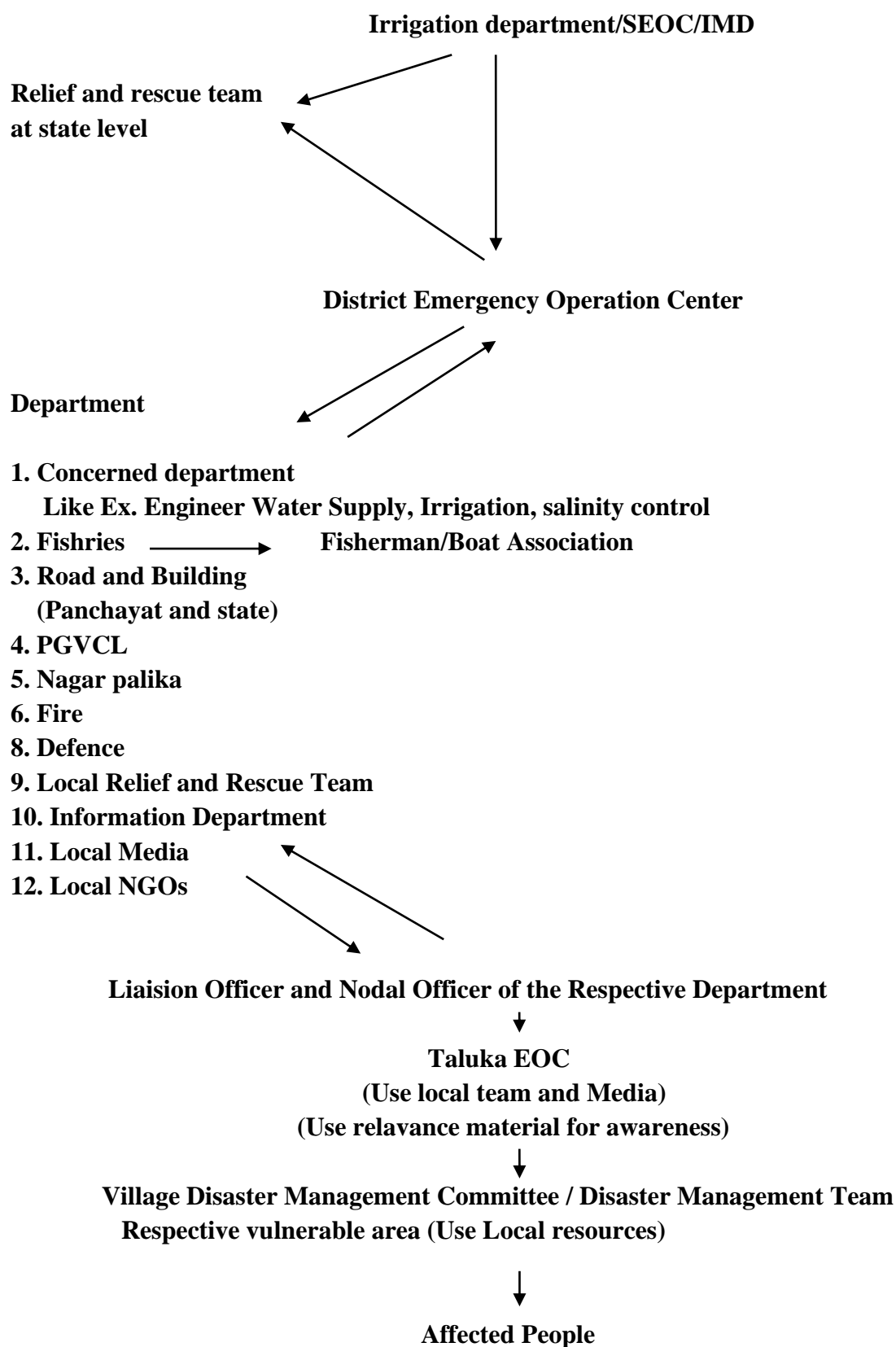


## **Disaster Specific Response Flow Chart:**

### **1. Flood Response Flow chart**



## 2. Cyclone Response Flow chart



### 6.3 Warning and alert

On the receipt of warning and alert from the agency which listed in the table no: and on the basis of disaster occurrence report of Collector, the response mechanism of the district administration will be put into operation. The collector assisted with Resident Additional Collector will assume the role of the Chief of Operation during emergency situation in the district. The following table shows the details of agency which has authority to issue the warning or alert pertaining to different disasters:

Sr. no.	Disaster	Agency
1	Earthquake	IMD/ISR
2	Flood	IMD/Irrigation Department/CWC
3	Cyclone	IMD
4	Epidemic	Public Health Department
5	Road accidents	Police/RTO/NHAI
6	Industrial and Chemical accidents	Industry, DISH
7	Fire	Fire brigade/Police
11	Drought	Agriculture and Revenue department
12	Tsuanmi	INCOIS/IMD/ISR

### 6.4 District CMG meeting

The Collector & District Magistrate is responsible to held regular CMG meetings on disaster management including government, NGOs and private sectors. The CMG Committee held various meeting and had detailed interaction with members and management of Crisis. The Porbandar district level Pre-Monsoon and CMG Meeting for all District level departmental heads along with Mamlatdars, Chief Officers and TDOs holds every year before the monsoon season.

### 6.5 Activation of EOC

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.

The EOC is a nodal point for the overall coordination and control of relief work. In case of a level one (L1) disaster the The Local Control room will be activated, in case of a level two (L2) disaster DEOC will be activated along the coordination with SEOC.

Other line department EOC/Control Room should be activated for response against disaster as follows:

- ✓ TEOC
- ✓ Nagar palika
- ✓ Irrigation department
- ✓ PGVCL
- ✓ CDMO
- ✓ Fishries
- ✓ Port
- ✓ GWSSB
- ✓ District Panchayat
- ✓ Police
- ✓ Home Guard
- ✓ CDHO
- ✓ Salinity Control
- ✓ Forest
- ✓ S.T

## 6.6 Response Planning (multi hazard), preparedness and damage assessment

### Quick assessment of damage and need

Sr No	Assesment	Area of Operation	Responsibility	Time frame
1	Vulnerability assessment-houses/infrastructures, roads and bridges	Prant office Porbandar & Kutiyana	Quick Response Team of R&B dept.	Immediate
2	Houses/infrastructure, roads damage		SDM	within 3 days of incident
3	Water supply lines		Ex Engineer, GWSSB	Immediate
4	Electricity		Superintendent Engineer, PGVCL	Immediate
5	Telecommunication		Area manager, BSNL	Immediate
6	Health & Hygiene		CDHO	Immediate
7	Road connectivity		Ex. Engineer, R&B	Immediate
8	Crops		DAO	within 3 days of incident
9	Livestock		Dy director of Animal husbandry	Immediate
10	Forest		Dy Conservator of Forest	within 3 days of incident

## 6.7 Media Management

The role of media, both print and electronic, in informing the people and the authorities during emergencies becomes critical, especially the ways in which media can play a vital role in public awareness and preparedness through educating the public about disasters; warning of hazards; gathering and transmitting information about affected areas; alerting government officials, helping relief organizations and the public towards specific needs; and even in facilitating discussions about disaster preparedness and response. During any emergency, people seek up-to-date, reliable and detailed information.

The State Government has established an effective system of collaborating with the media during emergencies. At the State Emergency Operation Centre (SEOC), a special media cell has been created which is made operational during emergencies. Both print and electronic media is regularly briefed at predetermined time intervals about the events as they occur and the prevailing situation on ground. A similar set up is also active at the District Emergency Operation Centre (DEOC).

Media can play crucial role during response time. Media management to be ensured for precise communication of the impact of disaster and relief measures being taken and generate goodwill among community and other stakeholders.

## 6.8 Warning dissemination

The dissemination of warning is the most critical function in order to give early warning to the community. It has to be fast in order to give reasonable amount of time for communities to prepare for any eventuality. Due consideration has to be given to the points mentioned below before sending across the information.

- Warning dissemination will be done to all the important stakeholders (as given below in the information dissemination format) at the Panchayat level in rural areas and Nagarpalika level in urban areas for early warning communication.
- Making use of the fastest means to communicate the message in the most lucid manner so as to prevent spread of rumor and panic among the masses.
- Bulk Voice SMS Service is the best means of communication to large masses without any effort and within no time. A voice recorded message from the District Magistrate from official number shall be sent to the database of numbers identified for information dissemination with the help of Mobile service providers & Telephone department.
- DEOC will incorporate to arrange dissemination of information through various means of communication such as Radio, TV, Cable Network, and SMS about warnings to districts/areas which are likely to be hit by disasters.
- Dist. Collector and Information Dept. will ensure dissemination of information to remote areas by local means. They will also ensure that local TEOC help lines are opened and effectively managed for public information, guidance and rumor control.

As soon as the warning of an impending calamity is received, the EOCs at the State,

District and Block levels will be on a state of alert. The Incident Commander will take charge of the EOC and oversee the dissemination of warning to the community.

The District Collector will inform the District Disaster Management Committees who will alert the block and Village level DMCs and DMTs to disseminate the warning to the community.

## **6.9 Resource Mobilization**

Taluka authority will try their best to contain the situation with the available local resources. However, if they find that the situation is beyond their control and the district level resource mobilization is required, they will seek the help of their superiors or call the meeting of Disaster Management Committee.

Online web portal like SDRN and IDRN and other web based IT solutions can be used for resource mobilization and deployment of trained members. This decentralized system presents many advantages such as the easy availability of the resources and plans at all levels, minimum duplication and time saving and finally the visual data reports generation that assists in gap analysis and resource mobilization.

## **6.10. Emergency Response Functions**

Effective response planning requires realistic identification of likely response functions, assignment of specific tasks to individual response agencies, identification of equipment, supplies and personnel required by the response agencies for performing the assigned tasks. Response functions essentially outline the strategy, resources needed, evacuation, search & rescue, etc.

### **Evacuation:**

In many emergencies, local authorities would set up public shelters in schools, municipal buildings and places of worship. While they often provide water, food, medicine and basic sanitary facilities.

### **Search and Rescue:**

At district level whatever help would be required during disaster that will be immediately informed to the various departments by the district collector and possible support NGOs and other line agencies in the district would be tapped up. If the District Collector thinks that it cannot cope with the disaster then he can ask help from the defence and paramilitary force.

### **Cordoning the area:**

SDM and Police department will cordoning off affected areas for restricting entries of rail or road traffic and instruct to cordon affected areas and setting up of check posts to control entry and exit. The DSP will send instructions for the cordoning off of the area. People should not be allowed access anywhere close to the site of the disaster.

**Traffic control:**

The Superintendent of Police will co-ordinate the work of Traffic control and Traffic arrangements towards the disaster affected areas. Traffic cell also has responsibility for the ground transportation of personnel, supplies, and equipment and make alternate arrangements to open the roads to traffic at the earliest.

**Law & order and safety measures:**

Collectorate and SP office is responsible for assuring the execution of all laws and maintenance of order in the area affected by the incident. The law and order section incorporates law and order taskforce which may be created to deal with a disaster with sufficient safety measures. It will arrange law and order against theft in the disaster affected area and co-ordinate with the search and rescue operations. It will also arrange for security at the relief camps/relief material storages. It is also responsible to maintain law and order at the time of distribution of relief material.

**Dead body disposal:**

The health department will immediately start the procedure for post mortem of the dead persons as per the rules. Disposal of dead bodies is to be carried to prevent the outbreak of epidemics. Arrangement should be made to issue death certificates of the deceased to the relatives.

**Carcass disposal:**

The animal husbandry departments with necessary equipments in case of cattle death are there in the affected areas for the disposal of carcass with a view to restoration of public life and result oriented work.

## 6.11 Responsibility matrix for response functions (Hazard specific)

**Hazard specific Responsibility Matrix for response functions for the disasters where early warning is available.**

Time	Hazard	Task	Department /Agency	Activity
D-72 Hr	Cyclone /Flood	Forecast/ Warning	IMD/CWC/S EOC/DEOC	<ul style="list-style-type: none"> <li>• DEOC staff will analyse the information:               <ol style="list-style-type: none"> <li>1. Where flood may occur or cyclone may landfall and which will be the most affected area.</li> <li>2. When the incident may take place, DEOC will inform directly to DM &amp; Collector, Porbandar for further instruction.</li> </ol> </li> <li>• Disseminate the emergency message.</li> </ul>
D-48Hr	Cyclone /Flood	Forecast/ Warning	IMD/CWC/S EOC/DEOC	<ul style="list-style-type: none"> <li>• DEOC staff will analyse the information:               <ol style="list-style-type: none"> <li>1. Where flood may occur or cyclone may landfall and which will be the most affected area.</li> <li>2. When the incident may take place, DEOC will inform directly to DM &amp; Collector, Porbandar for further instruction.</li> </ol> </li> <li>• Disseminate the emergency message</li> </ul>
D-24 Hr	Cyclone /Flood	Warning/Evacuation	IMD/CWC/ DEOC/NDR F/SDRF/DD MA/Police	<ul style="list-style-type: none"> <li>• DEOC/TEOC will immediately pass the information to:-               <ul style="list-style-type: none"> <li>• Mamlatdar and P.I. for sending QRTs for Search and Rescue operation. (Police/Fire brigade/NDRF/SDRF)</li> <li>• CDHO/CDMO for sending QRTs for First aid</li> <li>• EE, R&amp;B (State &amp; Panchayat) for sending QRT/Road Clearance Team for Road clearing for response activities.</li> <li>• EE, PGVCL has to cut the power supply of the affected area to avoid accidents caused by electric shock.</li> <li>• Contact SDM and Mamlatdar for Shelter house and relief</li> </ul> </li> </ul>



				<ul style="list-style-type: none"> <li>• Contact EE, GWSSB for ensuring drinking water/sanitation &amp; tanker.</li> <li>• Dy director, Animal husbandry for arranging cattle camp</li> <li>• Contact EE, R&amp;B (State &amp; Panchayat) for vulnerability assessment of affected houses and damage assessment.</li> <li>• DDMA meeting for more support from outside and for situation analysis.</li> </ul>
D 0 Hr	Cyclone /Flood	Preparedness	PGVCL	<ul style="list-style-type: none"> <li>• Power cut off in affected area</li> <li>• Deployment of Portable Generator</li> </ul>
D+15 Min	Cyclone /Flood	Rescue/First aid	Fire brigade/Police/Homeguard/NDRF/SDRF/Health dept	<ul style="list-style-type: none"> <li>• Road clearing by R&amp;B dept. so that response team may reach to the spot immediately and damage assessment.</li> <li>• Search and Rescue Operation and First Aid.</li> </ul>
D+30 Min	Cyclone /Flood	Rescue/First aid	Fire brigade/Police/Homeguard/NDRF/SDRF/Health dept	<ul style="list-style-type: none"> <li>• Road clearing by R&amp;B dept. so that response team may reach to the spot immediately and damage assessment.</li> <li>• Search and Rescue Operation and First Aid.</li> </ul>
D + Hr	Cyclone /Flood	Rescue/First aid	Fire brigade/Police/Homeguard/NDRF/SDRF/Health dept	<ul style="list-style-type: none"> <li>• Road clearing by R&amp;B dept. so that response team may reach to the spot immediately and damage assessment.</li> <li>• Search and Rescue Operation and First Aid.</li> </ul>
D +2 Hr	Cyclone /Flood	Rescue/First aid/Damage assessment	Fire brigade/Police/Homeguard/NDRF/SDRF/Health dept	<ul style="list-style-type: none"> <li>• Road clearing by R&amp;B dept. so that response team may reach to the spot immediately and damage assessment.</li> <li>• Search and Rescue Operation and First Aid.</li> </ul>
D + 3Hr	Cyclone /Flood	Rescue/First aid/Damage assessment/Sheltering	Fire brigade/Police/Homeguard/NDRF/SDRF/Health dept/SDM/M	<ul style="list-style-type: none"> <li>• Ensuring facilities like food, drinking water, hygiene and electricity at identified shelter homes.</li> <li>• Evacuating affected families and sheltering.</li> <li>• Damage assessment so that planners can</li> </ul>

			amlatdar/TDO/CO	prioritize the resources, needs to be in place and synchronize activities of different stakeholders.
D +6 Hr	Cyclone /Flood	Relief distribution/Water, sanitation & hygiene/Sheltering	Fire brigade/Police/Homeguard/NDRF/SDRF/Health dept/SDM/Mamlatdar/TDO/CO/PGVCL/GWSSB	<ul style="list-style-type: none"> <li>Ensuring drinking water, alternate power supply, sanitation facilities to the affected families and at shelter homes.</li> </ul>
D + 12Hr	Cyclone /Flood	Vulnerability assessment/Restoration of road, water supply, power supply & other services/damage and loss assessment	R&B dept, DAO, Animal Husbandry, Forest, Fisheries dept, PGVCL, BSNL, TDO	<ul style="list-style-type: none"> <li>Restoration of road, water supply, power supply, communication line and other services.</li> <li>Vulnerability assessment by R &amp; B dept. engineers.</li> <li>Damage and Loss assessment by formed team.</li> </ul>
D+24 Hr	Cyclone /Flood	Vulnerability assessment/Restoration of road, water supply, power supply & other services/damage and loss assessment	R&B dept, DAO, Animal Husbandry, Forest, Fisheries dept, PGVCL, BSNL, TDO & other required depts.	<ul style="list-style-type: none"> <li>Restoration of road, water supply, power supply, communication line and other services.</li> <li>Vulnerability assessment by R &amp; B dept. engineers. Damage and Loss assessment by formed team</li> </ul>

### Hazards specific Responsibility Matrix for sudden disasters like Earthquake and Fire.

Time	Hazard	Task	Department /Agency	Activity
D+15 Min	Earthquake/Fire	Evacuation/Search and Rescue/First Aid	Fire brigade/Police/Homeguard/NDRF/SDRF/Health dept, NGOs	<ul style="list-style-type: none"> <li>Intimation from TEOC/ Public/Media. If telecommunication works strategy will be: Collect information of incident from Village sarpanch through TEOC. TEOC will inform DEOC.</li> <li>If telecommunication fails: A messenger will collect information of incident from Community to nearest QRT. QRT will inform Police control room by wireless. Police control room inform DEOC by wireless. DEOC will inform TEOC and SEOC.</li> <li>DEOC/TEOC will immediately pass the information to:- <ul style="list-style-type: none"> <li>Mamlatdar and P.I. for sending QRTs for Search and Rescue operation. (Police/Fire brigade/NDRF/SDRF)</li> <li>CDHO/CDMO for sending QRTs for First aid</li> <li>EE, R&amp;B (State &amp; Panchayat) for sending QRT for Road clearing for response activities.</li> <li>EE, PGVCL has to cut the power supply of the affected area to avoid accidents caused by electric shock.</li> </ul> </li> </ul>
D+30 Min	Earthquake and Fire	Evacuation/Search and Rescue/First aid	Fire brigade/R&B dept/Police/Homeguard/NDRF/SDRF/Health dept/Forest/SDM/NGOs	<ul style="list-style-type: none"> <li>Road clearing so that response team, may reach to the spot immediately and damage assessment.</li> <li>Search and Rescue Operation and First Aid</li> </ul>
D + Hr	Earthquake and Fire	Evacuation/Search and Rescue/First aid	Fire brigade/R&B dept/Police/Homeguard/N	<ul style="list-style-type: none"> <li>Road clearing so that response team, may reach to the spot immediately and damage assessment.</li> <li>Search and Rescue Operation and First</li> </ul>

			DRF/SDRF/ Health dept/Forest/S DM/NGOs	Aid.
D + 2 Hr	Earthquake and Fire	Evacuation/Search and Rescue/First aid/Sheltering	Fire brigade/Police/Homeguard/NDRF/SDRF/Health dept/SDM/Mahtad/TDO/CO/PGVCL/GWSSB	<ul style="list-style-type: none"> <li>• Shelter place identification and ensuring facilities like food, drinking water, hygiene and electricity.</li> <li>• Evacuating affected families and sheltering.</li> <li>• Damage assessment so that planners can prioritize the resources, need to be in place and synchronize activities of different stakeholders.</li> <li>• Ensuring drinking water, alternate power supply, sanitation facilities to the affected families and at shelter homes.</li> </ul>
D + 3 Hr	Earthquake and Fire	-do-	-do-	-do-
D + 6 Hr	Earthquake and Fire	Relief	SDM, Mahtad, TDO, CO	Relief distribution
D+12 Hr	Earthquake and Fire	Damage assessment/Restoration of road, water supply, power supply & other services/damage and loss assessment	R&B dept, DAO, Animal Husbandry, Forest, Fisheries dept, PGVCL, BSNL, SDM, TDO	<ul style="list-style-type: none"> <li>• Restoration of road, water supply, power supply, communication line and other services.</li> <li>• Vulnerability assessment by R &amp; B dept. engineers.</li> <li>• Damage and Loss assessment by formed team</li> </ul>
D+24 Hr	Earthquake and Fire	Vulnerability assessment/Restoration of road, water supply, power supply & other services/damage and loss assessment	R&B dept, DAO, Animal Husbandry, Forest, Fisheries dept, PGVCL, BSNL, SDM., TDO	<ul style="list-style-type: none"> <li>• Restoration of road, water supply, power supply, communication line and other services.</li> <li>• Vulnerability assessment by R &amp; B dept. engineers.</li> <li>• Damage and Loss assessment by formed team.</li> </ul>

## 6.12 Best Practices/Success story

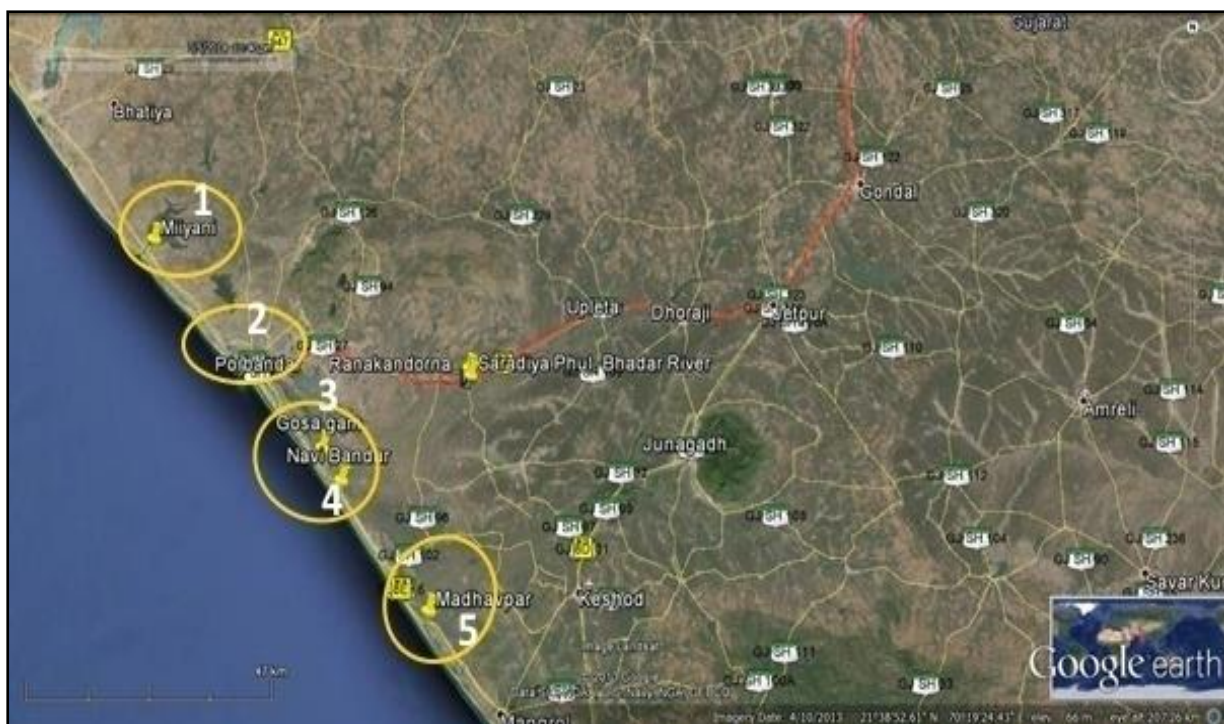
### Network of Local Rescue Groups: Porbandar District

Porbandar is a coastal district having a large fishing industry with fishing communities having small and big boats. A very large proportion of the district belongs to the low-lying Ghed land, which remains inundated for a long period after the monsoon rain. The district is prone to multiple hazards of coastal flooding, flooding from monsoon, cyclone and storm surge. In the *ghed* areas, usually during monsoon many of the villages tend to be marooned due to the flooding. According to information gathered from district authorities, there are 37 villages in the flood-prone *ghed* area. The overflow from two dams i.e Bhadar-1 (Gondal Taluka) and Bukhi in (Upleta Taluka) and the Minsar river causes flooding in these areas. It does not seem very feasible to maintain sufficient number of rescue boats at a central location for dispatching to distant vulnerable locations at the time of a crisis. However, since fishing is a major economic activity in the district, there are large number of rugged boats and highly capable people to operate them in the district.

Taking note of the capabilities of the fishing community and their legacy of bold initiatives to help and rescue people in distress, the DEOC has established good rapport with leaders of the fishing community at different locations along the coast. The DEOC has identified clusters of villages that can be supported by the local fishing community in case of emergencies where rescue boats are needed. In each cluster, at least one group of 5 to 10 fishermen have been identified who can help the disaster management efforts of the DEOC. At present, there are five such groups enlisted by DEOC from the North to South:

- 1) Miyani
- 2) Porbandar
- 3) Gosa
- 4) Navi Bandar and
- 5) Madhavpur

This is an informal arrangement that has now become somewhat institutionalized increasing its reliability in a crisis.



The success of this approach was demonstrated on 27 September 2013 when the fishermen's group from Gosa rescued eight people who were at risk of getting drowned as they were trapped in a dangerous location in a place known as koribal na timba. The team of fishermen of the Ismailbhai Dimmer family consisting of Shri Lakhabhai, Shri Hasambahi and Shri Punabhai carried out the rescue using medium-sized Fibre-Reinforced Plastic (FRP) boat (locally called as hodi) powered by a 8-HP outboard motor. They had kept another two boats as standby in the Gosa village. The Dimmer family takes great pride in their tradition of undertaking brave rescue efforts. Their great grandfather is famous for many such efforts and the community is keen on carrying on the tradition. They now work closely with the DEOC and respond to emergency calls from the DPO.

