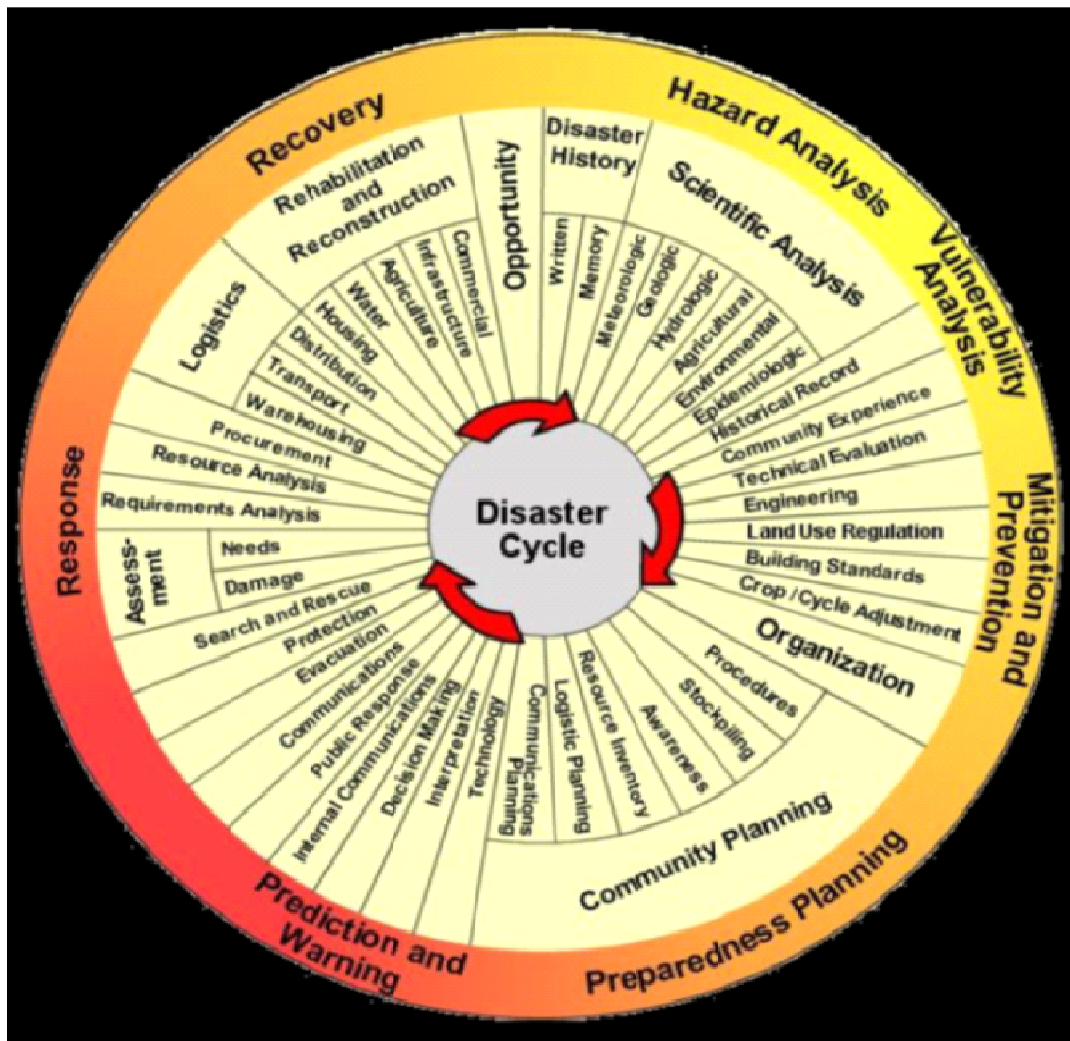


District Disaster Management Plan-2017

Bhavnagar

Volume-II



Gujarat State Disaster Management Authority
and
District Collector Office - Bhavnagar



Prologue

Bhavnagar district has a number of villages at the coastal region of Arabian Sea and also many Hazardous industries are there, Worlds' largest Ship Recycling Yard Alang; there hazardous materials are handled.

Bhavnagar has faced multitude of Disasters like Flood, Cyclone, Heavy Rain, Lightening, Earthquake and Fire. Experience has shown that pre-planned and practiced procedures for handling an emergency can considerably reduce loss of life and minimize damage too. But now under the Disaster Risk Management Program Gujarat State Disaster Management Authority, and Collector Office Bhavnagar are preparing the communities and Government Officials from grass root level to top level for securing quick response mechanism right from bottom to top level under the four DRM Components. These are Capacity Building, Awareness Generation, Mock drill and Plan Preparation.

The Role of each agency in the event of an emergency is specified. Needless to say that the success of disaster management depends upon the co-coordinator and effective performance of the duties assigned to each and every agency.

The multy-hazard District Disaster Management plan of Bhavnagar is divided in two Volume. This volume-II is a comprehensive document covering all possible hazards, with a systematic analyses of risk and vulnerability, element at risk and level of impact through scientific and experience developed by the core team of district administration.

This plan is a necessary document for reducing risks due to hazards and vulnerability; I hope this great document would be really helpful for protecting life and properties as well as sustainable development in future.

**Harshad Patel
Collector
Bhavnagar**

LIST OF ABBREVIATION/ACRONYMS

GSDMA:	GUJARAT STATE DISASTER MANAGEMENT AUTHORITY
DCO:	DISTRICT COLLECTOR OFFICE
DCR:	DISTRICT CONTROL ROOM
EOC:	EMERGENCY OPERATION CENTER
BMC:	BHAVNAGAR MUNICIPAL CORPORATION
DC:	DISTRICT COLLECTOR
DDO:	DISTRICT DEVELOPMENT OFFICER
MC:	MUNICIPAL COMMISSIONER
DSP:	DISTRICT SUPRITENDENT OF POLICE
RAC:	RESIDENSIAL ADDITIONAL COLLECTOR
DRMP:	DISASTER RISK MANAGEMENT PROGRAMME
CBDM:	COMMUNITY BASED DISASTER MANAGEMENT
CBDP:	COMMUNITY BASED DISASTER PREPAREDNESS
IDRN:	INDIA DISASTER RESOURCE NETWORK
SDRN:	STATE DISASTER RESOURCE NETWORK
DDMP:	DISTRICT DISASTER MANAGEMENT PLAN
DDMC:	DISTRICT DISASTER MANAGEMENT COMMITTEE
CDMP:	CITY DISASTER MANAGEMENT PLAN
CDMC:	CITY DISASTER MANAGEMENT COMMITTEE
TDMP:	TALUKA DISASTER MANAGEMENT PLAN
TDMC	TALUKA DISASTER MANAGEMENT COMMITTEE
VDMP:	VILLAGE DISASTER MANAGEMENT PLAN
VDMC:	VILLAGE DISASTER MANAGEMENT COMMITTEE
SDMP:	SCHOOL DISASTER MANAGEMENT PLAN
IEC:	INFOR MATION EDUCATION COMMUNICATION
ICS:	INCIDENT COMMAND SYSTEM
SOP:	STANDARD OPERATING PROCEDURE
CMG:	CRISIS MANAGEMENT GROUP
NAC:	NOTIFIED AREA COUNCIL
NCC:	NATIONAL CADET CORPS
NSS:	NATIONAL SERVICE SCHEME
NGOS:	NON GOVERNMENTAL ORGANIZATION
ULB:	URBAN LOCAL BODIES
UEVRP:	URBAN EARTHQUAKE VULNERABILITY REDUCTION PROGRAMME

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CHAPTER – 1

Introduction:

What is Disaster?-

Disaster management is a process or strategy that is implemented when any type of catastrophic event takes place. Sometimes referred to as disaster recovery management, the process may be initiated when anything threatens to disrupt normal operations or puts the lives of human beings at risk. Governments on all levels as well as many businesses create some sort of disaster plan that make it possible to overcome the catastrophe and return to normal function as quickly as possible.

A disaster is an event triggered by natural manmade causes that lead to sudden disruption of normalcy causing widespread damage to life and property. The High Power Committee of Government of India has identified 30 major and minor disasters, which frequently occurs in our country. It is now a recognised fact that while natural disasters is primarily due to imbalance in the nature but losses due to them on account of human feelings. Human sufferings and misery from a large number of natural disasters can be minimised by taking timely action, preventing mechanisms and undertaking capital works of long and medium terms.

Aims and Objectives-

In the absence of a defined plan response to a disaster would be arbitrary leading to over emphasis of some actions or other actions, which would be critical. Moreover, due to absence of a defined response structure and responsibilities allocations there would be mismanagement of resources and overlap of actions among various agencies, which may exacerbate the situation there by compounding the disaster effect.

The objectives of the disaster management plan for the Bhavnagar District should be listed covering the subject of responsibility of the District administration.

- To ascertain the status of existing resources and facilities available with the various agencies involved in the management of disaster in the District.
- Assess their adequacies and short falls if any in providing a multi-disaster response.

- Suggest institutional strengthening, technology support, up gradation of information system and data management for improving the quality of administrative responses to disaster at the district level and finally
- To evolve DDMP as an effective managerial tool.
- Defines the risks and Vulnerabilities of the citizens of the district to different disasters and Identifies the private and public sector parties with prime and supporting responsibilities to reduce or negate these vulnerabilities.
- Defines actions to be taken by these parties to avoid or mitigate the impact of possible disasters in the district.
- To prevent loss of human lives and property and effective medical response

Subsidiary plan detail the roles and responsibilities of most important and at the bottom of parties (Stake holders) in responding to definite disasters. These plans are developed

- At the Taluka level
- For location specific major industrial sites located in the district and,
- Through Standard Operation Procedures (SOPs) detailing how specific disaster response actions will be accomplished.

Developing and maintaining SOPs are the responsibility of parties with designated prime of supporting tasks assigned by this plan.

Concept of Disaster Management-

Disaster Management is a continuous and integrated process of:

- Planning and implementing measures to mitigating or reducing the risk of disasters
- Mitigating the severity or consequence of disaster
- Preparedness for emergencies and disasters
- Assessing the effects of disasters
- Providing emergency relief and rescue and post disaster rehabilitation and reconstruction, and
- Building capacities to these ends.

The concepts of all hazard management and empowerment provide the foundation for disaster management plans and efforts. All hazards management involves considering, planning for, and taking actions to avoid or mitigate, all possible hazards, which may affect the district.

Empowerment means that each citizen is enabled, through education, training and support, to be able to address all hazards and disasters, which may threaten their lives or livelihoods. Empowerment does not transfer full responsibility for dealing with disasters to the individual, but strives to ensure each individual has the means and support needed to avoid or limit the impact of disaster.

The district and subsidiary plans seek to limit vulnerability and reinforce the resilience of communities in the face of hazards and disasters. Addressing vulnerability generally takes place before a disaster through actions to reduce the opportunities for the disasters to occur. Reinforcing the resilience occurs through actions to reduce the scale or potential impact of a disaster, and building capacities and systems that facilitates (shorten and make less costly) the recovery process.

Levels of Disaster (**The L Concept**)

The L concept has been developed to define the different levels of disaster in order to facilitate the assistance to State and the Centre. It has four levels which are as follows.

L0 level: Denotes normal times, which will be utilized for close monitoring, documentation and preparatory activities. Training of Search and Rescue teams, rehearsals, evaluation and inventory updation for response activities will be carried out during this period.

L1 level: Denotes when the disasters which can be managed at the District level where the State and the Centre need to be on guard in case assistance is required for disaster relief operations.

L2 level: Disaster situations that require assistance and active participation of State resources for management of the disaster.

L3 level : Disaster situation arises in case of large scale disasters that have a noticeable impact on a number of districts of states and when the State and District authorities have been overwhelmed with the disaster and require assistance from the Centre for rescue and relief operations.

Approach to Disaster Management-

The Government of Gujarat takes a inclusive approach to disaster management. Disaster impact decrease is divided into two broad areas:

- Warning, Relief and recovery, focusing on plans and actions necessary to reduce the impact of quick-onset disasters or speed the response of slow-onset disaster, and,
- Mitigation, Preparedness and Prevention, focusing on plans and action to avoid or eliminate the causes or impacts of hazards or threatened disasters.

The overall approach to disaster management is based on six elements;

- Precise risk and Vulnerability assessment
- Planning and efficient allocation of resources,
- Capacity building and training
- Provision of ample resources
- The assignment of disaster management roles and responsibilities which correspond to normal roles and responsibilities (if possible) and,

- Use of diverse legal and operational mechanisms to accomplish disaster management objectives.

Approach to Disaster Management:-

1 Warning, Relief and Recovery

Necessary actions are intended to eliminate the loss of life and property and hardship due to disasters. Plans and SOPs at District level should provide as seamless as possible provision of warning, relief and recovery assistance to avoid or reduce losses and hardship.

The focal point for early warning, relief and recovery is the District Collector, who directs and coordinates these efforts within the district. The Collector is also answerable for coordinating warning, relief and recovery with similar activities in neighboring districts and with the GSDMA and Revenue Department.

The Collector is further responsible for developing long term relief, recovery and rehabilitation plans during the course of a disaster. These plans will include steps to reduce disaster impact in the future and be coordinate with the GSDMA in terms of policy and implementation.

2 Mitigation, Preparedness and Prevention

Mitigation, preparedness and prevention actions are to be taken before a disaster to reduce the probability of a disaster (risk reduction) or the level of damage (vulnerability reduction) expected from a possible disaster. Vulnerability reduction is given priority over a risk reduction. The district can avail itself of four mechanisms (singularly or together) to reduce risk and vulnerability;

- Long term planning for mitigation, preparedness and prevention investments in the district,
- Enforcement of regulations, particularly building and safety codes and land use plans,
- Review and evaluation of development plans and activities to identify ways to reduce risks and vulnerability, and,
- Capacity building including warning, the provision of relief and recovery assistance and community-level identification of risk and vulnerability.

The Collector, assisted by the District Development Officer, is responsible for developing plans and activities to effect mitigation, preparedness and prevention using the mechanism noted above.

Base on the interim assessment of risk and vulnerabilities, the District will focus on the following areas for mitigation, preparedness and prevention;

- Resilience of lifeline systems (water, power and communications)
- Reduction in disaster impact on health care facilities, schools and roads
- Vulnerability reduction in flood-prone areas
- Vulnerability reduction to high winds
- Improvement of off-site Preparedness near industrial sites.

3 Finance

The finance arrangement as per the fund granted by GSDMA / State nodal agencies to the district.

District Collector has authorities to distribute / impart the fund to the counter partners of Disaster management in the District as per required activities, according to the instructions of Government of Gujarat.

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

1. The authority shall develop or cause to be developed guidelines for the preparation of disaster managements 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 subsection (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, programme 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 maintained a master plan for the State/District

How to use the plan

The present plan is not intended to provide comprehensive explanations and background information about a disaster, or serve as a training manual on how to respond to a disaster or conduct a disaster related task. The approach taken is that plans and SOPs should be limited to the minimum information need to respond to a specific disaster or undertake a disaster related task. Steps to address disaster specific requirements can be covered in procedures related to actions. This approach does require that task forces develop disaster specific procedures where appropriate.

In other words, this plan is intended for use by persons who are technically competent in the tasks or responsibilities set out in each plan. The SOPs are intended to be used by persons who are unfamiliar with disaster management topics but are intended to be task specific and not as replacements for full plans.

(Annexure-1A)

Authority for the plan-

The requirement for district and subsidiary plans is set by the Gujarat State Disaster Management Authority (GSDMA) under the authority of the Gujarat State Disaster Management Act of 2003. The Act authorizes the collector to secure cooperation and assistance from other parties in efforts to avoid or reduce the impact of disasters.

The Collector (Specifically) and Government authorities (generally) are responsible for managing hazards and disasters, which affect a district, with support from GSDMA, the relief commissioner and other public and private parties as, may be needed. The roles, responsibilities and obligation of the Collector and other parties are set out in detail in the Act and are considered as part of this plan.

Stakeholders and their Responsibilities-

At the district level, District Collector is responsible for responding any disaster situation in consultation with other line departments at district HQ are responsible to deal with all phases of disaster management within district. Technical institutions, NGOs, Local authority, private sector, Community groups, volunteer agencies and citizens.

According to Disaster Management Act-2003 Stakeholders and their responsibilities are:

District Collector:

During the period, an area is an 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.

The District Collector may-

1. Make arrangements for release and use of available resources
2. Control and restrict traffic to, from and within the area affected by a disaster
3. Control and restrict the entry into, movement within and departure from any disaster area or part of it
4. Remove debris
5. Conduct search and rescue operations
6. Make arrangements for the disposal of the unclaimed dead body, by appropriate means
7. Provide alternative shelter
8. Provide food, medicines and other essentials
9. Require experts and consultants in the matters relevant to the disaster to provide relief under his direction and supervision
10. To take possession and make use of any property, vehicles, equipment, buildings and means of communication on such terms and conditions as may be prescribe
11. Procure exclusive or preferential use of amenities as and when required
12. Construct temporary bridges or other structures
13. Demolish unsafe structures which may endanger the public
14. Coordinate with non-governmental organizations and ensure that such entities carry out their activities in an equitable manner
15. Disseminate information to the public to deal with the disaster
16. Direct and compel evacuation, of all or part of the population from any affected area for the purpose of preservation of life and for such evacuation, and for such evacuation use such force as may be necessary

17. authorize any person, to make any entry into any place, to open or cause to be opened, any door, gate or other barrier, if he considers such an action is necessary for preservation of life and property, if the owner or occupier is absent, or being present, refuses to open such door, gate or barrier

The Collector may exercise the powers contained in subsection (2) to the extent only that this is necessary for the purpose of –

- (a) Assisting and protecting the community
- (b) Providing relief to the community
- (c) Preventing or combating disruption
- (d) Dealing with the destructive and other effects of the disaster

The Collector may issue such directions to any person or government agency and take such other steps, as may be necessary to curtail the escalation of the disaster or to alleviate, contain or minimize the effects of disaster.

Role and responsibility

The Collector

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

Local Authority

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

Private Sector

- The private sector should ensure their active participation in the pre-disaster activities in alignment with the overall plan developed by the GSDMA or the Collector.
- They should also adhere to the relevant building codes and other specifications, as may be stipulated by relevant local authorities.

Community Groups and Voluntary agencies

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

Citizen

It is a duty of every citizen 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.

Approval of the plan-

Plan Review and Updation-

The District Collector is responsible for the preparation, revision and updation of the District Disaster Management Plan in collaboration with the line departments and other organizations in the district. The plan should be reviewed annually / half yearly and updated:

- When significant changes in the nature of any hazards
- Lessons learnt following any major disaster or
- When there is any significant change to organization or responsibility of primary members of the task forces defined in the plan.

Bhavnagar District Profile

Demographic details-

The district is having an area of 10,034 Sq. Kms. Total population is 2,880,365 (Males – 1,490,201 and Female – 1,390,164 as per 2011 census) and it is about 4.77 % of the total state population. Density of population is 287 persons per Sq. Km. The literacy in percentage is 75.52 %.

Geographic Details-

Bhavnagar is placed in the southwestern corner of Gujarat State. Its mainland extends between 21-47 degree southeast at North Pole and 71-15 degree longitude. It is bounded by Gulf of Khambhat in east and south and Amreli district in the west, Rajkot and Surendranagar districts in the northwest, Ahmedabad in northeast and Arabian Sea in the east and south.

Bhavnagar, in the Indian State of Gujarat, is a port of city on the coastal region of the Saurashtra peninsula abutting the picturesque Gulf of Cambay. Once the capital of the princely state of that name, Bhavnagar was founded in 1743 by a Rajput Prince, Bhav Sinhji and was lucky enough to have successive rulers who contributed to the development of their kingdom in a major way, to the extent that it became a highly progressive society. Bhav Sinhji, the founder of the city established educational and judicial institutions. Later rulers commissioned European architects to build palaces and administrative buildings. So aware and progressive were the rulers that Bhavnagar was amongst the first of the princely states to join the Indian Union after independence in 1947.

General Information about District-

Area & Administration

Sr.No.	Name of District	Name & No. of Nagarpalika	Name & No. of Taluka	Taluka wise No. of Villages
	Bhavnagar	(6 Nagarpalika)	(10 Taluka)	(705 Villages)
1		Mahuva	Mahuva	118
2		Talaja	Talaja	117
3		Sihor	Sihor	80
4		Palitana	Palitana	82
5		Gariyadhar	Gariyadhar	48
6		Vallabhipur	Vallabhipur	60
7			Bhavnagar (Rural)	60
8			Ghogha	47
9			Umralla	43
10			Jesar	41

Bhavnagar town is District Head quarter and has one Municipal Corporations in the State out of 8 Municipal Corporations. There are 10 Talukas (Bhavnagar, Ghogha, Umralla, Jesar, Mahuva, Talalja, Sihor, Palitana, Gariyadhar and Vallabhipur), 6 Nagarpalikas (Mahuva, Talalja, Sihor, Palitana, Gariyadhar and Vallabhipur).

Departmental Information (linkages with other stakeholders)

Port (Gujarat Maritime Board)

Out of 1600 Kms. Length of Coastal line of Gujarat the coastal belt of Bhavnagar District blessed with 152 Kms. There are 4 ports in the Bhavnagar District, 2 cargo ports and 2 fisheries ports.

Fisheries (Fisheries department)

There are 16 fishing villages. Entire Coastal area is active in fishing activity.

Total 14 fishing societies have been registered in the district, out of which 09 are active.

Salt pan

Due to large seashore in the District, Salt Industries has developed very well. There are 30 Salt factories in the district and occupies 38444 acres of land. Annual production of Industrial and table salt is around 35 Lacks tones.

Transportation

- 1) The district has 987 Kms. length of State Highway, 3847 Kms. length of pakka roads connection to approximately 700 villages / towns in the district. Kachchha roads are of 1843 kms. And 108 villages accessible only in fair weather.

Out of the total 824 inhabited villages, 633 villages are connected by State Road Transport facilities.

- 2) Total length of railway track is 282.68 kms. In the District of broad gauge, and 34 railway stations are on the district.

Gariyadhar, Vallabhipur, Ghogha, and Talaja talukas have not the railway facilities.

- 3) District has airport facility too

The Details of Dams of Bhavnagar District is as under

S.N.	Name of the Dam	Village Name	Taluka	District	Capacity (In feet)	Danger point (In foot)	No. of Villages affected
1	2	3	4	5	6	7	7
1	Shetrunji	Nani Rajasthali	Palitana	Bhavnagar	34.00	41.00	
2	Hanol	Hanol	Palitana	Bhavnagar	12.30	12.30	
3	Kharrodam	Sonpari	Palitana	Bhavnagar	21.70	22.14	
4	Rajaval	Mandavda	Palitana	Bhavnagar	22.14	27.81	
5	Malpara	Mandavda	Gadhada	Bhavnagar	16.73	16.73	1
6	Kalubhar	Rajpipla	Gadhada	Bhavnagar	21.80	26.30	4
7	Bhimdad	Bhimdad	Gadhada	Bhavnagar	28.30	36.28	
8	Limbali	Limbani	Gadhada	Bhavnagar	12.12	14.23	
9	Ghelaitariya	Itaria	Babra	Amreli	25.00	31.00	
10	Ghelasomnath	Somalpura	Jasdan	Rajkot	25.75	30.75	
11	Malgarh	Bhadli	Jasdan	Rajkot	25.75	30.75	
12	Ranghola	Ranghola	Umralla	Bhavnagar	30.00	31.00	2
13	Goma	Goma	Botad	Bhavnagar	20.00	27.50	3
14	Sukhbhadar	Nana Bhadla	Sayala	Surendra-Nagar	26.60	30.43	2
15	Kaniyad	Kaniyad	Botad	Bhavnagar	11.15	11.15	
16	Malan	Mota Khutavada	Mahuva	Bhavnagar	34.00	34.00	2
17	Rojki	Thoran	Mahuva	Bhavnagar	32.50	38.50	3
18	Bagad	Khumbharia	Mahuva	Bhavnagar	16.60	26.56	3
19	Hamirpara	Hamirpara	Talaja	Bhavnagar	17.50	17.50	
20	Khodiyardam	Dhari	Dhari	Amreli	65.00	65.00	
21	Lakhanaka	Lakhanka	Ghogha	Bhavnagar	30.30	32.80	
22	Pingali	Pingali	Talaja	Bhavnagar	51.30	51.30	

Health

SR.No.	NAME OF C.H.C.	TALUKA	CODE NO.	TELIPHINE NO (O)
1	Vartej	Bhavnagar	0278	2445642
2	Koliyak	Bhavnagar	0278	2884341
3	Ghogha	Ghogha	0278	2882126
4	Talaja	Talaja	02842	222266
5	Datha	Talaja	02842	283330
6	Thaliya	Talaja	02842	284432
7	Mota Khutvda	Mahuva	02844	287441
8	Jesar	Jesar	02845	281476
9	Bagdana	Mahuva	02844	284470
10	MAHUVA Municipal.Hospitals	Mahuva	02844	223109

11	PALITANA Mansinhji.Hospital	Palitana	02848	252175
12	Gariyadhar	Gariyadhar	02843	252970
13	Vallabhipur	Vallabhipur	02841	222449
14	Umarala	Umarala	02843	235236
15	Shihor	Shihor	02846	222063

Industries

There are 723 factories registered under the Indian factories Act and approximately 2.00 lacks persons are employed in these factories. Besides the district is known for Diamond and Handicrafts.

There are 9651 small-scale industries registered and employing 47291 people.

Bhavnagar has 5 MAH industries. IOCL, Alang Ship Breaking Yard, Sun petrochemical provate ltd are the LPG user industries. Exel Corps ltd. using Mithenol, Toluin, Hydrogen, Solvent C-IX and Formaldehyd and Nirma Ltd. using Clorine. So District is very high chances of risk of loss of property due to leakage of gases and fire.

Industries have their own Onsite Emergency Management Plans to deal with onsite emergencies and the other major units like IOCL, Excel crop care, Nirma and Alang etc. has developed their Disaster Management Plans.

No. MAH industries in Bhavnagar District

Sr. No.	Name of MAH industries	Chemical being utilized by the industries
1	Excel Crop Care Ltd. 6/2 Ruvapari Road Bhavnagar	1. Mithenol 2. Toluin 3. Hydrogen 4. Solvent C – IX 5. Formaldehyd
2	Indian Oil Corporation Tagadi	LPG
3	Ship Recycling Industrial Association (india) Oderaka, Ghogha	LPG
4	Sun fire Petrochemical Private Ltd. survey no. 34, vadiya, Taluka: Sihor	LPG
5	Nirma Ltd., Kalatalav, Bhavnagar	Clorine

Animal Husbandry (Live Stock)

There are total 11 Veterinary hospital and 11 Dispensaries in the District. There is total 1007027 animals in district as per 2012.

Education

The district has 75.52% literacy rate. The district has total 1039 Primary schools, 347 Secondary and Higher Secondary Schools and 1 university (there is more than 25 colleges under the Bhavnagar university).

RAINFALL DATA OF BHAVNAGAR DISTRICT FROM 2007 -2016

Sr. No.	Taluka	2007	2008	2009	2010	2011	2012	2013	2014	2015	2016
1	Bhavnagar	1301	997	519	952	687	532	1324	651	672	668
2	Ghogha	914	655	460	595	612	443	917	516	451	631
3	Umrala	1141	712	448	651	465	416	773	596	682	542
4	Jesar								420	675	753
5	Mahuva	954	544	494	763	585	259	1055	542	592	778
6	Talaja	856	811	374	850	634	354	969	466	493	697
7	Sihor	1070	884	438	865	582	353	983	458	554	499
8	Palitana	867	694	462	714	667	446	830	354	627	639
9	Gariyadhar	643	566	251	618	414	251	685	359	366	604
10	Vallabhipur	1050	680	245	882	594	515	851	540	581	660
	Total	8796	6543	3691	6890	5240	3569	8387	4902	5693	6471

CHAPTER – 2

Hazard Vulnerability and Risk Assessment:

Matrix of past disasters in the district - (Annexure-1B)

Year	Description
1982	<p>On 8th November 1982 Bhavnagar faced a tropical cyclone of the speed of 150 kms / hours. Instead of it there was heavy rain in the district on 7th and 8th November 2004. Because 250 mm rain falls in two days there was the situation of flood in the rivers that cause the death of 125 people at the site of Kalubhar dam in Gadhada Taluka. Same day 25 people felt in the grip of death of Umratal Taluka.</p> <p>In the same cyclone the Kashmir of Saurashtra MAHUA lost its beauty because thousands of trees fell down and there was heavy loss of human being, resources, property and livestock.</p>
1999	Again the Bhavnagar District copied a cyclone of 80-100 kms / hour with heavy rain. It's taken the 5 innocent people in the grip of death.
2000	<p>In August – 2000 the topple of Bhavnagar experienced the earthquake. The epicenter of the quake was near to the 8 kms far from circuit near Malanka village.</p> <p>From August 2000 to 25th January – 2001 the people of Bhavnagar experienced 175 to 200 light earthquakes.</p> <p>Because of the waves of those quakes there was heavy loss of buildings in the Bharatnagar area of Bhavnagar.-</p>
2001	The destructive earthquake of 26 th January 2001 badly affected the Bhavnagar district. Because of earthquake 4 people and one cattle dead and 24 people were injured. In the same earthquake 9752 kuchcha and pukka houses were partially damaged and 239 house were totally damaged.
2002	In Bhavnagar district during 6 th June 2002 to 30 th June 2002 the heavy rain created flood in Palitana, Bhavnagar and Sihor Taluka of the district, during the flood 19147 people were affected and 8 people were dead and there was heavy loss of buildings and property in Bhavnagar, Sihor and Palitana Taluka.
2007	During this session heavy rain became the main cause of flood. Seven taluka of the Dist. were adversely affected city and total 40 people dead in different area within district. Similarly other adjoining taluka were also affected. There was heavy loss public and private property.
2015	<p>There was heavy rain in district and it cause of flood. It affected whole district especially some area of Palitana city and Talaja city and also 4 villages of Gariyadhar and Jeasar taluka.</p> <p>8 people were dead and there was heavy loss of property. Administration also done evacuation during flood situaion.</p>

**‘Hazard Risk Vulnerability Assessment-
(Authority that carried out HRVA)’**

Bhavnagar faces a number of hazards, which pose the threat of disaster, the threat (risk) and possible impact (vulnerability) which can be actualized from these hazards ranges from minor impacts affection one village to events impaction larger than the state alone.

The table below summarize the results of an analysis of hazard, risk and disaster impact in Bhavnagar. This analysis indicated that disaster planning at the Bhavnagar district level should first focus on the functional response to the High winds and Sea surge. The functional responses to these events have links to the response to floods, hail storms and dam failure. Typical responses to these disaster events also can apply to fire, industrial accidents, failure of critical infrastructure and building collapse.

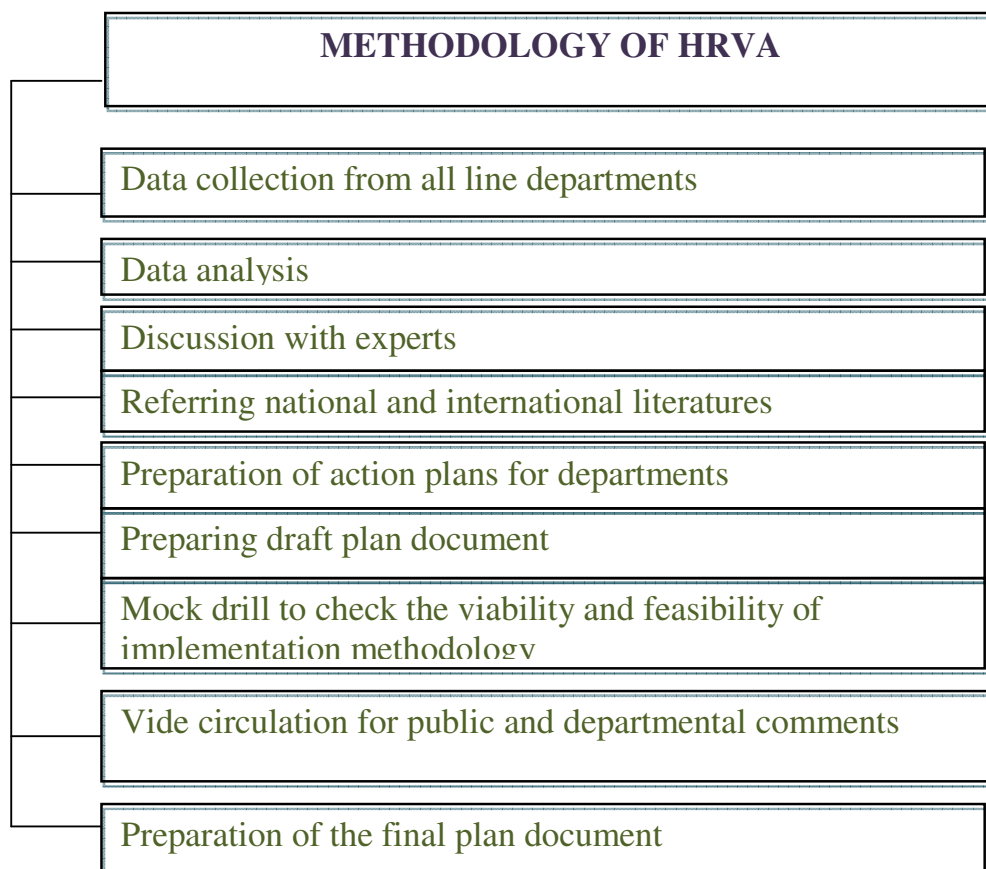
Special plans exist for drought, oil spills and ship breaking. A separate plan for dealing with chemical and industrial accidents also exists and focuses on the technical procedures needed to avoid or address these hazards.