### **Porbandar District**

The flooding of Bhadar River inundated vast stretches of land in Porbandar district. Nine persons (1 woman, 3 children and 5 men) were stranded in Kutiyana Taluka because of the flooding. To save themselves from floodwaters, five persons (3 children, 1 woman and 1 man) on the outskirts of Kutiyana town had taken shelter in the top floor of two-storey farmhouse. Besides, four men were marooned in Chouta village close to Bhadar River. The river was flowing so rapidly that it was not possible to carry out rescue operations using boats. Under these circumstances, the District Collector sought the help of Indian Coast Guard (ICG). The people were stranded with very little food. Though there was no immediate threat to life, had the flooding continued unabated they would have been in serious danger in less than 24 hours. The stranded persons were in touch with the officials and the officials ensured that morale of the stranded people was maintained.





**Figure 6.2: Rescue work in Kutiyana, Dist:-Porbandar**



**Figure 6.3: Rescued person brought to safe location by ICG helicopter, Kutiyana, Dist:-Porbandar**

After the Regional HQ (NW) of ICG at Gandhinagar received the request from the District administration in the evening of 26 September 2013, an aerial reconnaissance was carried out using the advanced light helicopter in the early hours next morning as soon as there was sufficient visibility. They identified the locations and established a drop zone at a highway passing through Kutiyana Village. There were some difficulties in identifying the particular spots where the two groups were stranded as out of curiosity people began to gather at various places seeing a low-flying helicopter. The stranded persons were then instructed through the mobile phones to wave brightly colored clothes such as a *saree* or bed-sheet to draw the attention.

Today, Emergency managers and researchers view recovery as a process, defined as a series of stages, steps, and sequences that people, organizations, and communities move through at varying rates. FEMA defines short-term efforts as those that return “vital life support systems to minimum operating standards.” Short-term recovery efforts usually include a transition from response activities to recovery efforts. Response activities focus on saving lives, including search and rescue; providing food, shelter, and clothing; and moving into activities that expedite the transition to long-term recovery. Key transitional activities usually center on managing donations and volunteers, conducting damage assessments, securing temporary housing, restoring lifelines, and clearing debris. Long-term recovery activities include debris management, the environment, historical preservation, housing, businesses, critical infrastructure (roads, bridges, and ports), lifelines (power, electricity, and water supply), psychological recovery, and the public sector.

### **7.1 General Policy Guidelines**

The approach to re-construction and recovery is guided by the National Disaster Management Policy 2009 of which salient clauses / sections are stated in the following para:

Section 9.1.1 of the NPDM states that - the approach to the reconstruction process has to be comprehensive so as to convert adversity into opportunity. Incorporating disaster resilient features to 'build back better' will be the guiding principle. The appropriate choice of technology and project impact assessment needs to be carried out to establish that the projects contemplated do not create any side effects on the physical, socio-cultural or economic environment of the communities in the affected areas or in their neighborhood. Systems for providing psycho-social support and trauma counseling need to be developed for implementation during reconstruction and recovery phase.

Section 9.2.1 of NPDM states that - Reconstruction plans and designing of houses need to be a participatory process involving the government, affected community, NGOs and the corporate sector. After the planning process is over, while owner driven construction is a preferred option, contribution of the NGOs and corporate sector will be encouraged. Reconstruction programme will be within the confines and qualitative specifications laid down by the Government.

Section 9.3.1 states - Essential services, social infrastructure and intermediate shelters/camps will be established in the shortest possible time. For permanent reconstruction, ideally, the work including the construction of houses must be completed within two to three years. Concerned Central Ministries/Departments and the State Governments should create dedicated project teams to speed up the reconstruction process.

Section 9.3.2 of NDMP states - that - Contingency plans for reconstruction in highly disaster prone areas need to be drawn out during the period of normalcy, which may include architectural and structural designs in consultation with the various stakeholders.

As per the section 9.5.1 of NPDM – the State governments will have to lay emphasis on the restoration of permanent livelihood of those affected by disasters and special attention to the needs



of women-headed households, artisans, farmers and people belonging to marginalised and vulnerable sections.

## 7.2 Detailed damage and loss assessment

A detailed assessment must be conducted before commencing reconstruction and rehabilitation activities. The relevant Government departments and local authorities shall initiated detailed assessment at their respective level for damages sustained in housing, industry/services, and infrastructure, agriculture, health / education assets in the affected regions. Immediate recovery can continue from a day to two months, depending upon the extent of damage. The assessment teams are to report the following information to the DEOC for further action.

- Boundaries of the disasters and Access points to the disaster area.
- Status of the transportation and communication system.
- Disaster casualty information.
- Status of medical systems.
- Shelter / mass care information.
- Damage to utility system and status of critical facilities.
- Status of security within the affected areas.
- Information on the humanitarian organisations within the areas.

Conducting detailed damage and loss assessment in the aftermath of severe incident includes, Individual damage assessment as well as Public Damage assessment which includes (but not limited to)

1. Damage to road, streets and bridges (critical infrastructures)
2. Damage to water control facilities such as drainage system, water channel etc.
3. Damage to public buildings, equipments, utilities and places like parks, recreational sites.
4. Managing Debris.

## 7.3 Short-term recovery programme

Short-term recovery phase starts during the first hours and days after an emergency event. The principal objectives are to restore the necessary structural [facilities, critical systems/Infrastructure, roadways and grounds] and non-structural, (power, water, sanitation, telecommunications).

The Short-term recovery with urgent measures to be undertaken includes the following:

- **Roads and Bridges:** This covers construction of all critical roads and bridges necessary to provide connectivity with immediate effect.
- **Drinking Water Supply:** Restoration of Drinking Water supply has to be done by setting up of new hand pumps, tube wells or setting up of piped water supply in areas with no access to potable water. In case of floods, setting up of raised hand pumps is required.

- **Electricity:** Restoration of power supply is also critical to immediate recovery.
- **Communication Network:** After disasters, communication networks may be disrupted. The networks of mobile services providers have to be put back in operation at the earliest to make search and rescue easier, as well as to expedite coordinated response measures.
- **Reconstruction & Repair of Lifeline Buildings:** Lifeline buildings are those necessary to keep the administrative machinery functioning despite the damage by disaster have to be repaired on priority.
- **Rehabilitation:** In case, there is a major damage from earthquake or flooding, a large segment of the population may have to be rehabilitated to new safer place. Communities will have to be supported with relief shelter.
- **Mass Care/Sheltering and Housing:** The management of relief shelters is continued from the response phase to the immediate recovery phase. During this period, the number of victims must be identified for whom construction of houses under PMAY/ Sardar Awas Yojna shall be sanctioned.
- **Food:** Supply of food in relief phase is more important. It becomes important to elicit support from various NGOs, Grain merchants and volunteers.
- **Debris Removal and Disposal of Dead Bodies:** Removal of debris or trees from transportation routes for effective rescue and relief measures.
- **Drainage and Sewage:** Drainage and sewage systems will have to be quickly re-established to decrease inundation from floods, spread of diseases and epidemics and Maintain sanitation & hygiene.
- **Health Care:** First Aid and Emergency Health care has to be provided at the earliest. In case the health care centers are affected by the disaster, temporary medical relief camps need to be installed while the building is retrofitted or reconstructed.
- Mobile Medical units have to be pushed into action for immediately health care close to the community.

## 7.4 Long-term Community Recovery

Individuals, families and communities who are affected by disaster severely may need more time and specialized assistance to recover, and a more formalized structure to support them. Specialized assistance may be needed to address unique needs that are not satisfied by routine disaster assistance programs. It may also be required for very complex restoration or rebuilding challenges. Long-term community recovery addresses these ongoing needs by taking a holistic,

long-term view of critical recovery needs, and coordinating the mobilization of resources at the federal, state, and community levels.

### Showing short term and long term recovery time table

<b>SHORT TERM AND LONG TERM RECOVERY TIMETABLE</b>		
Recovery and Reconstruction		
Activity/Action	Estimate of Duration	Estimate of Duration
	<b>Short-Term</b>	<b>Long-Term</b>
Warning	Hours to a few days	
Response/Operations	<b>Ongoing</b>	Ongoing
Emergency	<b>1-15 days</b>	1-60 days
Preparation of damage assessment	<b>1-4 days</b>	4-8 days
Disaster declaration (state or federal)	<b>1-10 days</b>	0-30 days
Federal/State mitigation Strategy	<b>1-15 days</b>	15-30 days
Recovery	<b>7-150 days</b>	150-365 days
Temporary building moratorium	<b>&lt;=30 days</b>	<=60 days
Letter of intent to submit HM Grant	<b>&lt;=60 days</b>	<=60 days
Short-term reconstruction	<b>&lt;= 1 year</b>	200-365 days
State mitigation	<b>&lt;= 180 days</b>	365 days
HMGP proposal	<b>70-200 days</b>	200-365 days
Long-term reconstruction	<b>100 days to 5 years</b>	5 to 10 years

## **Chapter: VIII**

## **Financial Arrangements**

To ensure the long-term sustainance and permanency of the organization funds would be generated and deployed on an ongoing basis. There are different ways to raise the fund in the State as described below.

### **8.1 State Disaster Response Fund**

To carry out Emergency Response & Relief activities after any disaster the State Disaster Response Fund is made available to Commissioner of Relief, Revenue Department under which the Central Government will share 75% and the Govt. of Gujarat has to share 25% as per the recommendation of 13th Finance Commission.

### **8.2 State Budget**

The Authority, submit to the State Government for approval a budget in the prescribed form for the next financial year, showing the estimated receipts and expenditure, and the sums which would be required from the State Government during that financial year. As per the provisions of The Gujarat State Disaster Management Act, 2003 the Authority may accept grants, subventions, donations and gifts from the Central or State Government or a local authority or any individual or body, whether incorporated or not.

### **8.3 District Planning Fund**

For preparedness, mitigation, capacity building and recovery fund can be raised from MP or MLA grant as received for developmental work through departmentally arrangement. Budget planning is a comprehensive exercise for annual financial planning. For Disaster Management, there can be two categories of budget heads i.e (a) Line department's own fund through various schemes and programmes; and (b) Additional budget required particularly for DM activities.

### **8.4 Partnerships**

There are projects/schemes in which funding can be done by a public sector authority and a private party in partnership (also called on PPP mode funding). In this State Govt. along with Private organizations and with Central Govt. share their part.

#### **Centrally Sponsored scheme:**

<b>Name</b>	<b>Purpose</b>	<b>Finance arrangement</b>	<b>Activities that can be take under scheme</b>	<b>Nodal Agency</b>
NDRF (NCCF)	Relief assistance	100% central govt.	Cash and kind relief	Revenue Department
SDRF (CRF)	Relief assistance	75% Centre, 25% State	Cash and kind relief	Revenue Department
Planning Commission (13 <sup>th</sup> Finance commission) Year 2011-15	Capacity Building	100% Centre	Trainings & awareness programme , IEC materials and Mockdrills	Revenue Department

**9.1 Authority for maintaining and reviewing the plan**

The DDMA, Porbandar will be responsible for the maintaining and reviewing of the DDMP. This needs constant review and updation based on the following requirements:

- Major changes in the operational activities, location and valuable inputs from actual disasters.
- Lessons learnt from trainings and inputs from mock drills/simulation exercises.
- Lessons learnt from mis-happening and near miss incidents.
- Changes in disaster profile of Porbandar.
- Technological developments/ innovations in identifying potential hazards or mitigating them.
- Changes in regulatory requirements.
- Changes in demography of population of Porbandar district and nearby places.
- Changes in geo-political environment
- Inventory of disaster management resources & equipments in the district.
- Human resources, their addresses and contact numbers.

**9.2 Schedule for updation & revision of plan**

DDMC shall compile its learning and proposed new mechanisms for improvement in updation of plan for the capacity to deal with disasters.

Every year as a part of pre-monsoon, DDMC will update plan in the month of May-June and will revise in the month of October-November every year.

**9.3 Schedules for Mock Drills**

The DDMA has planned to test the preparedness level of all line departments, community, Quick Response Team and the limitation of DDMP by organising regular mock drills.

Taluka level: Community level mock drills to be conducted involving Village volunteers, vulnerable families, NGOs, QRTs and VDMC.

District level: Mock drills (twice in a year) to be conducted at vulnerable places involving DDMC, TDMC, NGOs, Village volunteers, Aapda Mitra and district level QRTs.

## **Chapter: X** **Guidance For Mass Rescue Operation**

### **Introduction**

1 A mass rescue operation (MRO) is one that involves the need for immediate assistance to large numbers of persons in distress such that capabilities normally available to search and rescue (SAR) authorities are inadequate.

2 Fortunately, MROs are relatively rare compared to normal SAR operations, but major incidents leading to the need for MROs have not been infrequent on a world-wide basis, and can occur anywhere at any time. Since the nature of such operations may be poorly understood due to limited chances to gain experience with major incidents involving MROs, this Guidance begins with a general discussion of MROs and related matters.

3 Flooding, earthquakes, terrorism, casualties in the offshore oil industry, accidents involving releases of hazardous materials and major aircraft or ship incidents are examples which, because of their magnitude, may need to use the same resources as would be needed to carry out mass maritime or aeronautical rescue operations.

4 The sequence of priority in major multi-mission incidents must be lifesaving first, generally followed by environmental protection, and then protection of property.

5 Moral and legal obligations, as well as public and political expectations, drive the need to be prepared to carry out MROs safely and effectively should they become necessary. Since the need for MROs is relatively rare, it is difficult to gain practical experience to help deal with them. While the types of potential MRO scenarios, as well as the organizations, emergency response structures and circumstances vary from place to place, there are certain general principles, common actions and examples that can be followed based on lessons of history, which this Guidance is intended to convey.

6 MROs are relatively low-probability high-consequence events. Effective response to such major incidents typically require immediate, well-planned and closely co-ordinated large-scale actions and use of resources from multiple organizations. Intense and sustained high priority lifesaving efforts may need to be carried out at the same time and place as major efforts to save the environment and property. Huge amounts of selected information will need to be readily available at the right times and the right places not only to support the response efforts, but to meet the needs of the media, public and families of the persons in distress, which may number in the hundreds or thousands. Many means of communications will need to be available and interlinked amongst organizations at various levels to handle huge amounts of information reliably for the duration of the response. A surge in the numbers of competent staffing in all key organizations must be available immediately and be sustainable for up to weeks at a time. Equipment and logistics demands will jump to unprecedented levels. Successful MROs depend on the advance provision of flexible and all-level contingency plans. Intense integrated planning and operational efforts must also be carried out in real time throughout actual rescue efforts.

7 All who will be involved in the overall multi-agency, multi-jurisdiction, multi-mission and possibly international response to a major incident will need clearly understand who is in charge, how to work with who is in charge, the respective roles of all involved, and how to interact with each other. SAR authorities may be responsible for all, or part, of the MRO responsibilities of the major incident response, and will be able to co-ordinate their efforts seamlessly with other

incident responders under overall direction of another authority within or outside their agency. The broader response environment may involve hazards mitigation, damage control and salvage operations, pollution control, complex traffic management, large-scale logistics efforts, medical and coroner functions, accident-incident investigation, intense public and political attention, etc. MRO plans need to be part of and compatible with overall response plans for major incidents. Plans must typically allow for command, control and communications structures that can accommodate simultaneous air, sea and land operations.

8 Potential disastrous consequences of poor preparations for MROs in terms of loss of life and other adverse results are enormous. Major incidents may involve hundreds or thousands of persons in distress in remote and hostile environments. A large passenger ship collision, a downed aircraft, or a terrorist incident could, for example, call for the immediate rescue of large numbers of passengers and crew in poor environmental conditions, with many of the survivors having little ability to help themselves, and the dire results of failure are evident.

9 Preparedness to mount an extraordinarily large and rapid response is critical to preventing large-scale loss of lives. Such preparedness often depends on strong and visionary leadership and unusual levels of co-operation to achieve. There will often be strong resistance to paying the inherently high price in terms of time, effort and funding that preparedness for major incidents entails, particularly as they are rare events. The required levels of co-operation, co-ordination, planning, resources and exercises, required for preparedness are challenging and do not happen without the requisite commitment of SAR authorities, regulatory authorities, transportation companies, sources of military and commercial assistance and others.

10 SAR authorities should co-ordinate MRO plans with companies that operate ships and aircraft designed to carry large numbers of persons. Such companies should share in preparations to minimize the chances that MROs will be needed, and to ensure success if they are.

11 MRO planning, preparations and exercises are essential since opportunities to handle actual incidents involving mass rescues are rare. Therefore the exercising of MRO plans is particularly important. Appendix 1 provides guidance on planning and conducting such exercises.

12 The provisions of this document are intended to provide general guidance to authorities and organizations responsible for ensuring that MROs, should they be necessary, are successful.

13 For a situation involving large numbers of persons in distress, on scene responsibilities for the safety of passengers and crew will be shared by the OSC and the aircraft pilot in command or ship master, with the pilot or master assuming as much of this responsibility as possible before or after the aircraft or ship is abandoned.

14 Pilots and masters are responsible for maneuvering the aircraft or ship as feasible and appropriate. They also have overall responsibility for safety, medical care, communications, fire and damage control, maintaining order and providing general direction.

15 Unless a ship appears to be in imminent danger of sinking, it is usually advisable for passengers and crew to remain on board as long as it is safe to do so.

16 In the case of a downed aircraft, whether passengers would be safer on board should be assessed for each situation. Usually they should promptly evacuate the aircraft at sea. On land this decision must account for the conditions of the aircraft and the environment, expected time to



rescue or aircraft repair, and whether required passenger care can be best provided inside the aircraft.

17 The OSC will normally be designated by an SMC. An OSC may be able to handle certain communications on scene and with appropriate remote authorities to help free the pilot or master to retain the integrity of his or her craft. However, these persons are themselves in need of assistance, and anything the OSC can do to help them should be considered, bearing in mind that the OSC's main duty is co-ordinating SAR facilities and rescue efforts under the SMC's general direction.

18 It is important to minimize unnecessary communications with the master of a ship or pilot in command of an aircraft in distress, and this should be taken into account in advance planning. Exchanges of information during joint planning by use of SAR Plans of Co-operation (see MSC/Circ.1000 or its superseding circulars) and other means will reduce the need to ask the pilot or master for this information one or more times during a crisis. Persons or organizations that want this information should be directed to a source ashore or on the ground that is prepared to handle what could be many requests.

19 High priority should be given to tracking and accounting for all persons on board and all lifeboats and rafts, and efforts to keep them together will help in this regard. Availability of accurate manifests and accounting is critical. The need to relocate survival craft and check for persons in them can waste valuable resources. One option is to sink survival craft once the persons in them have been rescued; however, the potential that other survivors may find and need the craft should be considered.

20 Navy ships are often better equipped than commercial vessels for retrieving people who have abandoned a ship or aircraft, and use of any such ships should be considered.

21 Helicopter capabilities should be employed if available, especially for retrieval of weak or immobile survivors. Lifeboat crews should be trained in helicopter hoist operations. Lowering a rescue person from the helicopter to assist survivors may be viable.

22 Ship companies should be encouraged to equip large passenger ships and possibly other types of vessels with helicopter landing areas, clearly marked hoist-winch areas, and onboard helicopters to facilitate more direct transfers of numerous persons.

23 If a ship with a large freeboard cannot safely retrieve survivors from the water or survival craft, it may be possible to first retrieve them onto small vessels, and then transfer them to progressively larger ones.

24 Depending on the circumstances, it may be safer to tow survival craft to shore without removing the occupants at sea. Lifeboats could be designed to support passengers for longer periods of time, and to be able to reach shore on their own from longer distances offshore.

25 To the extent practicable, MROs should be co-ordinated by an SMC in an RCC. However, depending on the magnitude, nature and complexity of a mass rescue incident, the rescue efforts may be better co-ordinated by an appropriate operations centre higher within the SAR agency or a government. Considerations in this decision might include, among others:

- extensive rescue support by organizations other than those commonly used for SAR;



- need for heavy international diplomatic support; and
- serious problems in addition to potential loss of lives, such as environmental threats, terrorist actions, or national security issues.

26 The following factors should be considered in MRO planning:

- use the Incident Command System (ICS) or other effective means of handling multi-agency, multi-jurisdiction, multi-mission scenarios;
- identify situations within the SRR that could potentially lead to the need for MROs, including scenarios that might involve cascading casualties or outages;
- mobilisation and co-ordination of necessary SAR facilities, including those not normally available for SAR services;
- ability to activate plans immediately;
- call up procedures for needed personnel;
- need for supplemental communications capabilities, possibly including the need for interpreters;
- dispatching of liaison officers;
- activation of additional staff to augment, replace or sustain needed staffing levels;
- recovery and transport of large numbers of survivors (and bodies, if necessary), accounting for survivors potentially having injuries and lack of training, age limitation, hypothermia, etc.;
- a means of reliably accounting for everyone involved, including responders, survivors, crew, etc.;
- care, assistance and further transfer of survivors once delivered to a place of safety, and further transfer of bodies beyond their initial delivery point;
- activation of plans for notifying, managing and assisting the media and families in large numbers;
- control of access to the RCC and other sensitive facilities and locations;
- RCC backup and relocation plans, as appropriate; and
- ready availability to all potential users of plans, checklists and flowcharts.

27 At some point the ability of an RCC to continue to effectively co-ordinate the MRO and

still handle its other SAR responsibilities might be overwhelmed, and another RCC or a higher authority may need to assume responsibility for the MRO.

28 With these possibilities in mind, MRO plans may provide for various degrees of response, along with criteria for determining which amount of response will be implemented. For example, as local SAR resources are exhausted, or from the outset, SAR resources may need to be obtained from distant national or international sources.

29 Experiences in responding to major incidents have resulted in other practical advice such as the following:

- plan and exercise how any agency receiving notification of an actual or potential mass rescue event can immediately alert and conference call other authorities that will potentially be involved, brief them, and enable immediate actions to be taken by all concerned (this will require identification of contacts in each agency that can be contacted on a 24-hour basis, and that have authority to immediately initiate actions and commit resources);
- co-ordinate all rescue operations effectively from the very beginning;
- begin quickly with a high level of effort stand down as appropriate rather than begin too late with too little effort;
- use more capable resources like cruise ships for taking large numbers of survivors onboard;
- ensure that MRO emergency plans address communications interoperability or inter-linking;
- retrieve and protect debris as evidence for follow on investigation;
- put security plans in place to limit access to the RCC;
- arrange in advance to involve the Red Cross, chaplains, critical incident stress experts and other such support for human needs;
- identify senior agency spokespersons to protect the time of workers directly involved in the response and designate a senior official to provide information to families;
- clearly identify the point at which the SAR response (lifesaving) has ended, and the focus shifts to investigation and recovery;
- be prepared to use an ICS when appropriate;
- ensure that air traffic and air space can be and is controlled on scene;
- the SMC can often benefit from assigning additional liaison personnel on scene;

- anticipate development and needs and act early;
- ensure that the scopes of SAR plans and other emergency or disaster response plans are co-ordinated to reduce gaps, overlaps and confusion about who is in charge and what procedures will be followed at various times and places;
- control access to the scene, including access by the media;
- work out in advance how private resources can be appropriately used to supplement other SAR resources;
- ensure that SAR plans provide for logistics support for large numbers of rescuers and survivors, including pre-arranged accommodations, if possible, and availability of food, medical care and transportation;
- consider requesting assistance from airlines and shipping companies other than the one whose aircraft or ship is involved in the incident, and know the types of assistance that such organizations might provide;
- bar coded bracelets can be an effective means of identifying children before, during and after the emergency;
- attempt to reduce the burden on a pilot or master and crews;
- if safe and appropriate to do so, place a marine casualty officer on board to assist the master and SAR personnel;
- share capabilities, expertise and assets among government and industry to take maximum advantage of the strengths of each.

## Communications

- 1 Communication plans must provide for a heavy volume of communication use, as a major incident will normally involve many responding organizations that need to communicate effectively with each other from the beginning. As necessary, advance arrangements should be made to link means of interagency communications that are not inherently interoperable. Interagency communications must be based on terminology that all involved understand.

## Major incident co-ordination

- 1 Regardless of the magnitude and priority of the lifesaving efforts involved in responding to a major incident, if any other functions are being carried out concurrently on scene by other than SAR personnel, the overall response involving SAR and the other functions, e.g., firefighting, should be well co-ordinated.
- 2 If certain basic concepts and terms are recognized and understood by all emergency responders, they will be much better prepared to co-ordinate joint efforts.
- 3 Standard SAR procedures should typically be followed for the SAR part of the response, but these procedures will be largely independent of other efforts. Companies or authorities handling other aspects of the response will follow command, control and communication procedures developed for their respective organizations and duties.
- 4 The SAR system can function in its normal manner or use modified SAR procedures established to account for special demands of mass rescues, but it should be appropriately linked and subjected to a scheme for management of the overall incident response.
- 30 For major incidents, crisis management for the overall response may also be needed. The **Incident Command System (ICS)** is one simple and effective means of meeting this need. The ICS works best with some advance familiarization and exercising. Since SAR and transportation authorities are likely to encounter use of the ICS within emergency response communities, Appendix 3 provides general information for familiarization with the ICS. The ICS is an example of an effective system used for emergency management, and is a tool that can be used where no equivalent means of overall incident management is in place.

## Industry planning and response

- 31 SAR authorities should co-ordinate MRO plans with companies that operate aircraft and ships designed to carry large numbers of persons. Such companies should share in preparations to minimize the chances that MROs will be needed and to ensure success if they are. Appendix 2 provides guidance on industry roles and discusses how companies could arrange for use of company field teams and emergency response centres as possible means of carrying out their MRO responsibilities. For passenger ships, SAR Plans of Co-operation are part of MRO plans.

## Public and media relations

32 What the media reports may matter more than what SAR services do for shaping of public opinion about MROs. Importantly, the role of the media may be critical in shaping the actions of the public and those directly involved in the distress situation in a way that contributes to safety, success and panic control. There should be no unwarranted delays in providing information to the media. Information should be readily available, clear, accurate, consistent and freely exchanged among emergency responders and others concerned, such as the public and families of persons on board.

33 Identify spokespersons and outline what they will say, staying factual. If SAR services do not provide a public spokesperson for a major incident, the media will. Spokespersons should be cautious about speculating on causes of accidents and should inform the media that current operations are focused on saving lives.

34 Ensure that the media knows who is in charge of co-ordinating rescue operations.

35 A single spokesperson not directly involved in the incident can be valuable in relieving the IC and SMC of this duty.

36 Many entities are involved in a major incident, including ships, aircraft, companies and SAR services. Co-ordination is required to ensure that there is one message with many messengers. Interviews should be live if possible.