Hazards	Probab ility Rating	Impact Rating	Vulnerabi lity Ranking	Vulnerable Areas / Taluka	Vulnerable Population
1	2	3	4	5	6
High Wind	4	4	16 (high)	Very high damage risk zone (50m/s.) Bhavnagar, Ghogha, Talaja, and Mahuva	1.717 million (4 taluka of the district are likely to be affected)
Sea Surge	4	4	16 (high)	Coastal Taluka i.e. Bhavnagar, Ghogha, Mahuva, Talaja	0.22 million (2,27,264) 31 Coastal villages in 4 taluka are likely to be affected Maximum surge record is 3 meters.
Drought	4	3	16 (high)	(4 Taluka) Vallabhipur, Bhavnagar, Gariadhar and Umralla	

Fire	4	3	12 (moderate)	Mostly in urban pockets and industrial areas (including rural areas)	
Industrial Accidents	3	4	12 (moderate)	In major Industries like Excel, Nirma etc.	
Oil Spill	2	5	10 (moderate)		
Earthquake	2	5	16 (high)	Zone – III : Bhavnagar	
Heat Wave	3	2	8 (high)		

Hazards	Probability Rating	Impact Rating	Vulnerability Ranking	Vulnerable Areas / Taluka	Vulnerable Population
1	2	3	4	5	6
Rail / Road / Air Accidents	4	1	4 (high)		
Flood	4	4	4 (high)	May occur due to heavy rain fall, sea surge of dam failure	
Terrorism	1	1	1	Bhavnagar City, IOCL	
Failure of Critical Infrastructure	1	3	3 (Low)		
Boat Sinking	1	1	2 (Low)		
Mine Fires / Collapse	2	1	2 (Low)		
Building Collapse	1	2	2 (Low)		
Hail Storms	1	1	1 (Low)		
Land Slides /Mud Flows	1	1	1 (Low)		
Epidemics	1	1	1 (Low)		
Animal Disease	1	1	1 (Low)		
Food Poisoning	1	1	1 (Low)		
Dam Failure	1	1	1 (Low)		
Civil Unrest	2	1	1		

Tool and methodology used for HRVA



List of hazards with probability (frequency and magnitude)

Probability of Occurrence of disaster												
Type of Hazard	Time period											
	Jan	Feb	Mar	Apr	May	June	Jul	Aug	Sep	Oct	Nov	Dec
Earthquake												
Cyclone												
Flood												
Tsunami												
Fire												

List of Vulnerable Talukas and Villages (Hazard wise)

(Annexure-2)

The Details of Coastal Villages are as under

Sr. No.	Name of Taluka	No.of Villages
1	Mahuva	13
2	Talaja	10
3	Bhavnagar	08
4	Ghogha	03
Total:-		34

Details of water logging villages are as under

Sr. No.	Name of the Taluka	No. of Village
1	Mahuva	5
2	Talaja	5
3	Sihor	4
4	Gariyadhar	6
5	Bhavnagar	17
6	Umralla	5
7	Jesar	2
Total :-		44

Details of river affected villages are as under

Sr. No.	Name of the Taluka	No. of Village
1	Mahuva	6
2	Talaja	5
3	Palitana	14
4	Gariyadhar	3
5	Vallabhipur	19
6	Bhavnagar	15
7	Ghogha	5
8	Umralla	19
9	Jesar	8
Total :-		94

Resoure Analyses- (Annexure-3)

Capasity Analyses - (Annexure-4)

Outcome and recommendations of the Hazard, Risk (Vulnerability and Capacity Analyses)

Hazards are defined as “Phenomena that pose a threat to people, structures or economic assets and which may cause a disaster. They could be either man-made or naturally occurring in our environment.” A disaster is the product of a hazard coinciding with a vulnerable situation, which might include communities, cities or villages. Vulnerability is defined as “the extent to which a community, structure, service or geographical area is likely to be damaged or disrupted by the impact of particular hazard, on account of their nature, construction and proximity to a hazardous terrain or disaster prone area.

Hazard, Risk analysis:-

A detailed analysis of the hazards likely to impact the state will be carried out by the Department of Disaster Management, in consultation with the DMC of the state H.C.M. RIPA and experts from the field. Hazard assessment is concerned with the properties of the hazard itself. The Vulnerability Atlas of Gujarat, developed by BMTPC, Govt of India, will be used as the baseline for all analyses. The State Disaster Management Authority shall take all appropriate steps to complete a comprehensive hazard assessment of the State.

1. Earthquake

Bhavnagar district falls under zone-III according to the zoning map so very high possibility of failure of various infrastructures and very high chances of risk of loss of live properties too in certain highly inhabited areas of the district.

Population / Density wise area / residents details can be drawn from the CDM Plan / WDM Plan of BMC in case of city area, from TDM Plan / CDM Plan of Municipalities for urban areas of the district.

2. Flood

The Climate of Bhavnagar District can be regarded as one of extreme king with hot summers & cold winters except in the coastal region, where it is generally pleasant all throughout the year. The air is humid due to coastal location.

- a. The District has no major river. There are seasonal rivers streams. Amongst these are the river Maleshri, Lakahnka, Kalubha, Ghelo, Vaigad, Manari, Kairi, Shetrunji, Kharo, Rajaval, Hanol, Khodiya, Sitapari, Sukhbhadar, Goma, Kaniyad, Rangholi, Malan, Rojki, Bagad, Bhadod, Ranaji. Flow of the river is towards the Gulf of Kutch in the north and in northwest.

- b. There is not any huge dam in Bhavnagar District, the 17 dams of Bhavnagar controlled by the Department of irrigation and 4 other dams are in the neighbor district, but affect the villages of Bhavnagar.
- c. The dams situated in Ghogha taluka; does not affect any village of Ghogha but affect the villages of Bhavnagar Taluka.
- d. Sukhsagar dam of Surendranagar district also affects the villages of Bhavnagar district.

3. Cyclone

In meteorology, a cyclone is an area of closed, circular fluid motion rotating in the same direction as the Earth. This is usually characterized by inward spiraling winds that rotate counter clockwise and clockwise of the Earth. Most large-scale cyclonic circulations are centered on areas of low atmospheric pressure. The largest low-pressure systems are cold-core polar cyclones and extra tropical cyclones which lie on the synoptic scale.

Coastal areas of District like Bhavnagar, Ghogha, Mahuva and Talaja are particularly prone. Cyclones originate out at sea and become hazardous when they come ashore. They also drive the sea level up to cause coastal flooding.

At a community level, the GSDMA has proposed to provide temporary cyclone shelter. There is a identified site to construct Cyclone Shelter. This shelter will be, with built-in safety against high wind velocity and heavy rainfall and within easy reach of the people most affected. Educational buildings or places of worship may also be designed as cyclone shelter, for evacuation and temporary occupation.

4. Drought: probability chances are higher due to low rainfall.

5. Tsunami

Tsunamis are ocean waves produced by earthquakes or underwater landslides. Tsunamis are often incorrectly referred to as tidal waves, but a tsunami is actually a series of waves that can travel at speeds averaging 450 (and up to 600) miles per hour in the open ocean. However, waves that are 10 to 20 feet high can be very destructive and cause many deaths or injuries.

Tsunamis are most often generated by earthquake-induced movement of the ocean floor. Landslides, volcanic eruptions, and even meteorites can also generate a tsunami. Areas at greatest risk are less than 25 feet above sea level and within one mile of the shoreline. So far as Bhavnagar District is concern there are 4 costal talukas and 34 villages of the same. Most deaths caused by a tsunami are because of drowning. Associated risks include flooding, contamination of drinking water, fires from ruptured tanks or gas lines, and the loss of vital community infrastructure.

6. Fire

Fires may be caused due to earthquakes, explosions, electrical malfunctioning and various other causes. The State shall take up detailed assessment of fire hazards like preparation of inventories/maps of storage locations of toxic/hazardous substances, provision and regular maintenance of firefighting equipment, identification of evacuation routes, fail-safe design and operating procedures, planning inputs, transportation corridors etc.

Bhavnagar district has 5 MHA company, many cotton and oil mills and Alang Ship Breaking Yard which is most vulnerable for Fire in so fire possibility are like more.

7. Industrial Accident

There are 723 factories registered under the Indian factories Act and approximately 2.00 lacks persons are employed in these factories. Besides the district is known for Diamond and Handicrafts.

There are 9651 small-scale industries registered and employing 47291 people.

Bhavnagar has 5 MAH industries. IOCL, Alang Ship Breaking Yard, Sun petrochemical provate ltd are the LPG user industries. Exel Corps ltd. using Mithenol, Toluin, Hydrogen, Solvent C-IX and Formaldehyd and Nirma Ltd. using Clorine. So District is very high chances of risk of loss of property due to leakage of gases and fire.

Industries have their own Onsite Emergency Management Plans to dealt with onsite emergencies and the other major units like IOCL, Excel crop care, Nirma and Alang etc. has developed their Disaster Management Plans.

8. Epidemic

Probability is almost certain due to increase in Human Disease (Water borne disease, air borne disease and vector borne disease) along with that animal disease so impact will be very high according to that vulnerability is very high.

Chapter – 3

Institutional Arrangements:

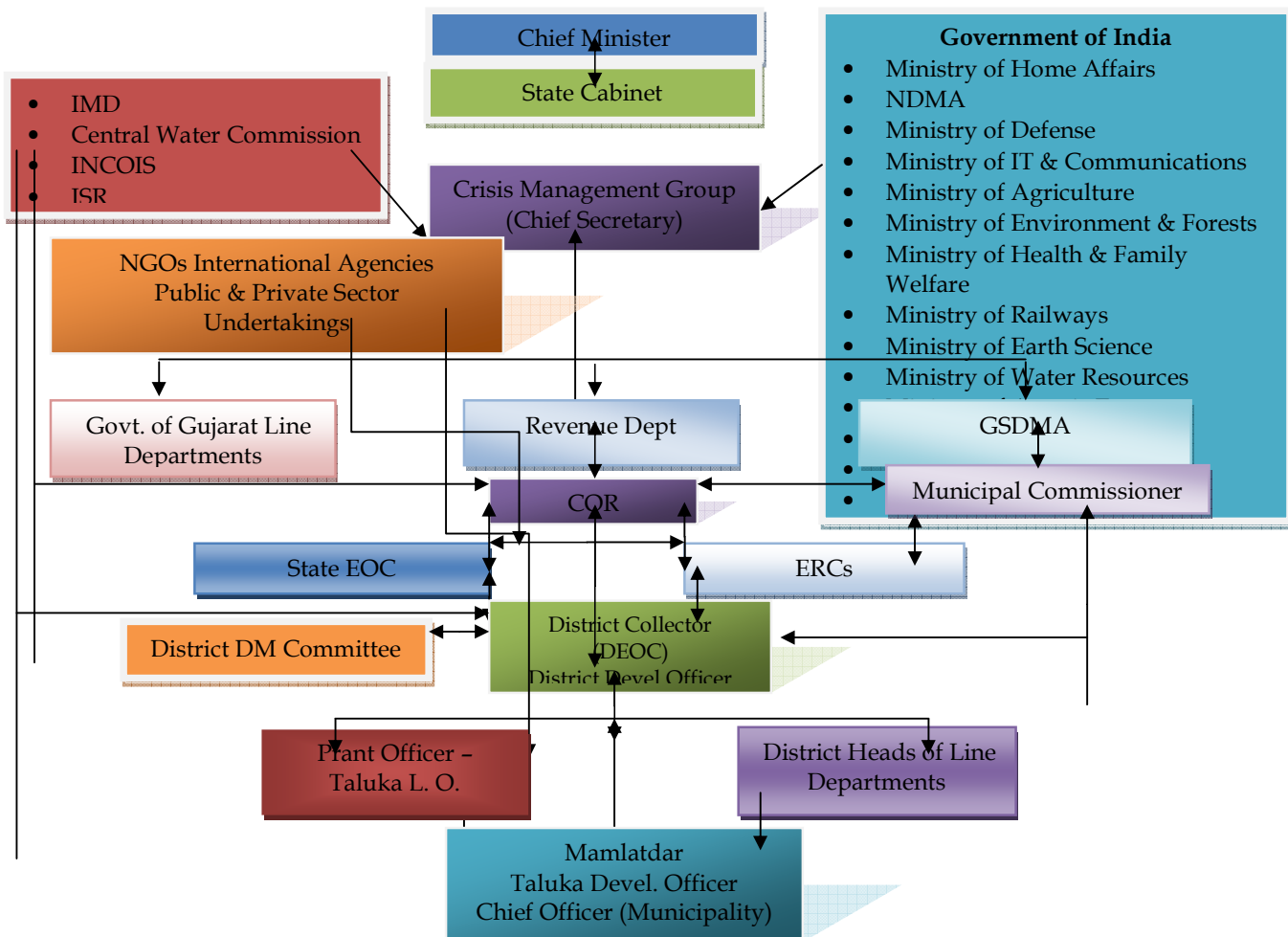
The plan incorporate multi level institutional as well as response planning mechanism at district level. That is.....

The DM structure in the State is as per the Gujarat State Disaster Management Act – 2003. The National Disaster Management Act – 2005 resembles the State Act with only a few provisions which are not a part of the State Act but are there in the Central Act. Those provisions include designating a Vice Chairman to the GSDMA, constitution of a State Executive Committee, establishment of a District Disaster Management Authority in each District and creation of a District Disaster Response & Mitigation Funds. The State has existing institutional arrangements in place for addressing the roles / responsibilities envisaged through the above provisions and hence does not find it compelling to implement the provisions afresh.

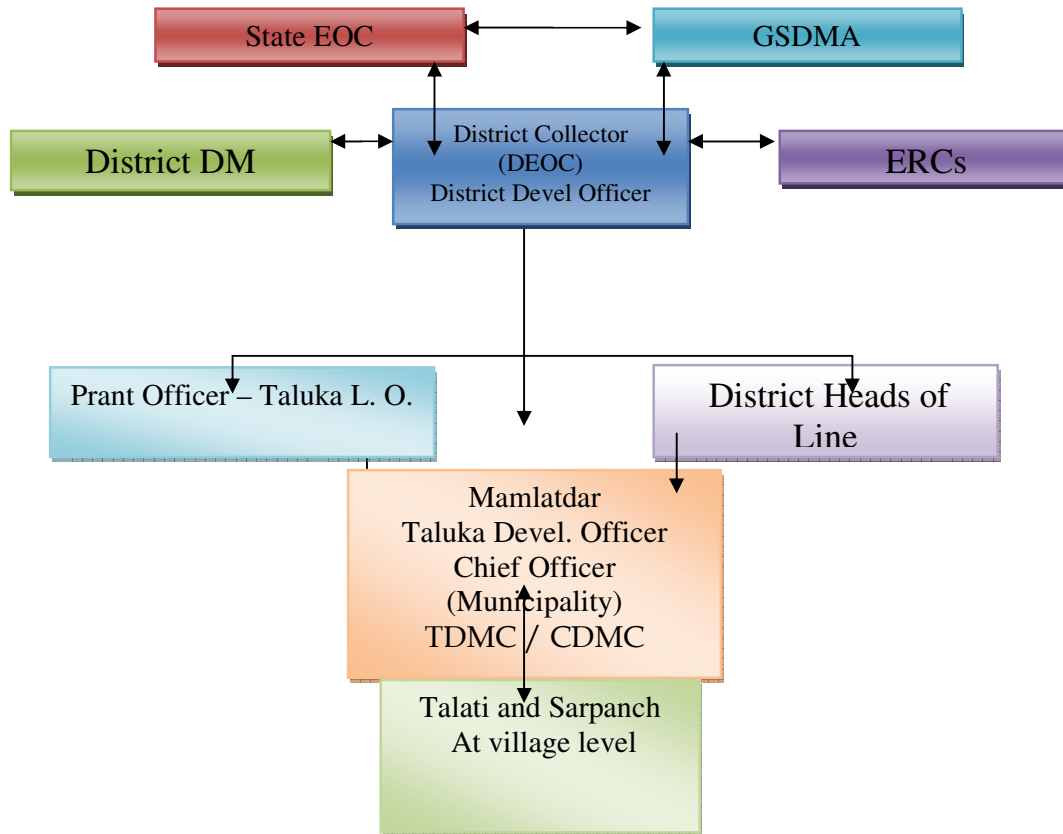
The Revenue Department of the State is the Nodal Department for controlling, monitoring and directing measures for organizing rescue, relief and rehabilitation. All other concerned line departments should extend full cooperation in all matters pertaining to the response management of the disaster whenever it occurs. The State EOC, ERCs and other control rooms at the State level as well as district control rooms should be activated with full strength. The State Government may publish a notification in the official gazette, declaring such area to be disaster-affected area under GSDMA Act (Section 32 (2) (a)).

Under this State Disaster Management Plan, all disaster specific mechanisms would come under a single umbrella allowing for attending to all kinds of disasters. The existing arrangements therefore will be strengthened by defining this administrative arrangement. This arrangement proposes Chief Secretary as the head supported by the Relief Commissioner through the branch arrangements at the Emergency Operations Centres (EOC), both at State level and at the district levels. There is a formal Incident Response System in the State. The GSDMA Act 2003 empowers Commissioner of Relief to be the Incident Commander in the State and District Collector in the respective districts.

D.M. Organizational Structure of the State



D.M. Organizational Structure In The District



District Crisis Management Group (Task Force)

The District administration of Bhavnagar has identified 16 expected task forces for key response operation functions that are described below (As per the ICS manual). Additional taskforces can be added under the operations section as needed by the circumstances of a disaster. Each Taskforce is led by one organization and supported by other organizations.

Emergency Operation Taskforce	Functions
1. Coordination and Planning	Coordinate early warning, Response & Recovery Operations
2. Administration and Protocol	Support Disaster Operations by efficiently completing the paper work and other Administrative tasks needed to ensure effective and timely relief assistance
3. Warning	Collection and dissemination of warnings of potential disasters
4. Law and Order	Assure the execution of all laws and maintenance of order in the area affected by the incident.
5. Search and Rescue (including Evacuation)	Provide human and material resources needed to support local evacuation, search and rescue efforts.
6. Public Works	Provide the personnel and resources needed to support local efforts to reestablish normally operating infrastructure.
7. Water	Assure the provision of sufficient potable water for human and animal consumption (priority), and water for industrial and agricultural uses as appropriate.
8. Food and Relief Supplies	Assure the provision of basic food and other relief needs in the affected communities.
9. Power	Provide the resources to reestablish normal power supplies and systems in affected communities.
10. Public Health and sanitation (including First aid and all medical care)	Provide personnel and resources to address pressing public health problems and re-establish normal health care systems.
11. Animal Health and Welfare	Provision of health and other care to animals affected by a disaster.
12. Shelter	Provide materials and supplies to ensure temporary shelter for disaster-affected populations
13. Logistics	Provide Air, water and Land transport for evacuation and for the storage and delivery of relief supplies in coordination with other task forces and competent authorities.

14. Survey (Damage Assessment)	Collect and analyses data on the impact of disaster, develop estimates of resource needs and relief plans, and compile reports on the disaster as required for District and State authorities and other parties as appropriate.
15. Telecommunications	Coordinate and assure operation of all communication systems (e.g.; Radio, TV, Telephones, Wireless) required to support early warning or post disaster operations.
16. Media (Public Information)	Provide liaison with and assistance to print and electronic media on early warning and post-disaster reporting concerning the 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 ICS/GS 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 Disaster Management Committee (DDMC)

The District Collector will be responsible for coordinating all disaster management activities at the district level. There shall be a District Disaster Management Authority headed by Collector. The District Disaster Management Authority shall approve a district disaster management planning and review all measures relating to preparedness and response to various hazards. The District Disaster Management Committee comprises members from Jilla Panchayat, different line departments, NGOs and others to be notified by the Department of Disaster Management from time to time. In times of disasters, Dist. Collector shall constitute a District Relief Committee to oversee management of relief. Following member should ne club at district level committee.

Sr. No.	Designation	Position in DCMG
1	Collector/ District Magistrate	Chairmen
2	District Development officer	Member
3	District Superintend of Police	Member
4	Residential Additional Collector	Member
5	District Supply Officer	Member
6	Exe. Engineer-R&B State	Member
7	Exe. Engineer-R&B Panchayat	Member
8	Exe. Engineer R&B State Irrigation	Member
9	Superintending Engineer- PGVCL	Member
10	District Home guard commandant	Member
11	Superintendent Civil Hospital	Member
12	Port Officer	Member
13	District forest Officer (west)	Member
14	District forest Officer (east)	Member
15	Dy. Director-Information Department	Member
16	District Municipality Officer	Member
17	Regional Officer-GPCB	Member
18	District Agriculture Officer	Member
19	All S D M	Member
20	Regional Transport officer	Member
21	Divisional Controller-State transport	Member
22	Dy. Controller –Civil Defense	Member
23	District Education Officer	Member
24	District Primary Education officer	Member
25	NGO Member	Member
26	Media Person	Member

Incident Response System in the state

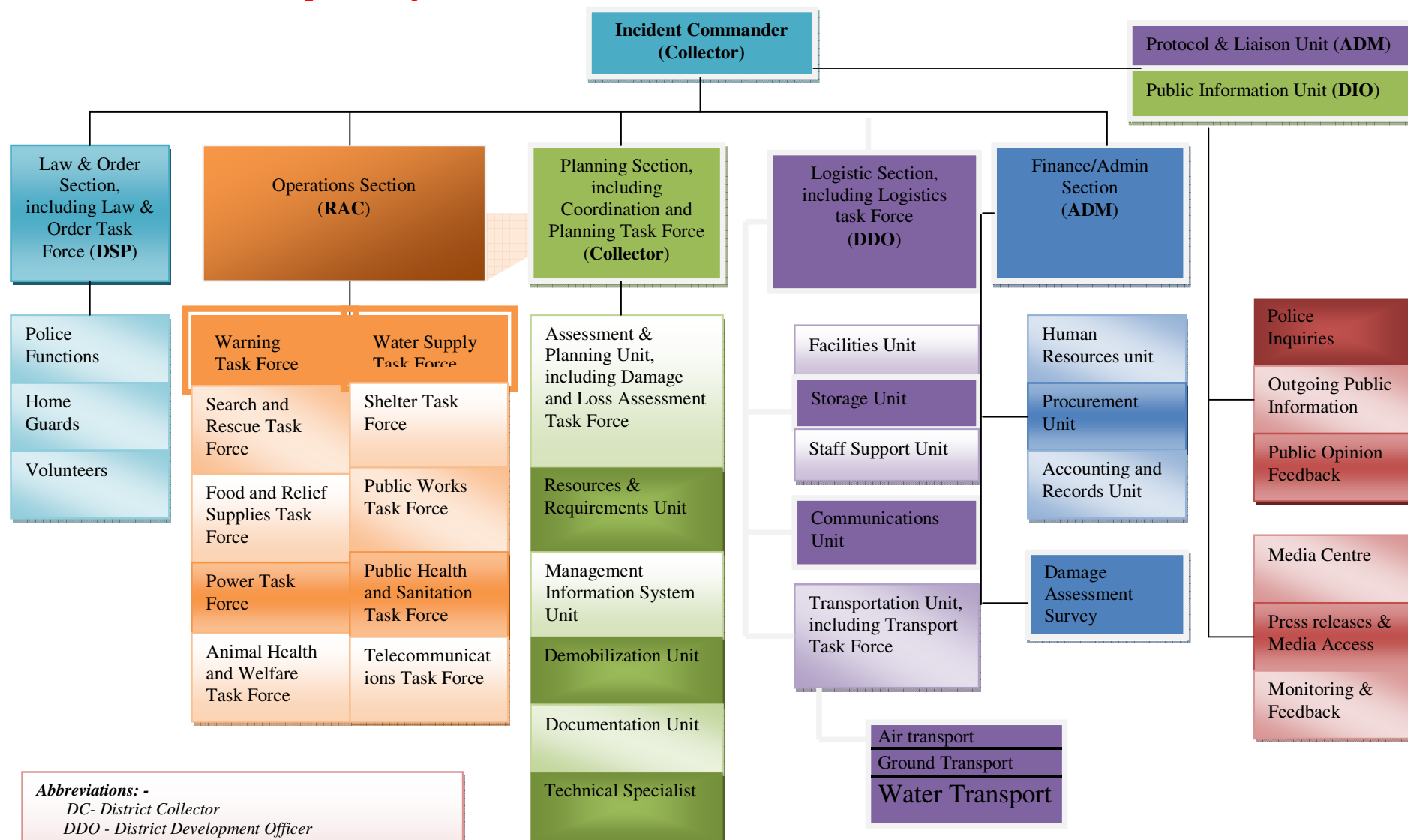
Incident Response System in the District

The response to disasters in the district will be organized according to the Incident Command System as adopted to conditions in Gujarat State (ICS/GS). The argument for the ICS is that its fundamental elements –unity of command, clarity of objectives and efficient resource use are common to the effective response to any disaster.

In Bhavnagar district, the multi-hazard response plan focused on sector specific action plans unlike the department specific planning approach in the previous plan documents. The disaster response is led by the **District Emergency Operation Center** (EOC) under the command and control of the District Collector.

The organizational structure of the Incident command system of district and Taluka is given in the next page.

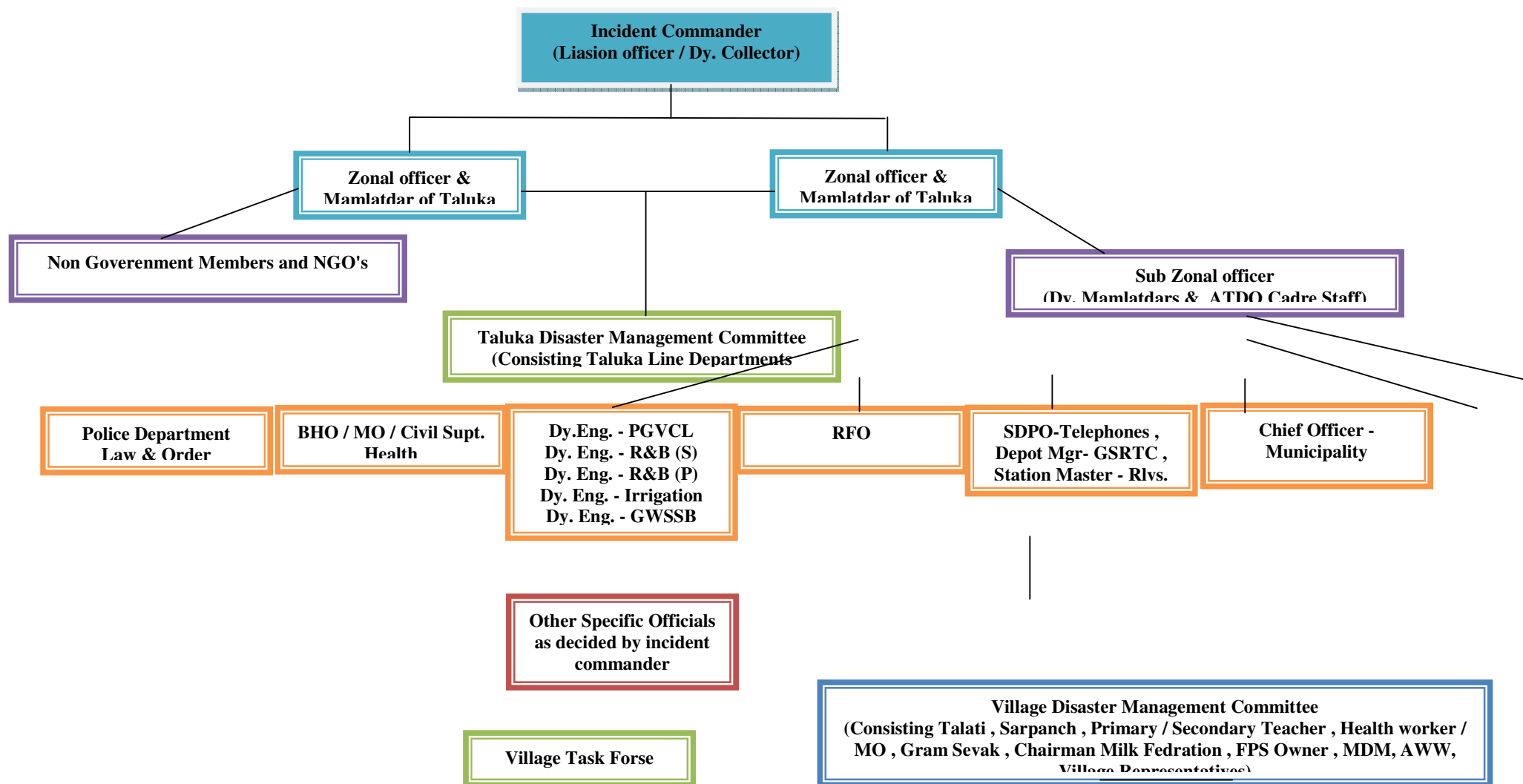
Insident Command/Response System in the District



Abbreviations: -

DC- District Collector
 DDO - District Development Officer
 DSP - District Superintendent of Police
 DIO - District Information Officer
 ADM- Additional District Magistrate
 RAC- Residential Additional Collector

Insident Command/Response System in the Taluka



Basic Functions of the response group Leader / Member

The basic functional descriptions for key elements in the district Incident command System is described below. Not all these functions need to be filled (activated) in every disaster. But the ensemble of these functions represents all the key tasks which need to be accomplished in a well planned manner and executed in effective and cost efficient disaster response effort.

I. Incident Commander:

Responsible for overall management of an incident based on clearly stated mandate from higher authority and based on focused objectives responding to the immediate impact of the incident.

The Incident command is led by an Incident Commander, who can be assisted by a Dy. Incident Commander. In each incident there will be as many commanders and other staff as there are shifts in the incident operation. Shifts will normally not exceed 12 hours at a time and should be standardized to 8 hours each as soon as possible after the start of the incident.

II. Command Staff Units

Safety unit:

Responsible for ensuring the safe accomplishment of all activities undertaken in response to the incident. This task is accomplished through developing incident specific safety guidance documents, reviewing and advising on the safety of plans and monitoring actual operations to ensure safety of personnel and survivors.

Protocol and Liaison unit:

Responsible for all official visits as well as liaison between the incident command and organizations providing personnel or material support being used to manage the incident. The first point of contact for NGOs and others coming to the disaster as well as responsible for managing coordination meetings (some of which may actually be held by taskforces or sections).

Public Information Unit:

Responsible for all media and public information tasks related to the incident. To accomplish its task, the unit can have the following sub units:

- **public inquiries:** to handle non media requests for information
- **outgoing public information:** to handle public information dissemination
- **Public opinion feedback:** to collect information from the public (incident survivors and the non-affected)

- **Media center:** to provide a single point of contact for all media involved in the incident.
- **Press release and media access:** produce all releases and provide a single point of contact to arrange media access to the incident.
- **Monitoring and Feedback:** to monitor media reports and provide feedback to the incident management on coverage of the incident and to also take corrective measures and issue contradictions if required.

III. Law and Order Section

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.

Police functions:

As determined by the normal mandate for and special duties assigned to the police service

Home guard:

As determined by the normal mandate for and special duties assigned to the home guard

Volunteers

Supporting police and home guards in non-enforcement tasks, such as patrolling, monitoring and evacuations

IV. Operation Section

Responsible for assuring specific operations according to objectives and plans to address the immediate impacts of the incident. Taskforces under the operation section will deal with specific functional tasks, such as search and rescue, the provision of water or shelter. The composition and size of these taskforces depends on the nature of the incident.

The District administration of Bhavnagar has identified 16 expected task forces for key response operation functions that are described below (As per the ICS manual). Additional taskforces can be added under the operations section as needed by the circumstances of a disaster. Each Taskforce is led by one organization and supported by other organizations.

Emergency Operation Taskforce	Functions
1. Coordination and Planning	Coordinate early warning, Response & Recovery Operations
2. Administration and Protocol	Support Disaster Operations by efficiently completing the paper work and other Administrative tasks needed to ensure effective and timely relief assistance
3. Warning	Collection and dissemination of warnings of potential disasters
4. Law and Order	Assure the execution of all laws and maintenance of order in the area affected by the incident.
5. Search and Rescue (including Evacuation)	Provide human and material resources needed to support local evacuation, search and rescue efforts.
6. Public Works	Provide the personnel and resources needed to support local efforts to reestablish normally operating infrastructure.
7. Water	Assure the provision of sufficient potable water for human and animal consumption (priority), and water for industrial and agricultural uses as appropriate.
8. Food and Relief Supplies	Assure the provision of basic food and other relief needs in the affected communities.
9. Power	Provide the resources to reestablish normal power supplies and systems in affected communities.
10. Public Health and sanitation (including First aid and all medical care)	Provide personnel and resources to address pressing public health problems and re-establish normal health care systems.
11. Animal Health and Welfare	Provision of health and other care to animals affected by a disaster.
12. Shelter	Provide materials and supplies to ensure temporary shelter for disaster-affected populations
13. Logistics	Provide Air, water and Land transport for evacuation and for the storage and delivery of relief supplies in coordination with other task forces and competent authorities.
14. Survey (Damage Assessment)	Collect and analyses data on the impact of disaster, develop estimates of resource needs and relief plans, and compile reports on the disaster as required for District and State authorities and other parties as appropriate.
15. Telecommunications	Coordinate and assure operation of all communication systems (e.g.; Radio, TV, Telephones, Wireless) required to support early warning or post disaster operations.
16. Media (Public Information)	Provide liaison with and assistance to print and electronic media on early warning and post-disaster reporting concerning the 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 ICS/GS 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.