37 Prompt establishment of a joint information centre away from the SMC will help to achieve this goal. The centre can establish proper procedures for establishing what messages will be released to the public and how those messages will be released. Since the messages may be sensitive, it is critical that everyone communicates the same information. The centre can be responsible for co-ordinating information made available via the internet and perhaps establishing and maintaining a public web site.

38 The media is a 24-hour global market, with news broadcast worldwide around the clock. The media will find a way to get to the scene for first hand information, pictures and video. By providing transportation to the scene and controlling media access, safety and what is reported can be improved and better controlled.

39 Media outlets may have more resources to mobilize on scene than do SAR authorities, and RCC operating plans should account for how to deal with such situations.

40 Information should be provided to the public on what SAR facilities are being used and, if possible, a web address or list of contact phone numbers should be provided for families, media and others to contact for more information.

41 Preparations should be made so that large numbers of callers can be accommodated without saturating the phone system or crashing the computer server.

42 Advance preparation of standby web pages by transportation companies and SAR authorities can help in responding to floods of requests for information. These pages can be quickly posted to provide general information the media can use. Web information should be timely and accurate. Once posted, these pages can be easily updated with the status of the incident

and could also include:

- contact information;
- basic government or industry facts;
- industry and SAR definitions;
- photographs and statistics of aircraft, ships and SAR facilities;
- answers to frequently asked questions;
- links to other key sites;
- information on passenger capacity, crew size, vessel plans and firefighting capabilities; and
- library footage of a vessel inspection or of the crew performing lifesaving drills.

### **Follow up actions**

1. It is very important to develop and share lessons learned from actual MRO operations and exercises. However, concerns (often excessive) about legal liability may discourage highlighting matters that could have been done better.
2. Since lessons learned can help prevent recurring serious mistakes, agreement should be reached among principal participants on how lessons learned can be depersonalized and made widely available. Lessons learned from MROs should be shared not just locally, but internationally.
3. Careful accounting for survivors after they have been delivered to a place of safety remains important. They need to be kept informed about plans for them and about the ongoing response operations. With large numbers of persons often staying in different places, keeping track of and working with them can be difficult.
4. Transportation companies are often best suited to handle and assist survivors during this time. Crewmembers may be placed at various locations to record passenger names and locations. Another possibility is for airlines or passenger ships to attach plastic cards to life vests to give passengers phone numbers for contacting the company. Some companies use bar coded bracelets to track children who are passengers.
5. Communicating with passengers is more difficult in remote areas, where phone service may be inadequate or lacking. If phones do exist, calling the airline or shipping company may be the best way to check in and find out information. In more populated areas, local agencies may have an emergency evacuation or other useful plan that can be implemented.
6. To protect passengers from harassment by interviewers and cameras, survivors might be placed in hotels or other places of refuge. However, triage and landing locations must be established and publicized to all rescue personnel and good Samaritans.

## APPENDIX 1

### EXERCISES FOR MASS RESCUE OPERATIONS

Since opportunities to handle actual incidents involving mass rescues are rare and challenging, exercising MRO plans are particularly important. Mass evacuation and rescue operations are difficult and costly, leading to a tendency to use simulation excessively during exercises rather than physically exercising on scene efforts.

MRO exercise objectives need not be addressed in a single large exercise, but may be satisfied in part by routine incorporation into multiple drills, some intended mainly to test other systems. However, realistic drills are necessary and costly, and over 1,000 volunteer ship passengers or hundreds of volunteer aircraft passengers will likely be needed to conduct a realistic exercise.

Separate rooms can be used to simulate command posts that would normally be in separate locations. MRO exercises should ideally achieve the following objectives:

- Account for:
  - Crew and passenger lists
  - Rescued passengers and crew until they can return to their homes
  - All persons associated with the rescue and aftermath operations
  - Lifeboats, including empty boats or rafts
  - High freeboard issues for likely rescue facilities
- Identify and task available resources:
  - Use of Amver
  - Potential resources ashore and afloat
  - Resources from local agencies (medical personnel, hospital facilities, fire department, general community, transportation resources)
  - National and regional military and other resources
- Evaluate notification processes, resource availability, timeliness of initial response, real-time elements, conference capabilities and overall co-ordination
- Ensure all agency roles are sorted out, understood and properly followed
- Test capabilities of potential OSCs and ability to transfer OSC duties
- Evaluate span of control
- Evacuate a ship or aircraft
- Co-ordinate activities and achieve information exchanges
  - Communications (RCC-RCC, government-industry, RCC-OSC, on

- scene, shore-ship, ground-air, ship-air, SAR facility-survival craft, etc.)
  - Information for all concerned (identify, merge, purge, retrieve and transfer to the right place in the right form at the right time)
  - New communication and information management technologies
  - Media and next-of-kin
- Safely transfer and care for passengers (evacuation, in survival craft, rescue, medical, protection from environment, post-rescue transfers, etc.)
- Test all communication links that may be needed for notification, co-ordination and support
- Conduct medical triage and provide first aid
- Assess ship's safety management system effectiveness
- Exercise co-ordination with local response agencies
- Provide food, water, lifejackets and other protective clothing to survivors
- Test mass rescue plans:
  - SAR services
  - Company (including aircraft and ship plans)
  - Any relevant emergency response organizations, e.g., disaster response, military, firefighting and medical
  - Transportation and accommodations
- Assess how effectively earlier lessons learned have been accounted for in updated plans and how well these lessons were disseminated
- Exercise salvage and pollution abatement capabilities
- Carry out emergency relocation of the disabled craft
- Exercise external affairs, such as international and public relations:
  - Necessary participants involved
  - Joint information **centres** established quickly and properly staffed
  - Press briefings handled effectively, e.g., consistent information from different sources
  - Notification of the next of kin and family briefings
  - Staff and equipment capacity to handle incoming requests for information
  - Rescued persons tracked, kept informed and needs monitored, and reunited with belongings

**The following steps are normally carried out during exercise planning:**

- Agree on the exercise scenario, goals and extent



- Assembly a multi-disciplinary planning team and agree on objectives for each aspect of the exercise
- Develop the main events and associated timetables
- Confirm availability of agencies to be involved, including any media representatives or volunteers
- Confirm availability of transportation, buildings, equipment, aircraft, ships or other needed resources
- Test all communications that will be used, including tests of radio and mobile phones at or near the locations where they will be used
- Identify and brief all participants and people who will facilitate the exercise, and ensure that facilitators have good independent communications with person who will be controlling the exercise
- Ensure that everyone involved knows what to do if an actual emergency should arise during the exercise
- If observers are invited, arrange for their safety, and to keep them informed about the exercise progress
- For longer exercises, arrange for food and toilet facilities
- Use “exercise in progress” signs, advance notifications and other means to help ensure that person not involved in the exercise do not become alarmed
- Schedule times and places for debriefs
- Agree and prepare conclusions and recommendations with the entity responsible for handling each recommendation along with the due date for any actions
- Prepare a clear and concise report and distribute it as appropriate to the participating organizations
- Consider the outcome of this exercise in planning future exercises

## **APPENDIX 2**

### **INDUSTRY PLANNING AND RESPONSE FOR MASS RESCUE OPERATIONS**

- **SAR authorities should co-ordinate MRO plans with companies that operate aircraft and ships designed to carry large numbers of persons. Such companies should share in preparations to minimize the chances that MROs will be needed, and to ensure success if they are. This Appendix provides guidance on industry roles, and discusses how companies could arrange for use of company field teams and emergency response centres as possible means of carrying out their MRO responsibilities.**
- 
- **Early notification of potential or developing MROs is critical, due to the level of effort required to mount a very large-scale response. It is much better to begin the response process and abort it should it become unnecessary, than to begin it later than necessary should the actual need exist. Pilots and masters should be advised and trained to notify SAR services at the earliest indication of a potential distress situation.**
- 
- **Company response organizations should be able to help SAR services by organizing support, equipment, advice and liaison any of their ships or aircraft.**
- 
- **Companies should be prepared to provide information to preclude the need for multiple sources attempting communications with the aircraft pilot in command or ship captain for information that is unavailable or available from another source. Receiving and handling requests for information aboard the distressed craft can interfere with the pilot's or master's ability to handle the emergency and handle critical on scene leadership needs.**
- 
- **Companies operating large aircraft or ships should be advised to be able to field a co-ordinated team that can handle emergency response functions around the clock should the need arise. Such a team might include staff as indicated in the following Table.**

### Typical company field team

<b>Team Leader</b>	Maintains overview, directs operations and keeps management informed
<b>Communicator</b>	Maintains open (and possibly sole) line of communications to craft in distress
<b>Co-ordinating Representative</b>	Usually a pilot or master mariner, who co-ordinates with SAR and other emergency response authorities, organizes tugs, looks at itineraries, arranges to position ships or ground facilities that may be able to assist and organizes security and suitable delivery points for passengers crew when they are delivered to safety
<b>Technical Representative</b>	Maintains contact with regulatory authorities, classification societies, insurers and investigators and provides liaison and advice for firefighting, damage control, repairs and other specialized or technical matters
<b>Environmental Representative</b>	Involved with environmental impact and spill response
<b>Medical Representative</b>	Gives medical advice, tracks casualties and arranges medical and identification services for survivors
<b>Passenger and Crew Representatives</b>	Provides information and support to whoever is designated to care for next of kin and keep them informed, identifies transportation needs, and may need to deal with various countries, languages and cultures
<b>Media Representative</b>	Gathers information, co-ordinates public affairs matters with counterparts in other organizations, prepares press releases, briefs spokespersons and arranges availability of information by phone and web sites
<b>Specialists</b>	From within or outside the company who may facilitate some special aspect of the response or follow up

**The company may operate an Emergency Response Centre (ERC) to maintain communications with the craft in distress, remotely monitor onboard sensors if feasible, and keep emergency information readily available. Such information might include passenger and crew data, aircraft or ship details, incident details, number of survival craft and status of the current situation.**

**Transportation companies should have readily available contacts with tour companies, shore excursion companies, airlines and cruise lines, hotels, etc., since such resources can be used to address many problems experienced with landing large numbers of survivors into a community.**

**Contingency plans for co-operation should be developed between SAR authorities and transportation companies, and these plans should be sufficiently exercised to ensure they would be effective should an actual mass rescue situation arise. Such plans should identify contacts, co-ordination procedures, responsibilities, and information sources that will be applicable for MROs. These plans should be kept up to date and readily available to all concerned.**

**Respective functions of the ERC and RCC should be covered in co-ordinated pre-established plans, and refined as appropriate for an actual incident. These centres must maintain close contact throughout the SAR event, co-ordinating and keeping each other apprised of significant plans and developments.**

**There are other steps the transportation industry could be urged to undertake to improve preparedness for MROs. The following are some examples:**

- Carry SAR plans on board aircraft or ships
- Provide water and thermal protection for evacuees appropriate for the operating area
- Provide a means of rescue to bring people from the water to the deck of ships
- Use preparation checklists provided by SAR authorities
- Conduct an actual physical exercise in addition to simulations
- Provide the capability to retrieve fully loaded lifeboats and rafts
- Enhance lifeboat lifesaving capabilities
- Provide ways to assist persons in lifeboats who are seasick, injured or weak
- Provide on-board helicopter landing areas and helicopters
- Prepare to assist survivors once they have been delivered to a place of safety
- Have aircraft or ship status and specifications readily available, such as inspection records, design plans, communication capabilities, stability calculations, lifesaving appliances, classification society contacts, passenger and cargo manifests, etc., so that such information will not need to be obtained directly from a pilot or master
- Work with SAR authorities to develop and be able to rapidly deploy air droppable equipment or supplies for survivors, maintain strategically located caches for this purpose

**Acceptance of certain responsibilities by industry demonstrates commitment to passenger safety and can free SAR services to handle critical arrangements relating to SAR resources, co-ordination and communications.**

## APPENDIX 3

### INCIDENT COMMAND SYSTEM OVERVIEW

**For major incidents, crisis management for the overall response may also be needed. The Incident Command System (ICS), one widely used means of meeting this need, but works best with some advance familiarization and exercising within and among the transportation and emergency response communities. Since SAR and transportation authorities are likely to encounter use of the ICS within emergency response communities, this Appendix provides general information for familiarization with ICS. The following terms are relevant to the ICS:**

- **Incident Commander (IC):** the primary person functioning as a part of the incident command system, usually at or near the scene, responsible for decisions, objectives, strategies and priorities relating to emergency response
- **Incident Command Post (ICP):** location at which primary functions are carried out for the Incident Command System
- **Incident Command System (ICS):** on scene emergency management concept that provides an integrated organizational structure adaptable to the complexity and demands of a major incident involving multiple missions, response organizations or jurisdictions
- **Unified Command (UC):** the incident commander role of the incident command system expanded to include a team of representatives that manages a major incident by establishing common objectives and strategies and directing their implementation

**The ICS is designed for use when multiple organizations and jurisdictions need to be jointly involved in an emergency response activity and co-ordinate their efforts.**

**While organizations have their respective systems of command and control or co-ordination, these should be compatible with systems others use so organizations can function well jointly when necessary. Commonality and similarities among crisis management systems locally, regionally and internationally foster effective joint efforts.**

**The ICS does not take control, responsibility or authority away from SAR services; SAR services remain focused on lifesaving, while the ICS focuses on promoting an effective overall incident response.**

**The ICS training, advance co-ordination and liaison will be rewarded by better performance and success when a crisis situation arises. As a tool for managing major incidents, the ICS:**

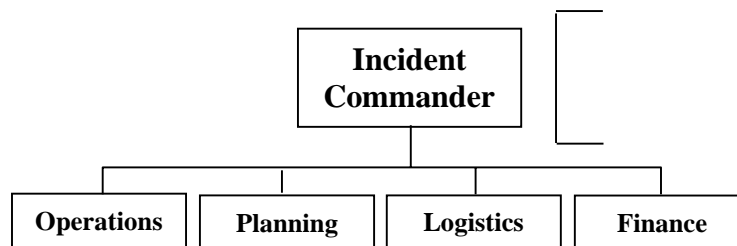
- Accommodates all risks and hazards
- Is simple, powerful and flexible

- Can easily expand or contract as the incident warrants
- Relieves the SAR system of co-ordinating non-SAR missions
- Enables SMC to use the ICS contacts to draw on additional resources
- Ensure better communication and co-operation between agencies
- **The ICS organization can grow or shrink as the situation dictates, and provides a logical process and progression to achieve results. Its organization should be allowed to grow with increased demand and shrink when operations decline, both of which require anticipation.**
- 
- **Advantages of the ICS can be lost when organizations develop their own unique and relatively complex versions of the ICS; it works best when it remains simple, flexible and standardized so everyone on scene from all organizations understands it.**
- 
- **In its basic form a person is designated as the IC to handle overall co-ordination, including setting objectives and priorities.**
- 
- **Support functions (sections supported by one or more persons) can be established *as needed* and on the scale needed to keep the IC informed and assist in certain areas. The four support sections in the ICS organization are as follows:**
- **Operations Section** - helps manage resources to carry out the operations
- **Planning Section** - helps develop action plans, collect and evaluate information, maintain resource status and arrange to scale up or scale down activities
- **Logistics Section** - helps provide resources and services needed to support the incident response, including personnel, transportation, supplies, facilities and equipment
- **Finance-Administration Section** - assists with monitoring costs, providing accounting and procurements, keeping time records, doing cost analysis and other administrative matters

**Other additions to directly assist the IC might include:**

- An **Information Officer** - assists the media and others seeking incident information, ensures the IC has appropriate information available, and helps to provide information to the public and families of persons in distress
- A **Safety Officer** - monitors safety conditions and develops measures to ensure safety and reduce risks
- **Liaison Officers** - serve as primary contacts for on scene representatives of their respective organizations

- The following Figure illustrates the basic ICS organization.
- Safety Information Liaison



### Incident Command System Organization

- The IC usually establishes an **Incident Command Post (ICP)** as a base for ICS activities.
- For particularly demanding incidents, the ICS organization can be expanded. For example, for operations that are particularly large-scale, sustained or complex, the IC can be augmented by establishment of an actual or virtual (without everyone co-located) Unified Command (UC) populated by operational managers representing the primary response organizations involved. If the UC is made up of linked independent command posts, a government post and an industry post for example, ideally there should still be a person from each command post assigned to work at the other post(s) involved.
- For a situation like a major passenger aircraft or ship disaster, a Joint Information Centre (JIC) should be established, perhaps in association with the Information Officer position, to facilitate and co-ordinate the vast information that will need to be managed internally and shared with the public.
- Whether the ICS should be used depends on the duration and complexity of the incident. If it is used, co-ordination of SAR functions with other functions is usually achieved by assigning a representative of the SAR agency or of the SMC to the Operations Section of the ICS organization. This allows SAR services to be plugged into the ICS and overall operations while still being able to function with relative independence in accordance with normal SAR procedures. The ICS has an overall incident focus, while SAR services must remain focused on lifesaving.
- A determination should be made as early as possible on who will be responsible for overall co-ordination, and how the overall response will be organized and managed. Procedures that all involved understand and support should be applied to managing the overall response for mutual support, effort prioritization, and optimal use of available resources, and to enhance on scene safety and effectiveness.
- Inter-agency contingency planning should identify who the IC should be for various scenarios. Typically, the IC will be assigned from the government organization with primary responsibility for the type of function most

**prominent for the particular incident. However, with appropriate access to experts and information from all agencies concerned, a key consideration in selecting the IC should be familiarity and experience with the IC function, i.e., the IC should be a person who can best handle the responsibility.**

- **The IC should be someone good at managing on scene operations, and will usually be located at or near the scene. Everyone involved, regardless of rank or status, will normally be in a support role for the IC, similar to the way the SMC function is carried out.**
- **The IC function can be transferred as the situation warrants, although such transfers should be minimized as is the case for transfers of SMC functions during a mission. It is important to designate an IC early, in contingency plans if possible, and make a transfer later as appropriate, as delay in designating an IC can be quite detrimental.**
- **Except when functions other than SAR are relatively insignificant to the incident response, the IC should normally be someone other than the SMC. The priority mission will always be lifesaving, and the SMC should normally remain unencumbered by additional non-SAR duties.**
- **Similarly, the IC's command post should normally be at a location other than in the RCC, because the RCC needs to remain focused on, and be vigilant and responsive to, its normal SAR responsibilities in addition to handling SAR aspects of the major incident.**



# A N N E X U R E S

## ANNEXURE: 1

### List of Cyclone prone villages

Sr. No.	Taluka	Village	Population (2011)
1	Porbandar	Visavada	3472
2		Miyani	3239
3		Bhavpara	1915
4		Tukda Miyani	1924
5		Ratdi	1815
6		Kantela	1289
7		Kuchhadi	4348
8		Palakhada	1190
9		Javar	990
10		Madhavpur	20241
11		Chikasa	909
12		Navibandar	1193
13		Ratiya	3679
14		Untada	1165
15		Balej	6392
16		Mocha	1016
17		Gorsar	1138
18		Mander	4683
19		Kadach	5130
20		Pata	3320
21		Bokhira	16754
22		Oddar	5379
23		Ratanpar	1243
24		Tukda-gosa	1821
25		Gosa	2250
26		Rajpar	1190
27		Bharvada	2115
28		Keshod (Lushada)	437
29		Erada	986
30		Delodar	996
31		Bhad	2663
32		Mitrada	1077
33		Garej	3726
34		Rojivada	2215
35		Bhomiyavadar	1719
36		Sisli	1798
37		Vadala	1916
38		Vijarana	1084
39		Kathiyo Nes	73

40	Ranavav	Ashiyapat	428
41		Jarera Nes	420
42		Dolatgadh	1703
43		Aniali	1771
44		Bapodar	1757
45		Thoyana	2506
46		Bhodadar	1757
47		Jambu	1057
48		Mahira	677
49		Nerana	738
50	Kutiyana	Druvala	1116
51		Vadala	1209
52		Helabeli	847
53		Daduka	655
54		Khunpur	196
55		Bildi	1042
56		Mahotbatpara	2110
57		Chauta	3113
58		Choliyana	800
59		Baloch	957
60		Mandva	2558
61		Thepada	1105
62		Kotada	2778
63		Katvana	562
64		Pashvari	1926
65		Segrash	1402
66		Moddar	1480
67		Kavalka	912
68		Chhatrava	1323
69		Bhogshar	478
70		Kansavad	1094
71		Dharsan	843
72		Gadhvana	281
73		Jamara	968
74		Revadra	470
75		Mahiyari	4001
76		Tarkhai	957
77		Kadegi	2042
78		Junej	671
79		Farer	1739
80		Amipur	1266
<b>Total</b>	<b>3</b>	<b>80</b>	<b>172205</b>



## ANNEXURE: 2

### List of coastal villages and towns of Porbandar district

Sr No	Village name	Area name	Population
1	Madhavpur	Ghed area	20,241
2	Pata	Ghed area	3,320
3	Chingriya	Ghed area	1,529
4	Mander	Ghed area	4,683
5	Gorsar	Ghed area	1,138
6	Mocha	Ghed area	1,016
7	Kadachh	Ghed area	5,130
8	Balej	Ghed area	6,392
9	Untada	Ghed area	1,165
10	Ratiya	Ghed area	3,679
11	Navibandar	Ghed area	1,193
12	Chikasa	Ghed area	909
13	Rajpar	Ghed area	1,190
14	Gosa	Ghed area	2,250
15	Tukda Gosa	Ghed area	1,821
16	Odadar	Ghed area	5,379
17	Ratanpar	Ghed area	1,243
18	Chhaya	City area	47,783
19	Bokhira	City area	16,754
20	Javar (part-1)	Village-City area	990
21	Javar (part-2)	Village-City area	634
22	Khapat, Bokhira and Porbandar	City area	168,514
23	Kuchhdi	Barada area	4,348
24	Kantela	Barada area	1,289
25	Shreenagar	Barada area	1,141
26	Ratdi	Barada area	1,815
27	Palakhada	Barada area	1,190
28	Visasvada	Barada area	3,472
29	Tukda Miyani	Barada area	1,924
30	Bhavpara	Barada area	1,915
31	Miyani	Barada area	3,239
Total			317,286

## PORT SIGNAL

### બંદર ઉપર વાવાઝોડા પરિસ્થિતિ સમયેની સંકેત નિશાનીઓ (બંદર સીગ્નલ્સ)

સીગ્નલ નંબર	સંકેતની વિગત	દિવસની નિશાની	રાત્રિની નિશાની
1	હવા તોફાની અથવા સપાટી વાળી છે કે નથી. વાવાઝોડુ આવશે કે નહીં? તેની ચેતવણી		
2	વાવાઝોડુ થયું છે. સીગ્નલ નં. 1 અને 2 બતાવે છે. નં. 2 બતાવે છે કે બંદર છોડ્યા પછી વહાણોને બળનો સામનો કરવો પડશે.		
3	સપાટી વાળી હવાથી બંદર ભયમાં છે.		
4	વાવાઝોડાથી બંદર ભયમાં છે પરંતુ અત્યાર સુધી ભય એવો ગંભીર જણાતો નથી, કે જેના માટે સાવચેતીના કોઈ પગલા લેવાની જરૂર પડે.		
5	થોડા અથવા સાધારણ પ્રકારનું વાવાઝોડુ બંદરથી દક્ષિણ દિશા તરફ કીનારાઓ ઓળંગવાનો સંભવ છે. જેથી બંદરમાં ભારે હવાનો સંભવ છે.		
6	(ભય) થોડા અથવા સાધારણ પ્રકારનું વાવાઝોડુ બંદરથી ઉત્તર તરફનો કીનારો ઓળંગવાનો સંભવ છે. જેથી બંદર ઉપર ભારે હવાનો અનુભવ છે.		
7	(ભય) પાતળા અથવા સાધારણ પ્રકારનું વાવાઝોડુ બંદર નજીક અગર બંદર ઉપર થઈને પસાર થવાનો સંભવ છે. જેમાંથી બંદરે ભારે તોફાની હવાનો સામાનો કરવો પડે.		
8	(મહા ભય) ભારે જોરવાળું વાવાઝોડુ બંદરથી દક્ષિણ તરફ કીનારો ઓળંગવાનો સંભવ છે. જેથી બંદરે બહુજ તોફાની હવાનો અનુભવ થશે.		
9	(મહા ભય) ભારે જોરવાળું વાવાઝોડુ બંદરથી ઉત્તર તરફ કીનારો ઓળંગવાનો સંભવ છે. જેથી બંદરે બહુજ તોફાની હવાનો અનુભવ થાય.		
10	(મહા ભય) ભારે જોરવાળું વાવાઝોડુ બંદરથી અગર બંદર ઉપર થઈને પસાર થવાનો સંભવ છે. આથી બંદરને ભારે તોફાની હવાનો અનુભવ થવાની શક્યતા છે.		
11	તાર વ્યવસ્થા બંધ કોલાબા હવા ચેતવણીના કેન્દ્ર સાથેનો તાર વ્યવહાર ખોરવાઈ ગયેલ છે. કે જેથી સ્થાનિક અધીકારીનું માનવું છે કે ખરાબ હવામાનનો ભય છે.		