V. Planning Section

Responsible for collecting and analyzing information and developing plans to address the objectives set to address the incident. The overall work of the planning section will include efforts undertaken by any planning and coordination taskforce which is established as part of the response to a disaster. Units under the section include:

1. Assessment and planning
2. Resources and Requirements
3. Management information system
4. documentation
5. Demobilization and
6. Technical specialists

VI. Logistic section

Responsible for all task and functions related to provision of material and other resources needed for operations and the physical and material support and operation of the incident management team. This section includes transportation taskforce established to support disaster operations. Logistics tasks are through the following units:

1. storage and supply
2. Facilities
3. staff support
4. communications
5. transportation (include ground, air water)

VII. Finance and Administration

Responsible for managing all financial and administrative tasks related to incident field operations. These tasks may, but would not usually include disbursement of financial aid to those affected by an incident. The task of this section are accomplished through following units: 1. Human resources; 2. procurement; and 3. accounting and records

Departmental Control Room and Nodal Officer
Supporting department details in response

The COMPOSITION of the TASKFORCES is given in the table below:

Sr. No.	Task Force	Taskforce Leader	Supporting members / Organizations/Departments	Section / Unit
1.	Planning and Coordination	Collector	DDO, DSP, Commissioner BMC, RAC and Mamlatdar	Planning
2.	Administration & Protocol	RAC	DDO, DSP, Commissioner BMC, RAC and Mamlatdar	Finance & Admin.
3	Damage Assessment/Survey	RAC	DIC, Dy. DDO, Ex. Engr., R&B, DAO, Fisheries	Planning
4	Warning	RAC	RAC, Dy. Mamlatdar, Control Room, District Information Officer (DIO)	Operation
5	Communications	RAC	Dy. Mamlatdars, Mobile Operators, TV, Radio, Port Office GMB, Police, Forests	Logistics
6	Media	District Information Officer	Information Department, Print, Media, TV, Journalists, NGOs	Public Information
7	Logistics	DDO	RTO, DSO, FPS, Private & Public sector, Municipal water supply board, Mamlatdar, Dist. Supply Mamlatdar	Logistics
8	Law & Order	DSP	Dy. SP, Home Guards Commandant, NGOs, Para-military and Armed Forces	Law & Order
9	Search & Rescue	RAC Civil Defense	Mamlatdar, TDO, Police, Executive Engr., BMC Fire & Emergency services, RTO, State Transport, Health Deptt.	Operation
10	Public Works	Ex. Engr. R&B (State)	Irrigation, Ex. Engr., Panchayat, NGOs, Water Supply Board, Municipalities, Home Guards, Police	Operation

11	Shelter	Dist. Primary Education Officer	School Principal, Teachers, Health, PHC, State Transport, Water Supply, RTO, Mamlatdar, TDO.	Operation
12	Water Supply	Ex. Engr. GWSDB / Ex. Engr. Water Works VMSS	Dy. Ex. Engr., Talati, Mamlatdar, TDO, Health, Dy. Engr. BMC	Operation
13	Food & Relief Supplies	Dist. Supply Officer	FPS, PDS, Mamlatdar, NGO, RTO, State Transport, Municipality, DRDA, Police, Home guard	Logistics
14	Power	Supt. Engr. PGVCL	Ex. Engr., Dy. Engr. Technical, PGVCL, Transport	Operation
15	Public Health & sanitation	Chief district health Officer (CDHO)	Supt. GG Hospital, BMC Hospital, Municipality, Red Cross, Fire and emergency services, BMC, Civil Defense, R&B, NGOs, Doctors, TDO, Mamlatdar	Operation
16	Animal Health & Welfare	Dy. Director Animal Husbandry	Veterinary Inspector, NGOs	Operations

Coordination of control room and nodal officers details

Coordination structure of Control Rooms with Specific Taskforce Details

Taskforce	Taskforce Operation Room/Contact Number	Taskforce leader/Contact Number	TASKFORCE-Alternate Leader/Contact Number
Incident Commander -District Collector Mo.-9978406206, Office No.-0278-2428822 Alternate Incident Commander - Resident Additional Collector Mo.-99784 05178, Office No.-0278-2421881			
1. Warning and Communications	RAC Office / EOC	RAC Mo.-99784 05178 Off.-0278-2427756	Mamlatdar- DM Mo.-8000284545 Office-0278-2521554,2521555
2. Law & Order	Police Control Room (PCR)	SP/DSP Office-0278-2520050, 2520350	ASP/Dy.SP offi.-0278-2518091 offi.-0278-2513717
3. Search & Rescue	Civil Defense and Fire & Emergency Services (FES) For City Area.	Dy. Collector – CD Office-02782521554 Chief fire Officer Office-101, 0278-2430061, 2424814 District Area Liaison Officer list	Dy. Municipal Commissioner, 0278-2439292 0278-2439797 0278-2515540
4. Public Works	R&B-(Panchayat)	I/C Ex. Eng. R&B Office-0278-2422548,	Office-0278- 2428386, 2516899
	R&B-(State)	Ex. Eng. R&B Office-0278- 2423383	Office-0278- 2423383
5. Shelter	Education Office	DEO Office-0278- 2426629	DPEO Offi.-0278-2523582

6. Water Supply	GWSSB-(CR)	Ex. Eng. GWSSB Office- 0278- 2565013, 2425849	Ex. Eng. Waterworks
7. Food & Relief supplies	DSO-CR & DDO office	DSO Office- 0278-2428908, Office- 0278-2423810	NGO's and CBO's As decided by DSO
8. Public Health & Sanitation	District Health Department / Centre, District Panchyat	CDHO office- 0278-2423665	CDMO office- 0278-2423665
9. Power	PGVCL-CR	Addi. Chief Sec. PGVCL, Office- 0278-2524924	Supt. Engr. - PGVCL Chavdi gate, Office- 0278- 2522922
10. Logistics	DDO office	DDO Office- 0278-2423810	Dy. DDO- Panchayat Off.-0278-2426810
11. Animal Health & Welfare	Animal H & W Office	Dy. Director, Animal H &W Office- 0278-2514378, 2439951	Dy.DDO- Devlopment Office- 0278- 2423868
12. Damage Assessment/Surv ey	RAC office	RAC Mo.-9978405178 Off.-0278- 2427756	Dy. DDO – Revenue office- 0278- 2423868
13. Media / public Information	Information Dept. CR	Dy. Info. Director Office- 0278- 2422919	Joint Director Infor. Sr. Sub Editor
14. Planning and coordination	Collector's office	Collector Mo.- 9978406206, Office No.-0278- 2428822,	ADM Mo.-99784 05178 Off.-0278-2427756

15. Finance/ Administration / protocol	RAC office	RAC Mo.-99784 05178 Off.-0278- 2427756	RAC Mo.-99784 05178 Off.-0278-2427756
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Note: for municipal areas, the Chief fire Officer is the taskforce leader of the Search & Rescue. While Liaison officer appointed as taskforce leader for search and Rescue operation in non-municipal areas.

EOC setup and facilities available with the location

District Emergency Operation Center (DEOC)/ District Control Room (DCR)

The District Control Room is located in building of Collector office, Near Bhavnagar Mahanagarpalika and Jilla Panchayat office, opposite Galaxy. 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 co-ordination for decision-making process.

- **Facilities at District Emergency Operation Centers**

The District Control Room equipped with to the following items in Table:

Sr. No.	Item/ Facility	Unit/ Number of item
1	Television	1
2	Telephones	3
3	Satellite Telephone	1
4	Fax machine	1
5	Printer	3
6	Scanner	1
7	PC with GSWAN Internet and web site facilities	3
8	Marker board -	1
9	Projector	1
10	A copy of Disaster Management Plan	10
11	Other relevant documents of district information	-
12	Chairs	30
13	Tables	5

Taluka Emergency Operation Centers (TEOC)

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

- **Task Force Operation Room (TFOR)**

Individual Task Force function shall activate & operate their respective control rooms in their office manned by a competent person who is proficient in communication and technically capable of coordinating with Taluka Level Control Room and District Control Room and mobilize requisite resources to the disaster site.

- **Facilities at Taluka Level Control Rooms (TLCR)**

The following facilities are maintained inside TFCR:

- Telephones
- Facsimile
- Satellite Phone (desirable)
- Hand held Radios/Base Stations
- Marker board (1)
- A copy each of Disaster Management Plan and Taluka Level Plan
- Other relevant documents, if any

Responsibility of up keeping and maintenance of all the above items / facilities in the respective Control rooms is given as below.

DCR (DEOC): District Collector or any person nominated
TFCR: Respective Task Force Leader
TLCR (TEOC): Respective Taluka Liaison Officer

The above responsible Depts./ personnel shall carryout periodic inspection of such facilities in their respective control rooms at the frequency set by them and maintain records on the same.

Emergency Communication Systems

Communication system is very crucial for effective control of any disaster. The communication philosophy adopted by Disaster Management team during the disaster is given as below:

In the event of collapse of any communication facility / Communication infrastructure as a cascading effect/consequence of disaster, Telecommunication Task Force Leader shall ensure immediate restoration of such facility or infrastructure to ensure uninterrupted communication for effective disaster management operations.

Synthesized Radio Communication

All the Control Rooms are equipped with Radio base stations and all the task force leaders and their teams are provided with hand held radio sets. The different user groups are operating at different frequency channels allotted to them for ease in communication in respective groups. The table below shows the allotted frequency channel for individual Task Force. All the sets are programme for different groups' frequencies to facilitate horizontal communication among the different task groups.

Sr. No.	Task Force / Functional Area	Channel
1.	DCR	
2.	Law & Order & its TFOR	
3.	Search & Rescue & its TFOR	
4.	Public Works & its TFOR	
5.	Shelter & its TFOR	
6.	Water Supply & its TFOR	
7.	Food & Social Service & its TFOR	
8.	Power & its TFOR	
9.	Public Health & Sanitation & its TFOR	
10.	Logistics & its TFOR	
11.	Animal Health & Welfare & its TFOR	
12.	Relief Supplies & its TFOR	
13.	Communication & its TFOR	
14.	Survey & its TFOR	
15	Taluka Level Control Room (TLCR)	

At present, “Hand held radio sets” are with the District Magistrate, DDO, DSP, fire Brigade and Forest department. If possible, Health Personnel may be given these sets later.

Telephones

Telephones and Fax Machine had provided at DEOC and all TEOC Control Rooms.

Alternate EOC available and its location

The Bhavnagar District Control Room is located in the building of Collector office near Bhavnagar Mahanagarपालिका and jilla Panchayat office, opposite Galaxy. It is also the central point for information gathering, processing and decision making more specifically to combat the disaster but when such kind of situation where DEOC will collapse so alternate EOC will started at Collector office.

Alternate Communication System

There could be a situation when all the communication facilities and systems may come to halt due to collapse of communication facilities/infrastructures. In the event of such a failure, till the facility/infrastructure is restored made functional, following alternate systems shall be used based on the seriousness of the situation:

Satellite Communication System

Satellite communication shall be activated once all the communication systems fail. This facility is installed at all the control rooms. The Telecommunication Task Force Leader shall ensure that this facility is resumed on all such occasions.

Messengers

- Use of messengers as a last resort to carry the hand written messages to persons concerned in dealing with the disaster.
- A dedicated vehicle shall be made available by the Transport Task Force Leader upon request
-
-

Right use of Communication facility

- The sense of urgency that every one experiences during disaster may lead to a chaotic situation if communication systems are not properly used.
- Communication shall be brief and simple.
- Telephones/ Hot Lines shall be used wherever possible to avoid congestion of Radio communication.
- All task force members shall communicate only through their allotted frequency channel to avoid congestion in the particular channel.

Personnel who use Radios should be acquainted with the operation of the equipment, various channels, code words, length of speech, etc.

Public and private emergency service facilities available in the district

Bhavnagar district has a fire station of Bhavnagar Municipal Corporation and 6 Fire stations in Respective 6 Municipality and in addition the district has a fire station in Alang as well as GMB control Room. This emergency service are fully equipped by various equipment and train personal which are use in search and rescue operation during disaster situation.

Forecasting and warning agencies

Alert Mechanism – Early Warning

On the receipt of warning or alert from any such agency, which is competent to issue such a warning, or on the basis of reports from District Collector of the occurrence of a disaster, the response structure of the State Government will be put into operation. The Chief Secretary/Relief Commissioner will assume the role of the Chief of Operations during the emergency. The details of agencies competent enough for issuing warning or alert pertaining to various types of disasters are given below;

Sr. No.	Disaster	Agencies
1	Earthquakes	IMD, ISR
2	Floods	IMD, Irrigation Department
3	Cyclones	IMD
4	Tsunami	IMD, ISR, INCOIS
5	Drought	Agriculture Department
6	Epidemics	Health & Family Welfare Department
7	Industrial & Chemical Accidents	Industry, Labor & Employment Department, DISH
8	Fire	Fire & Emergency Services

Chapter 4

Prevention and Mitigation Measures:

Prevention measures in development plans and programmes

For disaster prevention and mitigation, both structural and non-structural interventions can be planned. Structural interventions include construction of physical engineering and non engineering structures to reduce hazard risks. Non structural mitigation includes awareness and capacity building at official and community level, formulation of new plans and overall promoting a commitment for safety.

Mitigation measures can be divided in two categories:

- i) Structural measures: On site works, construction, and engineering works and
- ii) Non-structural measures: Which include studies, research, regulations, policy changes and capacity building activities that support the structural measures.

The taluka disaster management plan includes hazard specific structural and non structural mitigation plans in consultation and convergence with various Departments. For example, the MGNREGA work can take up activities on construction of embankment for flood safety or the forest department may take up mangrove plantation in the coastal areas, while the water supply department can construct hand pumps on raised platforms.

Departments shall draw out its own plan, goals and milestones and review it annually for its achievements and planning for next year.

Mitigation, preparedness and prevention actions are to be taken before a disaster to reduce the likelihood of a disaster (risk reduction) or the level of damage (vulnerability reduction) expected from a possible disaster. Vulnerability reduction is given priority over a risk reduction. The district can avail itself of four mechanisms (singularly or together) to reduce risk and vulnerability;

- Long term planning for mitigation, preparedness and prevention investments in the district,
- Enforcement of regulations, particularly building and safety codes and land use plans,
- Review and evaluation of development plans and activities to identify ways to reduce risks and vulnerability, and,
- Capacity building, including warning, the provision of relief and recovery assistance and community-level identification of risk and vulnerability.

The Collector, assisted by the District Development Officer, is responsible for developing plans and activities to effect mitigation, preparedness and prevention using the mechanism noted above.

Base on the interim assessment of risk and vulnerabilities, the District will focus on the following areas for mitigation, preparedness and prevention;

- Resilience of lifeline systems (water, power and communications)
- Reduction in disaster impact on health care facilities, schools and roads
- Vulnerability reduction in flood-prone areas
- Vulnerability reduction to high winds
- Improvement of Off-site Preparedness near Industrial sites.

Special Project proposed for Preventing the Disaster

1. Disaster Risk Management Programme (DRM)

Disaster Risk Management Programme (DRM) has taken strong roots at various levels of administration in Gujarat. The Department of Revenue & Disaster Management is the nodal Department in Government of Gujarat that handles the subject with GSDMA. Disaster Management Committees are formed at various levels and are assigned the task of implementing the programme. Representation for these committees are drawn from elected representatives, officials of line departments, professional bodies, Civil Defense, NGO and CBO representatives and local opinion leaders. Major Activities are being carried out under DRM program are Plan Development at Various Levels, Emergency Resources Database maintain through SDRN / IDRN, Capacity Building through Trainings & Resource Mobilization, Disaster Awareness through Orientations, Campaigning, Media Management and IEC distribution. Coordinate District Administration for all Disaster Management Activities with expertise knowledge, logistics and fund allocation.

Hazard wise Structural and Non- structural Mitigation Measures

Hazard: Flood

Table No. : A1

Structural Mitigation Measures for Flood
(Identified works of concerned Departments)

Probable Mitigation Measures	Implementing Departments	Convergence with Scheme/ Program	Time Frame
Desalting and deepening of water channel (khans)	Irrigation and Rural Development, GLDC	Departmental program & MGNREGS,	Regularly
Construction of embankments/ protection wall	Rural Development, Forest	Departmental program & MGNREGS, watershed, Integrated coastal zone management programme	2015-16
Repair of embankments/ protection wall	Rural Development, R&B department	Departmental program & MGNREGS	Regularly
Repair and maintenance of Flood Channels, canals, natural drainage, storm water lines	Irrigation department Concern Municipality	Departmental or special plan	2015-16
Construction of Safe Shelters (new construction through Indira Awas, Sardar Awas and Ambedkar Awas)	Collector and R&B District Panchayat	NCRMP	Regularly
Protection wall and mangroves and vegetative cover against sea level intrusion and land erosion	Forest and Rural development department GEC	Department schemes, MGNREGS, IWMP Integrated coastal zone management	2015-16
Desalting of water bodies like river and ponds	Irrigation DDO Rural Development	MGNREGA and Land Development	2015-16

Table No. : A2

Non-Structural Mitigation Measures for Flood
(Identified works of concerned Departments)

Non-Structural measures	Implementing Departments	Convergence with agency/program	Time Frame
Safety audit of existing and proposed housing stock in risk prone areas	DDO, Rural development	IAY, Sardar Awas and other rural housing schemes	Regularly
Promotion of Traditional, local and innovative practices like bamboo/plastic bottle rafts etc, clean city green city	DDMC, TDMC, CDMC, SHGs and youth groups, NGOs Volunteers	Training and capacity building plan for disaster management At all level	Regularly
Capacity building of volunteers and technicians	DDMC, TDMC, CDMC	Training and capacity building plan for disaster management	Regularly
Awareness generation on health and safety of livestock	veterinary officer, rural development	Departmental Scheme	Regularly

Hazard: Cyclone**Table N.: B1****Structural Mitigation Measures for Cyclone**

Structural measures	Identified Locations and Villages	Implementing Departments	Convergence with Scheme/Program	Time Frame
Plantations (mangroves) and Shelter Belt in the Coastal Area	Cyclone prone 34 villages Bhavnagar district	Forest department, Port Authority, DIC, TDO, Rural development department, GEC	Departmental schemes, MGNREGA Integrated coastal zone management	2015-16

Identification and repair/retrofitting of houses and buildings unsafe for cyclone		R & B (District Panchayat)	Departmental Scheme	Regularly
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Table No.: B2

Non-Structural Mitigation Measures for Cyclone

Non-Structural measures	Location/ coverage area	Implementing Departments	Convergence with agency/ program	Time Frame
Strengthening of Early warning mechanisms	Cyclone prone 72 villages In Kutch district	DDMC, TDMC	District administration Line department	Regularly
Training and awareness generation for use of safety jackets/rings/buoys/rope etc for fisher folks		DDMC, TDMC, VDMC, CDMC	TDMP, VDMC	2015-16
Enforcing strict compliance to coastal regulation zone and awareness regarding hazard		Department of Environment & Forest Depart. Fishing GEC	Integrated Coastal Zone Management CRZ Regulation	2015-16
Registration of fishing boats		Fisheries Department	CRZ Regulation	2015-16
Regulate and issue orders for poor quality hoardings/buildings or any other objects		R & B Department		2015-16

Hazard: Earthquake**Table No. : C1****Structural Mitigation Measures for Earthquake**

Structural measures	Identified Location s and Villages	Implementing Departments	Convergence with Scheme/ Program	Time Frame
Retrofitting (if required) of public utility buildings like offices, schools/ banks/ markets etc	Bhavnagar direct comes under Zone-III	R & B (State and Panchayat), DDO, Rural department	DM Plan and all development plan	Regularly
Retrofitting of unsafe rural houses		DDMC, DDO, R & B State and panchayat	Rural housing schemes and department al programs	Regularly
Identifying and safely dismantling unsafe structures		R & B department	Development plan	Regularly
Issue permission for Earthquake registrant house		Area Development Authority	TP plan	Regularly

Table No. : C2**Non Structural Mitigation Measures for Earthquake**

Non-Structural measures	Location / coverage area	Implementing Departments	Convergence with agency/ program	Time Frame
Capacity building of architects, engineers and masons on earthquake resistant features	Bhavnagar direct comes under Zone-III	R & B (State and Panchayat) DDMC, TDMC, CDMC	DRM	Regularly
Registration of trained and certified mason		R & B (State and Panchayat), DDMC	--	Regularly

Non-Structural measures	Location / coverage area	Implementing Departments	Convergence with agency/ program	Time Frame
Strict enforcement of guideline pertaining to seismic safety for government rural housing, urban development structure		DDO, DDMC, CDMC, TDMC, VDMC	Rural housing schemes	Regularly
Mock-drills for Schools, Hospitals and , Public Buildings and trainings for mason, engineers and architects		DDMC, Schools	DRM	Regularly

Hazard: Drought

Table No. : D1

Structural Mitigation Measures for Drought

Structural measures	Identified Locations and Villages	Implementing Departments	Convergence with Scheme/ Program	Time Frame
Development of Pasture land in common property, seed farms and trust land		Forest, Rural Development, Panchayat	Departmental Scheme, MGNREGA	2015-16
Rain Water Harvesting storage tanks at household level and public buildings		GWSSB, (WASMO), Rural Development	MGNREGA, Swajaldhara	2015-16
Structures for water harvesting and recharging like wells, ponds, check dams, farm ponds, etc		DDO, Rural development, irrigation department	MGNREGA ,Watershed program, departmental schemes	2015-16
Development of fodder plots/banks		DDMC, Forest department , animal husbandry department	Development plan	2015-16
Repair and maintenance, de-silting of water		Irrigation, Rural	MGNREGA, Watershed	2015-16

Structural measures	Identified Locations and Villages	Implementing Departments	Convergence with Scheme/ Program	Time Frame
sources, check dams, hand pumps etc.		Development		

Table No.: D2

Non-Structural Mitigation Measures for Drought

Non-Structural measures	Locations/ coverage area	Implementing Departments	Convergence with agency/ program	Time Frame
Listing/developing shelf of work for drought proofing/scarcity works including Identification of potential sites of water bodies		Rural Development	MGNREGS	2015-16
Farmer education to practice drought resistant crops and efficient water use		Agriculture & horticulture department	Departmental schemes	2015-16
Set up control mechanism for regulated water use (ponds, small dams, check dams) on the early onset.		Panchayats		Regularly

Hazard : Industrial (Chemical)

Table No. E1

Industrial (Chemical) Structural Measures

Structural measures	Activities	Implementing Departments	Convergence with agency/ program	Time Frame
Monitoring impact of industries on NRM	Data collection of impact on natural resources (ground water monitoring wells, air quality test, etc)	DDMC, DCG, GPCB	Environment protection act	Regular intervention

(land, water and air)				
Safety assessment	Carry out structural safety inspection/audit	DISH, DCG (Asst. Director. Industrial safety and health)	Industrial act	Regular intervention
Protection wall	Build protection wall for minimize risk of disaster	Industrial unit	Industrial act	Regular intervention

Table No.: E2

Industrial (Chemical) Non-Structural Measures

Non structural Measures	Activities	Implementing Departments	Convergence Agencies	Time Frame
Planning	Prepare an onsite and offsite emergency plan	Occupier, DISH	Various Industrial act	-
	Conduct mock drills as per the regulations	DISH and LCG	Various Industrial act	Regular intervention
	Update the DM plan as per the requirement	Occupier, DISH	Various Industrial act	Industrial act
	Monitor similar activities in all the factories/ industries	DISH and LCG	Various Industrial act	Industrial act
Capacity Building	Develop IEC material for Publication & Distribution	TDMC	Various Industrial act	Industrial act
	Awareness generation to general public and medical professional residing near MAH factories for immediate steps	TDMC, LCG	Various Industrial act	Industrial act
	Organize training programmers, seminars and workshops (e.g. for drivers of HAZMAT	TDMC, LCG	Various Industrial act	Industrial act

Non structural Measures	Activities	Implementing Departments	Convergence Agencies	Time Frame
	transport, line departments officers, Mamlatdar etc)			
	List of experts/ resource person/ subject specialist (District emergency Off site plan)	TDMC, LCG	Various Industrial act	Industrial act
	Encourage disaster insurance	Labor & employment department	Various Industrial act	Industrial act
Medical	Listing of hazardous chemicals and gases.	Occupier, LCG, DISH, THO	Various Industrial act	Industrial act
	Keep check on availability and validity of relevant antidotes for chemical hazards prevalent in Taluka	Occupier, LCG, DISH, THO	Various Industrial act	Industrial act
	Workshops and trainings for medical professionals to handle potential chemical and industrial hazard	THO, Occupier, LCG, DISH	Various Industrial act	Regularly
Compliance	Environmental Protection Act, Factory Act, Mutual Aid SOPs	DISH , GPCB	Various Industrial act	Regular interval

At the District level, the District Crisis Management Group (DCG) is an apex body to deal with major chemical accidents and to provide expert guidance for handling them. DCG has a strength of 34 members which includes District Collector, SDM and Dy. Collector, DDO, Dy. Director – Industrial Safety & Health, DSP, PI, Fire Superintendent of the City Corporations or important Municipalities, Chief District Health Officer, Civil Surgeon, SE, Chief Officer, Dy. Chief Controller of Explosives, Commandant – SRPF, Group-I, Dy. Director – Information to name a few. At Taluka level Local Crisis Management Group (LCG) is formed for coordination of activities and executing the operations.

Hazard: Tsunami**Table No. F1****Structural Mitigation Measures for Tsunami**

Structural measures	Identified Locations and Villages	Implementing Departments	Convergence with Scheme/ Program	Time Frame
Constructing shelter belts in coastal areas		Rural Development	Departmental programs , MGNREGA	Long term planning
Contraction Sea water brake structure		R & B State and panchayat	Departmental programs , MGNREGA	Long term planning

Table No. : F2**Non-Structural Mitigation Measures for Tsunami**

Non-Structural measures	Locations/ coverage area	Implementing Departments	Convergence with agency/program	Time frame
Provisions of Coastal Regulation Zone to be effectively implemented		Department of Environment & Forest GEC	ICZMP	Long term planning
Capacity building of task forces in coastal villages		TDMC, DDMC, CDMC, VDMC,	DRM,	Periodically
Awareness activity in prone/ vulnerable area		DDMC , TDMC, CDMC, VDMC	DRM	Regularly

Hazard-Fire

Over and above the softer issues highlighted above, GSDMA has provided all the existing Government schools in Gujarat with ISI marked portable Water-CO2 type of Fire Extinguisher (31746 Government schools

covered of which 31336 are primary and 410 are secondary and higher secondary schools). For the necessary guidance/instruction for use of fire extinguishers, GSDMA has prepared an 18-minute short education film in Gujarati on fire safety for schools. This was show to all government primary schools through the satellite network.

Specific projects for vulnerable group

DRMP (Disaster risk management programme) is targeting the most vulnerable people or group and give the training on different subject for built their capacity. It also organized mockdrills on various subject at industry, village, Taluka, ULB, district and Municipal corporation level.

GSSP (Gujarat School Safety programme) is targeting the school students, teachers and principal as organized training, sensitization programme, mockdrills, preparing the school disaster management plan and distribute the IEC material.

Thus, DRMP and GSSP are specific project for vulnerable group.

Chapter 5

Preparedness Measures:

Identification of Stakeholders involved in Disaster Response

Disaster response is the most important step during disasters. Public as well as volunteers take part in the response work. There should be search and rescue, first aid and evacuation activities. In case of Search and Rescue NDRF, Fire staff, Police, Homeguard, GRD, NCC, NSS and other trained volunteers involved in Search and rescue. In case of First Aid work people from Health profession and other trained volunteers involved in First Aid activities and in case of Evacuation again Police, Fire, HG and GRD involved in the same work.

Formation of Persons and Training for-

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. Also proper methodology and resources are needed to carry out a search & rescue mission.

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 flood it is recommended that the boats that are used should be light weight 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

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

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 detection and 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, 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. 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.

At the village level, members of the VDMCs and DMTs or village level will coordinate the evacuation procedures to the pre-designated relief centers, taking special care of the vulnerable groups of women, children, old people etc. according to the plans laid down earlier.

Evacuation

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

Shelter provides for the temporary respite to evacuees. It may be limited in facilities, but must provide protection from the elements as well as accommodate the basic personal needs, which arise at an individual level in an emergency.

The plan must allocate responsibility for management of each of the elements of shelter. Considering the wide range of services, agencies and issues to be managed, it becomes essential for 'shelter' to be managed within a structure, which facilitates the coordination of agencies and services and support of emergency workers. The following factors may need consideration:

- 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 counseling

Types of evacuation

For 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 Cyclone.

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 be ensured
- Security arrangement and protection of lives and property
- Preparation and updating of resource inventories
- Appropriate welfare measures throughout all stages
- Test exercise of prepared plans and recording of lessons learnt
- Documentation

Stages of Evacuation

There are five stages of evacuation as under:

- Decision of authorities to evacuate victims
- Issue of warning and awareness
- Ensuring smooth movement of victims to designated relief camps
- Ensuring provision of all requisite facilities like security, safe-housing, feeding, drinking-water, sanitation, medical and allied facilities
- Safe return of personnel on return of normalcy

Decision to Evacuate

Vulnerability analysis may indicate that for certain hazards and under certain conditions, sheltering in place could well be the best protection. Available lead-time may influence the decision to evacuate the public before the impact of emergency (e.g. floods) and reducing the risk to lives and property. Decision would also be dependent on factors like ready availability of suitable accommodation, climatic condition, and severity of likely hazard and time of the day.

The Collector would be the authoritative body to issue directions for evacuation. The OIC of DECR would convey directions to Desk Officers of concerned agencies, which are responsible to execute evacuation.

Basic consideration for Evacuation

The DCG will define area to be evacuated as also the probable duration of evacuation based on meteorological observations and intimations by the concerned forecasting agencies. It should also identify number of people for evacuation, destination of evacuees, lead-time available, welfare requirements of evacuees as also identify resources to meet the needs of victims, viz. manpower, transport, supplies equipments, communications and security of the evacuated area.

The evacuating agency should set priorities for evacuation in terms of areas likely to be affected and methodology to execute evacuation:

- Delivery of warning
- Transport arrangement
- Control and timing of movement
- Fulfill welfare needs including medical treatment
- Registration of evacuees

All agencies involved in evacuation operation like Home guards, Police, PWD, PHED, etc. will coordinate in field. They will remain in touch with the Desk officials in the DECR for issuing warning, information and advise the public.

Evacuation Warning

An evacuation warning must be structured to provide timely and effective information. Factors, which may influence the quality and effectiveness of warning, include time, distance, visual evidence, threat characteristic and sense of urgency e.g. the more immediate the threat, the greater the resilience of people to accept and appropriately react to the warning.

The warning should be clear and target specific. The warning statement issued to the community should be conveyed in a simple language. The statement should mention:

- The issuing authority, date and time of issue
- An accurate description of likely hazard and what is expected
- Possible impact on population, area to be in undated or affected due to earthquake
- Need to activate evacuation plan
- Do's and Don'ts to ensure appropriate response
- Advise to the people about further warnings to be issued, if any

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 assessing 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 color 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 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 2 phase's viz. Rapid Damage Assessment and Detailed Damage Assessment.

Training need analysis

Although education about disaster mitigation and prevention and capacity building would seem to be ideal district-level efforts, the lead for both probably best rests with the state level, with districts having a facilitating role. The issue is that if 26 districts independently embark on education and capacity building it will be hard to coordinate and standardize the results across districts. A significant consequence would be an inequality in capacities across districts, and thus uneven mitigation and prevention results. How to fund these activities remains open. Options range from GSDMA grants to set-asides in budget allocations. Project Impact in the US and similar programs in Australia and Canada are good models for the former approach.

Arrangements for training and capacity building

Training, capacity building and other proactive measures

Sr. No.	Task / Activity	Responsibility
1	Training to civil defense personal in various aspect of disaster management	Home Department
2	Training to home Guards personal in various aspect of disaster management including search and rescue	Dy. Controller Civil Defense District Home Guards Commandant
3	Training to NCC and NSS personal in various aspect of disaster management	Education Department NCC Collector Office
4	Training to educational and training institutions personal in various aspect of disaster management	DDMC
5	Training to civil society, CBOs and corporate entities in various aspect of disaster management	DDMC
6	Training to fire and emergency service personal in various aspect of disaster management	Fire Dept, CDMC DDMC
7	Training to police and traffic personal in various aspect of disaster management	DDMC Police Dept.
8	Training to media in various aspect of disaster management	DDMC Information Dept.
9	Training to govt. officials in various aspect of disaster management	DDMC
10	Training to engineers, architects, structural engineers, builders and masons in various aspect of disaster management	DDMC, R & B

Awareness

Task	Activity	Responsibility
Information, education And communication	Advertisement, hording, booklets, leaflets, banners, shake-table, demonstration, folk dancing and music, jokes, street play, exhibition, TV Spot, radio spot, audio-visual and documentary, school campaign, Rally, - Planning and Design - Execution and Dissemination	<input type="checkbox"/> Information Dept <input type="checkbox"/> Education Dept <input type="checkbox"/> All line dept <input type="checkbox"/> Dist. Collectors <input type="checkbox"/> Chief officer <input type="checkbox"/> Other Dist. Authorities

Activation of Incident Response System in the District

Command:

This function establishes the framework within which a single leader or committee can manage the overall disaster response effort. A single Incident Commander is responsible for the successful management of the response during operational period in an area. If the incident grows in size and extends throughout many jurisdictions, multiple incident commanders can be useful with an area command authority may be established to coordinate among the incidents. Incident Commander requires the following Command Staffs to support him, which are as followings,

- Public Information Officer – the single media point of contact
- Safety Officer – Responsible for identifying safety issues and fixing them, he has the authority to halt an operation if needed.
- Liaison Officer – Point of contact for agency to agency issues.

1. **Operations:** this section carries out the response activities described in the Incident Action Plan (IAP) along with coordinating and managing the activities taken the responding agencies and officials that are directed at reducing the immediate hazard, protecting lives and properties. This section manages the tactical fieldwork and assigns most of the resources used to respond to the incident. Within operations, separate sections are established to perform different functions, such as emergency services, law enforcement, public works...etc.

2. **Planning:** this section supports the disaster management effort by collecting, evaluating, disseminating, and uses information about the development of the emergency and status of all available resources. This section creates the action plan, often called “Incident Action Plan” (IAP), which shall guide emergency operations/response by objectives.

Followings are the six primary activities performed by the planning section, including,

- Collecting, evaluating, and displaying incident intelligence and information
 - Preparing and documenting IAPs
 - Conducting long-range and contingency planning
 - Developing plans for demobilization
 - Maintaining incident documentation
 - Tracking resources documentation
3. **Logistics:** the process of response includes personnel, equipments, vehicles, facilities...etc, all of which will depend upon the acquisition, transport, and distribution of resources, the provision of food and water, and proper medical attention. The Logistic section is responsible for the mentioned process.
 4. **Finance and Administration:** this section is responsible for tracking all costs associated with the response and beginning the process for reimbursement. The finance and administration section becomes very important when the national government provides emergency funds in place that guarantee local and regional response agencies that their activities, supply use, and expenditures will be covered.

A traditional command structure exists in the administrative hierarchy which manages disasters in India. It has been planned to strengthen and professionalise the same by drawing upon the principles of the ICS with suitable modifications. The ICS is essentially a management system to organise various emergency functions in a standardised manner while responding to any disaster. It will provide for specialist incident management teams with an incident commander and officers trained in different aspects of incident management, such as logistics, operations, planning, safety, media management, etc. It also aims to put in place such teams in each district by imparting training in different facets of incident management to district level functionaries. The emphasis will be on the use of technologies and contemporary systems of planning and execution with connectivity to the joint operations room at all levels.

The local authorities do not have the capacity to play an efficient role at local level to support the DEOC's requirements for field information and coordination. The DEOC will therefore need to send its own field teams and through them establish an Incident Command System. The system will comprise:

- Field command
- Field information collection
- Inter agency coordination at field level

Management of field operations, planning, logistics, finance and administration

Protocol to seeking help from other agencies

Checking and certification of logistics, equipments and stores

Bhavnagar district has various types of logistics and equipment. It should be check and certified by concern officer periodically. Disaster Management cell is regularly monitoring this activity and got certification of this equipment. (Detail information of Equipment is given in Annexure)

Operational check-up of Warning System

Warning system are checking periodically like, Satellite phone, Hot Line, Telephone connection, GSWAN connectivity etc, In Pre- monsoon meeting also give direction for checking warning system like, port signals.

Operational check-up for Emergency Operation Centre

Operational checkup of Emergency Operation Centre are carry out month wise and check out all facility and equipment in DEOC.

Seasonal inspection for facilities and critical infrastructure

Before Cyclone and Monsoon, the equipments are checking, especially pre-monsoon all the equipments, other facilities and critical infrastructure check by respective authority if it found that equipments are not in working condition, regularly follow up taken by DEOC.

Command and Coordination – Identification of quick response teams

In case of any kind of disaster district collector is responsible for command all the line departments and DEOC is responsible for coordination with affected area and other stakeholders under the guidens of district collector.

During any disasters quick response is essential and Police, HG, GRD, NCC, NSS, Fire services and other volunteers are responsible to identification of quick response teams.

NGOs and other stakeholders coordination

NGO and Voluntary group are doing very important activity and response during disaster. DDMA also organized capacity-building programmes, awareness programmes on Disaster Management for NGO and Voluntary group.

For arrangement of water supply, temporary sanitation facilities, search and Rescue activity, Relief distribution can be sought with help of special agencies, NGOs and CBOs. (Information of NGO and Voluntary group refer in Annexure)

Awareness Generation

As a part of Preparedness Awareness, generation among community will be continuous process. From District to Taluka, Village level awareness programme must be conduct with the help of Print Media, Electronic media, folk media authority can create awareness among community.

Seasonal preparedness for Seasonal Disaster

Like Flood and Cyclone-

Whether personal or institutional, all collections are subject to risks that can seriously affect the lifetime and value of a collection. For many museums, galleries, and private collections, an essential aspect in Collection Management is maintaining a loss prevention plan for seasonal disasters.

Hazards from these storms come in many forms including high winds, tornadoes, and storm surges and flooding. Natural disasters make all of us acutely aware of our vulnerabilities to disaster. Fortunately, catastrophes of a large magnitude are rare, but disaster can strike in many ways. Large or small, natural or man-made, emergencies put collections in danger. Hazards can often be mitigated or avoided altogether by a comprehensive, emergency-

preparedness plan. Such plans provide a means for recognizing and responding effectively to emergencies. The goal is to hopefully prevent damage or, at least, to limit the extent of the damage.

Identifying Risks

A first step is to list geographic and climatic hazards and other risks that could jeopardize the building and collections. These might include geographical susceptibility to hurricanes, tornadoes, flash flooding, earthquakes, or forest fires, and even the possibility of unusual hazards such as volcanic eruptions. Consider man-made disasters such as power outages, sprinkler discharges, fuel or water supply failures, chemical spills, arson, bomb threats, or other such problems. Take note of the environmental risks that surround you. Chemical industries, shipping routes for hazardous materials, and adjacent construction projects all expose you to damage. Any event that is a real possibility should be covered under your Emergency Preparedness Plan. It is also important to determine the vulnerability of the objects within the collections. What types of materials are included? Are they easily damaged? Are they particularly susceptible to certain types of damage such as moisture, fire, breakage, and the like? How and where are collections stored? Are they protected by boxes or other enclosures? Is shelving anchored to structural elements of the building? Is it stable? Are any artifacts stored directly on the floor where they could be damaged by leaks or flooding? All items should be raised at least four inches from the floor on waterproof shelves or pallets. Are materials stored under or near water sources? Analyze your security and housekeeping procedures. Do they expose collections to the dangers of theft, vandalism, or insect infestation? Consider vulnerabilities. Are your collections insured? Is there a complete and accurate inventory? Is a duplicate of the inventory located at another site? Although there may be a wide range of disaster scenarios, the most common are water, fire, physical or chemical damage, or some combination of these. The specific procedures of a disaster plan focus on the prevention and mitigation of these types of damage.

Decreasing Risks

Once your hazards are specified, the disaster planner should devise a program with concrete goals, identifiable resources, and a schedule of activities for eliminating as many risks as possible. While water damage is the most common form of disaster for collections, everyone needs a good fire-protection system. Wherever possible, collections should also be protected by a fire suppression system. Preservation professionals now recommend wet-pipe sprinklers for most collections. In addition, water misting suppression systems have become available within the last several years; these can provide fire suppression using much less water than conventional sprinkler systems.

Before choosing a fire-protection system, be sure to contact preservation professional or a fire-protection consultant for information about the latest developments in fire protection and for advice appropriate to your collections and situation. An inventory will provide a basic list of holdings, and will be essential for insurance purposes. Improved collection storage, such as boxing and raising materials above the floor level, will reduce or eliminate damage when emergencies occur. Comprehensive security and housekeeping procedures will ward off emergencies such as theft, vandalism, and insect infestation. They will also ensure that fire exits are kept clear and fire hazards eliminated.

Identifying Resources

An important step in writing your plan is to identify sources of assistance in a disaster. Research these services thoroughly--it is an essential part of the planning process. These can range from police, fire, and ambulance services to maintenance workers, insurance adjusters, and utility companies. If possible, invite local service providers to visit in order to become familiar with your site plan and collections in advance of an emergency. For example, you may want to provide the fire department with a list of high-priority areas to be protected from water if fire-fighting efforts permit.

Other valuable sources of assistance are local, state, or federal government Agencies.

Community awareness, education and preparedness

DRM Programme: -

GSDMA DRM activities:

Disaster Risk Management Programme (DRM) has taken strong roots at various levels of administration in Gujarat. The Department of Revenue & Disaster Management is the nodal Department in Government of Gujarat that handles the subject with GSDMA. Disaster Management Committees are formed at various levels and are assigned the task of implementing the programme. Representation for these committees are drawn from elected representatives, officials of line departments, professional bodies, Civil Defense, NGO and CBO representatives and local opinion leaders. Major Activities are being carried out under DRM program are Plan Development at Various Levels, Emergency Resources Database maintain through SDRN / IDRN, Capacity Building through Trainings & Resource Mobilization, Disaster Awareness through Orientations, Campaigning, Media Management and IEC distribution. Coordinate District Administration for all Disaster Management Activities with expertise knowledge, logistics and fund allocation.

The Disaster Risk Management Program (DRM) being implemented by Gujarat State Disaster Management Authority (GSDMA) aims to strengthen the response, preparedness and mitigation measures of the community, local self-governments, the District administration and the State in Gujarat. Under the DRM Programme

District Level Process

1. Orientation of District level officers and PRI members including line department officials
2. Formation of District Disaster Management Committee
3. Development of manuals and guidelines Capacity building of DDMC members, government officials, training institutes, other concerned organizations at district level.
4. Development of the District Disaster Management Plan
5. Use of IEC materials for awareness generation for preparedness, risk reduction and mitigation
6. Data updation on IDRN

Taluka level process

1. Orientation cum sensitize Taluka level officers and PRI members.
2. Formation of Taluka Disaster Management Committee
3. Capacity building of government officials
4. Development of the TDMP
5. Use of IEC material and media sources for create awareness at taluka level
6. TDMP update on SDRN

City-ULB level process

1. Orientation of City level officers, elected members & leaders.
2. Formation of CDMP
3. Capacity building of municipal official and concerned organizations at city level
4. Development of the CDMP.
5. Use of IEC material for create awareness at city level
6. CDMP updation on SDRN

Village Level Process

1. Formation Cluster within 10 to 12 village and conduct cluster meetings over 10-12 villages
2. Organize Gramsabha in each village
3. Undertake PRA exercise at village level for hazard, vulnerability assessment and resource analysis
4. Facilitate the formation of the Village Disaster Management Committee (VDMC)
5. Conduct training programs for DMT and DMC Members and volunteers
6. Awareness campaigns on risk reduction mechanisms, Risk Transfer-insurance, disaster resistant construction
7. Developed Village Disaster Management Plan (VDMP)
8. Conduct mock drills for test the VDMP
9. Update VDMP twice in a year (by VDMC)

Bhavnagar district had taken the preparedness measures from village level to District level. At the villages village Task forces was formed and trained about First aid and Health, Search and Rescue and Disaster Management. Some volunteers were also trained in Disaster Management and plans like VDMP were prepared and updated. Officers reviewed the disaster preparedness of the villages and interacted with the Village level Disaster Management team members, in the pre-monsoon meeting all departments, and stakeholders were asked to get prepared departmental plan. SOP's were also discussed with them so that quick response can be assured and any kind of risk due to water lodging, flood, heavy rainfall and dam overflow can be reduced.

Prevention and Mitigation and preparedness actions are to be taken before a disaster to reduce the likelihood of a disaster (risk reduction) or the level of damage (vulnerability reduction) expected from a possible disaster. Vulnerability reduction is given priority over a risk reduction.

Base on the interim assessment of risk and vulnerabilities, certain majors for mitigation, preparedness and prevention has been taken with respect to the District. These are...

The proposed state-level disaster-planning format sets out priorities for mitigation, prevention and preparedness activities. The underlying concept is to incorporate these three types of activities into normal (developmental) policies, procedures and undertakings and targeting specific areas for concerted effort.

Complementary priorities, plans and activities need to be established at the district level. This process is complicated by five realities:

1. Developmental policies and budgets are set at the state-level and project implementation is not always under the control of district authorities
2. District authorities have limited policy and funding independence.
3. The range of possible mitigation, prevention and preparedness actions within a district is significant but can be difficult to prioritize.
4. Many activities require popular participation and should be focus on the family or community, which requires time and effort to effectively organize.
5. The local commercial sector is cost-conscious and tends to avoid investments in activities which do not immediately improve profits.

A set of possible district-level approaches to mitigation, prevention and preparedness are summarized below based on these realities. These approaches need to be reviewed at the district and state level and to the degree possible, harmonized vertically within the government structure and across public and private sector organizations and districts. At the same time, the focus of efforts can vary between and even within districts depending on their particular hazards, risks and vulnerabilities.

One approach to developing this harmonization is to hold a state-district conference on mitigation, preparedness and prevention, complemented by annual review workshop. The initial conference would define and harmonize policies, procedures and approaches vertically and horizontally. The workshop would serve to recognize progress and adjust plans to take into account changing local and state-level conditions.

Community Warning System

Community Warning system-Early Warning System (EWS)

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	Chemical and industrial accidents	Tsunami
Existing EWS	Irrigation department / dam authority/ IMD ↓ Collector ↓ Mamlatdar /TDO ↓ Villages	IMD ↓ Collector ↓ Mamlatdar/TDO ↓ Villages	Industrial Association/industries ↓ DCG ↓ LCG ↓ Mamlatdar ↓ Villages	IMD ↓ Collector ↓ Mamlatdar /TDO ↓ Villages
Responsible Agency for warning dissemination	DDMC Mamlatdar office/TDO VDMC	DDMC Mamlatdar office/TDO VDMC	DDMC Mamlatdar office/TDO VDMC	DDMC Mamlatdar office/TDO VDMC
Trained personnel and operators available				
Villages covered	All risk prone villages			
Villages/habitat ion not covered or difficult to access	Communities in remote locations (fisher folk, salt pan workers, etc) VDMC			
Measures required to improve timeliness and outreach (For example, voice enabled SMS)	Contact of communities in remote locations (fisher folk, saltpan workers etc)			

During and Post Disaster Advisory Action Plan

Type of Hazard	Flood	Cyclone	Earthquake	Drought	Chemical and industrial accidents	Tsunami
Responsible Agency	DDMC, Mamlatdar office & TDO					
Villages covered	All risk prone villages					
Villages/habitation not covered or difficult to access	communities in remote locations (fisher folk, salt pan workers etc)					
Measures required for outreach	Contact of communities in remote locations (fisher folk, salt pan workers etc)					

Procurement various Resource

Provide logistical support to government and agencies for procurement of relief goods, transportation, Tents, blankets, tarpaulins, equipment etc, and monitoring illegal price escalations, stocking etc. during crisis. DDMA and other local authority should do procurement of such resource and If they have such resource so keep them in ready to use in disaster situation.

SDRN/IDRN data updation

State disaster Resource network and India Disaster Resource Network is a crucial databases for response any disaster. SDRN, a decision support tool, is layered using the existing IT Wide Area Network (WAN) of the State - GSWAN. SDRN uses the map-based Geospatial Information Systems developed by the Gujarat based organization Bhaskaracharya Institute for Space Applications and Geo-Informatics (BISAG). Currently, the SDRN network is being integrated with the GIS based Decision Support System using Java, MS-Access, Visual Studio 2005 with Database SQL Server 2005. The GIS Visualize does not require any GIS software. The GIS visualize contains multi layered options depicting roads-highways, taluka, district boundaries, rivers, ports, airways, etc. SDRN and IDRN updation are regularly base work and it is updation.

IDRN, 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. This database will also enable them to assess the level of preparedness for specific vulnerabilities. Total 226 technical items listed in

the resource inventory. 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.

Protocol and arrangement for VIP Visit

It is important that immediately inform VIPs and VVIPs on impending disasters and current situation during and after disasters. Appeals by VIPs can help in controlling rumors 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.

Media Management/information dissemination

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. Media 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 are regularly briefed at predetermined time intervals about the events as they occur and the prevailing situation on ground.

Documentation

Documentation is very important activity in disaster management. DDMA also appoints duty for Documentation to the information department. Documentation should be in good manner. It can be in summary and detail form. It is reliable and authentic.

Chapter 6

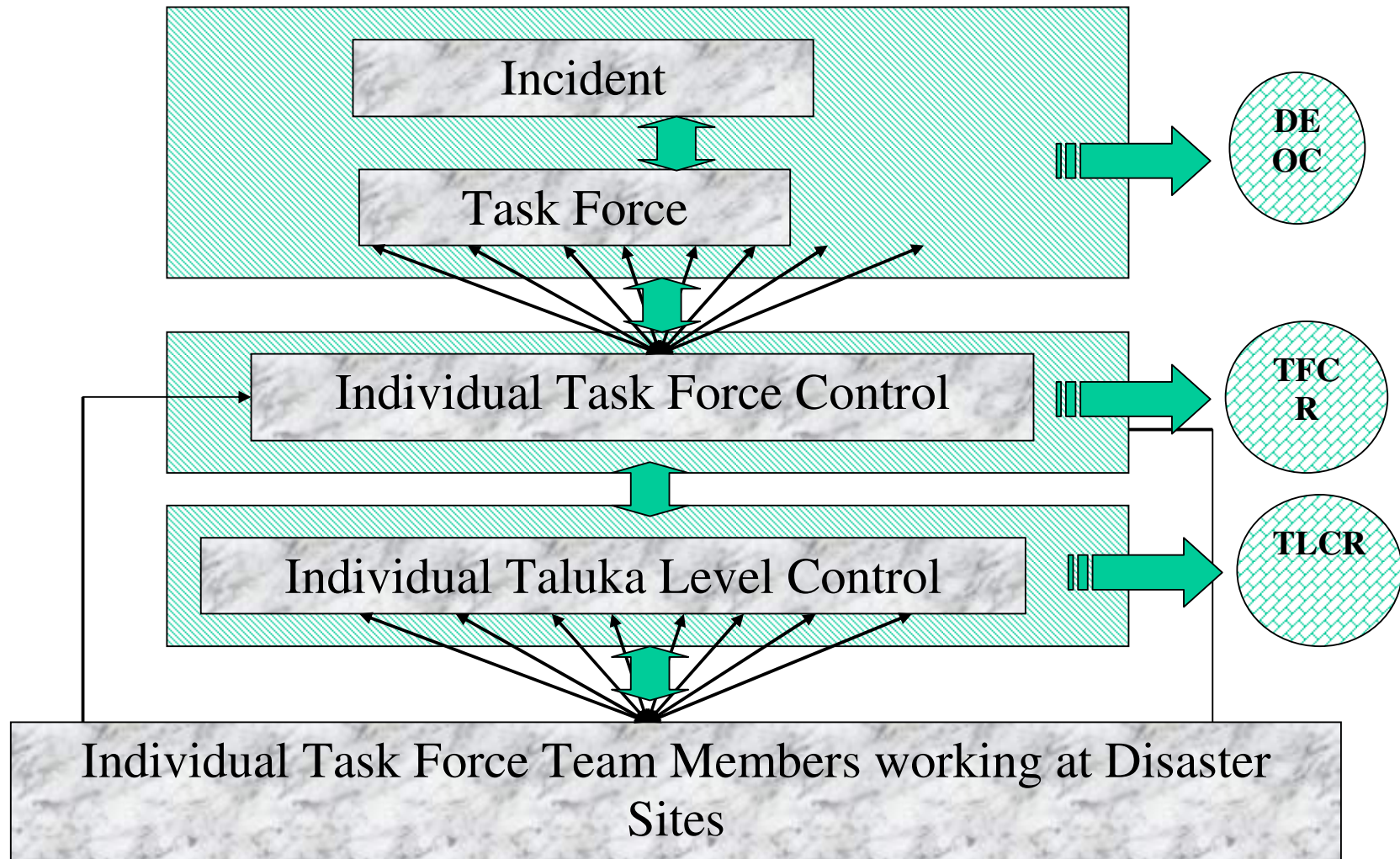
Response Measures (Multi-Hazard):

Response measures are those which are taken instantly prior to, and following, a disaster aimed at limiting injuries, loss of life and damage to property and the environment and rescuing those who are affected or likely to be affected by disaster. Response process begins as soon as it becomes apparent that a disastrous event is imminent and lasts until the disaster is declared to be over. Since response is conducted during periods of high stress in a highly time-constrained environment and with limited information and recourses (in majority of the cases), it is by far, the most complex of four functions of disaster management. Response includes not only those activities that directly address the immediate needs, such as search and rescue, first aid and shelters, but also includes systems developed to coordinate and support such efforts. For effective response, all the stakeholders need to have a clear perception/vision about hazards, its consequences and actions that need to be taken in the event of it.

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

The District EOC, ERCs and other control rooms at the District level should be activate with full strength and begun active for search and rescue according disaster.

Response Flow chart



Warning and alert/Warning dissemination

On the receipt of warning or alert from any such agency, which is competent to issue such a warning, or on the basis of reports from District Collector of the occurrence of a disaster, the response structure of the State Government will be put into operation. The Chief Secretary/Relief Commissioner will assume the role of the Chief of Operations during the emergency. The details of agencies competent enough for issuing warning or alert pertaining to various types of disasters are given below;

Sr. No.	Disaster	Agencies
1	Earthquakes	IMD/ISR
2	Floods	Meteorological Department, Irrigation
3	Tsunamis	IMD/ISR/INCOIS
4	Cyclones	IMD
5	Epidemics	Public Health Department
6	Road Accidents	Police
7	Industrial and Chemical Accidents	DISH, Police, Collector
8	Drought	Agriculture, Scarcity department
9	Fire	Fire Brigade, Police, Collector
10	Rail Accident	Railways, Police, Collector
11	Air Accident	Police, Collector, Airlines
12	Ammunition Depot-Fire	Army, Police, Collector.

1. Cyclone/flood forecasting is generally the responsibility of the Indian Meteorological Department (IMD). IMD is the nodal agency for providing cyclone-warning services. IMD's INSAT satellite based Cyclone Warning Dissemination System (CWDS) is one of the best currently in use in India to communicate cyclone warnings from IMD to community and important officials in areas likely to be affected directly and quickly. There are 19 CWDS stations in Gujarat.

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

3. On receiving an initial warning, the office of the COR disseminates the warning to all Line Departments, the District administration and DG Police. Warning messages are transmitted through wireless to all districts and Talukas. District Collectors are provided with satellite phones and a Ham radio to maintain effective communication, even if terrestrial and cell-phone communication fails.

4. The state EOC and control rooms of the other line departments at the State level as well as district level also get the warnings. The control rooms are activated on receiving the warnings.

District CMG meeting

At the District level, the District Crisis Management Group (DCG) is an apex body to deal with major chemical accidents, disaster and to provide expert guidance for handling them. DCG has a strength of 34 members which includes District Collector, SDM and Dy. Collector, DDO, Dy. Director – Industrial Safety & Health, DSP, PI, Fire Superintendent of the City Corporations or important Municipalities, Chief District Health Officer, Civil Surgeon, SE, Chief Officer, Dy. Chief Controller of Explosives, Commandant – SRPF, Group-I, Dy. Director – Information to name a few. At Taluka level Local Crisis Management Group (LCG) is formed for coordination of activities and executing the operations. DCGs as well as LCG. Meeting will meet periodically twice in a year.

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 1 Disaster the Local Control room will be activate, in case of a Level 2 disaster DEOC will be activated along inform with the SEOC.

Response planning, preparedness and assumption Quil assessment of damages and need

Agriculture

Prevention Activities:

- Awareness generation regarding various plant diseases, alternate cropping practices in disaster-prone areas, Crop Insurance, provision of credit facilities, proper storage of seeds, etc.
- Hazard area mapping (identification of areas endemic to pest infections, drought, flood, and other hazards)
- Develop database village-wise, crop-wise, irrigation source wise, insurance details, credit etc.
- Regular monitoring at block level; the distribution and variation in rainfall
- Prepare the farmers and department officers to adopt contingency measures and take up appropriate course of action corresponding to the different emerging conditions.
- Detail response manuals to be drawn up for advising the farmers for different types of disasters, e.g., rain failure in July or September & development of a dynamic response plan taking into account weekly rainfall patterns.
- Develop IEC materials to advise the farming communities on cropping practices and precautionary measures to be undertaken during various disasters
- Improving irrigation facilities, watershed management, soil conservation and other soil, water and fertility management
- Measures keeping in mind the local agro climatic conditions and the proneness of the area to specific hazards.
- Promotion of alternative crop species and cropping patterns keeping in mind the vulnerability of areas to specific hazards
- Surveillance for pests and crop diseases and encourage early reporting.
- Encourage promotion of agro service outlets/enterprise for common facilities, seed and agro input store and crop insurance.

Preparedness Activities before disaster seasons

- Review and update precautionary measures and procedures, especially ascertain that adequate stock of seeds and other agro inputs are available in areas prone to natural calamities.
- Review the proper functioning of rain gauge stations, have stock for immediate replacement of broken / non-functioning

gadgets/equipments, record on a daily basis rainfall data, evaluate the variation from the average rainfall and match it with the rainfall needs of existing crops to ensure early prediction of droughts.

Response Activities:

Management of control activities following crop damage, pest infestation and crop disease to minimize losses

1. Collection, laboratory testing and analysis of viruses to ensure their control and eradication
2. Pre-positioning of seeds and other agro inputs in strategic points so that stocks are readily available to replace damage caused by natural calamities.
3. Rapid assessment of damage to soil, crop, plantation, irrigation systems, drainage, embankment, other water bodies and storage facilities and the requirements to salvage, replant, or to compensate and report the same for ensuring early supply of seeds and other agro inputs necessary for re-initiating agricultural activities where crops have been damaged.
4. Establishment of public information centers with appropriate and modern means of communication, to assist farmers in providing information regarding insurance, compensation, repair of agro equipments and restarting of agricultural activities at the earliest.

Recovery Activities

1. Arrange for early payment of compensation and crop insurance dues.
2. Facilitate provision of seeds and other agro inputs.
3. Promotion of drought and flood tolerant seed varieties
4. Review with the community, the identified vulnerabilities and risks for crops, specific species, areas, which are vulnerable to repetitive floods, droughts, other natural hazards, water logging, increase in salinity, pest attacks etc. and draw up alternative cropping plans to minimize impacts to various risks.
5. Facilitate sanctioning of soft loans for farm implements.
6. Establishment of a larger network of soil and water testing laboratories
7. Establishment of pests and disease monitoring system
8. Training in alternative cropping techniques, mixed cropping and other agricultural practices which will minimize crop losses during future disasters

Health Department

Disaster Events

Prevention Activities:

- Assess preparedness levels at State, District and Block levels.
- Identification of areas endemic to epidemics and natural disasters
- Identification of appropriate locations for testing laboratories
- Listing and networking with private health facilities
- Developing a network of volunteers for blood donation with blood grouping data
- Strengthening of disease surveillance, ensuring regular reporting from the field level workers (ANMs / LHV etc) and its compilation and analysis at the PHC and District levels, on a weekly basis (daily basis in case of an epidemic or during natural disasters), forwarding the same to the State Disease Surveillance Cell and monthly feedback from the State to the district and from the District to the PHC
- Formation of adequate number of mobile units with trained personnel, testing facilities, communication systems and emergency treatment facilities
- Identification of locations in probable disaster sites for emergency operation camps
- Awareness generation about various infectious diseases and their prevention
- Training and IEC activities
- Training of field personnel, Traditional Birth Attendants, community leaders, volunteers,
- NGOs and CBOs in first aid, measures to be taken to control outbreak of epidemics during and after a disaster, etc
- Arrangement of standby generators for every hospital
- Listing of vehicles, repair of departmental vehicles that will be requisitioned during emergencies for transport of injured

Preparedness Activities before Disaster Seasons

For heat wave:

Preparation and distribution of IEC materials, distribution of ORS and other life-saving drugs, training of field personnel on measures to be taken for management of patients suspected to be suffering from heatstroke;

For flood and cyclone:

- Assessment and stock piling of essential medicines, anti snake venom, halogen tablets, bleaching powders. ORS tablets, Pre-positioning of mobile units at vulnerable and strategic points

Response activities:

Stock piling of life-saving drugs, detoxicants, anesthesia, Halogen tablets in vulnerable areas

Strengthening of drug supply system with powers for local purchase during Level-0

Situational assessment and reviewing the response mechanisms in known vulnerable pockets

Ensure adequate availability of personnel in disaster site

Review and update precautionary measures and procedures.

Sanitation

- Dispensing with post-mortem activities during L1, L2 and L3 when the relatives and/or the competent authority are satisfied about cause of death
- Disinfections of water bodies and drinking water sources
- Immunization against infectious diseases
- Ensure continuous flow of information.

Recovery Activities

- Continuation of disease surveillance and monitoring
- Continuation of treatment, monitoring and other epidemic control activities till the situation is brought under control and the epidemic eradicated
- Trauma counseling
- Treatment and socio-medical rehabilitation of injured or disabled persons
- Immunization and nutritional surveillance
- Long term plans to progressively reduce various factors that contribute to high level of vulnerability to diseases of population affected by disasters

Epidemics

Preventive Activities:

- Supply of safe drinking water, water quality monitoring and improved sanitation
- Vector Control programme as a part of overall community sanitation activities
- Promotion of personal and community latrines
- Sanitation of sewage and drainage systems
- Development of proper solid waste management systems
- Surveillance and spraying of water bodies for control of malaria
- Promoting and strengthening Primary Health Centers with network of paraprofessionals to improve the capacity of surveillance and control of epidemics
- Establishing testing laboratories at appropriate locations to reduce the time taken for early diagnosis and subsequent warning
- Establishing procedures and methods of coordination with the Health Department, other local authorities/departments and NGOs to ensure that adequate prevention and preparedness
- measures have been taken to prevent and / or minimize the probable outbreak of epidemics
- Identification of areas prone to certain epidemics and assessment of requirements to control and ultimately eradicate the epidemic
- Identification of appropriate locations and setting up of site operation camps for combating epidemics
- Listing and identification of vehicles to be requisitioned for transport of injured animals.
- Vaccination of the animals and identification of campsites in the probable areas
- Promotion of animal insurance
- Tagging of animals
- Arrangement of standby generators for veterinary hospitals
- Provision in each hospital for receiving large number of livestock at a time
- Training of community members in carcasses disposal

Preparedness activities before disaster seasons

- Stock piling of water, fodder and animal feed
- Pre-arrangements for tie-up with fodder supply units
- Stock-piling of surgical packets
- Construction of mounds for safe shelter of animals
- Identification of various water sources to be used by animals in case of prolonged hot and dry spells
- Training of volunteers & creation of local units for carcass disposal
- Municipalities / Gram Pranchayats to be given responsibility for removing animals likely to become health hazards.

Response Activities:

- Control of animal diseases, treatment of injured animals, Protection of lost cattle.
- Supply of medicines and fodder to affected areas.
- Ensure adequate availability of personnel and mobile team.
- Disposal of carcasses ensuring proper sanitation to avoid outbreak of epidemics.
- Establishment of public information centre with a means of communication, to assist in providing an organized source of information.
- Mobilizing community participation for carcass disposal.

Recovery Activities:

- Assess losses of animals assets and needs of persons and communities.
- Play a facilitating role for early approval of soft loans for buying animals and ensuring insurance coverage and disaster proof housing or alternative shelters/ mounds for animals for future emergencies.
- Establishment of animal disease surveillance system

Water Supplies and Sanitation (GWSSB)

Prevention Activities:

- Provision of safe water to all habitats
- Clearance of drains and sewerage systems, particularly in the urban areas
- Assess preparedness level

- Annual assessment of danger levels & wide publicity of those levels
- Identify flood prone rivers and areas and activate flood monitoring mechanisms
- Provide water level gauge at critical points along the rivers, dams and tanks
- Identify and maintain of materials/tool kits required for emergency response
- Stock-pile of sand bags and other necessary items for breach closure at the Panchayat level

Preparedness Activities for disaster seasons

- Prior arrangement of water tankers and other means of distribution and storage of water.
- Prior arrangement of stand-by generators
- Adequate prior arrangements to provide water and halogen tablets at identified sites to used as relief camps or in areas with high probability to be affected by natural calamities.
- Rising of tube-well platforms, improvement in sanitation structures and other infrastructural measures to ensure least damages during future disasters
- Riser pipes to be given to villagers

Response Activities:

- Disinfections and continuous monitoring of water bodies.
- Ensuring provision of water to hospitals and other vital installations.
- Provision to acquire tankers and establish other temporary means of distributing water on an emergency basis.
- Arrangement and distribution of emergency tool kits for equipments required for dismantling and assembling tube wells, etc.
- Carrying out emergency repairs of damaged water supply systems.
- Disinfection of hand pumps to be done by the communities through prior awareness activities & supply of inputs.
- Monitoring flood situation.
- Dissemination of flood warning.
- Ensure accurate dissemination of warning messages to GPs & Taluka with details of flow.
- Monitoring and protection of irrigation infrastructures.

- Inspection of bunds of dams, irrigation channels, bridges, culverts, control gates and overflow channels.
- Inspection and repair of pumps, generator, motor equipments, station buildings.
- Community mobilization in breach closure

Recovery Activities:

- Strengthening of infrastructure.
- Sharing of experiences and lessons learnt.
- Training to staff, Review and documentation.
- Development of checklists and contingency plans.
- Strengthening of infrastructure and human resources.
- Review and documentation.
- Sharing of experiences and lessons learnt.
- Training of staff.
- Development of checklists and contingency plans.

Police:

Prevention Activities:

- Keep the force in general and the RAF in particular fighting fit for search, rescue, evacuation and other emergency operations at all times through regular drills.
- Procurement and deployment of modern emergency equipments while modernizing existing infrastructure and equipments for disaster response along with regular training and drills for effective handling of these equipments.
- Focus on better training and equipments for RAF for all types of disasters.
- Rotation of members of GSDRAF so that the force remains fighting fit.
- Ensure that all communication equipments including wireless are regularly functioning and deployment of extra wireless units in vulnerable pockets.
- Ensure inter changeability of VHF communication sets of police and GSDMA supplied units, if required.
- Keeping close contact with the District Administration & Emergency Officer.

- Superintendent of Police be made Vice Chairperson of District Natural Calamity Committee.
- Involvement of the local army units in response planning activities and during the preparation of the contingency plans, ensure logistics & other support to armed forces during emergencies.

Response Plan:

- Security arrangements for relief materials in transit and in camps etc.
- Senior police officers to be deployed in control rooms at State & district levels during L 1
- Level deployment onwards.
- Deploy personnel to guard vulnerable embankments and at other risk points.
- Arrangement for the safety.
- Coordinate search, rescue and evacuation operations in coordination with the administration
- Emergency traffic management
- Maintenance of law and order in the affected areas
- Assist administration in taking necessary action against hoarders, black marketers etc.

Civil Defense

Prevention Activities

- Organize training programmers on first-aid, search, rescue and evacuation.
- Preparation and implementation of first aid search and rescue service plans for major public events in the State.
- Remain fit and prepared through regular drills and exercises at all times.

Response Activities

- Act as Support agency for provision of first aid, search and rescue services to other emergency service agencies and the public.
- Act as support agency for movement of relief.
- Triage of casualties and provision of first aid and treatment.
- Work in co-ordination with medical assistance team.
- Help the Police for traffic management and law and order.

Fire Services:

Prevention Activities:

- Develop relevant legislations and regulations to enhance adoption of fire safety measures.
- Modernization of fire-fighting equipments and strengthening infrastructure.
- Identification of pockets, industry , etc. which highly susceptible to fire accidents or areas, events which might lead to fires, building collapse, etc. and educate people to adopt safety measures. Conduct training and drills to ensure higher level of prevention and preparedness.
- Building awareness in use of various fire protection and preventive systems.
- Training the communities to handle fire emergencies more effectively.
- VHF network for fire services linked with revenue & police networks.
- Training of masons & engineers in fireproof techniques.
- Making clearance of building plans by fire services mandatory.

Response Activities:

- Rescue of persons trapped in burning, collapsed or damaged buildings, damaged vehicles, including motor vehicles, trains and aircrafts, industries, boilers, trenches & tunnels.
- Control of fires and minimizing damages due to explosions.
- Control of dangerous or hazardous situations such as oil, gas and hazardous materials spill.
- Protection of property and the environment from fire damage.
- Support to other agencies in the response to emergencies.
- Investigation into the causes of fire and assist in damage assessment.

Civil Supplies:

Preventive Activities

- Construction and maintenance of storage goods storage at strategic locations
- Stock piling of food and essential commodities in anticipation of disaster.
- Take appropriate preservative methods to ensure that food and other relief stock are not damaged during storage, especially precautions against moisture, rodents and fungus infestation.

Response Activities

- Management of procurement
- Management of material movement
- Inventory management

Recovery Activities

Conversion of stored, unutilized relief stocks automatically into other schemes like Food for Work. Wherever, it is not done leading to damage of stock, it should be viewed seriously.

Public Works/ Rural Development Departments

Prevention Activities:

- Keep a list of earth moving and clearing vehicles / equipments (available with Govt. Departments, PSUs, and private contractors, etc.) and formulate a plan to mobilize those at the earliest
- Inspection and emergency repair of roads/ bridges, public utilities and buildings

Response Activities

- Clearing of roads and establish connectivity. Restore roads, bridges and where necessary make alternate arrangements to open the roads to traffic at the earliest
- Mobilization of community assistance for clearing blocked roads
- Facilitate movement of heavy vehicles carrying equipments and materials
- Identification and notification of alternative routes to strategic locations
- Filling of ditches, disposal of debris, and cutting of uprooted trees along the road
- Arrangement of emergency tool kit for every section at the divisional levels for activities like clearance (power saws), debris clearance (fork lifter) and other tools for repair and maintenance of all disaster response equipments.

Recovery Activities:

- Strengthening and restoration of infrastructure with an objective to eliminate the factor(s) which caused the damage.
- Sharing of experiences and lessons learnt.
- Training to staff, Review and documentation.
- Development of checklists and contingency plans.

Energy: PGVCL

Prevention Activities:

- Identification of materials/tool kits required for emergency response.
- Ensure and educate the minimum safety standards to be adopted for electrical installation and equipments and organise training of electricians accordingly.
- Develop and administer regulations to ensure safety of electrical accessories and electrical installations.
- Train and have a contingency plan to ensure early electricity supply to essential services during emergencies and restoration of electric supply at an early date.
- Develop and administer code of practice for power line clearance to avoid electrocution due to broken / fallen wires.
- Strengthen high-tension cable towers to withstand high wind speed, flooding and earthquake, modernize electric installation, and strengthen electric distribution system to ensure minimum damages during natural calamities.
- Conduct public/industry awareness campaigns to prevent electric accidents during normal times and during and after a natural disaster.