**વાવાઝોડા સમયે બંદર ઉપરથી થતી સાયરેનની નિશાનીઓ**

### ANNEXURE: 3

#### List of Rivers and Flood prone villages

Sr. No.	Name of Taluka	Name of River	Name of vulnerable Village
1	Porbandar	Bhadar	Chikasa
2			Garej
3			Mitralla
4			Navibandar
5			Delodar
6			Erda
7			Bhad
8			Keshod-Lushala
9			Rajpar
10			Ratiya
11			Tukda Gosa
12		Vartu	Bhomiyavadar
13			Fatana
14			Ishwariya
15			Morana
16			Miyani
17			Paravada
18			Shingda
19			Sodhana
20		Ozat	Garej
21			Ratiya
22			Navibandar
23			Chikasa
24			Kadachh
25			Mander
26			Gorsar
27		Minsar	Erda
28			Delodar
29			Mitralla
30			Keshod-Lushala
31			Tukda Gosa
32			Odadar (Sim Area)
33		Madhuvanti	Pata
34			Mander
35			Kadachh
36			Chingriya

37		Sorthi	Advana
38			Bhetakdi
39			Sodhana
40	Ranavav	Minsar	Khisara
41			Valotra
42			Jambu
43			Rana Kandorna
44			Rana Khijdal
45			Mahira
46			Nerana
47			Bhoddar
48			Padardi
49	Kutiyana	Bhadar	Bhogsar
50			Bildi
51			Chauta
52			Chhatrava
53			Katvana
54			Kutiyana
55			Mandva
56			Pasvari
57			Roghda
58			Segras
59			Thepda
60		Ozat	Amipur
61			Mahiyari
62		Minsar	Baloch
63			Devda

## ANNEXURE: 4

### List of water logging village/ city area in Porbandar district

Sr. No.	Taluka	Village	Population
1	Porbandar	Chhaya	47783
2		Bhad	2663
3		Mitralla	1077
4		Delodar	996
5		Keshod lushala	437
6		Erda	986
7		Garej	3726
8		Kadachh	5130
9		Mander	4683
10		Chikasa	909
11		Navibandar	1193
12		Javar	1624
13	Ranavav	Padardi	704
14		Bapodar	1757
15		Mahira	677
16		Nerana	738
17		Jambu	1057
18		Kerala	428
19		Bhodadar	1757
20		Digvijaygad	463
21		Dharampur	7704
22		Virpur	1438
23		Pipaliya	1198
24		Bhod	4540
25		Mokar	3224
26	Kutiyana	Segras	1402
27		Kansabad	1094
28		Chhatrava	1323
29		Bhogsar	478
30		Dharsan	843
31		Gadhvana	281
32		Kavalka	912
33		Katvana	562
34		Jamra	968
35		Amipur	1266
36		Tarkhai	957



## ANNEXURE: 5

### List of villages which can be affected with dams

Sr No	Name of scheme	Name of District	Name of Taluka	Name of Village
Jamnagar District				
1	Dai-Minsar Irrigation scheme	Porbandar	Kutiyana	1.Baloch 2.Devda
			Ranavav	1.Khirsara 2.Valotra 3.Jambu 4.Rana kandorna 5.Khijdad 6.Mahira 7.Nerana 8.Bhoddar 9.Padardi
			Porbandar	1.Erda
Devbhumi Dwarka District				
1	Sorthi Irrigation scheme	Porbandar	Porbandar	1.Adwana 2.Bhetkadi 3.Miyani 4.Sodhana
2	Vartu-2 Irrigation scheme	Porbandar	Porbandar	1.Bhomiavadar 2.Fatana 3. Ishwariya 4.Morana 5.Miyani 6.Parvada 7.Shingada 8.Sodhana
Junagadh District				
1	Bantwa-Kharo W.R. Project	Porbandar	Kutiyana	1.Revdra 2.Gadhvana 3.Dharshan 4.Tarkhai
2	Ozat weir (Vanthli)	Porbandar	Porbandar	1.Balej 2.Ratiya 3.Navi Bandar 4.Chikasa
			Kutiyana	1.Mahiyari 2.Amipur

Porbandar District				
1	Saran	Porbandar	Kutiyana	1.Gokran 2.Khunpur 3.Chauta 4.Teri
2	Khambhala Irrigation scheme	Porbandar	Ranavav	1.Bhod 2.Bileshwar 3.Dolatgadh 4.Hanumangadh 5.Khambhala 6.Pipaliya 7.Ramgadh 8.Rana Bordi 9.Vadvala 10.Zarera nes
3	Phodarnes(W.S.) Irrigation scheme	Porbandar	Ranavav	1.Gandiyavala nes 2.Bileshwar 3.Jambu 4.Hanumangadh 5.Rana Kandorna 6.Khirsara 7.Khijdad 8.Sajnavada nes 9.Thoyana 10.Valotra 11.Zarera nes
4	Amipur Irrigation scheme	Porbandar	Kutiyana	1.Amipur 2.Garej
5	Kalindri Irrigation scheme	Porbandar	Kutiyana	1.Bavdavadar 2.choliyana 3.Ishwariya 4.Kotda 5.Mal
6	Adwana (WR)	Porbandar	Porbandar	1.Adwana 2.Sodhana
7	Rana Khirsara	Porbandar	Ranavav	1.Rana Khirsara 2.Rana Kandorna 3.Valotra
			Kutiyana	1.Devda

Rajkot District				
1	Bhadar -2 Irrigation scheme	Porbandar	Kutiyana	1.Bhogsar 2.Bildi 3.Chauta 4.Chhatrava 5.Katvana 6.Kutiyana 7.Mandava 8.Pasvari 9.Roghda 10.Segras 11.Thepda
			Porbandar	1.Chikasa 2.Garej 3.Mitralla 4.Navi Bandar

## ANNEXURE: 6

### Tidal Regulator Scheme, Dams and List of affected villages

Sr No.	Name of the Dam	Taluka	Normal level (in mtr)	Danger level (in mtr)	Dam affected villages with population	
					Village	Population
1	Medhacreek tidal regulator scheme Village: Miyani	Porbandar	2.50	5.82	Miyani	3200
2	Bhadar tidal regulator scheme, Village: Chikasa	Porbandar	2.45	3.60	Chikasa	804
3	Karli tidal regulator scheme Village: Chhaya/Gosa	Porbandar	2.20	3.65	Odadar	4500
					Ratanpar	1173
4	Karli reservoir scheme Village: Chhaya/Gosa	Porbandar	2.20	3.50	Odadar	4500
					Ratanpar	1173
					Chhaya	38546
5	Madhuvanti tidal regulator scheme Village: Pata	Porbandar	2.50	2.87	—	—
6	Barda sagar reclamation scheme Village: Rinavada	Porbandar	4.85	6.28	Ratdi	1205
7	Ozat tidal regulator scheme Village: Navibandar	Porbandar	1.50	3.64	—	—
8	Kalindri Irrigation Scheme Village: Iswariya	Kutiyana	52.23	54.96	Bavlavadar, Choliyana, Kotda, Mal	
9	Amipur Irrigation scheme Village: Amipur	Kutiyana	5.64	6.34	Amipur	

Source: Salinity control department

### **Bhadar-II Dam details with maximum recorded outflows from 2002-2020**

1. Dam is located at Bhukhi village of Dhoraji taluka in Rajkot dist. and has 22 gates.
2. R.F.L. of Dam : 53.10 mtr
3. Rule level (1-07-2020) : 52 mtr
4. Rule level (1-08-2020) : 52.50 mtr
5. Design Flood : 26380.00 Cumecs (931610.00 Cusecs)

Sr. No.	Year	Maximum recorded outflow in Cumecs	Maximum recorded outflow in Cusecs
1	2002	2519.17	88964.00
2	2003	771.60	27249.00
3	2004	671.27	23706.00
4	2005	370.38	13080.00
5	2006	2417.00	85536.00

<b>6</b>	<b>2007</b>	<b>7029.00</b>	<b>248230.00</b>
7	2008	3791.00	133892.00
8	2009	704.00	24862.00
9	2010	2919.61	103091.00
10	2011	1039.50	36710
11	2012	-----	-----
12	2013	3908.86	138041.55
13	2014	----	----
<b>14</b>	<b>2015</b>	<b>6816.36</b>	<b>240720.00</b>
15	2016	----	----
16	2017	129.626	4577.77
17	2018	113.068	3993.00
18.	2019	3067.87	108342.00
<b>19</b>	<b>2020</b>	<b>7867.35</b>	<b>277832.80</b>

**Source: Dy Executive Engineer Office, Irrigation scheme, Dhoraji**

## **ANNEXURE: 7**

### **General terminology used in weather or disaster bulletins**

#### **Specification for description of rainfall:**

<b>Rain fall amount in (MM)</b>	<b>Descriptive term used in forecast</b>
0.0	NO RAIN
0.1 TO 2.4	VERY LIGHT RAIN
2.5 TO 7.5	LIGHT RAIN
7.6 TO 34.9	MODERATE RAIN
35.0 TO 64.9	RATHER HEAVY RAIN
65.0 TO 124.9	HEAVY RAIN
EXCEEDING 125.0	VERY HEAVY RAIN
WHEN THE AMOUNT IS A VALUE NEAR ABOUT THE HIGHEST RECORDED RAIN FALL AT OR NEAR THE STATION FOR THE MONTH OR SEASON. IN REGIONS WHERE THE HEAVIEST RAIN FALL. EVER RECORDED IS LESS THAN 12 CM. THE TERM WILL NOT BE USED.	EXCEPTIONALLY HEAVY RAIN.

### Terminology for rainfall distribution :

OLD TERMINOLOGY	NEW TERMINOLOGY WITH EFFECT FROM APRIL-1998	SPATIAL DISTRIBUTION
ALMOST ALL PLACES	ALMOST ALL PLACES	ABOVE 75%
AT MANY PLACES	AT MANY PLACES	51% TO 75%
AT A FEW PLACES	AT A FEW PLACES	26% to 50%
AT ONE OR TWO PLACES	ISOLATED	01% TO 25%

### Important weather forecast website:

1. [www.imd.gov.in](http://www.imd.gov.in)
2. [www.imdham.gov.in](http://www.imdham.gov.in)
3. [www.accuweather.com](http://www.accuweather.com)
4. [www.skymetweather.com](http://www.skymetweather.com)
5. [www.weather.gov](http://www.weather.gov)
6. [www.noaa.gov](http://www.noaa.gov)
7. [worldweather.wmo.int](http://worldweather.wmo.int)
8. [www.usno.navy.mil](http://www.usno.navy.mil)
9. [www.windy.com](http://www.windy.com)
10. [www.cyclone.com](http://www.cyclone.com)
11. [www.zoom.earth](http://www.zoom.earth)

### Criteria for classification of Cyclonic disturbances over the North Indian Ocean

No.	Type of disturbance	Associated maximum sustained wind (MSW)
1	Low Pressure Area	Not exceeding 17 knots (<31 kmph)
2	Depression	17 to 27 knots (31-49 kmph)
3	Deep Depression	28 to 33 knots (50-61 kmph)
4	Cyclonic Storm	34 to 47 knots (62-88 kmph)
5	Severe Cyclonic Storm	48 to 63 knots (89-117 kmph)
6	Very Severe Cyclonic Storm	64 to 119 knots (118-221 kmph)
7	Super Cyclonic Storm	120 knots and above (≥222 kmph)

**Note: 1 Knot is equal to 1.852 kms.**

## ANNEXURE: 8

### Public and Private Emergency Resources available in the district

#### List of important resources inventory available at Taluka EOC.

Sr. No	Taluka (TEOC)	Phone Number	Important Resources					
			Life Jacket	Boyas	Ropes 100(M)	Ropes 200(M)	Generator	Boat
1	Porbandar	0286-2220543	43	62	22	13	01	----
2	Ranavav	02801-230622	13	09	03	01	01	----
3	Kutiyana	02804-261226	45	30	00	03	01	----
4	Shri ram Swimming Club Porbandar	98252 31468 (Founding chairman)	20	05	01	-	-	03
Total			121	106	26	17	03	03

#### List of important resources inventory Available at DEOC and DSP Office

Sr. No	Name of Office	Phone Number	Important Resources			
			Life Jacket	Rope (100 m)	Generator	Portable Emergency Light
1	DSP office (at different post)	0286 2211222	33	02	10	00
2	DEOC	0286 22208 00	06	01	00	03
Total			38	03	10	03

### List of important resources inventory available at Nagarpalika Area

Sr. No.	Important Resources	Name of Nagarpalika			
		Porbandar	Ranavav	Kutiyana	Total
1	Portable inflatable lighting system	02	02	02	06
2	Motor cycle mounted water mist	04	00	00	04
3	Trolley mounted water mist	01	00	00	01
4	Water bowser	03	01	00	04
5	Mini Fire Tender	03	01	01	05
6	Life jacket	20	00	00	20
7	Boya	25	02	00	27
8	Rope	05	01	00	06
9	FRP Boat	01	00	00	01
10	Speed Boat	01	00	00	01
11	HDPE Boat	01	00	00	01
12	De-watering pump	04	01	00	04
13	Tree cutter	03	00	00	03
14	JCB	05	01	00	06
15	Loader Truck	04	00	00	04
16	Tractor	10	02	01	13
17	Chhota Hathi mini truck	30	00	00	30
18	Emergency vehicle	01	00	00	01

### List of resources available with Private contractor (R&B State and Panchayat)

Sr. No	Contractor's Name	Resources			Location area	Contact no
		JCB	Dumper	Tractor		
1	A.T. Odedera	01	02	00	Kutiyana	9909062877
2	Mahendra Kumar & Co, Porbandar	02	03	00	Porbandar	9558818808
3	K.M. Gareja	01	02	00	Porbandar	9099085207
4	Arjun Construction & Co	01	03	00	Ranavav	9960399999
5	Parbatbhai	01	00	00	Ranavav	8980510291
<b>Total</b>		<b>06</b>	<b>10</b>	<b>00</b>		



### List of resources available with Forest department

Sr. No	Resources	Number	Contact person
1	Four wheel vehicles	03	Dy Conservator of Forest office, Porbandar (0286-2242551)
2	Bolero Camper	02	
3	Motorcycles	12	
4	Chainsaw tree cutter (petrol engine)	02	

### List of Dewatering Pumping Station

Sr. No.	Office	Place of Pump	H.P	Pump type	Number of Pump
1	Porbandar Nagarpalika	Central pumping station, Near Godhaniya college	50 H.P.	Sewage submersible	2
2		Opposite of Tran Maliya centre, Porbandar	50 H.P.	Sewage submersible	1
3		Near Birla Factory wall, Porbandar	50 H.P.	Sewage submersible	2
4		Near Modha school	15 H.P.	Sewage submersible	1

**Contact person: Porbandar Nagarpalika (0286-2240936)**

## ANNEXURE: 9

### Health Facility and Emergency Services:

The district has 1 Hospital, 17 PHCs and 4 CHCs in the District to cater the people. Major hospital is Govt. Bhavsinhji Hospital is in Porbandar. Location of the CHCs and PHCs in different Taluka is as follows.

Taluka	Hospital	Community Health Centre	Primary Health Centres	Sub-centres
Porbandar	Civil Hospital Porbandar	Advana Madhapur	1.Bakharla	8
			2.Visavada	7
			3.Garej	4
			4.Bhad	5
			5.Simar	9
			6.Kadachh	10
			7.Modhvada	6
			8.Subhasnagar (Urban)	-
			9.Chhaya (Urban)	-
			9.Kodiya plot (Urban)	-
			10.Shitla Chowk (Urban)	-
Ranavav	---	Ranavav	1.Bileshwar	8
			2.Ranakondarna	7
			3.Ranavav(Urban)	---
Kutiyana	---	Kutiyana	1.Devda	6
			2.Khageshri	7
			3.Mahiyari	6
			4.Kutiyana (Urban)	-

### Private Hospital in Porbandar District

Sr. No.	Name of the Hospital	No. of Beds	ICU beds	Total beds	No of Ventilator	Contact no
1	Thakrar Hospital	115	5	120	0	0286-2243819, 0286-2251313
2	Global Multi speciality Hospital	60	0	60	3	0286-2212108, 0286-2243787, 8238244108
3	Critical Care Unit	2	5	7	3	Dr Kamlesh Mehta 98242 45400
4	Godhaniya Medicare Hospital	21	-	21	1	79847 41042, 88664 74177
5	Shree Hospital (Dr. Jignesh Lodhari)	13	5	18	1	78749 71580
6	Daksh Children Hospital	10	0	10		Dr Prakash Vadukar 98790 01997
7	Meera Maternity Hospital	7	0	7	0	Dr Kirit Bhatt 98255 90222
8	Asha Children Hospital	50	0	50	0	0286 2210522/2246911
9	Ronak Orthopedic Hospital	13	0	13	0	Dr Urvish Malkan 96625 49594/90236 47072
10	Odedera Eye Hospital	5	0	5	0	Dr. Odedera 94268 50825

11	Anand Surgical and Maternity hospital	14	0	14	0	Dr Kalpit Parmar 98256 25689, 79907 96607
12	Shivam Eye Hospital	9	0	9	0	Dr. Manoj Joshi 98256 68333, 99090 49009
13	Netram Eye Hospital	10	0	10	0	Dr. Nayan Jethva 94281 87105
14	Sahom Orthopedic Hospital	12	0	12	0	Dr Naresh Bhalia 98250 75716, 70166 17864
15	Astha Children Hospital	15	8	23	2	Dr Yogesh Soni 95375 08888, 98257 12324
16	Manan Maternity Hospital	16	0	16	0	Dr Paras Majithia 96620 13883
17	Jadav Children Hospital	13	0	13	1	Dr Chirag Jadav 99250 23194
18	Vishwa Orthopedic Hospital	18	1	19	0	Dr Rajendra Godhaniya 93767 90900, 0286 224 7169
19	Shreeji Hospital	12	0	12	0	Dr Bhavesh Parmar 99250 23194
20	Parvani Hospital	12	0	12	0	88665 63500, 94273 80081
21	Dr. Kalpesh Modhwadiya	10	0	10	0	98257 19848
22	Tavri Orthopedic Hospital	15	0	15	0	Dr jitendra tavri 90990 79110
23	Venus Hospital	18	0	18	0	Nilesh Godhaniya 0286 2243777
24	Shrey Hospital	10	0	10	0	Dr Sanjay joshi 99250 41371, 95123 70707
25	Jay Hospital for Women Care	30	0	30	1	Dr Lakhani 0286 2246223
26	Sparsh Children Hospital	10	0	10	0	Dr Ashok Khunti 99988 77664
27	Darshak Patel Hospital	10	0	10	0	98794 43008, 94293 74390
28	Riddhi Hospital	12	0	12	0	Dr Jignesh Modi 97129 30697
29	Arpan Hospital	10	0	10	0	Dr Vasundhara Nanavati 96012 57997
30	Siddharth Hospital	10	0	10	0	Dr Hira Kodiyatar 98792 65639
31	Krishna Hospital	18	0	18	0	Dr K.B. deshani 98255 66188
32	Arpit Hospital	13	0	13	3	Dr Pankhania 97264 36999, 97267 47379
33	Manglam Hospital, Ranavav	15	0	15	0	Dr Amit Sadiya 9825377179 02801-231232

### Blood banks and their contact numbers

Sr. No.	Name of the Hospital	Name of Taluka	Office
1	Bhavsinhji Hospital Blood Bank	Porbandar	2240923 2242910
2	Asha Hospital, Porbandar	Porbandar	2210522 2210521

### EMRI 108 Ambulance services

Sr No.	EMRI 108 ambulance service area	Program manager	Ambulance contact no	Vehicle no	Location address
1	Porbandar Harbour	Jayeshgiri Meghnathi	9712901798	GJ 18GB 0296	Zilla panchayat PBR
2	Porbandar city 1		9512038571	GJ 18GA 3033	Riverfront PBR
3	Advana		7069016374	GJ 18GA 3171	Gram Panchayat Advana
4	Madhavapur		8238095264	GJ 18GA 3034	CHC Madhapur
5	Balej		6357376157	GJ 18GB 8141	Sub-Centre Balej
6	Ranavav		9512039715	GJ 18 GA 3170	Bal Mandir Ranavav
7	Kutiyana		8238024691	GJ 18GB 1964	Marketing yard goddown KTY
8	Mahiyari		8238471395	GJ 18GB 3253	Gram Panchayat Mahiyari
9	Porbandar boat		9712915055	GMB/MGD/23	GMB workshop dry doc, Porbandar

### Bhavashiji Hospital, Porbandar, Medical equipments

Sr. No.	Name of Item	Number of item Available	Address	Landline No.	Mobile No.
1	ABC Type Fire Ex.	41	Bhavashiji Hospital, Porbandar	0286-2242910	90334 27230
2	CO2 TYPE Fire Ex.	57			
3	Camera Digital	0			
4	TLD	6			
5	Port able Oxygen Cylinder	230			
6	Portable ECG	30			
7	Port able suction Unit	18			
8	Mechanical Ventilator	85			
9	Deviator	-			
10	4 Wheel drive and Vehicals	5			
11	Stricture Normal	17			
12	CT SCAN	0			
13	First Aid Kit	-			
14	General Physician	10			
15	Surgeon	3			
16	Anesthetist	5			
17	Radiologists	3			
18	Paramedics	(APROX)195			
19	Lab Technicians	24			
20	OT Assistance	1			
21	Bronchodilators	NA			
22	Vaccines	As per the need			
23	Anti snake Venom	As Per the need			
24	Chlorine Tablets	Sufficient			

### ANNEXURE: 10

#### Food Goddown in the district

Sr. No.	Goddown centre's name	Name of Goddown and its official	Storage capacity	Telephone
1	Porbandar	Govt. Food grain Godown, Degam road, Near R.T.O. office, Degam, Porbandar PIN: 360575	6000 MT	
2	Ranavav	Govt. Food grain Godown, Near Court, Porbandar to Rajkot Highway, Ranavav, PIN: 360550	2000 MT	02801-230624
3	Kutiyana	Govt. Food grain Godown, Kana kuva road, Near water tank, Kutiyana, PIN: 362650	2000 MT	

**Source: District Supply Officer, Porbandar**

## ANNEXURE: 11

### Boat information for Search & Rescue Operation

Sr. No.	Name of Taluka	Name of Boat	Owner of Boat	Address	Contact No.
1	Porbandar	Janiya Madad 5	Suleman Hasam Isbani (Chief, Madhavpur Machhimar Association)	Madhavpur	9924933278
2	Porbandar	Vali Ansa	Ismail Sumar Luchani	Madhavpur	9484680499
3	Porbandar	Almast	Ibrahim Jusab Lakhpatri	Madhavpur	9924765130
4	Porbandar	Dwarkadish	Pama Lalji Parmar	Miyani	9624510337
5	Porbandar	Jayshree Parmeswari Krupa	Manoj Daya Parmar	Miyani	9824840588
6	Porbandar	Devi Krupa	Gopal Pursattam Parmar	Miyani	9664882086
7	Porbandar	Shree Jagadbani Krupa	Jagdish Khimjee Parmar	Miyani	9726434466
8	Porbandar	Laxmi Sagar	Harish Dhanji Salet	Navibandar	9714174557
9	Porbandar	Jay Kankai Maa ni Krupa	Bhikhu Ramji Kankiya	Navibandar	9925250911

#### Contact Person:

1. Shri Mukesh Panjri (President, Porbandar Machhimar Boat Association)  
**Mb: 9825754053**
2. Shri Bhaskar Panjri (President, Porbandar Pilana Machhimar Boat Association)  
**Mb: 9925169996**

## ANNEXURE: 12

### Department wise available disaster management resources

**Name of Department: Gujarat Maritime Board**

**Phone Number: - 0286-2242408, 2242438, 2242412- 9737972729, 9099694747**

**Fax No. : 0286-2244013**

Sr. No.	Description	Quantity	Location
1	Helmet	06 Nos.	W/S
2	Hand gloves	13 Pairs	W/S
3	Emergency standby signal & siren	04 Nos.	W/S, G/O, M/G,B/J
4	Bolero Camp. GJ 25 U 42	01 No.	W/S
5	Crane S-1610 (16 tonne) only port area.	01 No.	W/S
6	Water Tanker - 10 tonne	01 No.	M & R
7	Drill Machine - 3 H.P.	01 No.	W/S
8	Drill Machine Elect. Portable 230 V	01 No.	W/S
9	Hecso Machine - 3 H.P.	01 No.	W/S
10	Branch Grinding Machine Elect. 0.5 H.P.	01 No.	W/S
11	Hand Grinder - 0.5 H.P.	01 No.	W/S
12	Cutter cable hydraulic wire	01 No.	W/S
13	Welding Transformer	01 No.	W/S
14	Oxy. - Acetylene Gas Cutting Set.	01 No.	W/S
15	Air Compressor	01 No.	W/S
16	Pump Set Diesel - 5 H.P. Trolley mounted	02. Nos.	W/S
17	Emergency Patrol boat-108	01	Dry dock
18	Emergency vehicle GJ 25G 0780	1 Nos.	GMB complex

### List of resources & equipments available at Department of Police, Porbandar

Sr. No.	Item Name	Name of Person	Number of Item Available	Contact Number	Mobile number
1	Search light	Superintendent of Police	1	2240922	99784 05079
2	Mini bus	Superintendent of Police	1		
3	4 wheel drive vehicle	Superintendent of Police	4		
4	Light ambulance van	Superintendent of Police	1		
5	Water tanker (large capacity)	Superintendent of Police	1		
6	V H F Sets (static )	Superintendent of Police	31		
7	V H F Sets (mobile)	Superintendent of Police	58		
8	Walkie talkie Sets	Superintendent of Police	10		
9	Life Jacket	Superintendent of Police	30		
10	HF SETS	Superintendent of Police	03		

### Supplier of DG sets, PGVCL, Porbandar

Sr no.	Supplier	Location	Contact no.	Capacity	Number
1	Rajnath electricals, c/o. Usha sound service	Chhaya road, Porbandar	9824230406	10 KVA	1
2	Rajnath electricals, c/o.usha sound Sec	Chhaya road, Porbandar	9824230406	15 KVA	1
3	Sudama decoration	Opp. Devdarshan apptt. Porbandar. Phn no: 2212620	9426467549 9825562629	8 KVA	1
4	Sudama decoration	Opp. Devdarshan apptt. Porbandar.P.No.2212620	9426467549 9825562629	5 KVA	1
5	Hanifbhai decoration	Opp. Jetpur godown galaxy decoration	9879503007	30 KVA	1
6				50KVA	1
7				250KVA	1
8				350KVA	1
9	Kalyani sound service.(harshadbhai joshi)	SVP road, opp. Parag std, Porbandar	9879856865 (0286 2245596 2220710)	5KVA	1
10	Kalyani sound service.(harshadbhai joshi)	SVP road, opp. Parag std, Porbandar	9879856865 (0286-2245596/ 2220710)	7.5KVA	1

### ANNEXURE: 13

#### AAPDA MITRA LIST

Sr. No.	Name	Taluka/district level	Mobile no
1	Shyam Rajshi Bagiya	Porbandar taluka	95585 89893
2	Vivek Gopalbhai Kotia	Porbandar taluka	81403 71777
3	Kodiyatar Kana sarman	Porbandar taluka	99252 29935
4	Parmar Pratap dudabhai	Porbandar taluka	9979757654
5	Agath Mayur Laxman	Porbandar taluka	8264177059
6	Daki Lakhman Virambhai	Porbandar taluka	8264408102
7	Kubavat Kishan Pravin	Ranavav taluka	9574787547
8	dodiya Sanjay devji	Ranavav taluka	99139 62253
9	Vala Manish Rameshbhai	Kutiyana taluka	7096203023
10	Chudasama Pankaj Rameshbhai	Kutiyana taluka	8980197506
11	Chudasama Bhavesh Rameshbhai	Kutiyana taluka	8141916511
12	Kasta Abhay Mahileshbhai	Porbandar dist.	8320443399