Response Activities:

- Disconnect electricity after receipt of warning.
- Attend sites of electrical accidents and assist in undertaking damage assessment.
- Stand-by arrangements to ensure temporary electricity supply.
- Prior planning & necessary arrangements for tapping private power plants like those belonging to ICCL, NALCO, RSP during emergencies to ensure uninterrupted power supply to the Secretariat, SRC, GSDMA, Police Headquarters, All India Radio, Doordarshan, hospitals, medical

colleges, Collector Control Rooms and other vital emergency response agencies.

- Inspection and repair of high tension lines /substations/transformers/poles etc.
- Ensure the public and other agencies are safeguarded from any hazards, which may have occurred because of damage to electricity distribution systems.
- Restore electricity to the affected area as quickly as possible.
- Replace / restore of damaged poles/ salvaging of conductors and insulators.

Fisheries

Prevention Activities

- Registration of boats and fishermen.
- Building community awareness on weather phenomena and warning system especially on Do's and Don'ts on receipt of weather related warnings.
- Assist in providing life saving items like life jackets, hand radios, etc.
- Certifying the usability of all boats and notifying their carrying capacities.
- Capacity building of traditional fishermen and improvisation of traditional boats which can be used during emergencies.
- Train up young fishermen in search & rescue operation and hire their services during emergency

Response Activities

- Ensure warning dissemination to fishing communities living in vulnerable pockets.
- Responsible for mobilizing boats during emergencies and for payment of wages to boatmen hired during emergencies.
- Support in mobilization and additional deployment of boats during emergencies.
- Assess the losses of fisheries and aquaculture assets and the needs of persons and communities affected by emergency.

Recovery Activities

Provide compensations and advice to affected individuals, community.

Forest Department

Prevention activities

- Promotion of shelter belt plantation
- Publishing for public knowledge details of forest cover, use of land under the forest department, the rate of depletion and its causes
- Keep saws (both power and manual) in working conditions
- Provision of seedling to the community and encouraging plantation activities, promoting nurseries for providing seedlings in case of destruction of trees during natural disasters

Transport Department:

Prevention Activities

- Listing of vehicles which can be used for emergency operation.
- Safety accreditation, enforcement and compliance
- Ensuring vehicles follow accepted safety standards.
- Build awareness on road safety and traffic rules through awareness campaign, use of different IEC strategies and training to school children.
- Ensure proper enforcement of safety regulations Response Activities.
- Requisition vehicles, trucks, and other means of transport to help in the emergency operations.
- Participate in post impact assessment of emergency situation
- Support in search, rescue and first aid.
- Cooperate and appropriation of relief materials.

Recovery Activities

- Provision of personal support services e.g. counseling.
- Repair/restoration of infrastructure e.g. roads, bridges, public amenities.
- Supporting the GPs in development of storage and in playing a key role and in the coordination of management and distribution of relief and rehabilitation materials.
- The G.P. members to be trained to act as an effective interface between the community,
- NGOs and other developmental organizations.

- Provide training so that the elected representatives can act as effective supportive agencies for reconstruction and recovery activities.

Panchayati Raj Institutions

Preventive Activities

- Develop prevention/mitigation strategies for risk reduction at community level.
- Training of elected representatives on various aspects of disaster management
- Public awareness on various aspects of disaster management
- Organize mock drills
- Promote and support community-based disaster management plans.
- Support strengthening response mechanisms at the G.P. level (e.g., better communication, local storage, search & rescue equipments, etc.).
- Clean drainage channels, trimming of branches before cyclone season.
- Ensure alternative routes/means of communication for movement of relief materials and personnel to marooned areas or areas likely to be marooned.
- Assist all the government departments to plan and priorities prevention and preparedness activities while ensuring active community participation.

Response Activities

- Train ups the G.P. Members and Support for timely and appropriate delivery of warning to the community.
- Clearance of blocked drains and roads, including tree removal in the villages.
- Construct alternative temporary roads to restore communication to the villages.
- PRIs to be a part of the damage survey and relief distribution teams to ensure popular participation.
- Operation emergency relief centers and emergency shelter.
- Sanitation, drinking water and medical aid arrangements.
- IEC activities for greater awareness regarding the role of trees and forests for protection during emergencies and also to minimize environmental impact which results owing to deforestation like climate change, soil erosion, etc.

- Increasing involvement of the community, NGOs and CBOs in plantation, protection and other forest protection, rejuvenation and restoration activities.
- Plan for reducing the incidence, and minimize the impact of forest fire.

Response Activities:

- Assist in road clearance.
- Provision of tree cutting equipments
- Units for tree cutting and disposal to be put under the control of GSDMA, SRC, Collector during Level 1.
- Provision of building materials such as bamboos etc for construction of shelters

Recovery Activities:

Take up plantation to make good the damage caused to tree cover.

Information & Public Relations Department

Prevention Activities

- Creation of public awareness regarding various types of disasters through media campaigns.
- Dissemination of information to public and others concerned regarding do's and don'ts of various disasters
- Regular Liasoning with the media

Response Activities

- Setting up of a control room to provide authentic information to public regarding impending
- emergencies
- Daily press briefings at fixed times at district level to provide official version
- Media report & feedback to field officials on a daily basis from Level 1 onwards
- Keep the public informed about the latest emergency situation (area affected, lives lost, etc).

- Keep the public informed about various post-disaster assistances and recovery programmers.

Revenue Department

- Co-ordination with Govt. of Gujarat Secretariat and Officers of Govt. of India
- Overall control & supervision
- Damage assessment, finalization of reports and declaration of Level 1/Level 2 disasters
- Mobilization of finance

Home Department

- Requisition, deployment and providing necessary logistic support to the armed forces
- Provide maps for air dropping, etc.

Gujarat Disaster Rapid Action Force

Response

- To be trained and equipped as an elite force within the Police Department and have the capacity to immediately respond to any emergency.
- Unit to be equipped with life saving, search & rescue equipments, medical supplies, security arrangements, communication facilities and emergency rations and be self-sufficient.
- Trained in latest techniques of search, rescue and communication in collaboration with international agencies

Resource Mobilization

Any disaster happens in district so resources are very important for response disaster. Resource mobilization is one of most important crucial activity. As mention above about IDRN and SDRN portal are have information regarding which kind of resource are available and location of its. IDRN and SDRN should use for resource mobilization. DDMC, TDMC, CDMC and VDMC should be update regularly.

Seeking external Help for assistance

In case of very big disaster, it is need to take help from external authority like, other district, state government and central government

Media Management/Coordination/Information dissemination

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.

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

Emergency Response Functions

Responsible for assuring specific operations according to objectives and plans to address the immediate impacts of the incident. Taskforces under the operation section will deal with specific functional tasks, such as search and rescue, the provision of water or shelter. The composition and size of these taskforces depends on the nature of the incident.

The District administration of Bhavnagar has identified 16 expected task forces for key response operation functions that are describe below. Additional taskforces can be added under the operations section as needed by the circumstances of a disaster. Each Taskforce is led by one organization and supporter by other organizations.

Emergency Operation Taskforce Functions

Sr. No.	Emergency Operation Taskforce	Functions
1	Coordination and Planning	Coordinate early warning, Response & Recovery Operations
2	Administration and Protocol	Support Disaster Operations by efficiently completing the paper work and other Administrative tasks needed to ensure effective and timely relief assistance
3	Warning	Collection and dissemination of warnings of potential disasters
4	Law and Order	Assure the execution of all laws and maintenance of order in the area affected by the incident.
5	Search and Rescue (including Evacuation)	Provide human and material resources needed to support local evacuation, search and rescue efforts.
6	Public Works	Provide the personnel and resources needed to support local efforts to reestablish normally operating infrastructure.
7	Water	Assure the provision of sufficient potable water for human and animal consumption (priority), and water for industrial and agricultural uses as appropriate.
8	Food and Relief Supplies	Assure the provision of basic food and other relief needs in the affected communities.
9	Power	Provide the resources to reestablish normal power supplies and systems in affected communities.
10	Public Health and sanitation	Provide personnel and resources to address pressing public health problems and re-establish normal health care systems.
11	Animal Health and Welfare	Provision of health and other care to animals affected by a disaster
12	Shelter	Provide materials and supplies to ensure temporary shelter for disaster-affected populations
13	Logistics	Provide Air, water and Land transport for evacuation and for the storage and delivery of relief supplies in coordination with other task forces and competent authorities.
14	Survey (Damage	Collect and analysis data on the impact of

	Assessment)	disaster, develop estimates of resource needs and relief plans, and compile reports on the disaster as required for District and State authorities and other parties as appropriate.
15	Telecommunications	Coordinate and assure operation of all communication systems (e.g; Radio, TV, Telephones, Wireless) required to support early warning or post disaster operations.
16	Media (Public Information)	Provide liaison with and assistance to print and electronic media on early warning and post-disaster reporting concerning the disaster.

The specific response roles and responsibilities of the taskforces indicated above is that these roles and responsibilities will be execute and coordinated through the ICS/GS 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.

Humanitarian Relief and Assistance

Response defines provision for assistance/ intervention during and after emergency. Response plan includes clear Incident Command System (ICS) operated through emergency operation centers (EOCs) with effective 3 C (Command, Control and Communication) mechanism. ICS covers early warning, search and rescue, humanitarian assistance, Food, medical response, relief, temporary shelter, water and sanitation, law and order, animal care, public grievance, recovery and rehabilitation.

Specific Task Forces should be formed for Food distribution, drinking water management, medicine and health related facility, clothes distribution, other essential needs and shelter related work. It is also essential to repair and restoration of basic animinities and management of VIP visits.

Helpline

Establish Information/ reception centers and setting up telephone helpline numbers for public utility. True information must be release by media to the concerned person and in case of rescue activity public can call on help line number. in that point of view help line must be activate at DEOC.

Reporting

Information Management/Media release

Taskforce Leader: District Information Officer

Note: As per the above format the Media taskforce of the district will prepare its taskforce action plan.

Activation of the Plan

The District Disaster Response structure is activated on warning or occurrence of a disaster. Task Forces are activate on a specific request of the District Collector or according to pre-determined SOPs, as appropriate for the nature of the hazard or disaster. Activation can be:

In anticipation of a District level disaster, or

Occur in response to a specific event or problem in the district.

On activation, coordination of warning and response efforts will operate from the District Control Room and Information Centre (DCIC). The DCIC operations plan and SOPs are providing in Annexure.

To activate a task force, the Collector or designated Incident Commander will issue an activation order. This order will indicate:

The nature of needs to be addressed

The type of assistance to be provided

The time limit within which assistance is needed

The District or other contacts for the provision of the assistance

Other Task Forces with which coordination should take place, and

Financial resources available for task force operations.

Special powers are conferred on Incident Controller during disasters. The Principle organization leading each task force is responsible for alerting the appropriate authority when use of these special powers is required to accomplish warning, relief or recovery objectives give to a task force.

Situation Report

Information department is also responsible for giving current situation report in any kind of disasters.

Demobilization and winding up

The end of emergency shall be declared through an ALL CLEAR siren/message. The Incident Controller in consultation with the ICS GROUP leaders shall declare the same once the situation is totally controlled and normalcy is restore and after any kind of disasters proper documentation of the event, success stories and lessons for future is also essential.

Responsibility matrix for response functions

TASKFORCE ACTION PLANS

Coordination and Planning

Coordinate early warning, response and recovery operations.

Task Force Leader: Collector

Action and (Who Should Take It)	Requirements or Conditions to be met for the action can occur.	Timeframe
Before a Disaster		
Establish a disaster management structure to the village level. (DDMC)	Links to State level and establishment of ICS structure	On-going
Develop disaster plans at all levels down to the village level. (DDMC)		On-going
Hold regular meetings on disaster management including government, NGOs and private sectors. (DDMC)		Quarterly
Continual training, including public awareness. (DDMA and Media Task Force)	Involvement of GSDMA	On-going
Check warning, communications and other systems (DDMC), including the use of drills		On-going
Warning		
Hold Crisis Management Committee (Collector)	Communications between Districts and with State Control Room	On receipt of warning.
Mobilize task forces at all levels (District, Taluka, village depending on disaster) (CMC, Telecommunications, Media Task Forces)	Communications systems and procedures	As decided by CMC.
Disseminate Information (CMC, Media Task Force)		As decided.
Mobilize resources to be positioned near vulnerable points depending on type of disaster.	Telecommunications systems, plans	As decided.

Establish alternate communications system (Telecommunications Task Force)		As decided.
Action and (Who Should Take It)	Requirements or Conditions to be met for the action can occur.	Timeframe
Disaster		
Start Search, Rescue and Evacuation activities. (CMC)	SAR Task Force operational	Immediately
Begin Collecting Information on extent of damage and areas affected. (CMC)	Assessment teams have communications and transport	Started in 4 hours
Start plan development and provide instructions on where Task Forces should go and what they should do. (CMC, Collector)	Information on damage and areas affected	Started in 4 hours
Mobilize outside resources (CMC)	Information on damage and needs	Started in 5 hours
Provide Public Information(CMC, Media Task Force)		should be started in 6 hours)
12 Hours		
Begin regular reporting on actions taken and status by Task Forces. (Task Forces)	Operating communications system	Started at 12 hours
Reassess damage information, resources, needs and problem areas/activities. (CMC)		Started at 12 hours
Begin rotation of staff (CMC)		Start at 12 hours
Establish regular liaison with State Control Room.	Working communications systems	Start at 12 hours
Shift focus of efforts to relief. (CMC)		Open
Restore key infrastructure (CMC through Public Works and other Task Forces)		Before 48 hours
48 hours		
Continue review and reassessment of operations (CMC)	Information on operations	
Conduct broad damage assessment (CMC and Damage Assessment Task Force)		
Establish Temporary Rehabilitation Plan (CMC)		
Begin demobilization based on situation.		

(CMC)		
Focus on creating a sense of normalcy. (CMC)		Before 72 hours
72 hours		
Start Rehabilitation activities. (CMC)	Plan	
Conduct detailed survey of damage and needs. (CMC and Damage Assessment Task Force)		
Begin regular reporting on operations	Information on operations	As early as possible
Restore all public and private sector services (CMC)		As early as possible
Lessons Learned meeting. (CMC and others)		After 2 weeks
Final Report/Case Study (CMC)		After activities completed

Warning

Collection and dissemination of warnings of potential disasters

Task Force Leader: Resident Additional Collector

Action and (Who Should Take It)	Requirements or Conditions to be met for the action can occur.	Timeframe
Before a Disaster		
Verify communication and warning systems are functioning - drills		Every 15 days
Have warning messages prepared in advance.		
Warning		
Receive and dispatch warnings. (Task Force)	Coordinate with Telecommunications Task Force	As received.
Verify warnings received and understood. (Task Force)		Within 1-2 hours of dispatch.
Independently confirm warnings if possible (Task Force)		As time allows.

Law and Order

Assure the execution of all laws and maintenance of order in the area affected by the incident

Task Force Leader: District Superintendent of Police

Action and (Who Should Take It)	Requirements or Conditions to be met for the action can occur.	Timeframe
Before a Disaster		
Evaluate expected disaster needs verses normal resources. (Task Force)		Completed in 8 days.
Estimate personnel and resources needed for disasters. (Task Force)	Based on standard number of security personnel per population depending on severity of disaster	Completed in one week
Planning and coordination with Revenue Dept. (Task Force)		
Conduct drills, including public awareness raising. (Task Force)	Includes participation of Media Task Force	Every 45 days

Action and (Who Should Take It)	Requirements or Conditions to be met for the action can occur.	Timeframe
Warning		
Verify communications system. (Wireless Inspector)		1-2 hours of warning
Alert police and other Task Force members (Superintendent of Police)		1-2 hours of warning
Implement duty distribution SOP for personnel and other resources. (Superintendent of Police)		1-2 hours of warning
Develop preliminary estimate of requirements to support other Task Forces. (Superintendent of Police)		1-2 hours of warning
Disaster		
Get orders on deploying personnel from Control Room. (Superintendent of Police)	Operating communications system	Immediately
Determine status of staff and facilities. (Superintendent of Police)	Operating communications system	1-2 hours of disaster
Deploy additional staff. (Superintendent of Police)	Transport available	2-3 hours of disaster
Monitor resources. (Superintendent of Police)		1 hour of disaster
Establish VVIP unit. (Superintendent of Police)		Immediately
Request additional resources, if needed. (Superintendent of Police)	Operating communications system	4 hours of disaster
12 hours		
Institute regular reporting. (Task Force)	Operating communications systems	At start of period
Begin staff rotation. (Task Force)		At start of period
Address crowd control problems. (Task Force)		As needed
Implement anti-looting/anti-theft SOP. (Task Force)		As needed
Establish rumor control. (Task Force)	Involves Collector, Media Task Force,	As needed

	NGOs, and local eminent persons	
Action and (Who Should Take It)	Requirements or Conditions to be met for the action can occur.	Timeframe
Provide information to public, e.g., road status. (Task Force)	Involves Control Room, Media Task Force, and Deputy Magistrate	As needed.
48 hours		
Implement a Force Management Plan (increase, reduction, redeployment, of forces). (Superintendent of Police)		From start of period
Plan for return to normal ((Superintendent of Police, Task Force, Control Room)		From 72 hours after the disaster
Conduct Lessons Learned Session (Task Force with input from other parties.)		1 week after the disaster
Final Report		2 weeks after the disaster

Search and Rescue (including evacuation)

Provide human and material resources to support local evacuation, search and rescue efforts.

Task Force Leader: Deputy Commander (Civil Defense) / Chief Fire Officer

Action and (Who Should Take It)	Requirements or Conditions to be met for the action can occur.	Timeframe
Before a Disaster		
Risk assessment and vulnerability mapping (Task Force)		Before warning
Develop inventory of personnel and material resources. (Task Force)		Before warning

Training (Task Force)	Input from GSDMA and NDMA	Before warning
Establish public education program. (Task Force)	Media Task Force	Ongoing
Establish adequate communications system. (Task Force)	Additional equipment required.	
Drills. (Task Force).		Before warning
Establish transport arrangements for likely SAR operations. (Task Force)	With Logistics Task Force	Before warning
Develop Rescue SOP. (Task Force)		Before warning
Action and (Who Should Take It)	Requirements or Conditions to be met for the action can occur.	Timeframe
Warning		
Mobilize Task Force and SAR teams. (Task Force)		On warning
Verify equipment is ready. (Task Force)		On team activation
Confirm transport is ready. (Task Force)	Logistics Task Force.	On warning
Undertake precautionary evacuation. (Task Force)	Logistics and Shelter Task Forces	As directed.
Re-deploy teams and resources, if safe. (Task Force)	Logistics Task Force	Based on conditions
Start public awareness patrols. (Task Force)	Media, Law and Order and Logistics Task Forces.	As required
Disaster		
Assure safety of staff.		Immediately
Restore own communications. (Task Force)		Immediately
Dispatch rescue/evacuation teams based on assessments. (Task Force)	Input from Control Room.	Immediately
Call for additional resources if needed. (Task Force)	Communication systems in operation	3-4 hours of disaster

Provide reports on operations. (Task Force)		Starting at 3-4 hours
Begin handling of deceased per SOP. (Task Force)	Various Revenue officers and Police involved.	Starting at 3-4 hours
12 Hours		
Begin staff rotation system. (Task Force)		Start at 12 hours
Begin specialized rescue (may begin earlier). (Task Force)	May require outside resources, coordination with Logistics Task Force	Started at 12 hours
Begin debris removal in cooperation with Public Works Task Force.	Focus on critical infrastructure. Liaison with Control Room	Start at 12 hours
Secure additional resources (e.g., fuel, personnel) for continued operations. (Task Force).		Start at 12 hours.
Action and (Who Should Take It)	Requirements or Conditions to be met for the action can occur.	Timeframe
48 hours		
Demolish/Stabilize damaged buildings in cooperation with Public Works Task Force.	Logistics Task Force, workers, equipment.	Starting at 48 hours.
Demobilization, reconditioning, repair and replace equipment and other resources. (Task Force)		Based on nature of disaster.
Remain on stand-by for additional operations, particularly related to safety of recovery work. (Task Force).		As needed.
72 hours		
Lessons Learned meeting. (Task Force and others)		After 2 weeks.
Final Report. (Task Force)		After major activities completed.

Public Works

Provide the personnel and resources needed to support local efforts to re-establish normally operating infrastructure.

Task Force Leader: Executive Engineer, Roads and Buildings

Action and (Who Should Take It)	Requirements or Conditions to be met for the action can occur.	Timeframe
Before a Disaster		
Inventory of personnel, equipment and status of infrastructure. (Task force)	Link to UNDP project data based development.	One week before warning.
Identify critical infrastructure. (Task Force)	Need to define what critical infrastructure is.	Before warning.
Identify alternate transport routes and publish map. (Task Force)		Before warning.
Plan for prioritized post-disaster inspection of infrastructure. (Task Force)		
Establish and maintain a resources and staffing plan. (Task Force)		
Plan to provide sanitation and other facilities for shelters. (Task Force)		
Action and (Who Should Take It)	Requirements or Conditions to be met for the action can occur.	Timeframe
Warning		
Establish Control Room. (Task Force)		No later than 6 hours from warning
Mobilize Task Force and personnel.	Requires communications	No later than 6 hours from warning
Liaise with District Control Room. (Task Force)		No later than 6 hours from warning
Verify status and availability of equipment and re-deploy if	Coordination with Logistics Task Force	24 hours from warning

appropriate and safe. (Task Force)	and Control Room.	
Review plans. (Task Force)		No later than 6 hours from warning
Disaster		
Begin damage assessment and inspections. (Task Force)	Coordination with Damage Assessment Task Force.	Within 12 hours of disaster
Develop operations plan and communicate to Control Room.		Within 12 hours of disaster
Mobilize and dispatch teams based on priorities. Teams will (1) repair, (2) replace, (3) Build temporary structures (e.g., rest facilities, shelters).	Coordination with Logistics, Water, Power Task Forces and Control Room.	Within 12 hours of disaster
Collaborate with other Task Forces.		Continuous
12 Hours		
Begin staff rotation system and manpower planning. (Task Force)		Start at 12 hours
Mobilize additional resources based on expected duration of operations. (Task Force).	Coordination with Logistics Task Force, Contractors. May need additional funding.	Started at 12 hours
Assure safety. (Task Force)		Start at 12 hours
Establish security arrangements. (Task Force)	Law and Order Task Force.	Start at 12 hours.
Provide public information on roads, access and infrastructure. (Media Task Force)	Coordination with Control Room	Start at 12 hours.
48 hours		
Start detailed survey. (Task Force)	In cooperation with Damage Assessment Task Force	Starting at 48 hours.
Action and (Who Should Take It)	Requirements or Conditions to be met for the action can occur.	Timeframe
Begin reporting on operations (Task Force)		Starting at 3 days

Reconditioning, repair and replace equipment and other resources. (Task Force)		Based on nature of disaster
Plan and start demobilization. (Task Force)		Starting at 3 days
72 hours		
Develop long term restoration plan and start activities. (Task Force)		From 72 hours
Lessons Learned meeting. (Task Force and others)		After 2 weeks
Final Report. (Task Force)		After major activities completed

Water Supply

Assure the provision of sufficient potable water for human and animal consumption (priority), and water for industrial and agricultural uses as appropriate.

Task Force Leader: Executive Engineer, Gujarat Water Supply Board

Action and (Who Should Take It)	Requirements or Conditions to be met for the action can occur.	Timeframe
Before a Disaster		
Establish water availability, capacities, reliabilities and portability. (Task Force)	Standard of 20 liters of drinking water per person per day.	3 months before warning.
Plan for alternate water delivery and storage (Task Force)	May need tankers, tanks, generator set.	3 months before warning.
Secure new and additional equipment. (Task Force)	Requires funding.	
Secure extra stocks of chemicals, expendable supplies and equipment. (Task Force)	May require additional funding.	3 months before warning.
Open Water Control Room in Monsoon. (Task Force)		Done.

Action and (Who Should Take It)	Requirements or Conditions to be met for the action can occur.	Timeframe
Warning		
Establish staff rotation and shift system. (Task Force)		No later than 24 hours from warning
Provide public awareness on use of water. (Task Force)	Media Task Force.	No later than 24 hours from warning
Provide instructions to government and private sectors on protection of water supplies. (Task Force)		No later than 24 hours from warning
Mobilize Task Force members		24 hours from warning.
Mobilize additional personnel and vehicles. (Logistics Task Force)	May be difficult to locate additional personnel locally. Recourse to outside or contractor sources may be required.	24 hours from warning.
Coordinate activities with Power and other Task Forces.	Involves District Control Room.	24 hours from warning.
Verify water source status and protection. (Task Force).		No later than 24 hours from warning.
Disaster		
Plan and prioritize supply of water to users. (Task Force)	Requires information on needs, damage and demand.	Completed by 24 hours into disaster.
Assess status and damage to water systems. (Task Force)	Coordination with Damage Assessment Task Force.	Completed by 24 hours into disaster.
Mobilize water tankers. (Task Force)	Coordination with Logistics Task Force and Control Room.	Started by 24 hours into disaster.
Repair/restore water systems, based on plan. (Task Force)	Coordination with Power and Logistics Task Forces.	Started by 24 hours into disaster.
Assure supply point/distribution security. (Law and Order Task Force)		Started as soon as

		distributions begin.
Coordinate distribution of water and storage and provision of information on safe water use. (Task Force).	Coordination with Media Task Force and Control Room	Started by 24 hours into disaster.
Action and (Who Should Take It)	Requirements or Conditions to be met for the action can occur.	Timeframe
12 Hours		
Establish temporary water systems. (Task Force)		Up to 72 hours from disaster.
Move toward permanent water supply system. (Task Force)		After 72 hours.
Complete long term recovery plan and needs. (Task Force)		After 72 hours.
Begin reporting and documentation. (Task Force)		From 48 hours.
Begin demobilization. (Task Force)	Coordinated with Control Room.	From 48 hours.
Lessons Learned meeting. (Task Force and others)		After 2 weeks.
Final Report. (Task Force)		After major activities completed

Food and Relief Supplies

Assure the provision of basic food and other relied needs in the affected communities.

Task Force Leader: District Supply Officer

Action and (Who Should Take It)	Requirements or Conditions to be met for the action can occur.	Timeframe
Before a Disaster		
Establish procedures and standards. (Task Force)	Need standards.	On-going.
Maintain two months stock of essential supplies. (Task Force)		Done.
Develop transportation plan. (Task	In cooperation with	Completed in

Force)	Logistics Task Force.	8 days
Develop list of NGOs. (Task Force)		Done
Plan staffing for disaster. (Task Force)		Done
Identify locations, which can be isolated and increase stock as needed. (Task Force)		On-going.
Identify food preparation locations. (Task Force)		Done
Action and (Who Should Take It)	Requirements or Conditions to be met for the action can occur.	Timeframe
Warning		
Pass on warning. (Task Force)		Within 12 hours of receipt of warning.
Alert NGOs to prepare food. (Task Force)	Contact with NGOs.	Within 12 hours of receipt of warning.
Verify stock levels and make distribution plan. (Task Force)	Possible cooperation with Logistics Task Force.	Within 48 hours of receipt of warning.
Alert transport contractors to prepare for transport. (Task Force)	Coordinate with Logistics Task Force.	Within 5 hours of receipt of warning.
Mobilize staff. (Task Force)		Within 6 hours of receipt of warning.
Disaster		
Receive and respond to instructions from Control Room. (Task Force)		As received.
Monitor conditions of stocks and facilities. (Task Force)	Need for communications.	
Develop distribution plan. (Task Force)	Need information on needs and locations.	As requested by Control Room.
Order food packets and provide supplies as needed. (Task Force)	Coordination with Logistics Task Force.	Per distribution plan.

Establish relief supplies receptions centers. (Task Force)	Coordinate with Control Room and Logistics Task Force.	As required.
12 Hours		
Start distribution operations. (Task Force)	In coordination with Logistics and Shelter Task Forces.	At beginning of period.
Formalize reporting, communications and monitoring. (Task Force)		Completed by 48 hours.
Start staff rotation system. (Task Force)		At beginning of period.
Begin mobilizing and managing additional supplies.	Coordination with Logistics and, Control Room.	Underway in 48 hours.
Establish security for all sites. (Law and Order Task Force)		At beginning of period.
Action and (Who Should Take It)	Requirements or Conditions to be met for the action can occur.	Timeframe
Begin public announcement of distribution plan and standards. (Media Task Force)		Underway in 48 hours.
48 Hours		
Shift to normal operations. (Task Force)		Within 1 week.
Reconcile receipts and distribution records. (Task Force)		Within 30 days.
Continue providing relief to special areas/populations. (Task Force)		For 15 days from the disaster
72 Hours		
Restore Public Distribution System. (Task Force)		From 1 week after the disaster.
Lessons Learned meeting.		Within 14 days

Power

Provide resources to re-establish normal power supplies and systems in affected communities

Task Force Leader: Superintending Engineer, Gujarat Electricity Board

Action and (Who Should Take It)	Requirements or Conditions to be met for the action can occur.	Timeframe
Before a Disaster and Warning Phases		
Develop inventory of current status of power system and resources. (Gujarat Electricity Board – GEB)		
Establish minimum stock levels and procure necessary additional stocks. (GEB)		
Conduct monthly meetings. (GEB)		On-going
Develop contact lists. (GEB)		
Conduct informal hazard and risk assessment. (GEB)		Completed.
Develop disaster plan. (GEB)		
Disaster		
Assess impact according to SOP. (GEB)	Coordinate with Control Room and Damage Assessment Task Force.	
Prioritize response actions. (GEB)	Need to establish priorities.	
Action and (Who Should Take It)	Requirements or Conditions to be met for the action can occur.	Timeframe
Collect more information. (GEB)		
Mobilize additional resources. (GEB)	Coordination with Control Room and other Task Forces.	
Check for unforeseen contingencies.		
12 Hours		
Revise plans based on feedback and assessments. (GEB)		Continuous

Monitor status of actions. (GEB)		Continuous
Begin staff rotation plan. (GEB)		At beginning of period.
Disseminate public information. (Media Task Force)		At beginning of period.
Secure support for staff (food, lodging) from NGOs. (GEB)		
Assure security as needed. (Law and Order Task Force)	Coordinate with Control Room.	
Establish constant communications on needs, requirements and resources with Control Room and GEB/HQ.		
48 Hours		
Look for improvements in efforts. (GEB)		
Reinforce central coordination. (GEB)		
Conduct regular coordination meetings with other actors. (GEB)		
Begin formal documentation of efforts. (GEB)		
72 Hours		
Review shift plan for safety. (GEB)		
Plan for return to normal, including additional security if needed. (GEB)	Involvement of Law and Order Task Force.	

Public Health and Sanitation

(Including first aid and all medical care)

Provide personnel and resources to address pressing public health problems and re-establish normal health care systems

Task Force Leader: Chief District Health Officer

Action and (Who Should Take It)	Requirements or Conditions to be met for the action can occur.	Timeframe
Before a Disaster		
Develop inventory of personnel, resources and facilities. (Task Force)		1 week.
Training. (Task Force)	Coordination with GSDMA	6 months.
Establish Control Room.		Completed.

Prepare for specific diseases by season (e.g., monsoon)		Completed.
Establish Epidemiological Reporting System (ERS). (Task Force)		Completed.
Identify disease vulnerable areas. (CDHO)		Completed.
Improve public awareness. (Media Task Force)		
Warning		
Send out warning to health facilities. (Task Force)		As received.
Mobilize health teams to possible disaster areas. (Task Force)	In coordination with Control Room.	As needed.
Activate Task Force for whole district. (CDHO)		On warning.
Disaster		
Begin first aid efforts. (Task Force)		Within 1 hour of disaster.
Establish status of health care system. (Task Force)	Requires communications.	Within 6 hours of disaster.
Begin referral of injured to upper-level facilities. (Task Force)		Within 1 hour of disaster.
Implement SOP for management of deceased. (Task Force)	Involves cooperation with Law and Order and SAR Task Force.	Within 1 hour of disaster.
Coordinate efforts with Control Room and other Task Forces.		Within 2-3 hours of disaster.
Action and (Who Should Take It)	Requirements or Conditions to be met for the action can occur.	Timeframe
12 Hours		
Begin to call in outside resources. (Task Force)	Involves Telecommunications and Logistics Task Forces and Control Room.	Within 3 hours.
Establish temporary medical facilities where needed. (Task Force)	Coordination with Public Works, Power, Water, and Law and Order Task Forces.	Within 24 hours.
Expand surveillance of health status.		Within 24

(Task Force)		hours.
Establish shift system for staff. (Task Force)		At beginning of period.
Visit and review health status in shelters. (Task Force)		Within 24 hours.
Develop health care system recovery plan. (Task Force)	In coordination with Control Room.	2-3 hours.
48 Hours		
Establish formal health care system reporting. (Task Force)		At beginning of period.
Start solid waste and vector control management SOP. (Task Force)		At beginning of period.
Start waste water management SOP. (Task Force)		At beginning of period.
Focus health status surveillance on children 0 to 5 years.		Implements in one week.
Establish public awareness and IEC efforts. (Task Force and Media Task Force)		At beginning of period.
72 Hours		
Develop demobilization plan.		By beginning of period.
Lessons Learned meeting.		Within 14 days of disaster.
Final Report		Within 14 days of disaster.

Animal Health and Welfare

Provision of health and other care to animals affected by a disaster

Task Force Leader: Deputy Director, Veterinary and Animal Husbandry

Action and (Who Should Take It)	Requirements or Conditions to be met for the action can occur.	Timeframe
Before a Disaster		
Update animal list. List of staff &		Done.

training for disposal of carcass. (Task Force)		
Stock medical supplies and vaccines. (Task Force)		Done
Warning		
Alert staff (by phone). (Task Force)		As warnings received.
Distribute supplies to vulnerable areas. (Task Force)		During warning period.
Contact Control Room. (Task Force)		As required.
Disaster		
Remove and destroy carcasses. (Task Force)	Need fuel and logistics.	As soon as possible.
Treat injured animals. (Task Force)		As soon as possible.
Issue certification of death. (Task Force)	For insurance purposes.	Within 48 hours.
Call in staff from other districts as needed. (Task Force)		As needed.
Assist local authorities in survey of damage and reconciliation of records.		As required.
48 Hours and Beyond		
Assist local authorities in providing fodder as needed.		As required.
Collect feedback. (Task Force)		
Final Report. (Task Force)		In 15 days.

Shelter

Provide materials and supplies to assure temporary shelter for disaster-affected populations.

Task Force Leader: District Primary Education Officer

Action and (Who Should Take It)	Requirements or Conditions to be met for the action can occur.	Timeframe
Before a Disaster		
Develop shelter operating procedures. (Task Force)		

Develop inventory of shelters (location, capacity,). (Task Force)	SDRN updating, project inventory.	On going
Provide information to other Task Forces on location of shelters. (Task Force)	Logistics, Water, Power, SAR, Food/Relief Supplies Task Forces and Control Room	
Training for shelter managers. (Task Force)	Need training module.	
Warning		
Mobilize shelter managers. (Task Force)		Within 6 hours of warning.
Review shelter locations for operating status. (Task Force)	Communications needed.	Within 6 hours of warning.
Open shelters as instructed.	Coordination with Control Room.	Within 6 hours of warning.
Mobilize additional resources for shelters and camps. (Task Force)	Cooperation with Logistics, Food and Relief Supplies, Water and Power Task Forces.	Within 6 hours of warning.
Provide public announcements on locations and status of shelters. (Media Task Force)		Within 6 hours of warning.
Disaster		
Beginning logging-in of occupants. (Shelter managers).		Immediately.
Report on status of shelters. (Task Force)	To Control Room.	As needed.
Plan for prioritization of shelter use. (Task Force)	Coordination with evacuation operations and Control Room.	Immediately.
Coordinate with other Task Forces on water, power, food, health, security. (Task Forces)		Immediately.

Action and (Who Should Take It)	Requirements or Conditions to be met for the action can occur.	Timeframe
Provide support and assistance to occupants. (Task Force)	Liaise with Animal Task Force on management of animal and with Health Task Force on health care.	
12 Hours		
Continue operations. (Task Force)		Continuously
Monitor shelter status and movement of people. (Task Force)		Continuously
Mobilize additional resources. (Task Force)	Coordinate with Control Room and Logistics Task Force.	Continuous.
48 Hours and Beyond		
Begin Demobilization as appropriate. (Task Force)		
Begin reconditioning/repairs to shelters. (Task Force)	In cooperation with Public Works Task Force.	As needed.
Lessons Learned session. (Task Force)	Involvement of other Task Forces and evacuees.	14 days after completion of operations.
Final Report. (Task Force)		1 month after completion of activities.

Logistics

Provide air, water and land transport for evacuation and for the storage and delivery of relief supplies in coordination with other Task Forces and competent authorities.

Task Force Leader: District Development Officer

Action and (Who Should Take It)	Requirements or Conditions to be met for the action can occur.	Timeframe
Before a Disaster		
Conduct resource inventory (air/land/water transport and storage; inside and outside district.). (Task Force)		1 month.
Establish deployment requirements, procedures and alternate options. (Task Force)		1 month.
Conduct drills. (Task Force)		1 month.
Coordinate with other Task Forces.	Work through Control Room.	As needed.
Warning		
Alert and mobilize Task Force members. (Task Force)		Within 1 hour of receiving warning.
Mobilize transport and other resources for action on short notice depending on disaster expected. (Task Force)	Coordination with Control Room	Within 2-3 hours of warning.
Liaise with Control Room and SAR, Shelter and Food/Relief Supplies Task Forces.		Within 1 hour of receiving warning.
Review plan and determine if outside resources are needed. (Task Force)		Within 6 hours of receiving warning.
Plan for logistics based depending on nature of disaster. (Task Force)	Coordinate with Control Room and Food and Relief Supplies Task Force.	As needed.
Disaster		
Take action based on instruction from		Within 2

Control Room. (Task Force)		hours of receiving warning.
Action and (Who Should Take It)	Requirements or Conditions to be met for the action can occur.	Timeframe
Continually review requirements and resources. (Task Force)		Continuous.
Develop operations plan. (Task Force)	Coordinate with Control Room and Food and Relief Supplies Task Force.	Within 2 hours of receiving warning.
Strengthen liaison with Control Room and key Task Forces. (Task Force)		Within 2 hours of receiving warning.
Verify quality of service. (Task Force)	Requires set standard of service and information on operations.	Daily.
12 Hours		
Respond to increased demand for logistics. (Task Force)		Continuous.
Begin rotation of staff. (Task Force)		At start of period.
Establish logistics bases as needed. (Task Force)	Coordinate with Control Room and Food and Relief Supplies Task Force.	Continuous.
Review plans and communicate with other Task Forces. (Task Force)		Continuous.
Begin regular reporting and documentation. (Task Force)		At start of period.
48 Hours		
Reassess needs and requirements. (Task Force)		Continuous.
Begin demobilization as appropriate. (Task Force)		
72 Hours		
Lessons Learned meeting.	Include Shelter, Food and Relief Supplies in meeting.	Within 14 days of disaster.
Final Report		Within 14

		days of disaster.
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Damage Assessment and Survey

Collect and analyze data on the impact of the disaster, develop estimates of resource needs and relief plans, and compile reports on the disaster as required for District and State authorities and other parties as appropriate.

Task Force Leader: Resident Additional Collector

Action and (Who Should Take It)	Requirements or Conditions to be met for the action can occur.	Timeframe
Before a Disaster		
Establish assessment procedures and forms. (Task Force)	Collaboration with GSDMA and COR.	
Compile baseline data. (Task Force)	Collaboration with GSDMA project.	
Establish assessment groups and teams. (Task Force)		
Develop an assessment coordination plan. (Coordination and Planning Task Force)		
Develop a communications plan. (Task Force)	In cooperation with Telecommunications Task Force	
Warning		
Mobilize Task Force. (Task Force)		Within 6 hours of warning.
Review Plan. (Task Force)		Within 6 hours of warning.
Consider pre-disaster impact assessment. (Task Force)	Based on expected nature of disaster.	Within 6 hours of warning.
Active village-level assessment teams. (Task Force)		Within 6 hours of warning.

Disaster		
Consider safety of assessment teams. (Task Force)		Immediately.
Start planning for assessment. (Task Force)		As initial impact information is available.
Begin initial assessment procedures. (Task Force)		When conditions allow.
Communicate assessment plans to Control Room. (Task Force)		Once initial plan is developed.
Action and (Who Should Take It)	Requirements or Conditions to be met for the action can occur.	Timeframe
12 Hours		
Publicly disseminate assessment plans and reports. (Media Task Force)		As available.
Initiate continual up-dating of assessment information. (Task Force)	Coordinate with Coordination and Planning Task Force.	
Initiate continual up-dating of assessment plans. (Task Force)	Coordinate with Coordination and Planning Task Force.	
Coordinate with other Task Forces. (Task Force)		
Begin staff rotation and secure more staff as needed.		At beginning of period.
48 Hours		
Prepare detailed damage, losses, needs assessment and long term recovery plans. (Task Force)	Coordinate with other Task Forces.	3-5 days after disaster.
Coordination of requirements, plans and activities.	Working through Control Room and Coordination and Planning Task Force.	Continuous.
72 Hours		
Lessons Learned meeting.	Include Shelter, Food and Relief Supplies in meeting.	Within 14 days of disaster.

Telecommunications

Coordinate and assure operation of all communications systems (e.g., radio, TV, phones, wireless) required to support early warning or post-disaster operations

Task Force Leader: Resident Additional Collector

Action and (Who Should Take It)	Requirements or Conditions to be met for the action can occur.	Timeframe
Before a Disaster		
Develop telecommunications inventory and SOPs. (Task Force)	Telecommunications training.	
Coordinate with other Task Forces. (Task Force)		
Identify sites of vulnerable system components (e.g., switches). (Task Force)		
Ensure redundancy in communications systems. (Task Force)	May require close liaison with private sector providers.	
Action and (Who Should Take It)	Requirements or Conditions to be met for the action can occur.	Timeframe
Training in communication skills and methods. (Task Force)		
Warning		
Verify communication systems are working. (Task Force)		Within 24 hours of warning.
Mobilize Task Force.		Within 24 hours of warning.
Repair down systems and establish alternate communications systems. (Task Force)	Coordinate with Control Room.	Within 24 hours of warning.
Mobilize resources. (Task Force)		Within 24 hours of warning.
Facilitate telecom demands of other Task Force members. (Task Force)		

Disaster		
Check status of communications systems. (Task Force)		In 2-3 hours.
Identify damage to systems. (Task Force)		First information available in 2-3 hours.
Contact Control Room and other Task Forces on telecom needs. (Task Force)		In 2-3 hours.
Start repairs. (Task Force)		In 2 hours.
12 Hours		
Mobilize outside resources (may start earlier). (Task Force)		Continuous.
Complete plans for repairs and re-establishment of systems. (Task Force)	Coordinate with Control Room.	Continuous.
Liaise with Control Room and other Task Forces.		
Start shift system for staff. (Task Force)		At beginning of period.
48 Hours and Beyond		
Continue to assist other Task Forces. (Task Force)		
Continue repair work. (Task Force)		
Begin demobilization. (Task Force)		
Lessons Learned meeting.	Include Shelter, Food and Relief Supplies	Within 14 days of disaster.
Final Report. (Task Force)	Involve other Task Forces.	Within one month of end of operations.

Chapter-7

Recovery Measures:

Recovery is defined as decisions and actions taken after a disaster with a view to “restoring or improving life and assets of the stricken community, while encouraging and facilitating necessary adjustments to reduce disaster risk. Recovery and reconstruction (R&R) or comprehensive rehabilitation is the last step in cycle of disaster management. In addition, this is the phase of new cycle, where the opportunity to reconstruction and rehabilitation should be utilized for building a better and more safe and resilient society.

Strategies for restoring physical infrastructure and lifeline services may be:

General policy guidelines

Build Back Better

This ensures greater resilience, preparedness; and minimum loss in an event of future disaster.

Participatory Planning

Infrastructure improvement measures need to be balanced with, or at least be in line with, the social and cultural needs and preferences of beneficiaries

Coordination

A plan of recovery will help better coordination between various development agencies.

Damage Assessment and Needs Assessment shall be the basis of recovery planning

Various Sectors for recovery process may be

Essential Services- Power, Water, Communication, Transport, Sanitation, Health

Infrastructural: Housing, Public Building and Roads

Livelihood: Employment , Agriculture, Cottage Industry, Shops and Establishments

Basic services such as power, water supply, sanitation, wastewater disposal etc. should be restored in shortest possible time. Alternate arrangement of water supply, temporary sanitation facilities can be sought with help of special agencies.

Special arrangements for provision of essential services should be ensured. It can include creating temporary infrastructure for storage and distribution of water supply, running tankers, and power supply and sanitation facilities.

Detailed damage and loss assessment

Restoration of Essential Services and Infrastructure

Following tables are to be filled after an event of disaster

Table No. 7.1

Power

Item/ Services	No. of unit damage d	No of village s affecte d	Popula tion affecte d	Recover y measure s	Implemen ting agency	Tentati ve Duratio n (Months)	Budge t
Feeder							
Transformer s							
HT Lines							
LT Lines							
Electric Poles							

Note: To be planned after initial damage assessment by departments

Table No. 7.2

Health

Item/ Services	PHC (village name)	CHC	Sub Centre	Drug Store	Recover y Measure s	Implementi ng agency	Tentativ e Duratio n (Months)	Budge t
No of buildings damaged								
No of health centres inaccessib								

le								
Refrigerati on and other vital equipment for storage								
Drugs and medicines perished	(Locatio n and qty)							
No of Ambulanc e damaged								

Note: To be planned after initial damage assessment by departments

Table No. 7.3
Social

**People in need of immediate rehabilitation including psychosocial support
(due to disaster)**

Village	Men	Women	Children	Total	Recovery Measures	Implementing agency	Tentative Duration (Months)	Budget

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Table No. : 7.4
Water Supply

Type	Village	No. of unit affected	Faliya/ Population affected	Recovery Measures	Implementing agency	Tentative Duration (Months)	Budget
Well							
Bore wells							
Pond							
Water Supply Disrupted							
Contamination							
ESR damaged							
GLR Damaged							
Sump damaged							
Pipe lines damaged							
Stand post damaged							
Cattle trough damaged							
Hand pump							

Table No. 7.5
Road and Transport

Road damage	Location	Severity	Km	Recovery Measures	Implementing agency	Tentative Duration (Months)	Budget
Panchayat							
State Roads							
National Highway							
Nagar Palika							

Item/ services	Village /War	Population	Alternative road/rou	Recovery Measur	Implementing Agency	Tentative Duration	Budget
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	d		te	es		n (Months)	
Road Cut off							
Rail Connectivity							

Table No. : 7.6
Communication

Type	Office/Tower Damaged	Villages affected	Recovery Measures	Implementing Agency	Tentative Duration (Months)	Budget
Landline connectivity	(No. of unit and location)					
Mobile connectivity						
Wireless Tower						
Radio						

Table No. : 7.7
Food Supply

List of village affected by disruption in food supply

Type	No. of godown damage	Type of grains perished (Ton)	Qty of grain perished (Ton)	Qty of grain at risk (Ton)	Recovery Measures	Implementing Agency	Tentative Duration (Months)	Budget
Civil Supply								
APMC								
Other								

Table No. : 7.8
Housing

Partial Damage		Fully Damaged / Collapsed		Recovery Measures	Prog. / Scheme	Implementing Agency	Tentative Duration (Months)	Budget
Kucha	Pucca	Kucha	Pucca					

Table No. : 7.9
Public Utilities

Public Buildings	Partial damage (No. of units)	Fully Damaged/ Collapsed (No. of Unit)	Recovery Measures	Prog/ Scheme	Implementing Agency	Tentative Duration (Months)	Budget
Panchayat							
Educational Buildings							
Aanganwadi							
Hospitals							
Office Buildings							
Market							
Police station							
Community Halls/ Function plots							

Table No. : 7.10
Restoration of Livelihood
Provisioning of Employment

Occupational category	No. of workers	Implementing Agency	Tentative Duration (Months)	Budget
Skilled laborers				
Unskilled and Agricultural laborers				
Small and marginal				

farmers				
Construction workers				
Salt pan workers				
Fisher folk				
Weavers				
Other artisans				

Table No. : 7.11
Land Improvement

Land erosion / siltation (Hectare)	HHs affected	Recovery Measures	Implementing Agency	Tentative Duration (Months)	Budget

Table No.:7. 12
Agricultural

Crop failure (Hectare)	HHs affected	Recovery Measures	Implementing Agency	Tentative Duration (Months)	Budget

Table No. : 7.13
Nonfarm livelihood

Cottage Industry	Extent of damage/disruption		Recovery Measures	Implementing Agency	Tentative Duration (Months)	Budget
	Tools and equipment (Specify no. and type)	Goods and material (Specify type and qty)				
Handloom						
Pottery						
Food Processing						
Diamond sorting etc						
Printing/ Dying						
Other						

Table No. :7.15
Shops and establishment

Extent of damage/disruption			Recovery Measures	Implementing Agency	Tentative Duration (Months)	Budget
Building (No. and location)	Tools and equipments (Specify no. and type)	Goods and materials (Specify type and qty)				

Long-term recovery programme

Disaster recovery typically occurs in phases, with initial efforts dedicated to helping those affected meet immediate needs for housing, food and water. As homes and businesses are repaired, people return to work and communities continue with cleanup and rebuilding efforts. Many government agencies, voluntary organizations, and the private sector cooperate to provide assistance and support.

Some individuals, families and communities that are especially hard hit by a disaster 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. 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, and community levels.

Oftentimes, committees, task forces or other means of collaboration formed with the goals of developing specific plans for Community recovery, identifying and addressing unmet or specialized needs of individuals and families, locating funding sources, and providing coordination of the many sources of help that may be available to assist. Some collaboration focuses on the community level and relies on the expertise of community planning and economic development professionals. Other collaborations focus on individual and family recovery and

are coordinate by social service and volunteer groups. All such efforts hope to lay the groundwork for wise decisions about the appropriate use of resources and rebuilding efforts.

Under the National Response Framework, Emergency Support Function (ESF) #14 Community Recovery coordinates the resources of federal departments and agencies to support the long-term recovery of States and communities, and to reduce or eliminate risk from future incidents. While consideration of long-term recovery is imbedded in the routine administration of the disaster assistance and mitigation programs. some incidents, due to the severity of the impacts and the complexity of the recovery, will require considerable interagency coordination and technical support.

ESF #14 efforts are driven by State/local priorities, focusing on permanent restoration of infrastructure, housing, and the local economy. When activated, ESF #14 provides the coordination mechanisms for the Federal government to:

- Assess the social and economic consequences in the impacted area and coordinate Federal efforts to address Community recovery issues resulting from an Incident of National Significance;

- Advise on the Community recovery implications of response activities, the transition from response to recovery in field operations, and facilitate recovery decision-making across ESFs;

- Work with State, local, and tribal governments; NGOs; and private-sector organizations to conduct comprehensive market disruption and loss analysis and develop a forward looking market-based comprehensive long-term recovery plan for the affected community;

- Identify appropriate Federal programs and agencies to support implementation of the Community recovery plan, ensure coordination, and identify gaps in resources available;

- Avoid duplication of assistance, coordinate to the extent possible program application processes and planning requirements to streamline assistance, and identify and coordinate resolution of policy and program issues; and

- Determine/identify responsibilities for recovery activities, and provide a vehicle to maintain continuity in program delivery among Federal departments and agencies, and with State, local, and tribal governments and other involved parties, to ensure follow-through of recovery and hazard mitigation efforts.

Grievances Redressed System

Grievance redressed is important aspect in the context of providing need based assistance to affected communities with transparency and accountability. It is also

ensures the protection of their rights and entitlements for disaster response services.

Grievance Redressed System

No.	Key Person/ Establishment	Contact No	Address
1	DEOC/ RAC	0278- 2521554/55	Collector Office-District Emergency Operation centre
2	DDO	0278- 2426810	District Panchayat
3	Police	0278- 2520050	S.P. Office, Bhavnagar

Matrix form of Sort term and long-term recovery programme

Disaster recovery has three distinct but interrelated meanings. First, it is a goal that involves the restoration of normal community activities that were disrupted by disaster impacts – in most people’s minds, exactly as they were before the disaster struck. Second, it is a phase in the emergency management cycle that begins with stabilization of the disaster conditions (the end of the emergency response phase) and ends when the community has returned to its normal routines. Third, it is a process by which the community achieves the goal normal life.

SHORT TERM AND LONG TERM RECOVERY TIME TABLE

Recovery and Reconstruction

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

Chapter-8

Financial Arrangement

To ensure the long-term sustenance 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

District Response Fund

National and state disaster Response fund

To carry out Emergency Response & Relief activities after any disaster the State Disaster Response Fund is making 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.

District Mitigation Fund

National and state disaster mitigation fund

The Pre-Disaster Mitigation (PDM) program provides funds for hazard mitigation planning and projects on an annual basis. The PDM program was set in place to reduce overall risk to people and structures, while at the same time, also reducing reliance on federal funding if an actual disaster were to occur.

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.

Centrally Sponsored scheme

Name	Purpose	Finance Arrangements	Activities that can be take under scheme	Nodal Agency
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 Finance commission) Year 2011-15	Capacity Building	100% Centre	Trainings Awareness Generation IEC material Mock drills	Revenue Department

District Planning Fund

For preparedness, mitigation, capacity building and recovery fund can be raised from MP or MLA grant as received for developmental work. also from departmentally arrangement.

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.

Disaster Insurance

Risk Transfer / Risk Distribution

Risk transfer or risk distribution refers to compensation cover against loss of life or assets in case of any disaster event. Insurance and reinsurance mechanisms and products against natural and manmade disasters have rapidly evolved in last decade. According to UNISDR, "Insurance is a well-known form of risk transfer, where coverage of a risk is obtained from an insurer in exchange for ongoing premiums paid to the insurer. Risk transfer can occur informally within family and community networks where there are reciprocal expectations of mutual aid by means of gifts or credit, as well as formally, where governments, insurers, multi-

lateral banks and other large risk-bearing entities establish mechanisms to help cope with losses in major events. Such mechanisms include insurance and re-insurance contracts, catastrophe bonds, contingent credit facilities and reserve funds, where the costs are covered by premiums, investor contributions, interest rates and past savings. Linkages with government insurance schemes like Rashtriya Swasthya Bima Yojana, Aam Admi Bima Yojana can be extensively taken up for risk transfer. Linkages can be done for teaching staff and children with existing insurance schemes. Livestock insurance can also be taken up through animal husbandry department. Coverage of crop insurance should be increased specifically for small and marginal farmers. Weather/rainfall insurance can also be explored with various existing schemes.

(DDMC should draw up their own risk transfer/distribution framework and action plan in this regard)

Micro financing

Microfinance has proven to be an essential element for people in disaster situations, enabling them to start to rebuild their lives and improve their living conditions. However, in recent times there have been crisis situations where massive injections of donor funding—including capital for microfinance operations—have not achieved their intended purpose, largely because there was insufficient local capacity to deliver services in a timely and appropriate manner.

Chapter-9

Maintenance of Plan

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

Schedule for updation of plan

District Disaster Management Plan (DDMP) updated by Disaster management cell, collector office in the month of May-June every year as a part of pre monsoon preparedness.

Schedule for revision of plan

DDMP revises in the month of October-November every year by the Disaster Management Cell of collector office.

Schedule for Mockdrills

Plan Maintenance is a dynamic process of updating plan on a periodic basis. It is based on learning and from the last disaster (As per under Mention) and mock drill exercise.

Major Learning based on experience of last disasters and mock drills (on planning/implementation/compliance)	Revisions adopted/proposed	Remarks
Flood	May-June	Highly affected area of the district
Chemical disaster	Jan, Feb	Due to MAH unit (Under Factory act-1947)
Tsunami	June, Oct	Due to coastal belt
Cyclone	May- June and Oct. Nov.	Due to Coastline

Certified/ Approved By _____ Collector Bhavnagar

Annexure-1

History of past disasters

Year	Description
1982	<p>On 8th November 1982 Bhavnagar faced a tropical cyclone of the speed of 150 kms / hours. Instead of it there was heavy rain in the district on 7th and 8th November 2004. Because 250 mm rain falls in two days there was the situation of flood in the rivers that cause the death of 125 people at the site of Kalubhar dam in Gadhada Taluka. Same day 25 people felt in the grip of death of Umratal Taluka.</p> <p>In the same cyclone the Kashmir of Saurashtra MAHUA lost its beauty because thousands of trees fell down and there was heavy loss of human being, resources, property and livestock.</p>
1999	<p>Again the Bhavnagar District copied a cyclone of 80-100 kms / hour with heavy rain. It's taken the 5 innocent people in the grip of death.</p>
2000	<p>In August – 2000 the topple of Bhavnagar experienced the earthquake. The epicenter of the quake was near to the 8 kms far from circuit near Malanka village.</p> <p>From August 2000 to 25th January – 2001 the people of Bhavnagar experienced 175 to 200 light earthquakes.</p> <p>Because of the waves of those quakes there was heavy loss of buildings in the Bharatnagar area of Bhavnagar.-</p>
2001	<p>The destructive earthquake of 26th January 2001 badly affected the Bhavnagar district. Because of earthquake 4 people and one cattle dead and 24 people were injured. In the same earthquake 9752 kuchcha and pukka houses were partially damaged and 239 house were totally damaged.</p>
2002	<p>In Bhavnagar district during 6th June 2002 to 30th June 2002 the heavy rain created flood in Palitana, Bhavnagar and Sihor Taluka of the district, during the flood 19147 people were affected and 8 people were dead and there was heavy loss of buildings and property in Bhavnagar, Sihor and Palitana Taluka.</p>
2007	<p>During this session heavy rain became the main cause of flood. Seven taluka of the Dist. were adversely affected city and total 40 people dead in different area within district. Similarly other adjoining taluka were also affected. There was heavy loss public and private property.</p>
2015	<p>There was heavy rain in district and it cause of flood. It affected whole district especially some area of Palitana city and Talaja city and also 4 villages of Gariyadhar and Jeasar taluka.</p> <p>8 people were dead and there was heavy loss of property. Administration also done evacuation during flood situaion.</p>

Annexure-2

List of vulnerable talukas and villages with risk ranking (Hazard wise)

Detail about Affected village in different aspect

The details of coastal villages

Sr. No.	Taluka Name	Village Name
1	Bhavnagar	
1.1		Kalatalav
1.2		Hathab,
1.3		Narmad
1.4		Koliyak
1.5		Jashvantpur
1.6		Kotda
1.7		Kheta khatli
1.8		Ganeshgadh
2	Ghogha	
2.1		Kuda
2.2		Ghogha
2.3		Avaniya
3	Mahuva	
3.1		Nicha kotda
3.2		Dayal,
3.3		Kalsar
3.4		Naip
3.5		Nikol
3.6		Vaghnagar
3.7		Katpar
3.8		Khared
3.9		Gadhda

3.10		Gujarda
3.11		Dudheri
3.12		Doliya
3.13		Padhiyarka
4	Talaja	
4.1		Alang
4.2		Mithivirdi
4.3		Sartanpar
4.4		Reliya
4.5		Gadhula
4.6		Zanzmer
4.7		Methala
4.8		Madhuvan
4.9		Juna-rajpara
4.10		Tarasra

The details of water logging villages

Sr.No.	Taluka Name	Village Name
1	Bhavnagar	
1.1		KalaTalav
1.2		Velavadar
1.3		Keta Khatli
1.4		Narmad
1.5		Paliad
1.6		Devalia
1.7		Jasvant Pura
1.8		Kotda
1.9		Sanesh
1.10		Ganeshgadh
1.11		Saviakot

1.12		Madhia
1.13		Savainagar
1.14		Bhadbhid
1.15		Adhelai
1.16		Rajgadh
1.17		Mithapar
2	Sihor	
2.1		Bhadvad
2.2		Bhangadh
2.3		Ukhrala
2.4		Navagam Mota
3	Gariadhar	
3.1		Valar
3.2		Bhamaria
3.3		Sartanpar
3.4		Tarasara
3.5		Juno Gorakhi
3.6		Sarambhada
4	Umrالا	
4.1		Ratanpar
4.2		Umrالا
4.3		Chogath
4.4		Tarpala
4.5		Hadmatالا
5	Mahuva	
5.1		Katpar
5.2		Gadhda

5.3		Khared
5.4		Sathra
5.5		Nikol
6	Talaja	
6.1		Valar
6.2		Sartanpur
6.3		Tarasara
6.4		Juno Gorakhi
6.5		Maglana
7	Jesar	
7.1		Pa
7.2		Ranigam

The details of river affected villages

Sr.No	Taluka Name	Village Name
1	Bhavnagar	
1.1		Shedhavadar
1.2		Fariyadka
1.3		Vartej
1.4		Undavi
1.5		Adhevada
1.6		Akvada
1.7		Tarsamiya
1.8		Malanka
1.9		Kala talav
1.10		Narmad,

1.11		Kheta Khatli
1.12		Paliyad
1.13		Devaliya
1.14		Jashvantpur
1.15		Kotda
2	Ghogha	
2.1		Lakhanka
2.2		Odarka
2.3		Karela
2.4		Garibpura
2.5		Manari
3	Vallabhipur	
3.1		Nasitpur
3.2		Totniyana
3.3		Monpur
3.4		Pipaliya
3.5		Navagam {Gayakvadi}
3.6		Kanpur
3.7		Jalalpur
3.8		Navi/Juni Rajashthali,
3.9		Juna Rampar
3.10		Chamardi
3.11		Pati
3.12		Juna Rampar
3.13		Dared
3.14		Mevasa
3.15		Loliyana
3.16		Kheta Timbi
3.17		Pachhegam
3.18		Vallabhipur

3.19		Rajapara Bhal
4	Palitana	
4.1		Nani Rajashali
4.2		Maydhar
4.3		Lapaliya
4.4		Medha
4.5		Lakhavad
4.6		Moti Paliyani
4.7		Palitana
4.8		Lakhavad
4.9		Bhutiya
4.10		Nani Paliyani
4.11		Mandavad
4.12		Anida
4.13		Lakhavad
4.14		Maydhar
5	Gariadhar	
5.1		Gujarda Juna
5.2		Thansa
5.3		Satpada
6	Jesar	
6.1		Ranigam
6.2		Karjala
6.3		Shantinagar
6.4		Bila
6.5		Itiya
6.6		Kobadiya
6.7		Beda

6.8		Bhanvadiya
7	Umrala	
7.1		Bhojavadar
7.2		Chogath
7.3		Dhamanka
7.4		Vangdhra
7.5		Umrala
7.6		Tarpala
7.7		Ratanpar
7.8		Samdhiyala
7.9		Hadmatata
7.10		Chogath
7.11		Timba
7.12		Ranghola
7.13		Piprali
7.14		Malpara
7.15		Langala
7.16		Zanzmer
7.17		Dharuka
7.18		Dambhaniya
7.19		Devaliya
8	Mahuva	
8.1		Samdhiyala
8.2		Sendarada
8.3		Kantasar
8.4		Vadli
8.5		Bhadrod
8.6		Khatsura

9	Talaja	
9.1		Juni Kamrol
9.2		Lilivav
9.3		Talaja
9.4		Shobhavav
9.5		Navi Kamrol

Details of MAH industries in Bhavnagar District

Sr. No.	Name of MAH industries	Chemical being utilized by the industries
1	Excel Crop Care Ltd. 6/2 Ruvapari Road Bhavnagar	Mithenol Toluin Hydrogen Solvent C – IX Formaldehyd
2	Indian Oil Corporation Tagad	LPG
3	Ship Recycling Industrial Association (india) Oderaka, Ghogha	LPG
4	Sun fire Petrochemical Private Ltd. survey no. 34, vadiya, Taluka: Sihor	LPG
5	Nirma Ltd., Kalatalav, Bhavnagar	Clorine

Details of Alang-Sosiya Ship Recycling Yard

Background:

The ship breaking industry performs two major roles. It adjusts Ship tonnage for the shipping industry by way of disposal of old ships and it also supplies substantial quantities of re-rollable and scrap steel. It also increases the availability of some finished material/ products which otherwise would have to be produced by the iron and steel industry using the natural ore. Thus, the ship breaking industry helps in conservation of natural resources.

In India till 60's ship breaking activity was confined mainly to dismantling of small barges and coastal wrecks. The activity grew as a full-

fledged industry by 1979 when the Government of India recognized it as a Manufacturing Industry. Though ship-breaking activities are carried out at West Bengal (Kolkata), Kerala (Beyport, Azical), Maharashtra (Mumbai) and Gujarat (Sachana) etc. however the main centre lies on the west coast of Gulf of Cambay at Alang-Sosiya, Bhavnagar, Gujarat. The large tidal range and other geomorphological characteristics of the beach at Alang make it an ideal location for the ship breaking industry. As many as 173 plots are developed by Gujarat Maritime Board along a 10 km long coast with total breaking potential of 3-5 MMTA.

MATERIALS OBTAINED ON RECYCLING OF SHIP:

During the recycling of ship, precious material is obtained which can be used either directly or after altering it. Some of the important materials obtained due to ship dismantling are:

- Steel plates, pipes, beams, angles, channels etc.
- Engines, D.G. Set, A.C. Unit and spare parts.
- Refrigerators, washing machines, TVs etc.
- Wood (doors, panels, furniture)
- Cables (Copper and Aluminum cables)
- Glass wool, Thermocol, PUF etc.
- Oils (Furnace oil, lubricating oil, transformer oil, diesel)
- Lead acid batteries.
- Gear boxes, machineries, pumps, valves etc.

BREAK UP OF MAJOR END PRODUCTS OF SHIP RECYCLING:

The percentage wise break up of important end products shows that only 2-3% waste is generated thereby proving it environment friendly process of getting steel.

Re-roll able scrap	: 70 - 80 %
Melting scrap	: 6 - 10 %
Non-Ferrous scrap	: 0.25 - 0.75 %
Machinery & other material	: 4 - 5 %
Furniture	: 1 %
Weight loss	: 8 - 10 %
Solid disposable waste	: 2 - 3 %

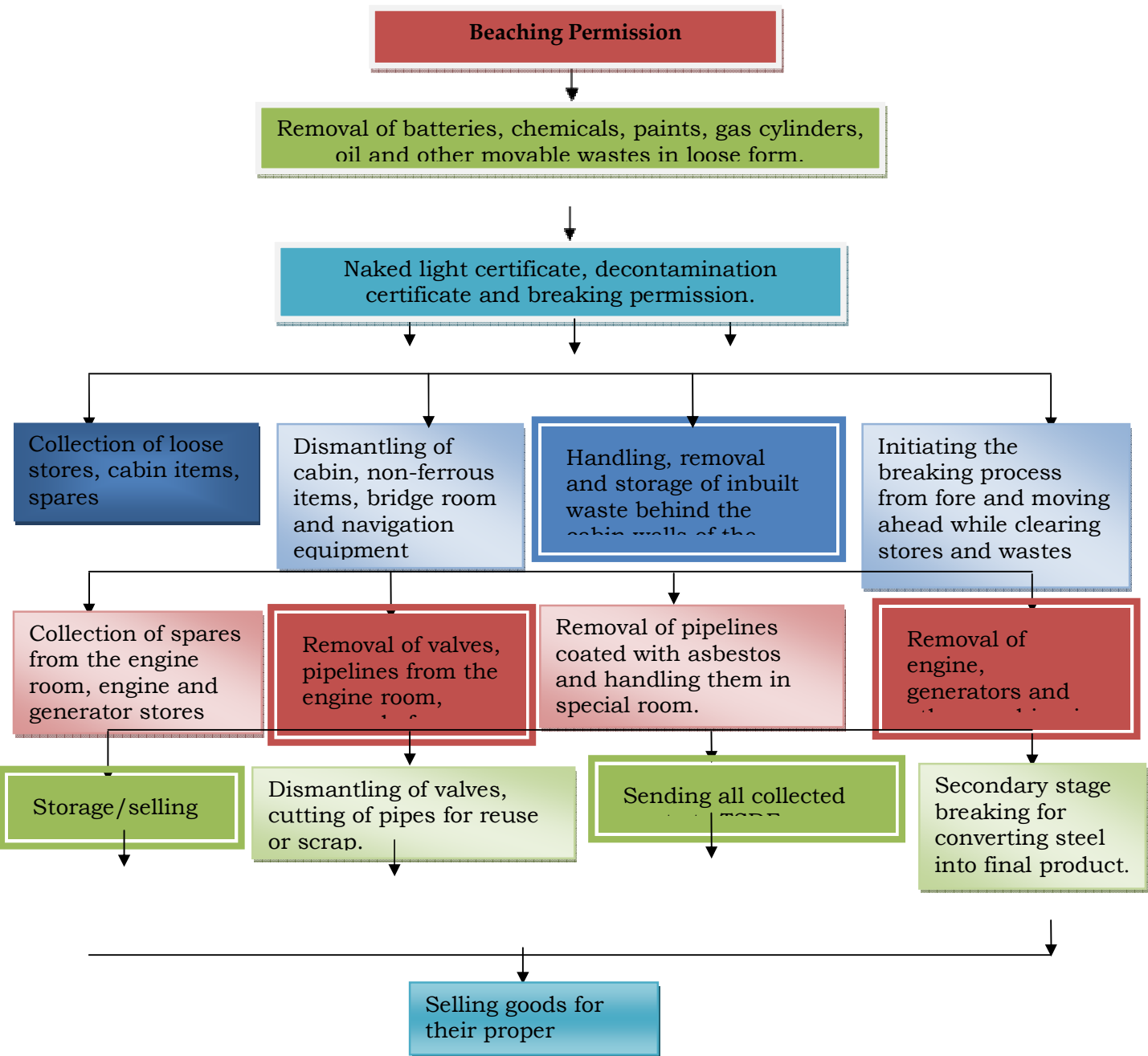
TYPE OF SHIPS COMING FOR RECYCLING ACTIVITY

Committee of Technical Experts in its report categorized ships in to 1)

Ships of special concern and 2) General ships. However mainly following type of ships comes to Alang for dismantling.