13	Kotia Jay kanjibhai	Porbandar dist.	8866649252
14	Motivaras Jay Pravin	Porbandar dist.	8530593776
15	Ankit L. Soneri	Porbandar dist.	8140982575
16	Akshay Mayurbhai Raninga	Porbandar dist.	8460820850
17	Keban B. Machhvara	Porbandar dist.	8320266608
18	Ajay Suresh Postariya	Porbandar taluka	8758030042
19	Nileshbhai Vaja	Porbandar taluka	7048702770
20	Rameshbhai Kamalpara	Porbandar taluka	9157144423
21	Nandaniya arjanbhai k	Porbandar taluka	8128656110
22	Sati akbar iqbal	Porbandar taluka	7567606884
23	Kachchhii rainiz shamsuddin	Porbandar taluka	9033591925
24	Dodiya amitbhai	Porbandar taluka	8141912939
25	Vala gautam govindbhai	Porbandar taluka	8000256651
26	Bhanvadiya ramjan zulfikar	Porbandar taluka	9428252174
27	Kachchhi ashish shamsuddin	Porbandar taluka	9724421020
28	Khakhas keval jethabhai	Porbandar taluka	8200077097
29	Chavda nikhil rambhai	Porbandar taluka	9016371772
30	Chavda kumaar rambhai	Porbandar taluka	8155089594
31	Odedara vijay ram	Porbandar taluka	9898682010
32	Dodiya amitbhai	Kutiyana taluka	613433094617
33	Sati akbar iqbal	Porbandar	7567606884

## ANNEXURE : 14

### List of Swimmer & Rescuer (District Homeguard, Porbandar, Fishermen and Police department)

Sr. No.	Name of the unit	Homeguards member	Roll no	Contact no
1	Porbandar	A.S.Meghanathi	1262	9726158942
2	Porbandar	K.G.shilu	1337	9662650475
3	Porbandar	U.K.Pandiya	1345	9586754598
4	Porbandar	J.M.odedara	1359	9328355050
5	Porbandar	S.K.Mori	1382	9512379545
6	Ranavav	Bharat Hiralal Thanki	392	9825187167
7	Bagavadar	Rahul Bhimaji Sadiya	85	9898447528
8	Bagavadar	Rana Punaja Modhavadiya	86	7600324224
9	Bagavadar	Parabat Samat Modhavadiya	98	9737015548
10	Bagavadar	Ramesh Vajashi Shingarakhiya	102	9913216963

11	Bagavadar	Govind Hamir Khara	122	9978701733
12	Bagavadar	Sanjay Jiva Shingarakhiya	124	9909947061
13	Bagavadar	Ashvin Hamir Khara	126	8200154389
14	Bagavadar	Harish Lakhu Khara	127	9726752399
15	Madhavpur	Babu Bachu Mavadiya	156	9913903140
16	Madhavpur	Keshu Kama Mavadiya	204	9601915360
17	Madhavpur	Janak Govind Mavadiya	313	7698281776
18	Porbandar	A.S.Meghanathi	1262	9726158942

### List of Swimmers (Fishermen) for Rescue Operation

Sr No.	Taluka name	Swimmer's name	Adress	Mobile no
1	Porbandar	Amit Bhiku Kankiya	Navibandar	9925250911
2	Porbandar	Sanjay Dhanji Salet (President, Navibandar Machhimar Association)	Navibandar	9714174557
3	Porbandar	Naresh Premji Salet	Navibandar	9998589120
4	Porbandar	Vinod Velji Chauhan	Navibandar	9662243266
5	Porbandar	Vikhu Rama Parmar	Miyani	8758209339
6	Porbandar	Dhanji Narshi Parmar	Miyani	9979775371
7	Porbandar	Nilesh Gopal Parmar	Miyani	9979551672
8	Porbandar	Dhelu Velji Parmar	Miyani	9904649537
9	Porbandar	Pathan Imtiazbhai (President, Madhapur Machhimar Association)	Madhavpur	9879898247
10	Porbandar	Yakub Mamod Lakhpatri (Member, Madhapur Machhimar Association)	Madhapur	9099542774
11	Porbandar	Ibrahim Jusab Lakhpatri	Madhapur	9924765130
12	Porbandar	Fakira Hasam Isbani	Madhapur	8153951544
13	Porbandar	Abdul suleman Isbani	Madhapur	9409615386
14	Porbandar	Ibrahim Dawood Isbani	Madhapur	9016353453

### List of Swimmers for Search and Rescue Operation, Police department

Sr. No.	Designation	Name	Police station/branch	Mobile no
1	PI	V.P.Parmar	Kamlabaug	9913737372
2	UHC	Kamlesh Manilal Joshi	Bagvadar	9909974187
3	UHC	Nitesh Karshanbhai Sadiya	Bagvadar	9824143673
4	AHC	Ram Chhaganbhai Bapodra	Bagvadar	9979587384
5	UPC	Narendra Vejabhai Nandaniya	Bagvadar	9979928707
6	UPC	Anopsinh Bhavubha Bhatti	Bagvadar	9664867091
7	UPC	Kanabhai Rambhai Karangiya	Bagvadar	8758771101
8	UPC	Meramanbhai Palabhai Khodbhaya	Kutiyana	9638388292
9	ALR	Merubhai Hajabhai Bhutiya	Kutiyana	9714534414
10	ALR	Mayurbhai Kanjibhai Goriya	Kutiyana	9106069501
11	UPC	Maldebhai Goganbhai	Ranavav	8530389824
12	UPC	Ashokbhai Maldebhai	Ranavav	7844964090
13	ASI	Mehbubkhan H Belim	SOG Porbandar	8980049560
14	UHC	Hardasbhai Lakhmanbhai Garchar	SOG Porbandar	8320538017
15	UPC	Samirbhai S Juneja	SOG Porbandar	9099966546
16	UPC	Vipul M Boricha	SOG Porbandar	9979238456
17	AHC	Sarmanbhai Savdasbhai	SOG Porbandar	9825919520
18	UPC	Mohitbhai Rajeshbhai	SOG Porbandar	9033150133
19	AHC	Hiteshbhai Jadavbhai Gohel	Traffic Shakha	9909330054
20	UPC	Popatbhai Parbatbhai Goraniya	Traffic Shakha	9687092002
21	UHC	Maheshbhai Shamjibhai Shiyal	LCB	9725040766
22	UHC	Kuldipsinh Rajubha Jadeja	LCB	9879822711
23	HC	Bhavinbhai Pravinbhai	Kirti Mandir	8849320302
24	HC	Vipulbhai Rayshi	Kirti Mandir	9737131374
25	PC	Rajubhai Devshibhai	Kirti Mandir	9712703459
26	PC	Vishalbhai Ravjibhai	Kirti Mandir	7069222740
27	LR	Sukhdevbhai Kanabhai	Kirti Mandir	9662002667
28	WHC	Manishben Rajshibhai	Kirti Mandir	8128812830
29	WLR	Santokben Virambhai	Police HQ	8128414777
30	WPC	Santokben Samatbhai	Kirti Mandir	9099229456
31	HC	Kailashbhai Bharatbhai	Kirti Mandir	7874665501
32	PC	Rajendrabhai Meghjibhai Kathad	Kamlabaug	9925602813
33	PC	Kanaksinh Parakramsinh	Udyognagar	9537233933
34	LR	Hardikbhai Panchabhai	Police HQ	9359595944
35	LR	Gopalbhai Devshibhai	Kirti Mandir	7405127507
36	PC	Arvindbhai Kachrabhai	Kamlabaug	9727252143
37	UHC	Mukeshbhai Kanabhai Mavdiya	LCB	9099966351
38	UPC	Bharatbhai Nathabhai Shingrakhia	Udyognagar	9664564609
39	ASI	Jitendrabhai Nathalal Kotiya	Police HQ	

40	AHC	Gigabhai Hajabhai Sadiya	Police HQ	9825763056
41	AHC	Jitendrabhai Mavjibhai Khorava	Police HQ	6351215440
42	APC	Govindbhai Ukeshbhai Vasan	Police HQ	9574856686
43	APC	Lakhmanbhai Bhanubhai Sadiya	Police HQ	7622827837
44	APC	Jitendrabhai Devjibhai Kotiya	Police HQ	8401619555
45	APC	Nahuskumar Khimabhai Vegda	Police HQ	9913955997
46	ALR	Jayeshbhai Bharatbhai Kanet	Police HQ	6359797799
47	PC	Bhikhubhai Madhukantbhai Ranavaya	Navi Bandar	9428205415
48	LR	Kishorbhai Maldebhai Shingrakhia	Navi Bandar	9033911197
49	LR	Kanjibhai Ramdebhai	Navi Bandar	8347591952
50	LR	VIjaybhai Madhubhai Mavdiya	Navi Bandar	8799031650
51	LR	Girishbhai Virambhai	Navi Bandar	9974338337
52	UHC	Devabhai Abhabhai Odedra	Navi Bandar	9909590499
53	UHC	Pravinbhai Nagjibhai Bhuva	Navi Bandar	9924190412
54	UHC	Manishbhai Ganabhai Gunetar	Navi Bandar	6354545111
55	LR	Pruthvirajsinh Pratapsinh Sisodiya	Harbar Marine	9722283740

## ANNEXURE: 15

### List of Flood Control room in Porbandar district

No.	Office Name	Control room Phone no	Incharge Duty officer's name, designation and Mobile No		
			Name	Designation	Mobile
1	DSP, Porbandar	0286-2240922	Shri B. U. Jadeja	Superintendent of Police	99784 05079
2	Irrigation dept. (State), Porbandar	0286-2222897	Shri Pathik Odedara	Ex. Engineer	9638188777
3	Irrigation dept. (Panchayat), Porbandar	0286-2212667	Shri J.N. Bhatu	Ex. Engineer	7874092928
4	Road and Building department (state), Porbandar	0286-2240948	Shri V.N.Chaudhary	Ex. Engineer	9687088473
5	Salinity Control department, Porbandar	0286-2242429	Shri J.K. Karavadra	Ex.Engineer	7567186511
6	GWSSB, Porbandar	0286-2242528	Shri M.S.Dama	Ex. Engineer	9157918521
7	PGVCL, Porbandar	99789 36122	Shri S.R. Rada	Suptd. Engineer	9825603182
8	Dy Conservator of Forest, Porbandar	0286-2242551	Shri Arunkumar IFS	Assistant Conservator of forest	9620347322
9	CDHO, Porbandar	0286-2212083, 2242910	Dr. B.B. Karmata	Epidemic Medical Officer	9909987301, 8780334305
10	Civil surgeon, Bhavsinhji hospital, Porbandar	0286-2240923, 2242910	Dr. Anirudhh tiwari	CDMO cum Civel surgeon	9099079117, 9033427230
11	Depot manager, S.T. dept., Porbandar	0286-2240949, 2242409	Shri D.M.Makawana	D.M	6359918582
12	Fishries dept, Porbandar	0286- 2242491/221501 3	Shri T.J.Kotia	Assistant Director of Fishries	9275904190

13	GMB, Porbandar	0286-2242404	Shree Arvind Mishra	Port officer	9099694747
14	Mamlatdar, Porbandar(City)	0286-2245444	Shri K.V. Nakum	Mamlatdar-(city)	8511020020
15	Mamlatdar, Porbandar(Rural)	0286-2220543	Shri R.K. Chaudhari	Mamlatdar-(Rural)	9099899778
16	Mamlatdar, Ranavav	02801-230622	Shri J.B. Dabhi	Mamlatdar	7567005338
17	Mamlatdar, Kutiyana	02804-261226	Shri B.R. Sumra	Mamlatdar	9428810828, 6353975758
18	Porbandar-Chhaya Nagarpalika	0286-2249850	Shri Abhay maheta	IC Station Fire officer	8306832283

## ANNEXURE: 16

### List of NGOs/CBOs/Youth organizations in the district

Sr No	Name of NGOs/CBOs	Address	Contact person	Contact no	Service
1	Shree Ram Krishnan mission	Vivekanand memorial, Bhojeswar plot, Opp of Duleep cricket school, Swami Vivekanand Marg, Porbandar	Swami Atma Deepanand	8200157228 T: 0286-2214677	Food packet distribution
2	Swami Narayan Trust	Swaminarayan Gurukul, Chhaya, Porbandar	Swami Bhanuprakash	9825230451	Disaster relief work
3	Rotary club	Natvarsinhji club, Bhojeswar plot, Porbandar	Shri Dipen Barai (President)	9824498425	Food packet distribution
4	Prem Harsh Manavta Trust	Near Public Peer, Dhobivad, Porbandar	Shri Trilok Thakar	9426477455	Distribution of disaster relief materials
5	District Chamber of commerce	2 <sup>nd</sup> floor, Amalani complex, Near Porbandar Nagar seva sadan, Sheetal chowk, Porbandar	Shri Bharatbhai Rajhani	9825230051 T: 0286-2246374	Food packet distribution
6	Indian Red Cross Society, Porbandar	Vyas Nivas building, Opposite of Civil hospital,	Shri Akbar N. Sorathiya (secretary)	9998996939	First aid facilities

		Porbandar			
7	Maher Supreme council	Limbda chowk, Near Zubeli railway track, Above J.D.C.C. bank building, Porbandar	Shri Mehulbhai Thanki	9825590013 T: 0286- 2210666	Food packet distribution
8	Lion's Club	Lion's Hospital, M.G. Road, Opposite of M.D. Science College, Near Khas jail, Porbandar	Shri Prafful Dattani	9428842441	Food packet distribution/ medical help

## ANNEXURE: 17

### OFF SITE EMERGENCY PLAN – PORBANDAR DISTRICT (List of Industries of Porbandar District)

Sr. No.	Name of the Factory	Category	Product	Storage Qty	Name of Villages within 3 kms. Radius	Population	Name of Villages within 5 kms.	Population	Total Population
1	SHV Energy LPG Infastucture Private Limited	MAH	LPG	8400 MT (6*1400)	Jawar, Subhash Nagar	900 2000	Bokhira kuchhdi	1500 1700	6100
2	Saurashtra Chemicals Limited	A	Ammonia	45 MT	Chhaya, Porbandar	32000 1.30.000	Ratanpar Odadar	1500 1800	167300
3	Asha Pura Ice Industries, Memanwad, Porbandar	A	Ammonia	6 MT	Ranavav Adiyana Kajavadari	30000 18000 1000	NIL	--	49000
4	Amar Cold Storage Jawar Village, Porbandar	A	Ammonia	12 MT	Jawar, Subhash nagar	900 2000	Bokhira Kuchhdi	1500 1700	6100
5	Cham Ice & Cold Storage Bokhira, Porbandar	A	Ammonia	12 MT	Porbandar town	900 2000	Bokhira Subhash Nagar	1500 2000	2900
6	Silavar Sea Food Jawar Village, Porbandar	A	Ammonia	9 MT	Jawar, Subhash Nagar	900 2000	Bokhira Kuchhdi	1500 1700	6100
7	Poonam Ice & Cold Storage Nr. New Fish Market, Porbnadar	A	Ammonia	4 MT	Porbandar town	125000	Bokhira jawar Subhash Nagar	1500 900 2000	129400
8	Hodar Export Pvt. Ltd. Jawar Village, Porbandar	A	Ammonia	5 MT	Jawar Subhash nagar	900 2000	Bokhira Kuchhdi	1500 1700	6100
9	Rubicon Industries GIDC, Porbandar	C	Caustic Lye (48%)	40 MT	GIDC, Porbandar	5000	--	--	5000



## ANNEXURE: 18

### Antidotes for toxic chemical

Sr. No.	Toxic chemicals	Antidotes required
1	Ammonia	0.4 % benzocain for eyes. Immediately, Keep away the victim from the affected area & take him to the nearest shower. Immediately, administer medical oxygen under low pressure using a pulmonary.
2	Chlorine	Derrifyline dexona, cp malate, milk of magnesia. Inhalational chlorine poisoning can be treated with supportive care and can include administration of humidified oxygen, bronchodilators, and Airway management. Pulmonary edema may be delayed and therefore patients should be monitored for up to 24 hours following severe inhalation exposures.
3	Hydrogen chloride	Milk of magnesia
4	Hydrogen fluoride	Inj. cal gluconate
5	Oleum (sulphur trioxide)	Milk of magnesia
6	Carbon disulfide	Inhalation: Take the victim to well ventilated area. If not breathing, give artificial respiration and get medical attention. Ingestion: induce vomiting immediately as directed by medical personnel. Never give anything by mouth to an unconscious person. Eye: immediately flush eyes with plenty of water atleast 15 minutes lifting lower and upper eyelids occasionally.
7	Sulphuric Acid	Inhalation: - Keep victim at well ventilated area, provide artificial respiration or oxygen if needed. Skin: - remove the contaminated clothing and wash the affected area with plenty of water and soap. Eye: - irrigate with plenty of water for 15 mins. Seek medical aid, immediately.
8	Hydrochloric acid	Observe victim for delayed pulmonary reaction, move him to well ventilated area. Give artificial respiration. Skin: remove clothes and shoes. Do not use oil & ointment. Flush affected area with plenty of water. Eyes: wash with plenty of water for 15 mins. Ingestion: give plenty of water to drink, do not induce vomiting. Seek medical aid.

## ANNEXURE: 19

### Media Management Plan

1. Preparedness
<p><b>External</b></p> <ul style="list-style-type: none"> <li>• Broadcast programs to raise people's awareness of disaster prevention measures</li> <li>• Develop news sources in emergency situation</li> <li>• Liaison with community leaders</li> <li>• Publicize station frequency</li> <li>• Broadcast public planning meetings</li> <li>• Outreach to the elderly, women, children, mentally and physically disabled people, as well as other marginalized and other vulnerable groups</li> <li>• Encourage stockpiling of (hand –powered) radio receivers</li> <li>• Compile local knowledge on signs of impending disaster and share it with community</li> </ul> <p><b>Internal</b></p> <ul style="list-style-type: none"> <li>• Back up important documents and files (including audio content) and store in a safe location</li> <li>• If possible, place a set of minimum broadcast equipment such as a microphone, tape/CD player, transmitter and antennae in a safe location</li> <li>• Plan radio programs to raise people's awareness of disaster prevention</li> <li>• First aid training for station personnel</li> <li>• Technical preparedness (generator, APS, securing, transmitter)</li> <li>• Guidelines for managing staff and volunteers</li> <li>• Arrange emergency drills in the station</li> <li>• Develop a contact list and post in station</li> <li>• Map community (ethnicity, religion, race, culture, vulnerability)</li> <li>• Prepare pre recorded Emergency Response</li> <li>• Announcements and scripts and post in the studio</li> </ul>
2. Mitigation
<ul style="list-style-type: none"> <li>• Develop networks with local Disaster Management and Response (DMR) NGOs, local government and key stakeholders: hold regular meeting with them</li> <li>• Arrange emergency drills in the community</li> <li>• Training of on a. air personnel b.what and how to broadcast</li> </ul>
3. Response
<p><b>External-on air</b></p> <ul style="list-style-type: none"> <li>• Broadcast pre-prepared announcements</li> <li>• Broadcast emergency public meetings</li> <li>• Broadcast emergency evacuation announcements</li> <li>• All announcements broadcast in a reassuring and calm manner</li> <li>• Dispel myths and rumors and provide timely and accurate updates</li> <li>• Broadcast updates on damage situation</li> <li>• Produce programs in which victims can express themselves</li> </ul>

- Establish contact with the meteorological office and broadcast weather information

#### **Internal-behind the scenes**

- Ensure safety of all station personnel
- Call station briefing meeting
- Notify CR networks of status
- Monitor all official announcements and activities of national government, local government and aid agencies (NGOs).
- Enact station evacuation plan if needed
- Stay calm and do not panic
- Divide information work so that all voices of the community can be heard and not just male leaders.

#### **4. Relief**

- Establish Information Support Centre for information sharing and logistic distribution

#### **5. Rehabilitation**

##### **External – Networking and Support**

- Broadcast pre-prepared announcements
- Broadcast programs to heal victim's psychology trauma.
- Interview trauma counselors, monks, Imams and priests
- Broadcast recovery announcements
- Cooperate with DMR NGOs, local government and key stakeholders
- Broadcast recovery public meetings
- Provide call in or talk-back programs for people to people interactions
- Broadcast positive entertainment programming

##### **Internal – Evaluation and Review**

- Decentralize and copy important documents
- Call meeting of all personnel to debrief
- Monitor all official announcements and activities of national government, local government and aid agencies(NGOs)
- Evaluate response and update guidelines
- Check physical infrastructure and repair damage
- Log all communications for reference
- Update preparedness and response manuals as required

## **ANNEXURE: 20**

### **Shelter management Plan**

As per instruction of a District collector or message for SEOC, DDO will do operation of relief and shelter with their staff, group members & their staff and maintain the records of areawise population, shelter centers in your area for effective emergency evacuation. Based on the warning issued by IMD, pin point the districts and villages likely to be affected by Disasters and start the procedure for identifying safe places/shelters for evacuation in those villages. Generally, Schools and public buildings are given first priority for shelter because they are always available with facilities and at the time of disaster people can take shelter in these public buildings.

Shelter Management Team takes care of the identified shelter buildings in pre, during and post disaster scenario. Care needs to be taken to stock necessary material such as food, drinking water, medicines, bleaching powder, firewood, lantern, etc. Special care needs to be taken for the animal stock during any disaster. The team needs to ensure hygiene in and around the shelter place. Women are generally active members of the shelter team as they are well acquainted with house management, and are able to manage shelters during emergency. The team leader or any other team member should have the keys of the safe shelters so that prior to the disaster they will clean up the place and make available the necessary materials like food, water, medicines, bleaching powder, firewood, lantern, etc. required for the evacuees during disaster period. The most important action by the police is to cordon off the site of the accident, divert and regulate traffic, and evacuate/shelter in place citizens in close proximity on a priority basis.

Village wise data of safe sheltering for evacuation available on SDRN should be referred and the dist. Lision officers/Taluka level officers/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. Arrange to shift evacuated persons to temporary shelters and ensure provision of food, water facilities, blankets and storage of relief materials.

Arrange for complaints regarding missing persons and initiate search in shelters, hospitals and police records. The villagers identify safe areas such as strong houses /buildings, raised platforms etc. These act as a shelter place for the people in the event of an evacuation. It would be useful to identify the alternate approach routes which could be used during the time of an emergency.

Field visit to the affected areas and shelter/ relief camp sites and report preparation and forward to Collector for approval, sanction and onward action. Check the condition of safe shelter during his visits in the district places and if necessary gets it repaired by co-coordinating with the local authorities, available financial resources and voluntary organizations. Setting up relief camps and tents using innovative methods that can save time. Instruct local authorities to set up important telecom and other service related facilities. Initiate, direct and market procurement of food available from different inventories and ensuring food supplies to the affected population. Prepare take-home food packets for the families. Ensure distribution of relief material to the all the people including vulnerable groups of the target area such as women with infants, pregnant women, children, aged people and handicapped. Ensuring supports from all corners to Local administration.