- 1) Bulk Carrier (Cargo)
- 2) Tankers (Oil, Chemical, LPG etc.)
- 3) Passenger Ships (RORO Passenger/ Big Passenger liner)
- 4) Factory Ships (Fish/Cement Factory)
- 5) War ships
- 6) Research vessel
- 7) FPSO/Offshore fixed or floating Platforms

Ship Recycling Process:



HAZARDOUS WASTE MANAGEMENT:

The following activity leads to generation of hazardous/non-hazardous wastes

Removal of oil : used oil/waste oil

Cleaning of oil tanks : oily sludge/oily rags/contaminated oily sand

Dismantling of cabins/passage : waste asbestos/glass wool/ thermocol/floor tiles/ glass pieces

Dismantling of pipes : waste asbestos/glass wool/PUF

Removal of cables: pieces of waste cables

Removal of Lead acid batteries: used batteries

Cutting of massive pieces of vessels : paint chips

Cutting of large pieces of plates in to smaller pieces: paint chips/scale

The Hazardous waste management scenario was observed to have improved significantly, as compared to the previous years, on account of the following measures:

Removal of oil:

Ship Recycler submits the tentative schedule of removal of oil to Regional Office, Bhavnagar. During the period of removal of oil, GPCB officials monitor the facility ensuring no leakage of oil. Used oil recovered from ships is sold to the oil reprocessing units registered with CPCB and copy of manifest is submitted to Regional Office.

Cleaning of oil tanks:

Oily sludge is sent to common incinerator facility where as oily rags and contaminated oily sand is disposed off to TSDF site.

Various types of oils in the ship:

Type of oils	Source	density	Flash point	Application
Fuel Oil	Engine	0.94	110	Sold as fuel oil
Marine gas Oil (Diesel)	Generator set	0.87 0.84	230+10	Sold as fuel oil
Lubricating oil	Various mechanical/ Hydraulic system	0.87	Total Base number 7-13	Sold as lube oil
Used oil	Sump tank	0.90 to 0.92	180 Water contaminant 2 to 50%	Disposed to Re Refining units
Waste oil	(Heavy fuel bottom tank) (Gas oil bottom tank)	0.94 0.80		Disposal to re refining units/incineration depending on the quality

4. Handling of asbestos: Following practice was adopted prior to Hon'ble Supreme Court order dtd.6/9/2007. Pipe and other parts containing asbestos is dismantled from the ship and brought to the asbestos handling area at the plot. The Pipe/parts containing asbestos is made wet by spraying the water on it and than Scrapped off to minimize the generation of air borne asbestos fiber. Waste asbestos thus generated is solidified in the cement pipe with the help of cementing material before disposal to the TSDF site. On site handling & solidification facility is provided in all the operative plots.

Many of the Plots have provided special asbestos handling facility (negative pressure system) containing facility of providing negative air, HEPA filter system along with air pollution control measures and a waste water treatment.

Proper collection, segregation, storage and disposal of pieces of glass wool, thermocol, floor tiles and other wastes including waste cables/rubber tubes, etc. to a secured land fill site at Alang.

Stopping haphazard dumping of solid/hazardous waste generated from the ships.

The landfill site at Alang developed by GMB is commissioned in October 2005 and made operational in March-06. It is expected to cater to the solid/hazardous waste disposal requirement for around 5 years. This site is outsourced by GMB to GEPIL, Surat for operation and maintenance for the period of three years which is further extended for another two years. So far about 6760 tons of waste is received at this site. These contain 185 MT of ACM/asbestos waste.

The ship breaking units at Alang-Sosiya had disposed around 3868 MT of such wastes up to February 2006 at the Naroda TSDF site. Till August-08, 4922 MT of hazardous & non-hazardous waste is received whereas 1838 MT of MSW is received at the site. The waste segregation and storage facilities for these wastes are provided on plots basis. The recoverable sheets of glass wool, asbestos containing material (ACM) and thermocol are recovered and sold for reuse.

Hazardous Waste/Solid Wastes from Ship Recycling Yard and its disposal methodology:

Sr. No.	Waste/Waste stream	Mode of disposal	Remarks
HAZARDOUS WASTE			
1	Oily sludge	Disposal by selling at TSDF or by incineration	
2	Asbestos	Disposal at TSDF	
3	Paint Chips	Disposal at TSDF	
4	Used Oil	Disposal by selling to registered re-refiners	
5	Waste Oil	Disposal by selling registered re-refiners or by incineration	
6	Used Batteries	Disposal by selling to Registered Recyclers	
SOLID WASTE			
1	Cementing Material	Disposal by selling to end users	Unusable pieces of tiles and other cementing material goes to TSDF
2	Iron scaling	Disposal by selling to end users	Unsellable goes to TSDF
3	Chicken mesh	Disposal by selling to end users	Unsellable goes to TSDF
4	Cardboard & packing Material	Disposal by selling to end users	Unsellable material goes to TSDF
5	Glass	Disposal by selling to end users	Unsellable broken glass pieces goes to TSDF
6	Rexene	Disposal by selling to end users	Unsellable small pieces goes to TSDF
7	PVC & Plastic & Cable	Disposal by selling Registered recycler	Unsellable small pieces goes to TSDF

Annexure-3

List of Resource available in district

Equipment available with District Collector

Sr.No.	Item Name	Number of Items	Remarks
1	Portable inflatable Emergency Lighting System	2	
2	Life Jacket	50	
3	Life Buoy	50	
4	PP Ropes 26 MM (100ft)	8	
5	PP Ropes 26 MM (200ft)	4	

Equipment available with BMC

Sr.No.	Item Name	Number of Items	Remarks
1	Portable inflatable Emergency Lighting System	7	
2	Motorcycle Mounted Water Mist	1	
3	Trolley Mounted Water Mist	5	
4	Water Browser	1	
5	Mini Fire Tender	1	
6	Life Jacket	120	
7	Life Buoy	120	
8	PP Rope (100ft)	24	
9	PP Rope (200ft)	12	
10	FRP Boat	1	
11	Rubber Boat	1	

Equipment available with Nagarpalika

Sr.No.	Name of Nagarpalika	Portable inflatable Emergency Lighting System	Motorcycle Mounted Water Mist	Water Browser	Mini Fire Tender
1	Gariyadhar	2	1	1	1
2	Mahuva	2	1	1	1
3	Palitana	2	1	1	1
4	Sihor	2	1	1	1
5	Talaja	2	1	1	1
6	Vallabhipur	2	0	1	0

Equipment available with Alang Fire station

Sr.No.	Item Name	Number of Items	Remarks
1	Water tander	2	
2	Form tender	1	
3	Bouser	4	

Equipment available with Nirma Company

Sr.No.	Item Name	Number of Items	Remarks
1	Water tander	1	

Equipment available with Excel Company

Sr.No.	Item Name	Number of Items	Remarks
1	Mini fire fighter	1	

Annexure-4

Infrastructure in the district

Sr. No.	District Fire Station	Taluka Code No.	Fone No.
1	Bhavnagar Mahanagarpalika Fire Station	0278	2515515, 2424878, 2424814/15
2	Alang Ship Breaking Yard Fire Station	02842	222250
3	Mahuva Municipality Fire station	02844	222318
4	Talaja Municipality Fire station	02842	223173
5	Sihor Municipality Fire station	02846	222024
6	Palitana Municipality Fire station	02848	242555
7	Gariyadhar Municipality Fire station	02843	250053
8	Vallabhipur Municipality Fire station	02841	222432
9	Nirama, Fire station	0278	2885301 to 5
10	Excel, Fire station	0278	2212401 to 3

Annexue-5

Facilities available in the district

Control Room Facilities-

Sr. No.	Control Room	Code No.	Fone No.	Remarks
1	District Emergency operation Center, Collector office	0278	2521554/55	Daily
2	Police control Room	0278	2520250	Daily
3	Bhavnagar Municipal Corporation Control Room, Fire and Emergency services	0278	2515515	Daily
4	GMB control Room, Alang	02842	235621/22	In critical situation
5	Bhavnagar Municipal Corporation, Control Room	0278	2430245	During Monsoon
6	Taluka Control Room, Mamlatdar office, Mahuva	02844	223042	During Monsoon
7	Taluka Control Room, Mamlatdar office, Talaja	02842	222042	During Monsoon
8	Taluka Control Room, Mamlatdar office, Sihor	02846	222009	During Monsoon
9	Taluka Control Room, Mamlatdar office, Palitana	02848	243326	During Monsoon
10	Taluka Control Room, Mamlatdar office, Gariyadhar	02843	252922	During Monsoon
11	Taluka Control Room, Mamlatdar office, Vallabhipur	02841	222435	During Monsoon
12	Taluka Control Room, Mamlatdar office, Bhavnagar (Rural)	0278	2421885	During Monsoon
13	Taluka Control Room, Mamlatdar office, Ghogha	0278	2882323	During Monsoon
14	Taluka Control Room, Mamlatdar office, Umrala	02843	235230	During Monsoon
15	Taluka Control Room, Mamlatdar office, Jesar	02845	281400	During Monsoon

Fire Station Facilities-

Sr. No.	District Fire Station	Taluka Code No.	Fone No.
1	Bhavnagar Mahanagarpalika Fire Station	0278	2515515, 2424878, 2424814/15
2	Alang Ship Breaking Yard Fire Station	02842	222250
3	Mahuva Municipality Fire station	02844	222318
4	Talaja Municipality Fire station	02842	223173
5	Sihor Municipality Fire station	02846	222024
6	Palitana Municipality Fire station	02848	242555
7	Gariyadhar Municipality Fire station	02843	250053
8	Vallabhipur Municipality Fire station	02841	222432
9	Nirama, Fire station	0278	2885301 to 5
10	Excel, Fire station	0278	2212401 to 3

Health Facilities-

SR.No.	NAME OF C.H.C.	TALUKA	CODE NO.	TELIPHINE NO (O)
1	Vartej	Bhavnagar	0278	2445642
2	Koliyak	Bhavnagar	0278	2884341
3	Ghogha	Ghogha	0278	2882126
4	Talaja	Talaja	02842	222266
5	Datha	Talaja	02842	283330
6	Thaliya	Talaja	02842	284432
7	Mota Khutvda	Mahuva	02844	287441
8	Jesar	Jesar	02845	281476
9	Bagdana	Mahuva	02844	284470
10	MAHUVA Municipal.Hospitals	Mahuva	02844	223109
11	PALITANA Mansinhji.Hospital	Palitana	02848	252175
12	Gariyadhar	Gariyadhar	02843	252970
13	Vallabhipur	Vallabhipur	02841	222449
14	Umarala	Umarala	02843	235236
15	Shihor	Shihor	02846	222063

Sr No	District	Taluka	PHC	Code No.	Fone No.	Fax No.
1	Bhavnagar	Bhavnagar	Adehlai	-	-	-
2	Bhavnagar	Bhavnagar	Adehlai	-	-	-
3	Bhavnagar	Mahuva	Belampar	02844	284470	284470
4	Bhavnagar	Bhavnagar	Bhadhariya	0278	2881315	2881315
5	Bhavnagar	Talaja	Bhadraval	02842	291330	291330
6	Bhavnagar	Bhavnagar	Bhaubhali	0278	2541305	2541305
7	Bhavnagar	Mahuva	Boda	02844	282408	282408
8	Bhavnagar	Umralla	Dadva	02843	242262	242262
9	Bhavnagar	Palitana	Gheti	02848	260119	260119
10	Bhavnagar	Ghogha	Ghogha Mo. He. Care Unit	0278	2510246	2510246
11	Bhavnagar	Mahuva	Gundarna	02844	283438	283438
12	Bhavnagar	Vallabhipur	Kalatalav	02841	280543	280543
13	Bhavnagar	Vallabhipur	Kalatalav Mo.He. Care Unit	02841	222543	222543
14	Bhavnagar	Mahuva	Kalsar	02844	281335	281335
15	Bhavnagar	Mahuva	Kumbhan	02844	247444	247444
16	Bhavnagar	Mahuva	Kumbhan	02844	247444	247444
17	Bhavnagar	Talaja	Kundhali	02842	284432	284432
18	Bhavnagar	Mahuva	Madhiya	02844	280519	280519
19	Bhavnagar	Mahuva	Mahuva Mo. He. Care Unit	02844	227660	227660
20	Bhavnagar	Talaja	Manar	02842	235213	235213
21	Bhavnagar	Gariyadhar	Mangadh	02843	290442	290442
22	Bhavnagar	Gariyadhar	Mangadh	02843	290442	290442
23	Bhavnagar	Talaja	Mathavada	-	-	-
24	Bhavnagar	Ghogha	Morchand	0278	2510246	2510246
25	Bhavnagar	Mahuva	MotaAshra	02844	241426	241426
26	Bhavnagar	Gariyadhar	Moti Vavadi	02843	254273	254273
27	Bhavnagar	Palitana	Nani Rajshthali	02848	288906	288906
28	Bhavnagar	Bhavnagar	Nari	0278	2446760	2446760
29	Bhavnagar	Bhavnagar	Nari	0278	2446760	2446760
30	Bhavnagar	Bhavnagar	Nari Mobile He.Care Unit	0278	2446760	2446760
31	Bhavnagar	Palitana	Nonghanvadar	02848	285597	285597
32	Bhavnagar	Vallabhipur	Patna	02841	244282	244282
33	Bhavnagar	Vallabhipur	Patna	02841	244282	244282
34	Bhavnagar	Talaja	Pithalpur	02842	287860	287860

35	Bhavnagar	Umralla	Ranghola	02843	234232	234232
36	Bhavnagar	Vallabhipur	Ratanpar(G)	02841	281111	281111
37	Bhavnagar	Shihor	Sanosara	02846	283117	283117
38	Bhavnagar	Talaja	Sartanpar	-	-	-
39	Bhavnagar	Mahuva	Sendarda	02844	247991	247991
40	Bhavnagar	Shihor	Songadh	02846	244061	244061
41	Bhavnagar	Shihor	Songadh	02846	244061	244061
42	Bhavnagar	Mahuva	Talgajarda	02844	247084	247084
43	Bhavnagar	Shihor	Tana	02846	286342	286342
44	Bhavnagar	Ghogha	Tansa	0278	2886307	2886307
45	Bhavnagar	Ghogha	Tansa	0278	2886307	2886307
46	Bhavnagar	Talaja	Trapaj	02842	286638	286638
47	Bhavnagar	Talaja	Unchadi	02842	287598	287598
48	Bhavnagar	Bhavnagar	Undavi	0278	2882167	2882167
49	Bhavnagar	Bhavnagar	Undavi	0278	2882167	2882167
50	Bhavnagar	Shihor	Usarad	02846	222224	222224
51	Bhavnagar	Ghogha	Valukad(G)	0278	2888338	2888338
52	Bhavnagar	Ghogha	Valukad(G)	0278	2888338	2888338
53	Bhavnagar	Palitana	Valukad(P)	02848	283321	283321
54	Bhavnagar	Gariyadhar	Velavadar	02843	286645	286645

Transport Facilities

Sr No.	Facility	Remarks
1	Airport facility	1
2	Railway facility	6 Talukas have the facility
3	Road Transportation	S.T. and private

School Building facilities-

Sr No.	Facility	Remarks
1	Primary School	1039
2	Secondary School	235
3	Higher Secondary School	108

Annexure-6

(List of Public volunteers)

List of volunteers for Flood Rescue training Shinor

Sr. No.	Name	Taluka	District	Mobile No.	Remarks
1	PradipBhai Chauhan	Talaja	Bhavnagar	9712115695	Volunteer
2	Sanjaybhai Solanki	Ghogha	Bhavnagar	9913598892	Volunteer
3	Sanjaybhai Baraiya	Talaja	Bhavnagar	9978583384	Volunteer
4	Ankeshbhai Kapadiya	Ghogha	Bhavnagar	8238994343	Volunteer
5	Hareishbhai Vegad	Talaja	Bhavnagar	9978583362	Volunteer
6	Vikrambhai Chauhan	Ghogha	Bhavnagar	8690827216	Volunteer
7	Kamleshbhai Parmar	Bhavnagar	Bhavnagar	8238994343	Volunteer
8	Lalajibhai Bambhaniya	Talaja	Bhavnagar	8905604622	Volunteer
9	Ghanshyambhai Parmar	Bhavnagar	Bhavnagar	7874850648	Volunteer
10	Ramjibhai Vegad	Talaja	Bhavnagar	9825392868	Volunteer
11	Nanjibhai Dihora	Talaja	Bhavnagar	9586140097	Volunteer

Annexure-7

List of NGOs and CBOs

Sr.No.	Name	Fone No.
1	Saurashtra Chember of Commerce	0278-2511600
2	Bhavnagar Blood Bank Trust	0278-2511755
3	Gujarat Ship Recycling Association	0278-2428696
4	Diomond Association	0278-2429391
5	Indian Red Cross Society	0278-2427286
6	Ram Mantr Mandir Trust	0278-2422205
7	P.N.R Society for Relief	0278-249326
8	Sai Seva Samaj	0278-2202944
9	Engineers Association	0278-2523088
10	Sardar Patel Snatak Mitra Mandal	0278-2429950
11	Mavtar Senior Citizen Counseling	0278-2565018
12	Shishuvihar	0278-2568823
13	Om Shree Mastrambapu Sanshthan Seva Trust	0278-
14	Nand kuvarba Balashram	0278-2445521
15	Shaishav	9825209679
16	Golibar Hanumanji Mandir	0278-2560134
17	Shahid Bhagatsinh Yuvak Mandal	0278-
18	Bhunkap Surksha Samiti	0278-2566929
19	Sweemer Association	0278-3299309
20	Vandematram Seva Sangh	0278-2210020
21	Doctor Association	9825205464
22	Sadbhavna Trust	0278-2212401
23	Lions Club of Bhavnagar	0278-2513709
24	Navjivan Society	0278-2519188
25	Chandanwadi Cheritable Trust	0278-

Annexure-8

Evacuation plan

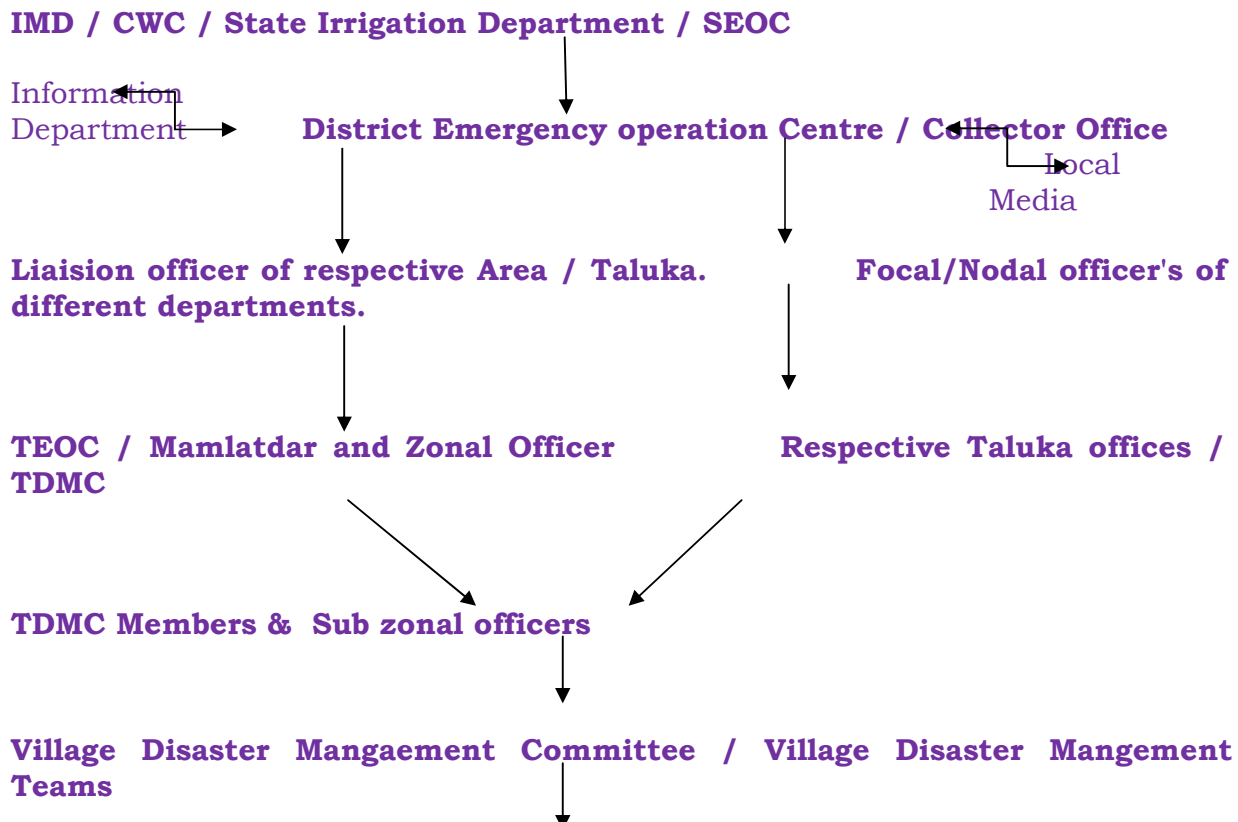
- (1) White Signal - Alert condition
- (2) Blue Signal - Ready for Evacuation
- (3) Red Signal - Immediate Evacuation

As and when the warning come from Indian Metrological department (IMD) , or from Irrigation department regarding heavy rainfall or water release the following channel has been intimated and appropriate message conveyed to the concerned department / official / control rooms /community members using tele communication , wireless message , by fax or in written by DEOC.

In city area the route has been finalized for early warning , accordingly early warning task force leading by fire and emergency services personals spread the message of alert in respective low line areas , in villages local methodologies of early warning has been used (by bitting up of drums etc.) to communicate the message of alert to the affected population of the village.

The following channel has been intimated and appropriate message conveyed to the concerned.

Early Warning & Communication Chart :



Annexure-9

Shelter Management plan

Temporary Shelter:

Urban Area:-

Local Nagar Palika and TEOC,-District Primary and Secondary Education Officer will be Responsible to Shift safely of Affected Population during any kind of Disaster ,In Bhavnagar District mainly use school, collage /community hall ,and Samaj Vadi for shifting of Affected people.Also already it has been identified ward wise by TEOC AND Nagar Palika. The list of Safe Shelter Included in CDMP Plan. Also find list on SDRN Side. At Urban level City Disaster Management Committee and District Administration directly responsible to evacuate affected people at Safe Place.

Village area:

Mainly village area looking by District and Taluka Panchyat with the support of Liaison officer and Respective mamlatdar. Also already Identified Village wise Safe Shelter at village level, like school/community hall/Samaj vadi etc. Detail List in VDMP Plan. Also find list on SDRN. District /Taluka/Village Level - District /Taluka /Village Disaster Management Team directly responsible to Evacuate affected people at Safe Place

Annexure-10

Medical and Hospital Management plan

Disaster: Health Impacts

Disaster causes negative impact on the overall health of the community besides interfering in its sustainable development. Direct health implications of disaster are death and injury. Disruption of human ecology and environmental concerns are of prime importance due to:

Disruption / damage to sanitation and sewage facilities creates enabling environment favorable for occurrence of vector borne and water borne diseases,

The affected communities living in temporary shelters / resettlements have limited or no access to safe drinking water, food etc. In addition, prevailing unhygienic sanitary conditions make it conducive for spread of food and water – borne disease.

Overcrowding in temporary shelters results in spread of communicable diseases.

Effects on mental health include Post Traumatic Stress Disorder; excessive grief, sleep disorders; exaggeration of existing illness; death wish & suicidal ideation.

Reproductive Health – Pregnant mothers and newborns become vulnerable and require additional care.

Among all the adverse health impacts, the impact of communicable disease is often delayed for weeks or months after the acute event. Water and food-borne disease transmission potential increases immediately and week after the disaster. Vector borne diseases may appear after four weeks or more due to disruption of vector control efforts, washing away of residual insecticides, increased number of vector breeding sites and more man-vector contact. Nutritional problems appear after months. Table (see next slide) gives the summary of health effects according to the type of hazard.

Post disaster public health intervention

Emphasis on post disaster public health measures is necessitated by the following additional factors:

Destruction of health care infrastructure.

Interference in public health services specially for:

Safe drinking water

Sanitation measures

Immunization

Rodent/mosquito control

Ecological changes and its effect on vector populations

High population density due to displacement Public health interventions to prevent disease outbreaks after disaster should

Essentially focus on:

Post disaster sanitation measures for:

Safe water supply

Food hygiene

Proper sewage systems/disposal of excreta

Vector/rodent control

Public health education

Annexure-11

Media Management Plan

Preparedness

External

Broadcast programs to raise people's awareness of disaster prevention measures
Develop news sources in emergency situation
Liaison with community leaders
Publicize station frequency
Broadcast public planning meetings
Outreach to the elderly, women, children, mentally and physically disabled people, as well as other marginalized and other vulnerable groups
Encourage stockpiling of (hand –powered) radio receivers
Compile local knowledge on signs of impending disaster and share it with community

Internal

Back up important documents and files (including audio content) and store in a safe location
If possible, place a set of minimum broadcast equipment such as a microphone, tape/CD player, transmitter and antennae in a safe location
Plan radio programs to raise people's awareness of disaster prevention
First aid training for station personnel
Technical preparedness (generator, APS, securing, transmitter
Guidelines for managing staff and volunteers
Arrange emergency drills in the station
Develop a contact list and post in station
Map community (ethnicity, religion, race, culture, vulnerability)
Prepare pre-recorded Emergency Response
Announcements and scripts and post in the studio

Mitigation

Develop networks with local Disaster Management and Response (DMR) NGOs, local government and key stakeholders: hold regular meeting with them

Arrange emergency drills in the community

Training of on-air personnel - what and how to broadcast

Response

External-on air

Broadcast pre-prepared announcements

Broadcast emergency public meetings

Broadcast emergency evacuation announcements

All announcements broadcast in a reassuring and calm manner

Dispel myths and rumors and provide timely and accurate updates

Broadcast updates on damage situation

Produce programs in which victims can express themselves

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

Log all communications for reference

Stay calm

Divide information work so that all voices of the community can be heard and not just male leaders.

Relief

Establish Information Support Centre for information sharing and logistic distribution

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

Annexure-12

Disaster Zonation

Cyclone

Sr. No.	Name of Taluka	No.of Villages
1	Mahuva	13
2	Talaja	10
3	Bhavnagar	08
4	Ghogha	03
Total:-		34

Flood (water logging villages)

Sr. No.	Name of the Taluka	No. of Village
1	Mahuva	5
2	Talaja	5
3	Sihor	4
4	Gariyadhar	6
5	Bhavnagar	17
6	Umrالا	5
7	Jesar	2
Total :-		44

Flood (river affected villages)

Sr. No.	Name of the Taluka	No. of Village
1	Mahuva	6
2	Talaja	5
3	Palitana	14
4	Gariyadhar	3
5	Vallabhipur	19
6	Bhavnagar	15
7	Ghogha	5
8	Umrالا	19
9	Jesar	8
Total :-		94

Industrial Hazard (MAH industries in Bhavnagar District)

Sr. No.	Name of MAH industries	Chemical utilized by the industries	Remarks
1	Excel Crop Care Ltd.	Mithenol Toluin Hydrogen Solvent C – IX Formaldehyd	Bhavnagar
2	Indian Oil Corporation	LPG	Bhavnagar
3	Ship Recycling Industrial Association (india)	LPG	Ghogha
4	Sun fire Petrochemical Private Ltd.	LPG	Sihor
5	Nirma Ltd.	Clorine	Bhavnagar

Earthquake

Bhavnagar district comes under Zone-III for earthquake

Annexure-13

Relief and Rehabilitation Norms

Office Memorandum

65/ 52 मा 5280 यमल नुसमान ने SDRF मा स्थापित
करवा मायन

No. 32-3/2010-NDM-1
Government of India
Ministry of Home Affairs
(Disaster Management Division)

Most immediate

232/11/14

602/3/14-3
नारायण

B' Wing, 3rd floor, NDCC-II, New Delhi
Dated the 13th August, 2012.

Office Memorandum

Subject: Inclusion of cold wave / frost as an eligible natural calamity in the guidelines for relief assistance under the SDRF/ NDRF- regarding.

The undersigned is directed to refer this Ministry's OM of even number dated 28th September 2010 regarding guidelines on constitution and administration of the State Disaster Response Fund (SDRF) and National Disaster Response Fund (NDRF). The Government of India has approved the inclusion of cold wave/ frost in the list of eligible calamity for assistance from SDRF and NDRF.

2. As such in addition to the natural calamities listed in the Para 3 and Para 3.1 of the Guidelines of SDRF/ NDRF respectively, the cold-wave/ frost may also be added to the list of eligible calamities for financial assistance from SDRF/ NDRF.

3. However, following condition/ criteria stipulated as under will be taken into account while considering the assistance from SDRF/ NDRF for the calamity of cold wave / frost:-

a) Severe cold wave conditions would be said to prevail in an area :

- (i) If minimum temperature is lower than 7th C in an area where normal minimum temperature is 10th C or above; and
- (ii) If minimum temperature is lower than 5th C in an area where normal minimum temperature is less than 10th C.

b) Frost conditions would be said to prevail when temperature falls below 0th C in an area where it is an abnormal phenomenon during the kharif/ rabi season.

c) For declaring a district affected by frost/ cold wave conditions by the State Government concerned, the meteorological data on departure of normal minimum temperature in the affected area, as released by the India Meteorological Department (IMD) shall be taken into consideration for prevalence of frost/ cold wave conditions.

d) Areas which suffer crop loss of 50% or more by cold wave/frost conditions will be eligible for assistance from SDRF/ NDRF, as is now allowed in the case of damage due to drought, hailstorm, pest attack and other natural calamities. Similarly, animal husbandry, including poultry sector, would get assistance from SDRF/ NDRF in the wake of cold wave/frost.

50/93

(11)

24/8/13

0 24/8

7/2

G 24/8

- e) The composition of the Central Team will be same as the Central Team constituted for the purpose of drought/hailstorm. The Central Team would make a field visit for assessment of damage to agriculture and horticulture production due to cold wave/ frost and shall take into consideration of all concomitant factors such as crops cutting experiment, fall in normal production, Normalized Differential Vegetation Index (NDVI) status of crops in the affected area, crops sown in the area affected, the vulnerability of the cold wave/ frost on standing agriculture/ horticulture crops etc. in the guidelines. The Ministry of Agriculture will be the nodal Ministry for natural calamity of cold wave/ frost.

4. This order will come into force prospectively with immediate effect.



(Dev Kumar)

Director (DM-1)

Telefax: 234328123

Distribution:-

1. Ministry of Finance, Department of Expenditure, North Block, New Delhi.
2. Ministry of Agriculture, Department of Agriculture & Cooperation, Krishi Bhavan, New Delhi.
3. National Disaster Management Authority, New Delhi.
4. Chief Secretaries of (All States).
5. The Relief Commissioners/ Secretaries, Department of Disaster Management of (All States).
6. Accountants General of all State Governments.
7. Controller General of Accounts (CGA), New Delhi.
8. Comptroller & Auditor General (CAG), New Delhi.
9. Resident Commissioners of all State Governments.

Items and Norms of assistance From the State Disaster Response Fund (SDRF) and The National Disaster Response Fund (NDRF) for the period 2010-2015

884/4/4

No. 32-3/2013-NDM-I
Government of India
Ministry of Home Affairs
(Disaster Management Division)

Wing, 3rd Floor, NDCC-II,
Jai Singh Road, New Delhi-110001.
Dated the 21st June 2013

02 JUL 2013
452873

To

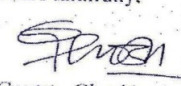
- Chief Secretaries of all States
- The Relief Commissioners, Secretaries, Department of Disaster Management of all States

Subject: - Items and Norms of assistance from the State Disaster Response Fund (SDRF) and the National Disaster Response Fund (NDRF) for the period 2010 - 2015.

Sir/ Madam,

I am directed to refer to this Ministry's letter No. 32-3/ 2012-NDM-I, dated 28th September 2012 regarding forwarding the list of revised items and norms from assistance from SDRF/ NDRF in the wake of identified natural calamities.

- It has now been decided to further revise the norms in respect of S. No. 9 (a) (i) i.e. repair/ restoration of fully damaged/ destroyed Pucca houses from Rs. 35,000/- per unit to Rs. 70,000/- per unit, of the revised list of items and norms of assistance from SDRF and NDRF. Similarly, it has also been decided to further revise the norms in respect of S. No. 1 (e) i.e. "provision of Gratuitous relief for families in dire need of immediate sustenance after a calamity; 5 (i) (B) (a) & (b) and 5 (ii) i.e. provision of input subsidy to SMF and OSMF (where crop loss is 50% and above) in respect of rainfed, irrigated and perennial crops; 6 (ii) & (iii) i.e. "provision of fodder/ feed concentrate and water supply in cattle camps". The State Governments concerned should draw up a separate plan with concerned Central Ministries and Planning Commission etc. for mitigating the drought situation. These revised norms, as cited above, will be effective from 1st March 2013. -
- The revised items and norms can also be downloaded from website of Disaster Management Division of Ministry of Home Affairs i.e. www.ndmindia.nic.in.
- Accordingly, a copy of further modified/ revised items and norms of assistance from SDRF/ NDRF in the wake of identified natural calamities is **Annexed**.
- This supersedes this Ministry's earlier letter on this subject, the last being No.32-3/ 2012-NDM-I dated the 28th September, 2012.

Yours faithfully,

(Goutam Ghosh)
Deputy Secretary to the Govt. of India
Telefax: 23438123

Encl: As above.