### List of shelters in Porbandar

Sr no	Type	Porbandar	Ranavav	Kutiyana	Total shelters
1	Govt School building	91	64	59	214
	Private School building	06	00	00	06
2	College building	01	00	00	01
3	Aaganvadi building	11	00	00	11
4	Temple building	04	00	01	05
5	Community hall	27	04	00	31
6	Panchayat office	04	00	00	04
7	Samaj wadi building	12	04	12	28
9	Dharmashala/Kalyan Hall	02	00	00	02
<b>Total no of shelters</b>					<b>302</b>

Source: Mamlatdar and T.D.O. office (Porbandar, Ranavav & Kutiyana)

### Multi Purpose Cyclone Shelters of Porbandar district under National Cyclone Risk Mitigation Project

Sr No	Taluka Name	Village Name	Capacity
1	Porbandar	Tukda Gosa	550
2		Untada	550
3		Gorsar	550
4		Palakhada	550

## ANNEXURE: 21

### Relief and Rehabilitation norms

#### Revised list of items & norms of assistance from State Disaster Response Fund (SDRF)/ National Disaster Response Fund (NDRF)

(Period 2022-23 to 2025-26, MHA letter No. 33-03/2020-NDM-I Dated 10.10.2022)

Sr. No.	Items	NORMS OF ASSISTANCE
<b>A</b>	<b>Response &amp; Relief [40% of State Disaster Risk Management Fund (SDRMF) i.e. equal to 50% of SDRF allocation for the year]</b>	
<b>1.</b>	<b>Gratuitous Relief</b>	
	a) Ex-Gratia payment to families of deceased persons.	Rs.4.00 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.
	b) Ex-Gratia payment for loss of a limb or eye(s).	Rs. 74,000/- per person, when the disability is between 40% and 60%. Rs. 2.50 lakh per person, when the disability is more than 60%. Subject to certification by a doctor from a hospital or dispensary of Government, regarding extent and cause of disability.
	c) Grievous injury requiring hospitalization	Rs. 16,000/- per person requiring hospitalization for more than a week. Rs. 5,400/- per person requiring hospitalization for less than a week.
	d) Clothing and utensils/ house-hold goods for families whose houses have been washed away/ fully damaged/severely inundated for more than two days due to a natural calamity.	Rs.2, 500/- per family, for loss of clothing. Rs.2, 500/- per family, for loss of utensils/ household goods.
	e) Gratuitous relief for families whose livelihood is seriously affected.	<p>Gratuitous Relief (GR) for families, whose livelihood is seriously affected will be provided to two adults members of the affected family as per day, whichever is lower. For this purpose, notification issued by Ministry of Rural Development from time to time, is to be referred for calculating average rate, is to be amount should be disbursed through DBT/cash (in case of exigency of the situation only) or the State Government may provide this relief in kind.</p> <p>State Govt. Will certify that identified beneficiaries are not housed in relief camps, during the period GR is provided. Further, the State Government will provide the basis and process for arriving at such beneficiaries, district-wise.</p> <p>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</p>

		<p>assistance will upto to 30 days, which may be extended upto 60 days in the first instance, if required, and subsequently upto 90 days in case of drought/ pest attack. Depending on the ground situation, the State Executive Committee can extend the time period beyond the prescribed limit subject to that expenditure on this account should not exceed 25% of SDRF allocation under this window (Response &amp; Relief) for the year.</p> <p>Further, to ensuretransparncy, the list of persons to whom Gratuitous Relief is provided, should be uploaded on the websiteof the State Government. The State Government shall notify the basis and prof for the identification of beneficiaries in a transparent manner.</p>
<b>2.</b>	<b>SEARCH &amp; RESCUE OPERATIONS</b>	
	(a) Cost of search and rescue measures/ evacuation of people affected/ likely to be affected	<p>As per actual cost incurred, assessed by SEC and recommended by the Central Team (in case of NDRF).</p> <p>- 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.</p>
	(b) Hiring of boats and other essential equipments 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>
<b>3.</b>	<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, Depending on the ground situation, the State Executive Committee can extend the time period beyond the prescribed limit subject to that expenditure on this account should not exceed 25% of SDRF allocation under this window (Response &amp; Relief) for the year. Medical care may be provided from National Health Mission (NHM).</p>

	b) Air dropping of essential supplies	As per actual, based on assessment of need by SEC and recommendation of the Central Team (in case of NDRF).  The quantum of assistance will be limited to actual amount raised in the bills by the Ministry of Defence for airdropping of essential supplies and rescue operations only.
	c) Provision of emergency supply of drinking water in rural areas and urban areas	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 upto 90 days in case of drought. Depending on the ground situation, the State Executive Committee can extend the time period beyond the prescribed limit subject to that expenditure on this account should not exceed 25% of SDRF allocation under this window (Response & Relief) for the year.
<b>4.</b>	<b>CLEARANCE OF AFFECTED AREAS</b>	
	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(in case of NDRF).
	c) Disposal of dead bodies/ Carcasses	As per actuals, based on assessment of need by SEC and recommendation of the Central Team (in case of NDRF).
<b>5.</b>	<b>AGRICULTURE</b>	
<b>(i)</b>	Assistance to small & marginal farmers having landholding upto 2 ha	
<b>A.</b>	<b>Assistance for land and other loss</b>	
	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. 18,000/- per hectare for each item. Above is subject to a minimum assistance of not less than Rs.2, 200/-per farmer.
	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. 47,000/- per hectare to only those small and marginal farmers whose ownership of the land is legitimate as per the revenue records. Above is subject to a minimum assistance of not less than Rs. 5,000/- per farmer
<b>B.</b>	<b>Input subsidy (where crop loss is 33% and above)</b>	



	a) For agriculture crops, horticulture crops and annual plantation crops	Rs. 8,500/- per ha. in rainfed areas. Above is subject to a minimum assistance of not less than Rs.1,000/- per farmer and restricted to sown areas .  Rs. 17,000/- per ha.in assured irrigated areas.  Above is subject to minimum assistance not less than Rs.2000/- per farmer and restricted to sown areas.
	b) Perennial crops / Agro forestry (Plantation in own farmland )	Rs. 22,500/- ha. for all types of perennial crops/ Agro forestry (Plantation in own farmland ), Subject a minimum assistance not less than Rs. 2500/- per farmer and restricted to sown areas.
	c) Sericulture	Rs. 6,000/- per ha. for Eri, Mulberry, Tussar  Rs. 7,500/- per ha. for Muga.  Above is subject to minimum assistance not less than Rs.1000/- per farmer and restricted to sown areas.
(ii)	<b>Input subsidy to farmers having more than 2 Ha of landholding</b>	Rs. 8,500/- per hectare in rainfed areas and restricted to sown areas.  Rs.17,000/- per hectare for areas under assured irrigation and restricted to sown areas.  Rs. 22,500/- per hectare for all types of perennial crops/ tree including agro forestry (plantation in own farmland) and restricted to sown areas.  Assistance may be provided where crop loss is 33% and above, subject to a ceiling of 2 ha. Per farmer.
6.	<b>ANIMAL HUSBANDRY - ASSISTANCE TO SMALL AND MARGINAL FARMERS</b>	
	i) Assistance for the loss of milch animals, draught animals or animals used for haulage.	Milch animals - Rs. 37,500/- Buffalo/ cow/ camel/ yak/ Mithun etc.  Rs. 4,000/- Sheep/ Goat/ Pig Draught animals  Rs. 32000/- Camel/ horse/ bullock, etc. Rs.20,000/- Calf/ Donkey/ Pony/ Mule/heifers  The assistance may be restricted for the actual loss of economically productive animals and will be subject to a ceiling of 3 large milch animals or 30 small milch animals or 3 large draught animals or 6 small draught animals per household irrespective of whether a household has lost a larger number of animals. (Claim for loss of animals will be considered

		<p>only if number and type of animals owned by Small and Marginal Farmers/Landless Livestock Owners are registered with local/designated authorities.)</p> <p><i>Poultry:-</i> Poultry @ 100/- per bird subject to a ceiling of assistance of Rs 10,000/- 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><b>Explanation:</b> It will also include existing Gaushala, if authorized by the State Government Order to act as a cattle camp subject to the following condition:-</p> <ol style="list-style-type: none"> <li>During the period of calamity, District Administration will assess the requirement of cattle shelter and number of gaushala required to be notified as cattle shelter in the base-line information on the cattle already sheltered and the number of more cattle it can accommodate, Gaushala may be notified as cattle shelter.</li> <li>The notified gaushala shall maintain a separate account of the additional cattle belonging to SMF and landless labourers for the notified drought period. The consolidated list of SMF and landless beneficiaries with number and types of animals will be displayed on the notice board of Gram Panchayat, Bloc, Tehsil and in the office of Sub-Divisional Magistrate and Divisional Magistrate as well as State/ District web-site for the purpose of verification and social audit.</li> <li>SDRF funds will only be released to such notified gaushala on reimbursement basis and will be limited to list of individual beneficiaries notified as in Sl. No.(ii) above</li> </ol>	<p>Large animals- Rs. 80/- per day.</p> <p>Small animals- Rs. 45/- per day.</p> <p>Period for providing relief will be as per assessment of the State Executive Committee (SEC) and the Central Team (in case of NDRF). The default period for assistance will be up to 30 days, which may be extended up to 60 days in the first instance and in case of severe drought up to 90 days. Depending on the ground situation, the State Executive Committee can extend the time period beyond the prescribed limit, subject to the stipulation that expenditure on this account should not exceed 25% of SDRF allocation under this window (Response &amp; Relief) for the year.</p> <p>Based on assessment of need by 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>
	iii) Transport of fodder to cattle outside cattle camps	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 per Livestock Census.
<b>7.</b>	<b>FISHERY</b>	
	<p>i) Assistance to Fisherman for repair / replacement of non-mechanized boats and damage/lost nets.</p> <p>(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.)</p>	<p>Rs. 6,000/- for repair of partially damaged boats only Rs. 3,000/- for repair of partially damaged net</p> <p>Rs. 15,000/- for replacement of fully damaged boats Rs. 4,000/- for replacement of fully damaged net</p> <p>(Assistance under this item will be adjusted to the extent of the fishermen, under any insurance scheme, for the instant calamity).</p>
	ii) Input subsidy for fish seed farm to Small and Marginally Farmers	<p>Rs. 10,000 per hectare.</p> <p>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 the Scheme of Ministry of Fisheries, Animal Husbandry.</p>
<b>8.</b>	<b>HANDICRAFTS/HANDLOOM – ASSISTANCE TO ARTISANS</b>	
	i) For replacement of damaged tools/ equipment	<p>Rs. 5,000/- per artisan for equipments.</p> <p>Subject to certification by the competent authority designated by the Government about damage and its replacement.</p>
	ii) For loss of raw material/ goods in process/ finished goods	<p>Rs. 5,000 per artisan for raw material.</p> <p>Subject to certification by Competent Authority designated by the State Government about loss and its replacement.</p>
<b>9.</b>	<b>Locust Control</b>	
	Hiring of vehicles, tractors, with spray equipments for spraying of plant protection chemicals for pest control hiring of water tankers and purchase of plant protection chemicals for locust control.	<p>As per the actual cost, based on the assessment of need by the 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 vehicles tractors with spray equipments for spraying of plant protection chemicals for locust control during locust attack. However, expenditure on this account, in no case, should exceed 25% of SDRF allocation under this window (respond &amp; Relief) for the year.</p>
<b>B.</b>	<b>Recovery &amp; Reconstruction: (30% of SDRMF i.e equal to 37.50% of SDRF allocation for the year)</b>	
<b>10.</b>	<b>HOUSING</b>	
	a) Fully damaged/ destroyed houses and Severely damaged houses	

	i) Pucca house	Rs. 1, 20,000/- per house, in plain areas.
	ii) Kutcha House	Rs. 1, 30,000/- per house, in hilly areas.
	<b>b) Partially Damaged Houses (other than huts) where the damage is at least 15 %</b>	
	i) Pucca house	Rs. 65,00/- per house.
	ii) Kutcha House	Rs. 4,000/- per house,
	<b>(c) Damaged / destroyed huts:</b>	Rs. 8,000/- per hut,  (Hut means temporary, make shift unit, inferior to Kutcha house, made of thatch, mud, plastic sheets etc. traditionally recognized as hut by the State/ District authorities.)  Note: -The damaged house should be an authorized construction duly certified by the Competent Authority of the State Government.
	<b>e) Cattle shed attached with house</b>	Rs. 3,000/- per shed.
<b>11.</b>	<b>INFRASTRUCTURE</b> [Repair/restoration (of immediate nature) of damaged infrastructure]	
	<b>(1) Roads &amp; bridges</b> , which may include the following activities i. Filling up of breaches and potholes, use of pipe for creating waterways, repair and stone pitching of embankments. ii. Repair of breached culverts. iii. Providing diversions to damaged/washed out portions to bridges to restore immediate connectivity iv. Temporary repair of approaches to bridges/embankments of bridges repair of damages railing bridges, repair of causeways to restore immediate connectivity, granular sub base, over damaged stretch of roads to restore traffic.	Assessment of requirements : Based on assessment of need, as per States' costs/ rates/ schedules for repair, by SEC and recommendation of the Central Team (in case of NDRF).  In case of repair of roads, assistance will be given based on the notified Ordinary Repair (OR) and Periodical Renewal (PR) of the State. In case OR & PR is not available, then assistance will be provided as per rate prescribed in this item. However, in any case, the assistance will be provided at the rate whichever is lower.  Prescribed rate are as under:-  ➤ Repairs of States Highways /Major District Roads(MDR) – In normal areas -- @ Rs.1.0 lakh /km ; – In hilly areas -- @ Rs. 1.25 lakh /km;  ➤ Repairs of Rural/village Roads with culverts – In normal areas -- @ Rs.60.000/ - km; – In hilly areas -- @ Rs. 75,000/ km;  ➤ Repairs of RCC culvert/Bridge – In normal areas -- @ Rs.60.000 per culvert – In hilly areas -- @ Rs. 75,000 per

		culvert.
	<p><b>(2) Drinking Water Supply Scheme,</b> Which may include the following activities:-</p> <p>(i) Repair of damaged platforms of hand pumps/ringwells/spring-tapped chambers/public stand posts cisterns.</p> <p>(ii) Restoration of damaged stand posts including replacement of damaged pipe lenth with new pipe lenth cleaning of clear water reservoir (to make it leak proof).</p> <p>(iii) Repair of damaged pumping machines, leaking overhead reservoirs and water pumps including damaged Intake-outtake structure, approach gantries/jetties.</p>	<p>Damaged drinking water supply schemes will be eligible for assistance per actual, subject to a ceiling of Rs 2.00 lakh per damaged scheme. Cleanning of Community drinking water wells as per actual, subject to a ceiling of Rs. 10,000/ per well</p>
	<p><b>(3) Minor Irrigation Schemes,</b> Which may include the following activities:-</p> <p>(i) Immediate repair of damaged canal structures and earthen/masonry works of tanks and small reservoirs with the use of cement, sand bags and stones.</p> <p>(ii) Repair of weak areas such as piping or rat holes in dam walls/embankments.</p> <p>(iii) Removal of vegetative material/building material/debris from canal and drainage system.</p> <p>(iv) Repair of embankments of minor irrigation projects.</p>	<p>In case of repairs of Bridges and Irrigation works, assistance will be given as per the schedule of rates (SOR) for repairs notified by the concerned State.</p> <p>In case SOR in not avaiable, assistance for irrigation scheme / canal will be approvided as per actuals subject ceiling of @ Rs. 2.00 lakh per damaged minor scheme.</p> <p><b>Note :-</b> However, in any case, the assistance will be provided at the rate whichever is lower.</p> <p>Assistance for restoration of damaged medium and large irrigation projects will also be given for the embankment portions, on par with the case of similar rural roads, subject to the stipulation that no duplication would be done with any ongoing schemes.</p>
	<p><b>(4) Power</b> (only limited to immediate restoration of electricity supply in the affected areas) :</p> <p>Damaged poles/conductors and transformers upto 11 kv.</p>	<p>Regarding repair of damaged power sector, assistance will be given to damaged conductors, poles and transformers upto the level of 11 KV and LT lines with bare conductor, as per detailed hereundaer.</p> <p>The rate of assistance will be</p> <ul style="list-style-type: none"> <li>- Rs. 5000/poles,</li> <li>- Rs 0.50 lakh per km of repairing of damage LT lines</li> <li>- Rs.1.00 lakh per damaged distribution transformer.</li> </ul> <p>(Note :- The above assistance will not be applicable for those items which can be reused).</p>
	<b>(5) Schools,</b> Repairs of damaged schools building	As per actual, subject to a ceiling of Rs2.00 lakh per school.
	<b>(6) Primary/Community Health Centres</b> Repairs of Primary/Community Health	As per actual, subject to a ceiling of Rs2.00 lakh per unit

	Centres	
	<b>(7) Community Assets Owned by Panchayat</b> Temporary repair of Mahila Mandal, Yuva Kendra, Panchayat Ghar, Community Hall, Anganwadi, etc.	As per actual, subject to a ceiling of Rs2.50 lakh per unit.
<b>C.</b>	<b>Preparedness &amp; capacity Building (10% of SDRMF i.e equal to 12.50% of SDRF allocation for theyear)</b>	
12	Procurement of essential search, rescue and evacuation equipments including communication equipments, etc. for response to disaster.	Expenditure from the preparedness and capacity building window will be government by the Guidelines issued separately by the Ministry of Home affaire for the Prepared ness & Capacity Building window of SDRF/ NDRF.
13	Capacity Building	
<b>D.</b>	<b>State specific Disasters</b>	
	State specific disasters within the local context in the State, which are not included in the notified list of disasters eligible for assistance from SDRF/ NDRF, can be met from SDRF within the limit of 10% of the annual funds allocation of respective window of the SDRF.	<p>Expenditure is to be incurred from SDRF only (and not from NDRF), as assessed by the State Executive Committee (SEC).</p> <p>The norm for various items will be the same as applicable to other notified natural disasters, as listed above.</p> <p style="text-align: center;">or</p> <p>In these cases, the scale of relief assistance against each item for ‘local disaster’ should not exceed the norms of SDRF.</p> <p>The flexibility is to be applicable only after the State has formally listed the disasters for inclusion and notified transparent norms and guidelines with a clear procedure for identification of the beneficiaries for disaster relief for such local disasters’, with the approval of SEC.</p>
<b>E</b>	<b>Items Not Covered under SDRF/NDRF</b>	
	a) Colleges and other education institutionbuildings b) Major/mediumIrrigationSchemes c) Flood control and anti erosion Protection work d) HydroPowerProject/HTDistribution systems/Transformers and sub stations e) High Tension Lines (above 11kv) f) State Gov Buildings viz. departmental/office building, departmental/residential quarters,religions structures,patwarkhana, Court premises,playground, forestbungalow property and animal/bird sanctuary etc. g) Long term/permanent resoration work h) Procurementof equipments/machineries under NDRF i) National Highways j) Sectors such as Telecommunication and Power (except immediate restoration of power supply), which generate their own renewes, and also undertake immediate repair/restoration work form their own fund/resources, are excluded.	

**Note: -**

- (i) For assistance under NDRF for items at S. Nos. 2 (a), (b). 3 (a), (b), (c). 4 (a), (b), (c), 6 (ii), (iii), and 9, while actual expenditure is allowed, the State Government will provide the item-wise details of expenditure to the Inter Ministerial Central Team (IMCT) /Central Government.
- (ii) Ex-Gratia payment of Rs 50,000/- per deceased person, to next of kin of the deceased person, including those involved in the relief operations or associated in the preparedness activities, subject to the cause of death being certified as COVID-19, as per the guidelines jointly issued by the Ministry of Health and Family Welfare and the Indian Council of Medical Research on 3rd September, 2021, will be given as per guidelines on minimum relief issued by the National Disaster management Authority (NDMA) dated 11.09.2021.  
This ex-gratia assistance will be applicable from the date of first COVID-19 case reported in the country and will continue till de-notification of COVID-19 as a disaster or till further orders, whichever is earlier, to next of kin of the deceased due to COVID-19.
- (iii) There will be a Mid-Term review of the norms after 2 years, based on price level index.
- (iv) The state Governments are to take utmost care and ensure that all individual beneficiary-oriented assistance is necessarily/ mandatorily disbursed through Direct Benefit Transfer in the bank account of the beneficiary.
- (v) The scale of relief assistance against each item for all notified disasters including 'local disaster' should not exceed the norms of SDRF/NDRF. Any amount spent by the State for such disaster over and above the ceiling, would be borne out of the resources of the State Government and not from SDRF.

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 breaches 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 of 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 bags 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.



iv) Repair of embankments of minor, medium and major irrigation projects.

#### 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.

6. Power: Poles/ conductors and transformers upto 11 KV.

7. The assistance will be considered as per the merit towards the following activities:

Sr. No.	Items/ Particulars	Norms of assistance will be adopted for immediate repair
i)	Damaged primary school building Higher secondary/ middle/ college and other educational institutions buildings	Up to Rs. 2.00 lakh/ unit Not covered
ii)	Primary Health Centre	Upto Rs. 2.00 lakh/ unit
iii)	Electric poles and wires etc.	Normative cost (Upto Rs.4000 per pole and Rs. 0.50 lakh per km )
iv)	Panchayat Ghar/ Anganwadi/ Mahila Mondal/ Yuva Kendra/ Community Hall	Upto 2.00 lakh/ unit
v)	State Highways/ Major District road	Rs. 1.00 lakh/ km *
vi)	Rural road/ bridge	Rs. 0.60 lakh/km *
vii)	Drinking water scheme	Upto 1.50 lakh/ unit
viii)	Irrigation Sector: Minor irrigation schemes/ Canal Major irrigation scheme Flood control and anti Erosion Protection work	Upto Rs. 1.50 lakh/ scheme Not covered Not covered
ix)	Hydro Power Project/ HT Distribution systems/ Transformers and sub stations	Not covered
x)	High Tension Lines (above 11 kv)	Not covered
xi)	State Govt Buildings viz. departmental/ office building, departmental/ residential quarters, religious structures, patwarkhana, Court premises, play ground, forest bungalow property and animal/ bird sanctuary etc.	Not covered
xii)	Long terms/ Permanent Restoration work incentive	Not covered
xiii)	Any new work of long term nature	Not covered
xiv)	Distribution of commodities	Not covered. (However, there is a provision for assistance as GR to families in dire need of assistance after disasters).
xv)	Procurement of equipments/ machineries under NDRF	Not covered
xvi)	National Highways	Not covered (Since GOI born entire expenditure towards restoration works activities)
xvii)	Fodder seed to augment fodder production	Not covered

\* If OR & PR rates are not provided by the State.



## ANNEXURE: 22

### State Level Emergency Contact Numbers

Sr. No.	EOCs/ Control rooms	Code	Contact Numbers
1	State Emergency Operation Center	079	23251900 23251902 23251908 F- 23251916/12
2	Relief Commissioner	079	23251509 23251506
3	Director of Relief	079	23251611 23251912
4.	CEO, GSDMA	079	23259276
5	Pri. Secretary Revenue Department	079	23251501
6	Dy. Collector (SEOC)	079	23251900
7	India Meteorological Department , Ahmadabad	079	22865012 22865449 22865165 22858020
8	Institute of seismological Research(ISR), Gandhinagar	079	66739001 66739028 66739000
9	Dist. Commandant, NDRF, Gandhinagar		9427304214
10	Control room, NDRF 6 <sup>th</sup> Batallion		9429469388
11	Major, Maratha regiment Army, Jamnagar		8469800077 8141153447

### EMERGENCY HELP LINE (TOLL FREE NO)

<b>State Emergency Operation Centre (SEOC), Gandhinagar</b>	<b>1070</b>
<b>District Emergency Operation Centre (DEOC), Porbandar</b>	<b>0286-1077</b>
<b>DEOC, Porbandar Landline number</b>	<b>0286 2220800/801</b>

### Gujarat Maritime Board

<b>Sr. No.</b>	<b>Name of Ports</b>	<b>STD Code</b>	<b>Office no</b>	<b>Fax No</b>
1	CEO & VC, GMB-Gandhinagar	079	23238363	34703/34704
2	Port officer, Bhavnagar	0278	2210221	2519326
3	<b>Port officer (Bedi port-Jamnagar)</b>	<b>0288</b>	<b>2256106</b>	<b>2712815</b>
4	<b>Port officer, Okha</b>	<b>02892</b>	<b>262001</b>	<b>262002</b>
5	Port officer, Navlakhi port (Morbi)	02822	220435	232470
6	Port officer, Mandavi	02834	223033	223040
7	Port officer, Jafarabad	02794	245443	245165
8	Port officer, Magdalla port	0265	2463781	2475645
9	Port officer, Bharuch	02642	220377	243140
10	<b>Port officer, Veraval</b>	<b>02876</b>	<b>220001</b>	<b>243138</b>
11	Port officer, Alang	02842	235222	235955

### ANEXURE: 23 (NEW SATELLITE TELEPHONE NUMBER)

Sr.No.	DISTRICT NAME	IMEI No.	Phone Number
1.	AHMEDABAD CITY(MC)	353032044157861	8991115047
2.	AHMEDABAD	353032044156657	8991115048
3.	AMRELI	353032044158232	8991115046
	ANAND	353032044161202	8991115043
4.	BANASKATHA	353032044160212	8991115042
5.	BHARUCH	353032044160295	8991115041
6.	BHAVNAGAR	353032044160618	8991115044
7.	DAHOD	353032044160709	8991115045
8.	DANG	353032044160774	8991115036
9.	DEVBHOO MI DWARKA	353032044160451	8991115037
10.	GANDHINAGAR	353032044161319	8991115038
11.	JAMNAGAR	353032044158612	8991115040
12.	JUNAGADH	353032044161442	89911 15039
13.	KHEDA	353032044160196	8991115034
14.	KACHCHH	353032044159958	8991115035
15.	MEHSANA	353032044158828	8991115033
16.	NARMADA	353032044161350	8991115032
17.	NAVSARI	353032044158802	8991115031
18.	PANCHMAHAL	353032044157234	8991115030
19.	<b>PORBANDAR</b>	<b>353032044157465</b>	<b>8991115029</b>
20.	RAJKOT	353032044157556	8991115026
21.	SABARKANTHA	353032044157457	8991115027
22.	SURENDRANAGAR	353032044157564	8991115026
23.	SURAT	353032044145353	8991115024
24.	SURAT CITY	353032044146609	8991115025
25.	TAPI	353032044146823	8991115023
26.	VADODARA CITY	353032044144729	8991115022
27.	VALSAD	353032044146617	8991115021
28.	<b>SEOC</b>	<b>353032044044648</b>	<b>8991115020</b>
29.	<b>CEO-GSDMA</b>	<b>353032044043954</b>	<b>8991115019</b>
30.	JAMNAGAR MC	353032044044655	8991115018
31.	JUNAGARH MC	353032044043889	89911 15017
32.	RAJKOT MC	353032044043608	8991115016
33.	BOTAD	353032041746302	8991115049
34.	ARVALLI	353032040819159	8991115050
35.	PATAN	353032041844156	8991115051
36.	VADODARA	353032041433604	8991115052
37.	GIR SOMNATH	353032041424710	8991115053
38.	CHOTTAUDEPUR	353032041844461	8991115054
39.	MORBI	353032040543395	8991115055

## ANNEXURE: 24

**District Administration**  
**(55) District Porbandar (STD Code: 0286)**

Sr No.	Designation	Name	Office	Resi	Mobile	Fax	Email Id
1	Collector	Shri K.D.Lakhani	2221800	2243801	9978406219	2222527	collector-por@gujarat.gov.in
2	DSP	Shri B.U.Jadeja	2211222	2211223	9978405079	2243015	sp-por@gujarat.gov.in
3	DDO	Shri K.B.Thakkar	2243803	2212638	9978406244	2212477	ddo-por@gujarat.gov.in
4	Resident Additional Collector	Shri R.M.Rayjada	2221085	2245801	9978405191	2222527	add-collector-por@gujarat.gov.in
5	Director, DRDA	Shri Rekhaba Sarvaiya	2213736	-	9925017584	-	drda.por@gmail.com
6	DSO	Shri H.P.Joshi	2220070	-	9428522300	2220071	dso-por@gujarat.gov.in
7	Dy. DDO (Revenue)	Shri P.L.Vaghani	2252806	-	8128953600	2212477	ddo-por@gujarat.gov.in
8	CDHO	Shri Dr.B.B.Karamta	2241134	-	8780334305	2242731	cdho.health.porbandar@gmail.com
9	DEO	Shri V.K.Parmar	2251350	-	9909970225	2253108	porbandardeo@gmail.com
10	DPEO	Shri V.K.Parmar	2252808	-	9909970225	2252808	dpeoporbandar@gmail.com
11	General Manager DIC	Shri D.R.Parmar	2222168	-	7096958566	2222169	gm-dic-por@gujarat.gov.in
12	Asst. Director of Information	Shri Naresh Mehta	2222470	-	9825263775	2222480	informationpor@gmail.com
13	Fire Officer	Shri Abhay Mehta	2249850	-	8306832283	-	copbr2008@gmail.com
14	Disaster Mamlatdar	Shri V.K. Barot	2220800	-	9427062192	-	dismgmt-por@gujarat.gov.in
15	Disaster Dy.	Shri D.A.Patel	2220800	-	9904035840	2220801	dismgmt-por@gujarat.gov.in
16	DPO(GSDMA)	Shri Gautam Vala	2220800	-	8000256651	2220801	dismgmt-por@gujarat.gov.in
17	EME 108	Shri Jayeshgiri Meghnathi	-	-	9510887108 9710861108	-	jayeshgiri_goswami@emri.in

### Porbandar Taluka

Sr. No	Designation	Officer Name	Code	Office	Mob.	Police station	Email id
1	Prant Officer	Shri S.A.Jadav	0286	2220916	9978405359 7383683377	2240944/ 2210577 KirtiMandir, Porbandar & 2210622 Kamlabaug, Porbandar	po-por@gujarat.gov.in
2	Mamlatdar (Rural)	Shri R.K.Chaudhri		2220543	9099899778		mam-porbandar@gujarat.gov.in
3	Mamlatdar (City)	Shri K.V.Nakum		2245444	8511020020		mamcity.pbr@gmail.com
4	TDO	Shri R.P.Makwana		2242439/ 2210273	9427536308		tdo.porbandar01@gmail.com
5	Chief Officer, Porbandar-Chhaya Nagarpalika	Shri Ashwin Gadhvi		2240936	9979887921		copbr2008@gmail.com

### Ranavav Taluka

Sr. No	Designation	Officer Name	Code	Office	Mob.	Police station	Email id
1	Prant Officer	Shri Paras Vanda	02801	260222	7567009703	230636, Ranavav	sdm-kut-por@gujarat.gov.in
2	Mamlatdar	Shri J.B.Dabhi		230622	7567005338		mam-ranavav@gujarat.gov.in
3	TDO	Shri N.A.Patel		230629	9898935694		tdo-ranavav@gujarat.gov.in
4	Chief Officer	Shri M.M.Joshi		230624	9909463555		np_ranavav@yahoo.co.in

### Kutiyana Taluka

Sr. No	Designation	Officer Name	Code	Office	Mob.	Police station	Email id
1	Prant officer	Shri Paras Vanda	02804	260222	7567009703	261222, Kutiyana	sdm-kut-por@gujarat.gov.in
2	Mamlatdar	Shri V S Desai		261226	9979307163		mam-kutiyana@gujarat.gov.in
3	TDO	Shri K.T.Thakkar		261229	9426582943		tdo-kutiyana@gujarat.gov.in
4	Chief Officer	Shri K.B. Chavda		261251	9824366279		np_kutiyana@yahoo.co.in

## ANNEXURE: 25

**Taluka wise Latitude and Longitude of villages**  
**Porbandar dist: Latitude 21.6417°N and Longitude 69.6293°E**

### Taluka: Porbandar

No	Village	Latitude	Longitude	Sr	Village	Latitude	Longitude
1	Advana	69.6	21.89	40	Madhavpur	69.59	21.22
2	Ambarama	69.47	21.81	41	Majivana	69.57	21.83
3	Bagvadar	69.58	21.75	42	Mander	69.93	21.29
4	Bakharla	69.62	21.7	43	Mitralla	69.86	21.48
5	Balej	69.86	21.34	44	Miyani	69.37	21.81
6	Baradiya	69.5	21.71	45	Mocha	69.88	21.3
7	Bavalvav	69.63	21.78	46	Modhvada	69.51	21.78
8	Beran	69.61	21.73	47	Morana	69.6	21.85
9	Bhad	69.83	21.46	48	Nagka	69.64	21.79
10	Bharvada	69.57	21.74	49	Natvarnagar	69.9	21.78
11	Bhavpara	69.4	21.78	50	Navi Bandar	69.78	21.41
12	Bhetkadi	69.55	21.88	51	Oddar	69.67	21.55
13	Bhomiyavadar	69.64	21.88	52	Palkhada	69.49	21.73
14	Bokhira	69.58	21.63	53	Pandavadar	69.6	21.69
15	Boricha	69.66	21.7	54	Paravada	69.64	21.85
16	Chhaya	69.66	21.6	55	Pata	69.92	21.25
17	Chikasa	69.79	21.43	56	Porbandar	69.62	21.59
18	Chingariya	69.91	21.27	57	Rajpar	69.79	21.48
19	Degam	69.59	21.67	58	Ratanpar	69.65	21.56
20	Delodar	69.87	21.5	59	Ratdi	69.49	21.7
21	Erada	69.84	21.51	60	Ratiya	69.82	21.38
22	Fatana	69.54	21.84	61	Rinavada	69.55	21.69
23	Garej	69.86	21.42	62	Rojhivada	69.7	21.93
24	Godhana	69.64	21.76	63	Sakhpur	69.47	21.77
25	Gorsar	69.89	21.29	64	Shingda	69.52	21.84
26	Gosa	69.74	21.47	65	Shrinagar	69.52	21.7
27	Ishvariya	69.68	21.89	66	Simani	69.58	21.7
28	Kadachh	69.91	21.31	67	Simar	69.66	21.9
29	Kantela	69.51	21.68	68	Sisli	69.5	21.84
30	Katvana	69.63	21.74	69	Sodhana	69.57	21.86
31	Keshav	69.5	21.77	70	Tukda Gosa	69.72	21.49
32	Keshod (Lushala)	69.8	21.49	71	Tukda Miyani	69.42	21.76
33	Khambhodar	69.57	21.77	72	Untada	69.84	21.35
34	Khapat	69.61	21.63	73	Vachhoda	69.61	21.760
35	Khistri	69.62	21.76	74	Vadala	69.44	21.80

36	Kindar Kheda	69.55	21.77		75	Vinjhvana	69.62	21.750
37	Kolikhada	69.64	21.66		76	Visavada	69.45	21.740
38	Kuchhdi	69.54	21.67		78	Zavar	69.56	21.620
39	Kunvadar	69.59	21.82					

### Taluka – Ranavav

No	Village	Latitude	Longitude		Sr.	Village	Latitude	Longitude
1	Adityana	69.68	21.68		17	Kerala	69.84	21.55
2	Amardad	69.7	21.65		18	Khambhala	69.76	21.71
3	Aniali	69.84	21.66		19	Khijdad	69.89	21.58
4	Ashiyapat	69.79	21.75		20	Khirsara	69.86	21.68
5	Bapodar	69.8	21.57		21	Mahira	69.88	21.54
6	Bhod	69.79	21.64		22	Mokal	69.77	21.57
7	Bhoddar	69.88	21.55		23	Nerana	69.88	21.52
8	Bileshwar	69.76	21.74		24	Padardi	69.82	21.54
9	Bordi	69.81	21.69		25	Pipaliya	69.71	21.63
10	Daiyar	69.9	21.65		26	Ramgadh	69.78	21.69
11	Dharampur	69.66	21.64		27	Ranavav	69.74	21.64
12	Digvijaygadh	69.68	21.63		28	Thoyana	69.87	21.56
13	Dolatgadh	69.83	21.68		29	Vadwala - Rana	69.82	21.62
14	Hanumangadh	69.8	21.75		30	Valotra	69.88	21.65
15	Jambu	69.85	21.55		31	Virpur	69.69	21.61
16	Kandorna - Rana	69.85	21.61					

### Taluka – Kutiyana

No	Village	Latitude	Longitude		Sr.	Village	Latitude	Longitude
1	Amar	69.9	21.62		25	Kantol	70.05	21.55
2	Amipur	69.91	21.37		26	Katwana	69.98	21.55
3	Baloch	69.9	21.59		27	Kavalka	69.95	21.49
4	Bavlavadar	69.92	21.61		28	Khageshri	69.96	21.72
5	Bhadula	70.02	21.42		29	Khunpur	70.02	21.63
6	Bhogsar	69.9	21.48		30	Kotda	69.92	21.54
7	Bildi	70.08	21.62		31	Kutiyana	69.97	21.6
8	Chauta	70.03	21.59		32	Mahiyari	69.92	21.43
9	Chhatrava	69.89	21.48		33	Mahobatpara	69.96	21.61
10	Choliyana	69.93	21.6		34	Mal	69.94	21.57
11	Daduka	70.12	21.64		35	Malanka	70.06	21.66
12	Devda	69.87	21.69		36	Mandva	69.99	21.56

13	Dharsan	69.95	21.47		37	Moddar	69.97	21.51
14	Dhrusan	69.99	21.65		38	Paswali	69.95	21.53
15	Farer	69.99	21.42		39	Ramnagar	69.9	21.71
16	Gadhvana	69.96	21.48		40	Revadra	69.96	21.45
17	Gokaran	70.03	21.61		41	Roghada	70.06	21.61
18	Hamadpara	69.99	21.61		42	Segras	69.92	21.51
19	Helabeli	70	21.64		43	Sindhpur	70.05	21.64
20	Ishvariya	69.93	21.65		44	Tarkhai	69.94	21.44
21	Jamra	69.88	21.46		45	Teri	70.01	21.61
22	Junej	70	21.42		46	Thepda	70.02	21.57
23	Kadegi	69.96	21.42		47	Vadala	70.1	21.64
24	Kansavad	69.92	21.47					



## ANNEXURE: 26

### Do's and don'ts of various disasters

#### **Cyclone Safety:**

A cyclone is a storm accompanied by high-speed winds. It brings torrential rains.

#### **Where does a cyclone come from?**

A cyclonic storm develops over tropical oceans like the Indian Ocean and Bay of Bengal and the Arabian Sea. Its strong winds blow at great speed, which can be more than 118 km per hour.

#### **What are the visible signs of a cyclone?**

When a cyclonic storm approaches, the skies begin to darken accompanied by lightning and thunder and a continuous downpour of rain.

#### **How does a cyclone affect us?**

- A cyclone causes heavy floods.
- It uproots electricity supply and telecommunication lines. Power supply shuts down and telephones stop functioning.
- Road and rail movements come to halt because floods damage rail tracks and breach roads. Rail movements are also disrupted because of communication failure.
- The inclement weather conditions also disrupt Air services. Seaports stop work due to high winds, heavy rains and poor visibility. Sometimes ships overturn or are washed ashore. The high-speed winds bend and pluck out trees and plants.
- A cyclone tears away wall sidings and blows off roofs of houses.
- Houses collapse and people are rendered homeless. In villages kacha houses get blown away. The speeding winds cause loose metal and wooden sheets to fly turning them to potential killers. Broken glass pieces can cause serious injuries.
- The floodwaters can take time to recede.
- The floodwaters can turn the fields salty.
- Bridges, dams and embankments suffer serious damages.
- Floods wash away human beings and animals and make water unfit for drinking. There can be outbreak of diseases like Cholera, Jaundice or Viral fever due to intake of impure water. Water gets contaminated because of floating corpses of animals and human beings and mixing of sewage stored food supplies, gets damaged.

#### **Which areas are exposed to a cyclone in Gujarat?**

In Gujarat, the Saurashtra-Kachchh region experiences a cyclone. The port towns of Veraval, Porbandar, Jamnagar, Dwarka, Okha, Kandla and Bhavnagar and other minor port towns suffer most.

#### **Does a cyclone follow a particular path?**

It is often difficult to predict where a cyclone will strike. When it starts moving from oceans (in Gujarat it is Arabian Sea) towards the land area, a cyclone can change track and hit areas other than those anticipated earlier.

#### **Has any early warning system been evolved for the occurrence of a cyclone?**

Yes. In India, the Indian Meteorological Department has developed a four-stage warning system for a cyclone.

### **How does the system operate?**

This warning is about the possibility of a cyclone when a low pressure depression develops in oceans. For Gujarat, the development of such a depression in the Arabian Sea is indicative of a cyclone attack.

- **The Alert stage**

This warning is given 48 hours prior to the time when a cyclone is expected to hit the land.

- **The Warning stage**

This is the stage when a cyclone gets formed. The warning is given 24 hours before the anticipated time of arrival of a cyclone.

- **Cyclone arrival**

This warning is issued 12 hours before a cyclone is due to hit the land. The warning gives information about cyclone and will continue until the winds subside. In sea ports, danger signal are hoisted about the impending cyclone.

### **From where can people access cyclone storm warnings?**

Warnings about storms, their intensity and the likely path they may take are regularly broadcasted by radio and television network continuously until the storm passes over.

### **What to do 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 and several copies of photographs of family members in case they are needed for identification purposes after the storm.
- 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.

#### **What one should not do during a Cyclone attack?**

- 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.

#### **Earthquake safety:**

- 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

#### **During Earthquake**

- Do not panic.
- If already inside, then stay indoors! Get under a heavy desk or table and hold 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

#### **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 stop.
- 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, of 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 sunbursts crackers...leave it!! Light a new cracker
- 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:**

The phenomenon Tsunami is a series of traveling ocean waves of extremely long length generated primarily by earthquakes occurring below or near the ocean floor:

Following safety measures needs to be learnt before, during and after the occurrence of tsunami:

### **Before**

- 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

### **During**

- 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.

### **After**

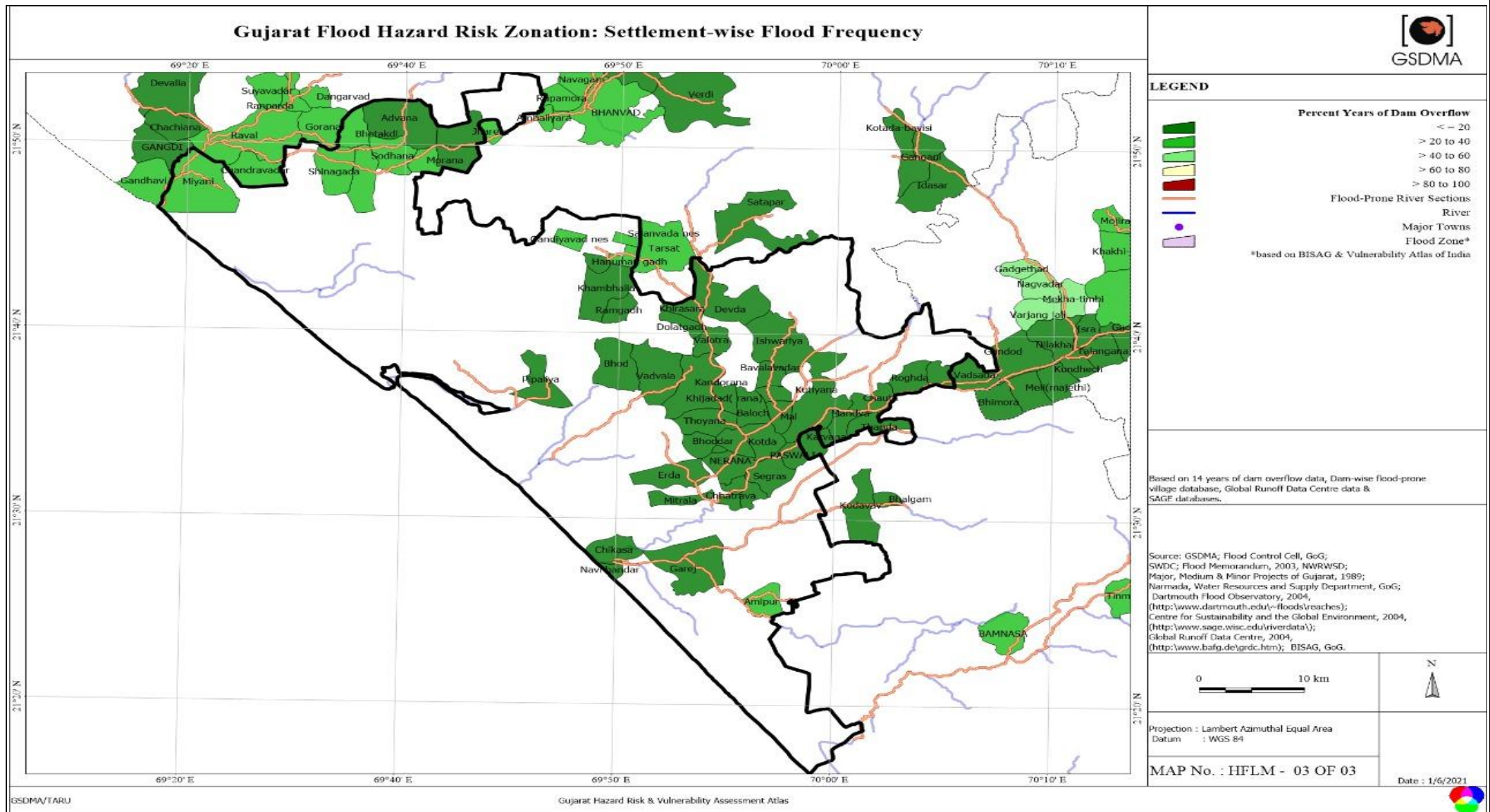
- Stay tuned to a battery-operated radio for the latest emergency information.
- Help injured or trapped persons.
- Stay out of damaged buildings. Return home only when authorities say it is safe.

- 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.



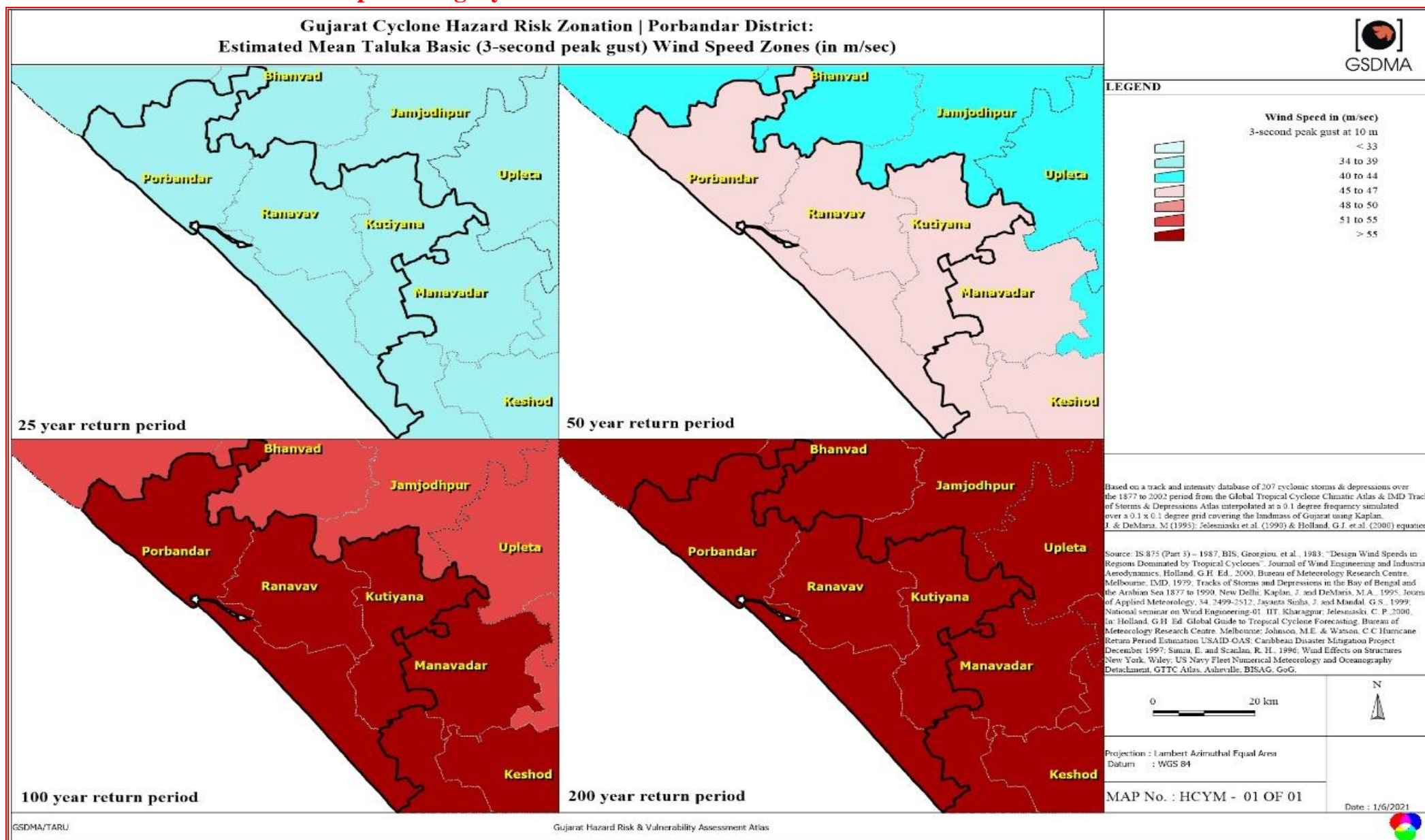
## ANNEXURE: 27

### Map Showing Flood Hazard Risk Zonation of Porbandar district





## Map showing Cyclone Hazard Risk Zonation of Porbandar district



# DISTRICT MAP OF PORBANDAR

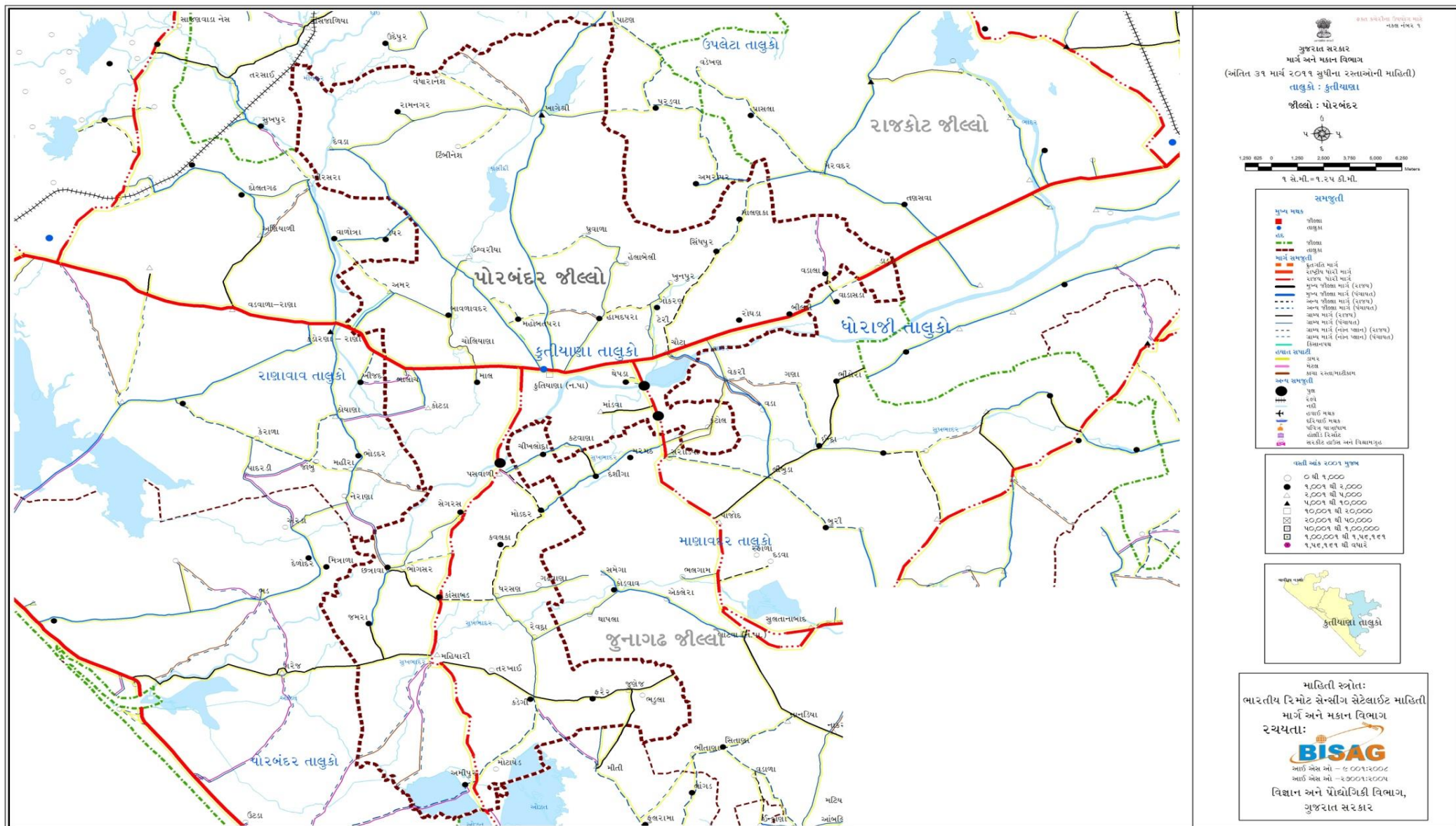




**Name of Taluka: Porbandar**

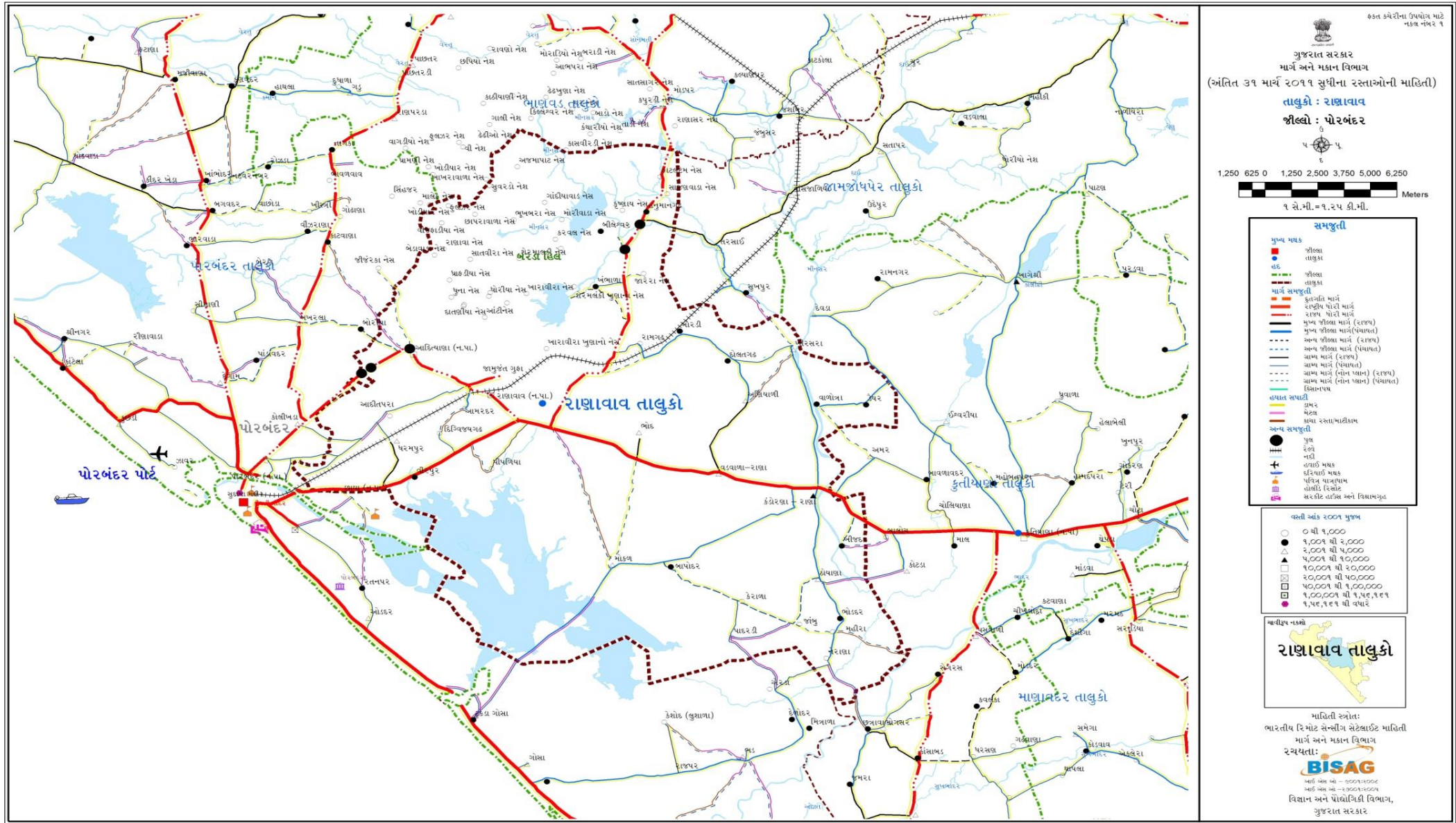


**Name of Taluka: Kutiyana**





Name of Taluka: Ranavav

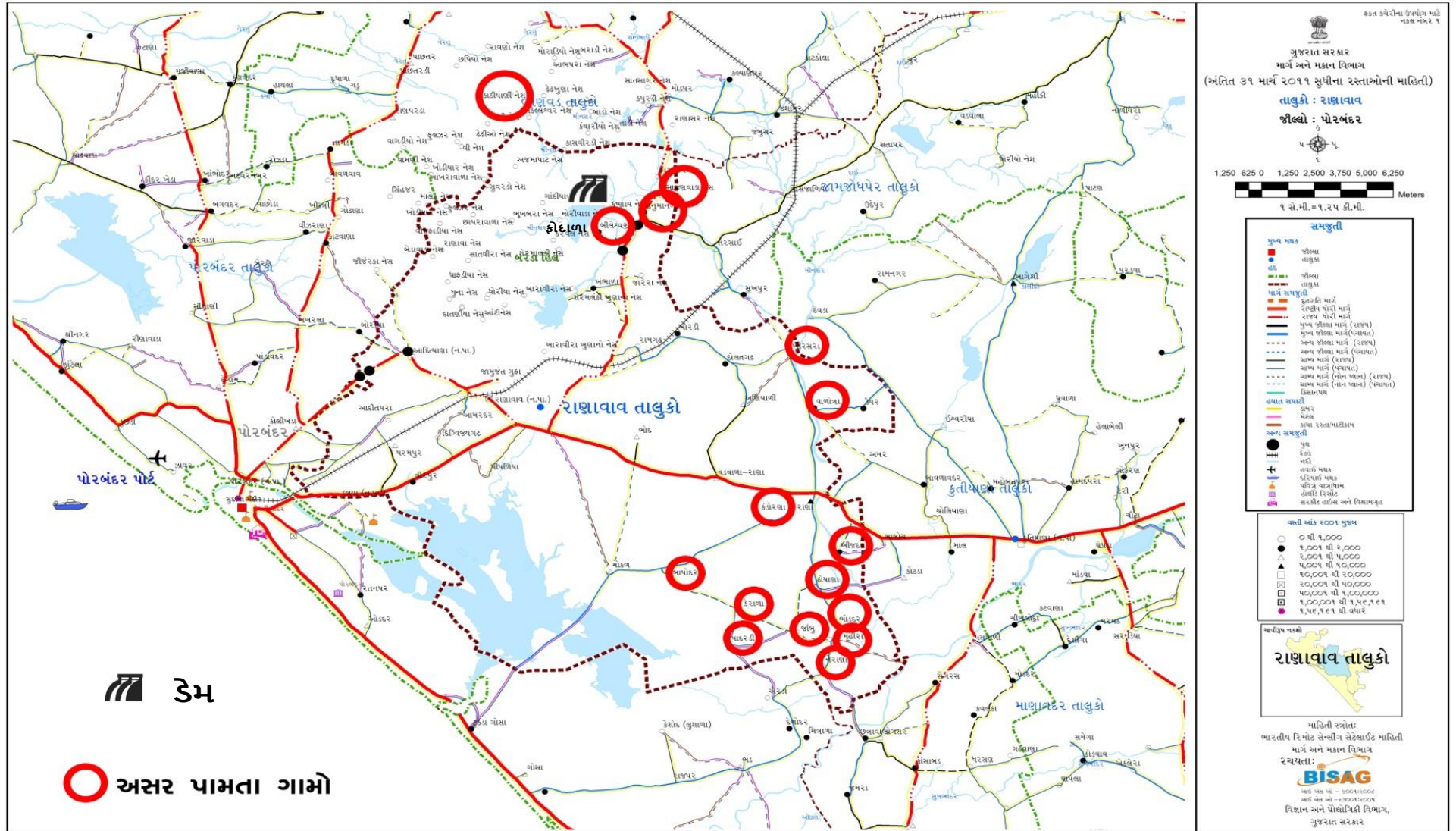






## **Map showing Flood prone villages due to Fodala dam**

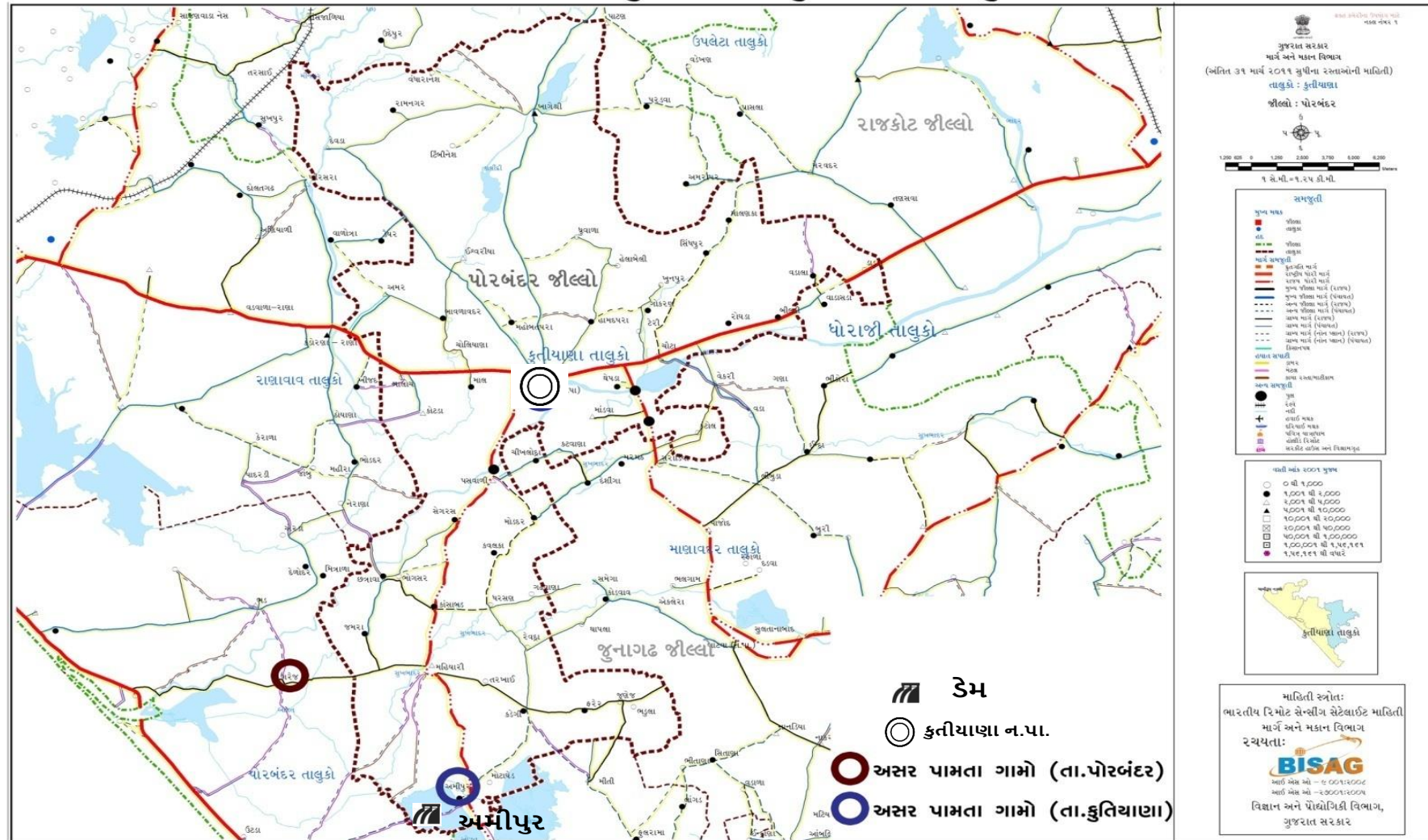
જિ.પોરબંદર તા.રાણાવાવ ડેમનું સ્થળ : બિલેશ્વર ગામ





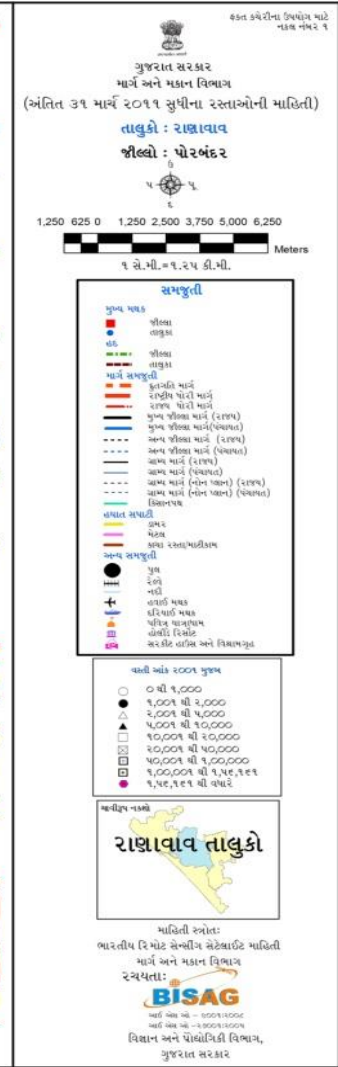
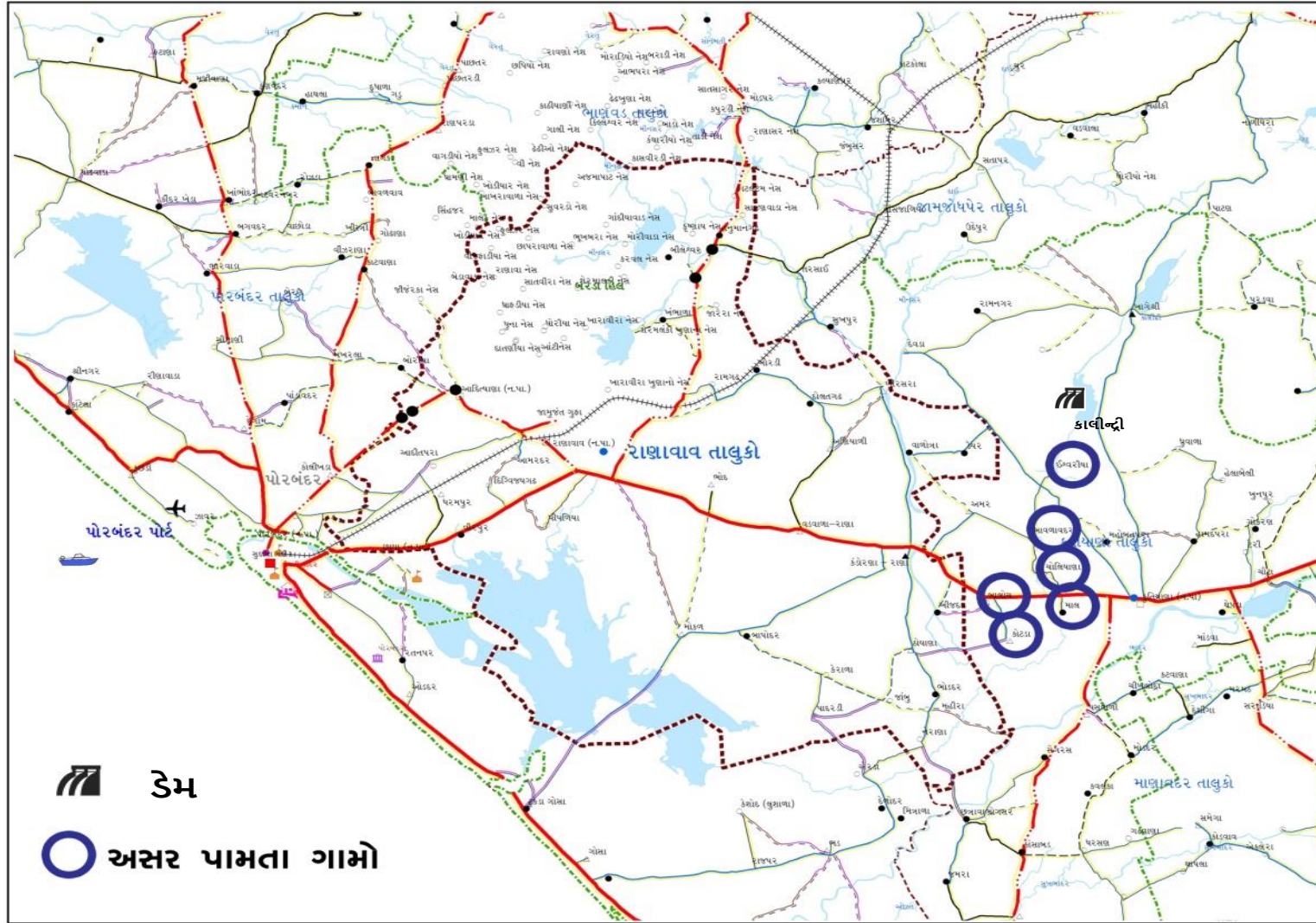
### Map showing Flood prone villages due to Amipur dam

**અમીપુર ડેમથી અસર કરતા ગામોની યાદી**  
**જિ.પોરબંદર તા.કુતિયાણા ડેમનું સ્થળ : અમીપુર**



## **Map showing Flood prone villages due to Kalindri dam**

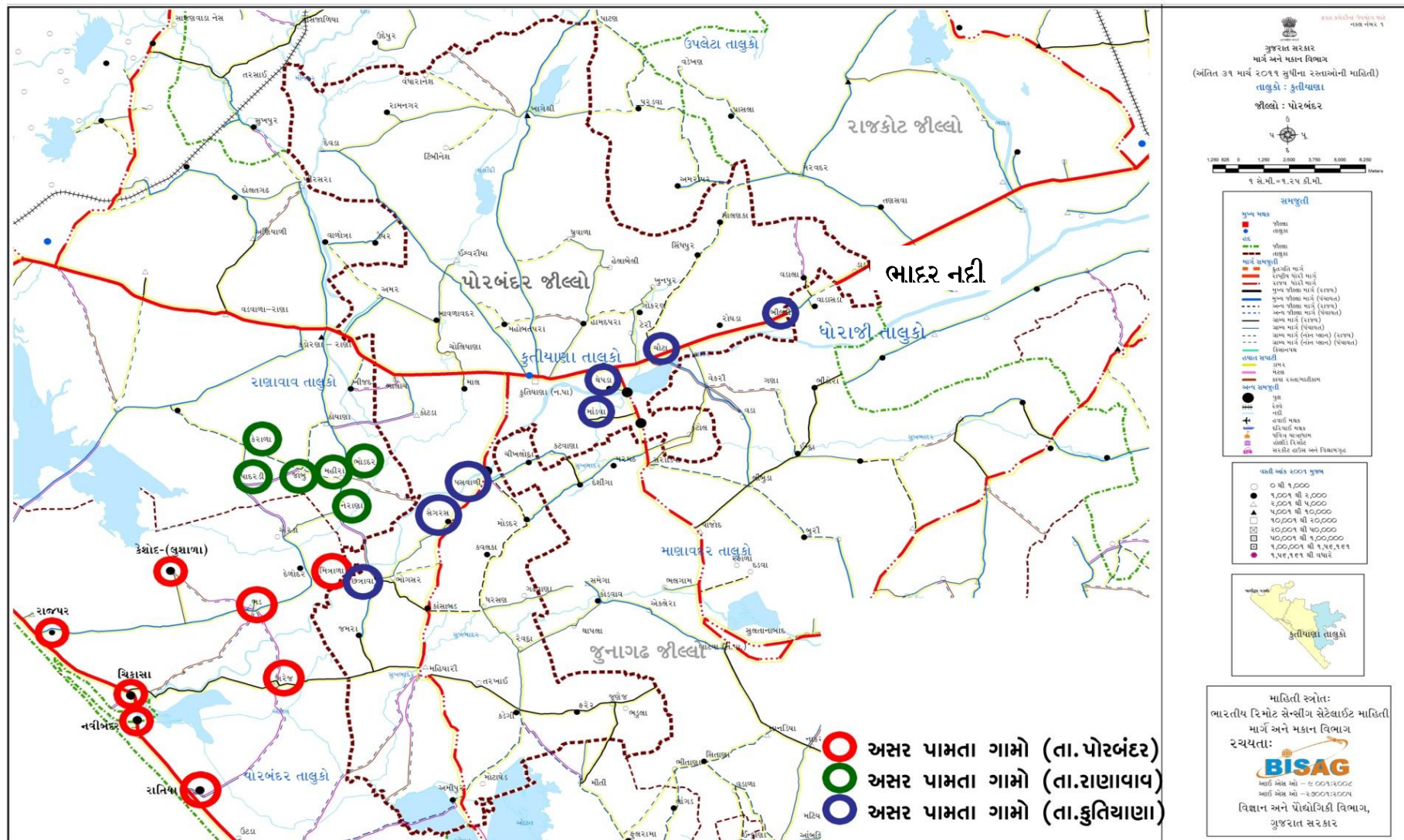
# કાલીદ્રી ડેમથી અસર કરતા ગામોની યાદી જિ.પોરબંદર તા.કુતિયાણા ડેમનું સ્થળ : ઇશ્વરીયા





### Map showing Flood prone villages due to Bhadar-2 dam

ભાદર-૨ ડેમથી અસર કરતા ગામોની યાદી  
જિ.રાજકોટ તા.ધોરાજી ડેમનું સ્થળ : ભુખી



## **Map showing Flood Prone villages due to Daiminsar-2 dam**

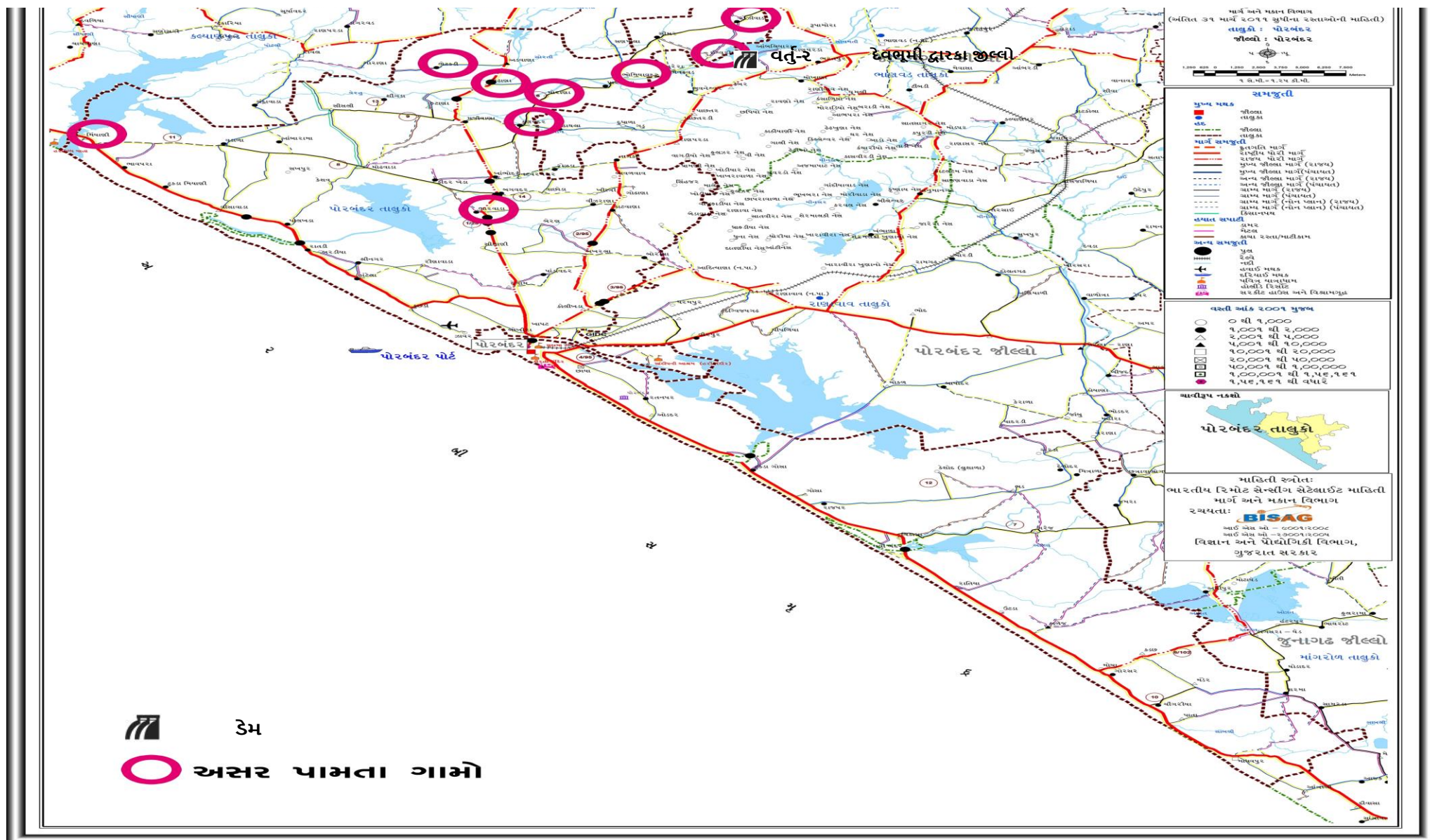


## **Map showing Flood prone villages due to Batva Kharo dam**





**Map showing Flood prone villages due to Vartu-2 dam, Bhenakvad, Bhanvad taluka, Devbhumi Dwarka**





## **List of Abbreviation**

<b>Sr. No</b>	<b>Abbreviation</b>	<b>Full form of Abbreviation</b>
1	ANM	Auxiliary Nurse Midwifery
2	ATVT	Apno Taluko Vibrant Taluko
3	CBO	Community Based Organization
4	CDHO	Chief District Health Officer
5	CHC	Community Health Center
6	COR	Commissioner of Relief
7	CWC	Central Water Commission
8	DAO	District Agricultural Officer
9	DCMG	District Crisis Management Group
10	DDMA	District Disaster Management Authority
11	DDMP	District Disaster Management Plan
12	DDO	District Development Officer
13	DEOC	District Emergency Operation Centre
14	DISH	Directorate of Industrial Safety and Health
15	DIC	District Industrial Centre
16	DIO	District Information Office
17	DM	Disaster Management
18	DPO	District Project Officer
19	DRDA	District Rural Development Agency
20	DRM	Disaster Risk Management
21	DSP	District Superintendent of Police
22	Dy. Eng.	Deputy Engineer
23	Dy SP	Deputy Superintendent of Police
24	EMRI	Emergency Management & Research Institute
25	EWS	Early Warning System
26	Ex. Eng.	Executive Engineer
27	FEMA	Federal Emergency Management
28	FPS	Fair Price Shop
29	GEB	Gujarat Electricity Board
30	GIDM	Gujarat Institute of Disaster Management
31	GLDC	Gujarat Land Development Corporation
32	GMB	Gujarat Maritime Board
33	GPs	Gram Panchayats
34	GPCB	Gujarat Pollution Control Board
35	GSDMA	Gujarat State Disaster Management Authority
36	GWSSB	Gujarat Water Supply and Sewerage Board
37	GWRDC	Gujarat Water Resources Development Corporation
38	HFL	Highest Flood Level
39	HQ	Head Quarter
40	HRVC	Hazard, Risk, Vulnerability and Capacity
41	IAY	Indira Aawas Yojana
42	ICS	Incident Commander
43	ICS	Incident Command System
44	ICG	Indian Coast Guard
45	IDRN	Indian Disaster Resource Network
46	IEC	Information Education Communication

47	IMD	Indian Meteorological Department
48	INCOIS	Indian National Centre for Ocean Information Services
49	ISR	Institute for Seismic Research
50	IWMP	Integrated Watershed Management Programme
51	LCMG	Local Crisis Management Group
52	LO	Liaison Officer
53	LPG	Liquified Petroleum Gas
54	MAH	Major Accident Hazard
55	MGNREGS	Mahatma Gandhi National Rural Employment Guarantee Scheme
56	MLA	Member of Legislative Assembly
57	MP	Member of Parliament
58	NCC	National Cadets Corps
59	NCRMP	National Cyclone Risk Mitigation Project
60	NDRF	National Disaster Response Force
61	NDRF	National Disaster Response Force
62	NGO	Non-Government Organization
63	NHAI	National Highway Authority of India
64	NPDM	National Policy on Disaster Management
65	NSS	National Service Scheme
66	PDS	Public Distribution System
67	PHC	Primary Health Center
68	PGVCL	Paschim Gujarat Vij Company Limited
69	PI	Police Inspector
70	PMAY	Pradhan Mantri Awas Yojna
71	PMKSY	Pradhan Mantri Krishi Sinchai Yojana
72	PRIs	Panchayati Raj Institutions
73	PWD	Public Work Department
74	RAC	Resident Additional Collector
75	R&B	Roads & Buildings
76	RTO	Regional Transport Office
77	SDM	Sub District Magistrate
78	SDRF	State Disaster Response Fund
79	SDRN	State Disaster Response Network
80	SE	Superintending Engineer
81	SEOC	State Emergency Operation Centre
82	SHGs	Self Help Groups
83	SMS	Short Message Service
84	SOP	Standard Operating Procedure
85	SRT	Special Response Team
86	ST	State Transport
87	TDMC	Taluka Disaster Management Committee
88	TDMP	Taluka Disaster Management Plan
89	TDO	Taluka Development Officer
90	TEOC	Taluka Emergency Operation Centre
91	THO	Taluka Health Officer
92	TV	Tele Vision
93	UNDP	United Nations Development Programme
94	VDMC	Village Disaster Management Committee
95	VHF	Very High Frequency
96	WASMO	Water and Sanitation Management Organization