Handwritten notes and stamps:
Top left: (4), 8/11/13, 22/7/13, 23/7/13
Left margin: PS (RD), 3/7/13, 25/7/13, 26/7/13, 27/7/13, 28/7/13, 29/7/13, 30/7/13, 31/7/13, 1/8/13, 2/8/13, 3/8/13, 4/8/13, 5/8/13, 6/8/13, 7/8/13, 8/8/13, 9/8/13, 10/8/13, 11/8/13, 12/8/13, 13/8/13, 14/8/13, 15/8/13, 16/8/13, 17/8/13, 18/8/13, 19/8/13, 20/8/13, 21/8/13, 22/8/13, 23/8/13, 24/8/13, 25/8/13, 26/8/13, 27/8/13, 28/8/13, 29/8/13, 30/8/13, 31/8/13, 1/9/13, 2/9/13, 3/9/13, 4/9/13, 5/9/13, 6/9/13, 7/9/13, 8/9/13, 9/9/13, 10/9/13, 11/9/13, 12/9/13, 13/9/13, 14/9/13, 15/9/13, 16/9/13, 17/9/13, 18/9/13, 19/9/13, 20/9/13, 21/9/13, 22/9/13, 23/9/13, 24/9/13, 25/9/13, 26/9/13, 27/9/13, 28/9/13, 29/9/13, 30/9/13, 1/10/13, 2/10/13, 3/10/13, 4/10/13, 5/10/13, 6/10/13, 7/10/13, 8/10/13, 9/10/13, 10/10/13, 11/10/13, 12/10/13, 13/10/13, 14/10/13, 15/10/13, 16/10/13, 17/10/13, 18/10/13, 19/10/13, 20/10/13, 21/10/13, 22/10/13, 23/10/13, 24/10/13, 25/10/13, 26/10/13, 27/10/13, 28/10/13, 29/10/13, 30/10/13, 31/10/13, 1/11/13, 2/11/13, 3/11/13, 4/11/13, 5/11/13, 6/11/13, 7/11/13, 8/11/13, 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Annexure -

REVISED LIST OF ITEMS AND NORMS OF ASSISTANCE FROM STATE DISASTER RESPONSE FUND (SDRF) AND NATIONAL DISASTER RESPONSE FUND (NDRF)

(Period 2010-15, MHA Letter No. 32-7/2011-NDM-I Dated 16th January 2012, modified vide letter No. 32-3/2012-NDM-I, dated 28th September 2012, modified vide letter No. 32-3/2013-NDM-I, dated 21st June 2013)

SNO.	ITEM	NORMS OF ASSISTANCE
1	2	3
1	GRATUITOUS RELIEF	
	a) Ex-Gratia payment to families of deceased persons.	<p>Rs.1.50.lakh per deceased person including those involved in relief operations or associated in preparedness activities, subject to certification regarding cause of death from appropriate authority.</p> <p>- In the case of an Indian citizen who loses his life due to a notified natural calamity in a foreign country, his family would not be paid this relief.</p> <p>- In the case of a Foreign citizen who loses his life due to a notified natural calamity within the territory of India, his family would also not be paid this relief.</p>
	b) Ex-Gratia payment for loss of a limb or eye(s).	<p>Rs. 43,500/- per person, when the disability is between 40% and 80%.</p> <p>Rs. 62,000/- per person, when the disability is more than 80%.</p> <p>Subject to certification by a doctor from a hospital or dispensary of Government, regarding extent and cause of disability.</p>
	c) Grievous injury requiring hospitalization	<p>Rs. 9,300/- per person requiring hospitalization for more than a week.</p> <p>Rs. 3,100/- per person requiring hospitalization for less than a week.</p>
	d) Clothing and utensils/ house-hold goods/ for families whose houses have been washed away/ fully damaged/severely inundated for more than a week due to a natural calamity.	<p>Rs.1,300/- per family, for loss of clothing.</p> <p>Rs.1,400/- per family, for loss of utensils/ household goods.</p>
	e) Gratuitous relief for families in dire need of immediate sustenance after a calamity.	<p>Rs. 40/- per adult and Rs. 30/- per child, not housed in relief camps. State Govt. will certify that (i) these persons have no food reserve, or their food reserves have been wiped out in the calamity, and (ii) identified beneficiaries are not housed in relief camps. Further State Government will provide the basis and process for arriving at such beneficiaries district-wise.</p> <p>GR to be provided to those who have no food reserves, or whose food reserves have been wiped out in a calamity, and who have no other immediate means of support.</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 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.</p>

2. SEARCH & RESCUE OPERATIONS	
(a) Cost of search and rescue measures/ evacuation of people affected/ likely to be affected	As per actual cost incurred, assessed by SEC and recommended by the Central Team (in case of NDRF). - By the time the Central Team visits the affected area, these activities are already over. Therefore, the State Level Committee and the Central Team can recommend actual/ near-actual costs.
(b) Hiring of boats for carrying immediate relief and saving lives.	As per actual cost incurred, assessed by SEC and recommended by the Central Team (in case of NDRF). 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.
3 RELIEF MEASURES	
a) Provision for temporary accommodation, food, clothing, medical care, etc. for people affected/ evacuated and sheltered in relief camps.	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 calamity like drought, or widespread devastation caused by earthquake or flood etc., this period may be extended to 60 days, and upto 90 days in cases of severe drought. Medical care may be provided from National Rural Health Mission (NRHM).
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.
4. CLEARANCE OF AFFECTED AREAS	
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 actual, based on assessment of need by SEC and recommendation of the Central Team (in case of NDRF).
5 AGRICULTURE	
(i) Assistance to small and marginal farmers.	
A. Assistance for land and other loss	
a). De-silting of agricultural land (where thickness of sand/ silt deposit is more than 3", to be certified by the competent authority of the State Government.)	Rs. 8,100/- per hectare for each item.

b) Removal of debris on agricultural land in hilly areas	(Subject to the condition that no other assistance/ subsidy has been availed of by/ is eligible to the beneficiary under any other Government Scheme)
c) De-silting/ Restoration/ Repair of fish farms.	
d) Loss of substantial portion of land caused by landslide, avalanche, change of course of rivers.	Rs. 25,000/- per hectare to only those small and marginal farmers whose ownership of the land is legitimate as per the revenue records.
B. Input subsidy (where crop loss is 50% and above)	
a) For agriculture crops, horticulture crops and annual plantation crops	Rs. 4,500/- per ha. in rainfed areas and restricted to sown areas. Rs. 9,000/- per ha. in assured irrigated areas, subject to minimum assistance not less than Rs.750 and restricted to sown areas.
b) Perennial crops	Rs. 12,000/- ha. for all types of perennial crops subject to minimum assistance not less than Rs. 1500/- and restricted to sown areas.
c) Sericulture	Rs. 3,200/- per ha. for Eri, Mulberry, Tussar Rs. 4,000/- per ha. for Muga.
(ii) Input subsidy to farmers other than small and marginal farmers	Rs. 4,500/- per hectare in rainfed areas and restricted to sown areas. Rs. 9,000/- per hectare for areas under assured irrigation and restricted to sown areas. Rs. 12,000/- per hectare for all types of perennial crops and restricted to sown areas. - Assistance may be provided where crop loss is 50% and above, subject to a ceiling of 1 ha. per farmer and upto 2 ha per farmer in case of successive calamities irrespective of the size of holding being large.
6. ANIMAL HUSBANDRY - ASSISTANCE TO SMALL AND MARGINAL FARMERS	
i) Replacement of milch animals, draught animals or animals used for haulage.	Milch animals - Rs.16,400/- Buffalo/ cow/ camel/ yak etc. Rs.1650/- Sheep/ Goat Draught animals - Rs.15000/- Camel/ horse/ bullock, etc. Rs.10,000/- Calf/ Donkey/ Pony/ Mule - The assistance may be restricted for the actual loss of economically productive animals and will be subject to a ceiling of 1 large milch animal or 4 small milch animals or 1 large draught animal or 2 small draught animals per household irrespective of whether a household has lost a larger number of animals. (The loss is to be certified by the Competent Authority designated by the State Government). Poultry:- Poultry @ 37/- per bird subject to a ceiling of assistance of Rs 400/- per beneficiary household. The death of the poultry birds should be on account of a natural calamity. Note:- 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.

	ii) Provision of fodder / feed concentrate including water supply and medicines in cattle camps.	<p>Large animals- Rs. 50/- per day.</p> <p>Small animals- Rs. 25/- 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 upto 30 days, which may be extended upto 60 days in the first instance and in case of severe drought up to 90 days.</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.
7	FISHERY	
	i) Assistance to Fisherman for repair / replacement of boats, nets – damaged or lost -- Boat -- Dugout-Canoe -- Catamaran -- net (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>Rs. 3,000/- for repair of partially damaged boats only</p> <p>Rs. 1,500/- for repair of partially damaged net</p> <p>Rs. 7,000/- for replacement of fully damaged boats</p> <p>Rs. 1,850/- for replacement of fully damaged net</p>
	ii) Input subsidy for fish seed farm	<p>Rs. 6,000 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 Department of Animal Husbandry, Dairying and Fisheries, Ministry of Agriculture.)</p>
8	HANDICRAFTS/HANDLOOM – ASSISTANCE TO ARTISANS	
	i) For replacement of damaged tools/ equipment	<p>Rs. 3,000 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. 3,000 per artisan for raw material.</p> <p>- Subject to certification by Competent Authority designated by the State Government about loss and its replacement.</p>
9	HOUSING	
	a) Fully damaged/ destroyed houses	
	i) Pucca house	Rs. 70,000/- per house
	ii) Kutch House	Rs. 15,000/- per house
	b) Severely damaged houses	
	i) Pucca House	Rs. 6,300/- per house
	ii) Kutch House	Rs. 3,200/- per house

(c) Partially Damaged Houses – both pucca/ kutcha (other than huts) where the damage is at least 15 %	Rs. 1,900/- per house
d) Damaged / destroyed huts:	Rs. 2,500/- per hut, <i>(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.)</i> <i>Note: -The damaged house should be an authorized construction duly certified by the Competent Authority of the State Government.</i>
e) Cattle shed attached with house :	Rs.1,250/- per shed.
10 INFRASTRUCTURE	<p><i>Repair/restoration (of immediate nature) of damaged infrastructure:</i></p> <p><i>(1) Roads & bridges (2) Drinking Water Supply Works, (3) Irrigation, (4) Power (only limited to immediate restoration of electricity supply in the affected areas), (5) Schools, (6) Primary Health Centres, (7) Community assets owned by Panchayat.</i></p> <p>Sectors such as Telecommunication and Power (except immediate restoration of power supply), which generate their own revenues, and also undertake immediate repair/ restoration works from their own funds/ resources, are excluded.</p> <p>Activities of immediate nature :</p> <p>Illustrative lists of activities which may be considered as works of an immediate nature are given in the enclosed Appendix.</p> <p>Assessment of requirements :</p> <p>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).</p> <ul style="list-style-type: none"> - As regards repair of roads, due consideration shall be given to Norms for Maintenance of Roads in India, 2001, as amended from time to time, for repairs of roads affected by heavy rains/floods, cyclone, landslide, sand dunes, etc. to restore traffic. For reference these norms are <ul style="list-style-type: none"> • Normal and Urban areas: upto 15% of the total of Ordinary Repair (OR) and Periodical Repair (PR). • Hills: upto 20% of total of OR and PR. <p><i>Note: States shall first use its provision under the budget for regular maintenance and repair.</i></p>
11 PROCUREMENT	<p>Procurement of essential search, rescue and evacuation equipments including communication equipments, etc. for response to disaster.</p> <ul style="list-style-type: none"> - Expenditure is to be incurred from SDRF only (and not from NDRF), as assessed by the State Executive Committee (SEC). - The total expenditure on this item should not exceed 5% of the annual allocation of the SDRF.

Illustrative list of activities Identified as of an immediate Nature

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.

4. Health :

Repair of damaged approach roads, buildings and electrical lines of PHCs/ community Health Centres.

5. Community assets of Panchayat

- a) Repair of village internal roads.
- b) Removal of debris from drainage/ sewerage lines.
- c) Repair of internal water supply lines.
- d) Repair of street lights.
- e) Temporary repair of primary schools, Panchayat ghars, community halls, *anganwadi*, etc.

Annexure-14

Formats (Reports, Damage and Loos Assessment)

Standard damage assessment form:

Application form for Government help for to Repair / Rebuilt House/Huts damaged during the Natural calamities of Earthquake on date 26.01.2001

:: APPLICATION FORM ::

Name of Applicant

Name of Village & Location of House / Hut

3. a. Ward No. Block No. House No.

b. Area

c. Valuation Register No.

Total No. of Family Member of Applicant

Sr. No.	Name	Age	Relation
1			
2			
3			

Annual Income of Applicant family

(A) Ownership of House :

House owner / House Tenant Name and Address:

House / Hut Party damage or fully damage

Damage estimate cost (In Rupees)

Amount Damaged for to Repair / Rebuilt House / Hut.

Fully damage House/ Hut is on official place or not? If not then Rebuilt House / Hut is on official place?

Place:

Date:

Signature of Applicant

Rojkam

Shriresident of Bhavnagar has residential building / Hut which is demolished heavy damage during the(type of Calamities). Which has seen by us and the estimated damage cost is Rs..... is true for that we punch sign under this.

- 1.
- 2
- 3

In presence of Team leader

Agreement

I shri living in village Taluka Agree to write agreement that in reference to my application what over the help given to me by Government according to his rules, I spend it for rebuilt house / hut. If I fail to do so I repaid the help to Government.

Witness:

Name:

Dates:

Applicant Signature

In presence of ten leaders.

In accordance with the Application of Shri..... for to repair / rebuilt residential building / kacha / packa / Hut. I personally verified the damage. In accordance with damage of situation of applicant . I agree to give him help according to rule. His valuation register No. is

Date:

Team Leader : Signagture

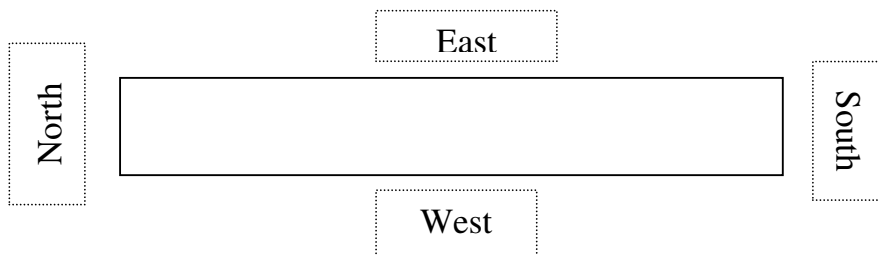
Shri..... Residence.....

house / hut damage details

Ward No.....

House No.....

Type of House : Kacha / Packa / Hut



Height of building :

Plinth Area:

Walls :

Cellar :

Roof detail : Tiles / Slash

Approximate damage:

(Repairing cost)

Categon of Damage:

% damage:

Engineer's Sign / Officer's Sign
Name:

-----Looking to the above detail Rs.is sranted as a help
for to repair / rebuilt . House / Hut.

Date:

Mamlatdar

Place:

Annexure-15

SOPs

SOP and Roles and Responsibilities of Different Key Departments and Taskforces

The Present plan document identifies the roles and Responsibilities of the organization, in key identified sector. Taskforces have constituted for taking response measures in sectors. Action plan has been prepared for each taskforce which covers their roles & responsibilities in development of incident / emergency. It is expected that each taskforce shall develop the standard operating procedures for specific disaster / emergency. District collector has to ensure that all the members acquire knowledge and skills to perform their assigned roles.

A) DISTRICT MAGISTRATE & COLLECTOR

Being chair person and Incident commander of the district for Disaster Management, he will be in over all command & emergency action to control a kind of emergency effectively for the district.

The Chair person has to perform the role as follows:

Preparation and updating of District Disaster Management Plan for the District.

To ensure to able to perform the role of each involved emergency service effectively.

To activate and maintain the District Control Room round the clock. To provide essential facilities with the District control room.

To access emergency situation and have to declare the emergency, call and direct the emergency services to respond the emergency by providing reinforcement and support by pooling the resources form the District and if required from the State.

The arrangement for rescue, evacuation, shelter, food, water, clothing, and transportation to affected area, announcement to the public.

To keep inform to the higher authority time to time to declare the withdrawal or termination of emergency.

Rehabilitation, Restoration etc on post emergency actions.

To submit the reports on emergency. To conduct the meetings.

To conduct the mock drill.

B) MUNICIPAL COMMISSIONER

On receiving the information from the Collector, the BMC will help by making arrangements like:

- To receive casualties during an emergency in the corporation run Hospitals.
- To mobilize the fire fighting equipments to Civil Hospital.
- To check for expected effected effects to the citizens of Bhavnagar and to take actions accordingly.
- To make schools available for shelters.
- To blow the city sirens for alarming the public.
- To inform the concerned department heads such as water and sewage supply, electricity section, hospitals, education department etc. about their DCPC plans and their functions and preparedness during emergencies.
- To rehabilitate evacuated city population after the emergency.

C) DISTRICT DEVELOPMENT OFFICER

Being a responsible person of Taluka / District the following actions are to be given prime importance for emergency purpose.

- Ensure the different authorities, agencies, organization persons, as specified their role, should participate immediately during emergency in district pocket area.
- To advice and guide different panchayat department and local representatives for meditative and preventives aspects of disaster management and coordinative approach at the time of emergency.
- To participate meeting, mock drill & training.
- To prepare own detailed action plan to ensure effective control on emergency.
- Liaison & co-ordination with chair person, Central Control Room, emergency services, organization, agencies, agencies person etc.
- Support all other duties as specified by District Collector.

D) POLICE DEPARTMENT

Another authority who gets the first information on incident / accident is police department. The following actions are to be carried out by police department.

- To access the situation and report immediately.
- To maintain the law and order during the emergency to control the traffic and control the affected area.
- To protect the life of people, inside, outside as well as road movers.
- To protect the property & environment & public announcement.
- Evacuation, rehabilitation, shelter & transportation work during the emergency as per prevailing situation.
- Help & assist to make area clean, removing of any structure and other similar work as required during actual emergency.
- To participate the meetings & Mock Drill / Rehearsal & Training.
- Liaison with Central Control Room and other emergency services/organization / agencies.

To prepare their own details action plan & to ensure the provisions to handle the emergency.

E) FIRE SERVICES

Most probably, the first information regarding any incidence / event is received by the fire services. Thus, fire service being first informant has to play the major role during the emergency.

Inspection, survey & assess the situation where incident occur & give the report.

To decide the proper & effective actions and immediate response actions to control the emergency, under intimation to Central Control Room or Chair Person.

Proper training to fight against different hazards

Rescue, Evacuation, Remove of debris, and other emergency work as directed or instructed.

To maintain the proper and adequate fire fighting, equipments, neutralizing media, self-breathing apparatus, emergency equipments, personnel protective equipments with keeping in working order.

The knowledge & information on different type of alternative resources, various types of extinguishing media, neutralizing media, chemical properties and their hazards with safe handling procedure.

To participate the meetings Mock Drill / Rehearsal & training.

Liaison with Central Control Room and other emergency services.

To prepare their own details action plan & to ensure the provisions to handle the emergency.

Other duties as required during actual emergency.

F) HEALTH DEPARTMENT

The health and medical services have to play vital role following the emergency. One fold is proper & timely treatments to the victims injured or affected persons. Other fold is to safe guard the public health.

To ensure the arrangement & preparedness for special medical treatment antidotes and trained doctor Para-medical staff as specified in toxicology at the time of industrial emergency in local pocket area.

On declaration of emergency or on receiving the message or information, prompt medical facilities should be set up e.g. first aid post, casualty receiving center/ camp, as Per gravity of situation at site. Situation at site. Similarly, arrangement for emergency operation or special treatment on chemical burn, injury, gas dispersion etc with adequate arrangement, which will can serve the purpose of Base Hospital.

Identification of dead bodies and post mortem arrangement.

To maintain upto-date list with telephone nos. of services of doctors, hospitals, ambulance, primary health center, Para-medical staff, vehicle to meet the emergency situation.

Arrangement to inform the upto-date status time to time to DEOC, Chair Person, and Relatives of injured or admitted patients, emergency services etc.

Arrangement to safe guard the public health in case of development of epidemic situation & announcement on safety measure to be taken by public at the time of emergency situation.

To advice & guide the different stake holders in respect of medical & health part time to time.

Provision for proper and adequate medicines, life saving drugs, equipments, antidotes etc. related to different hazards.

To participate meetings, mock drills / examine and training.

To prepare own detailed action plan to ensure the effective handling of different kinds of emergencies.

Liaison with DEOC, Chair person, emergency services organization, agency and other related person.

Other duties as required during actual emergency.

G) RTO

Respond to collector and police instructions in different kinds of emergency

Provide adequate requirements for both persons and material.

Arrange for deployment of vehicles with full fuel levels.

Streamline traffic flow and parking yard movement.

Co-ordinate deployment of vehicles, if required.

To participated meeting, mock drills & training.

To prepare own detailed action plan to ensure effective handing at the time of actual emergency.

H) Civil Supplies Department

Arrange to provide cooked food and clothing to evacuees and others involved in emergency controlling operation.

Ensure availability of sufficient cooked food, water ready for distributaries at various locations.

To participate meeting, mock drills & training.

To prepare own detailed action plan to ensure effective handling of emergency.

I) District Information Officer

The proper and correct news should be reach to the public to avoid rumors and panicky. The role of District information officer is to create awareness and preparedness amongst the public for different hazards because of wide & fast spreading news.

To participate meeting, mock drill / exercises and training.

To assist the public in case of rescue operation and authentic news.

Liaison & Co-ordination with Chair person, Central Control Room and emergency services.

Ensure to safe guard the public at large during actual emergency by providing correct reliable authentic guideline and news.

J) Commandant (Civil Defense Service)

To participate in meeting, mock drills & training.
To prepare own detailed action plan to ensure effective handling of emergency
To assist police in rescue and evacuation work during emergency.
To provide security, cordoning the area, and other Services.

K) ELECTRICITY BOARD (PGVCL)

Arrange for un-interrupted power supply, if needed.
Arrange for lighting at temporary medical camps, rallying points and parking yards.
Take care of electrical equipment within affected zone.
Arrange for switching off power supply if requested by authority.
To participate meeting, mock drills & training
To prepare own detailed action plan to ensure effective handling of emergency

L) Regional Officer (GPCB)

To participate meetings, mock drill / exercises and training.
To prepare own detailed action plan to ensure the effective control of industrial emergency & subsequent action.
Liaison with central control Room, chair person, Emergency Services, Organization agencies & other related persons.
Advice & Guidance to the District Crisis Group in Respect of environment protection in the industrial pocket.
To provide the technical input regarding environment and evaluate the contamination or adverse effect during industrial emergency.
To provide the details & information on development of emergency situation regarding in safe level to the life and suggest area to be evacuated and other safety measures.
To suggest the safe level for restoration & restarting of work on termination of emergency services & expert persons etc.
Other duties or work as directed by District crisis group or chair person.

M) Representative Form MAH Units

The management of major accident hazardous unit has to maintain updated onsite emergency plan with necessary details with accurate information and a correct assessment of the situation. The site main controller is responsible to provide immediately on occurrence of crisis at his unit with specific details, development and needed help from local crisis group & district crisis group. he will arrange & provide all resources, equipments, manpower, and communication network from his own unit and co-ordinate with local crisis group & district crisis Group to combat the industrial emergency.

N) ROLE OF OTHER MEMBERS OF DISTRICT CRISIS GROUP

The other members like controller of explosives, trade union representative, agriculture department, municipal commissioner and other government agencies, etc. have to perform the various duties. However, the following are the suggested duties as required during the emergency :

To Participate meeting, mock drill / exercise and training.

To assist the public in proper way in case of rescue and evacuation during actual emergency.

To advice and guidance to the District crisis group & Chair person.

To arrange and help the supporting actions and duties in respect of industrial emergency

To provide more and adequate resources & various requirement to tackle the industrial

emergency immediately.

Liaison & co-ordination with Central Control Room and emergency services.

O) Volunteer Organizations (N.G.O.)

The volunteer. organization / services can play vital role in relief & rescue operations like arrangement of food packets & packing up of the same , distribution of the food packets and water pouches , arrangement of life saving drugs & distribution of the same , Can have play a major roll in awareness generation , to convince the person / public to evacuate the residence / place and to shift to safe shelter timely during emergency. Otherwise it may result more serious effect. To save the life of public is more important factor, which will be successfully carried out by the volunteer organization. The list of such organization with address, telephone no. organization etc will be prepared and up-dated time to time.

P) RAILWAY AUTHORITY

On getting information at the time of disaster from Central Control Room, the Divisional Manager, western Railway, Bhavnagar will take following actions:

To issue the standing instruction to all railway gates to take actions on receiving the message from the Station Master.

To decide authority level of railway staff to take actions.

To carry out evacuation by railway, if required.

To take care of floating population at railway stations and on board travelers.

To issue the standing instruction to station Masters on up and down railway stations to stop the train as soon as emergency message is received from DEOC and CCR.

Q) Irrigation Department

Play vital roll in pre , during and post form of emergencies particularly in floods.
Proper management of dams ,irrigation canals, ponds and timely maintenance of the same.

Inform DEOC and respective stake holders in case of water release from the dams.

Start their control room at the time of monsoon.

Follow the instructions mentioned with the Flood memorandum.

To participate meetings, mock drill / exercises and training.

To prepare own detailed action plan to ensure the effective handling of different kinds of emergencies.

Liaison with DEOC, Chair person, emergency services organization, agency and other related person.

Other duties as required during actual emergency.

R) R&B Department

Play vital roll in pre, during and post form of emergencies.

Proper management of roads and buildings and timely maintenance of the same.

Inform DEOC and respective stake holders diversion of routes , closing status of the roads etc.

Ensure safety terms while establishing or developing of bridges , dams , roads , buildings etc.

To participate meetings, mock drill / exercises and training.

To prepare own detailed action plan to ensure the effective handling of different kinds of emergencies.

Liaison with DEOC, Chair person, emergency services organization, agency and other related person.

Other duties as required during actual emergency.

Annexure-16

Projects for prevention of disaster

Disaster Risk Management Programme (DRM)

Disaster Risk Management Programme (DRM) has taken strong roots at various levels of administration in Gujarat. The Department of Revenue & Disaster Management is the nodal Department in Government of Gujarat that handles the subject with GSDMA. Disaster Management Committees are formed at various levels and are assigned the task of implementing the programme. Representation for these committees are drawn from elected representatives, officials of line departments, professional bodies, Civil Defense, NGO and CBO representatives and local opinion leaders. Major Activities are being carried out under DRM program are Plan Development at Various Levels, Emergency Resources Database maintain through SDRN / IDRN, Capacity Building through Trainings & Resource Mobilization, Disaster Awareness through Orientations, Campaigning, Media Management and IEC distribution. Coordinate District Administration for all Disaster Management Activities with expertise knowledge, logistics and fund allocation.

DRM in Bhavnagar year 2016-17

Sr.No.	Activities	Remarks
1	Plan preparation	
2	Training	
3	Awareness Generation activity	
4	Mockdrill	

DRM Annual Report-2016-17

National Cyclone Risk Mitigation Project (NCRMP):

Gujarat being prone to cyclones, it is the topmost priority of the State Government to reduce the effect of cyclone and minimize the loss to property and lives in the coastal regions of the State through creation of suitable infrastructure. Gujarat has therefore been included in the NCRMP initiated by the National Disaster Management Authority and funded by the World Bank. Under NCRMP project various activity will carry out like Construction of cyclone shelter for selected area. In Bhavnagar district a village named Kuda of Ghogha taluka has select for this project.

Annexure-17

List of Trained Personnel

List of Trained personnels for Special Search and Rescue training At Jamnagar

Sr. No.	Name	Taluka/ City	District	Mobile No.	Remarks
1	Pradyumansinh R.Jadeja	BMC	Bhavnagar	9979425999	MNP
2	Udaysinh D.Rathod	Vallabhipur	Bhavnagar	9898262223	NP
3	Vinodbhai T.Vegad	Vallabhipur	Bhavnagar	9730388515	NP
4	Maheshbhai L.Ayar	Mahuva	Bhavnagar	9824880350	NP
5	Dharmendrabhai D.Chavda	Sihor	Bhavnagar	800063188	NP
6	Shivubha G.Gohil	Sihor	Bhavnagar	9725761319	NP
7	Zalabhai k.Aal	Sihor	Bhavnagar	9727192955	NP
8	Prakashbhai j.Pandya	Sihor	Bhavnagar	9898752455	NP
9	Pareshbhai B.Ladhel	Sihor	Bhavnagar	9898938620	NP
10	Laxmanbhai D.Vanjara	Gariyadhar	Bhavnagar	9662531402	NP
11	Rameshbhai P.Makwana	Gariyadhar	Bhavnagar	9662531418	NP
12	Hareshbhai B.Makwana	Gariyadhar	Bhavnagar	9662531398	NP
13	Manubhai U.Naiya	Gariyadhar	Bhavnagar	9662232240	NP
14	Manubhai R.Rathod	Palitana	Bhavnagar	9173881289	NP
15	Bijalbhai R.Rathiod	Palitana	Bhavnagar	9824539718	NP
16	Amitbhai R.Dodiya	Palitana	Bhavnagar	9426222194	NP
17	Batukbhai R.Parmar	Talaja	Bhavnagar	9824464078	NP
18	Limbabhai A.Dodia	Talaja	Bhavnagar	9904116281	NP
19	Nandlabhai J.Chauhan	Talaja	Bhavnagar	9879486523	NP
20	Kalubhai m.Chauhan	Talaja	Bhavnagar	9099214635	NP
21	Majbutsinh C.Gohil	BMC	Bhavnagar	9879111441	MNP
22	Dharamsibhai K.Gohil	Talaja	Bhavnagar	-	NP
23	LaljibhaiJ.Dodiya	Talaja	Bhavnagar	-	NP
24	Pappubhai K.Chauhan	Talaja	Bhavnagar	-	NP
25	Damjibhai N.Chauhan	Talaja	Bhavnagar	-	NP
26	Dulabhai S.Dharaniya	Gariyadhar	Bhavnagar	9974974293	NP
27	Arvindbhai D.Vanzara	Gariyadhar	Bhavnagar	9924524396	NP
28	Arvindbhai P.Makwana	Gariyadhar	Bhavnagar	9916695496	NP
29	Vallabhbhai P.Makwana	Gariyadhar	Bhavnagar	9662531429	NP
30	Ajaybhai H. Makwana	Shihor	Bhavnagar	9510361621	NP
31	Jaydipbhai R.Vaghela	Shihor	Bhavnagar	9725045817	NP
32	Bipinbhai A.Vaghela	Shihor	Bhavnagar	9723696905	NP
33	PRAFULBHAI S.SARDHARA	Shihor	Bhavnagar	9978042874	NP
34	Laljibhai M.Sarvaiya	Shihor	Bhavnagar	9925936246	NP
35	Laljibhai J.Bambhniya	Mahuva	Bhavnagar	9904460512	NP

Annexure-18

Contect Directory

Name of State stake holders

Key Members	Reporting Place	Contact Number
Relief Commissioner – RD - Gujarat	GANDHINAGAR	23221509, 26301728
Director of Relief – RD - Gujarat	GANDHINAGAR	23251611, 23251612
CEO-GSDMA - Gujarat	GANDHINAGAR	23259503
Additional CEO-GSDMA - Gujarat	GANDHINAGAR	3259220, 3259275

Name of District stake holders

Sr. No.	Designation	Name	Office No.	Mobile No.
1	Collector	Harshad Patel	0278 2428822	9978406206
2	DDO	Aayush Sanjiv	0278 2426810	9978406231
3	Municipal Commissioner	M.R.Kothari	0278 2510532	9978408567
4	DSP	Deepankar Trivedi	0278 2520050	9978405067
5	Res. Addi. Collector	R.P.Chaudhari	0278 2421881	9978405178
6	DSO	Mahipalsinh Chudasama	0278 2428908	7567021670
7	Director-DRDA	D.D. Jadeja	0278 2423657	7567032839
8	Dy.Director Information	Sharad Bumbaniya	0278 2424994	9913615298
9	CDHO	Dr.H.F.Patel	0278 2423665	9727779661
10	Suprentendent Civil Hospital	Dr. Vikas Sinha	0278 2423250	9879579193
11	District Epidemic Offi.	Dr.B.P. Boricha	0278 2525671	9727779717
12	District Agriculture officer	S.R.Kosambi (I/C)	0278 2439931	7600530340
13	Dy.Director	M.R.Vora	0278	9825670282

	Animal hus.		2524376	
14	Exicutive Engineer (R&B)-Panchayat	P.V. Gajera	0278 2422548	9426432833
15	Exicutive Engineer (R&B)-State		0278 2423383	9427217980
16	Exicutive Engineer (Irrigation)	S.G.Patel	0278 2430155	9909960156
17	DPEO	A.B.Prajapati	0278 2439954	9909971655
18	DEO	A.B.Prajapati (I/C)	0278 2426629	9909970212
19	Shashnadhikari	Satishbhai Trivedi	0278 2515646	9427181881
20	Disaster Mamlatdar	K.S.Limbani (I/C)	0278 2521554	8000284545
21	District Homgaurd Comandent	D.D.Chaudhari	0278 2423011	9978407982
22	DCF, Forest	Dr.Mohan Ram	0278 2428644	8511624496
23	Dy.Director, Fisheries	R.V.Bajpayi	0278 2427567	9428814485
24	Port Officer, Alang	Sudhir Chadhdha	02842 235621	9925153073
25	Port Officer, Bhavnagar	Sudhir Chadhdha	0278 2010195	9925153073
26	Superintedent-PGVCL Bhavnagar	J.M.Rathod	0278 2433043	9879203840
27	Exicutive Engineer, water suply	Shri Goratela	0278 2566446	9878406853
28	Divisional Controler, ST	B.R.Dindor	0278 2422699	9998953211
29	Depot Manager, Bhavnagar	A.A.Sersiya	0278 2423966	9998953215
30	Divisional Railway Manager	Rupa Shrinivashan	0278 2445475	9724097000
31	Director, Airport Bhavnagar	Sudha R. Murli	0278 2212971	9427211500
32	Chief Fire Officer	Chetan Vyas	0278 2430061	9825606021
33	Regional Officer-GPCB	R.R.Vyas	0278 2524108	7574827447
34	Regional Transport Officer	A.B.Patel	0278 2424293	9825007832
35	Dy. Director Industrial Safety&Health	P.M.Mistri	0278 2428473	9426325759
36	Charity Commissioner	V.N.Vasava	0278 2424171	9925986170

Name of Taluka Stakeholders

Datailes of SDM

Sr. No.	Prant Name	Officer Name	Taluka Code No.	Fone No.	Mobile No.
1	Mahuva (Jesar)	R.P.Joshi	02844	222765	7567010268
2	Talaja	M.D.Chudasama	02842	222260	7567010274
3	Sihor (Umralla, Vallabhipur)	M.A.Saiyed	02846	222103	7567010355
4	Palitana (Gariyadhar)	M.P.Patel	02848	243350	7567010276
5	Bhavnagar (Ghogha)	T.J.Vyas	0278	2428701	7567010346

Datailes of Mamlatdar

Sr. No.	Taluka Name	Officer Name	Taluka Code No.	Fone No.	Mobile No.
1	Mahuva	B.D.Mer (I/C)	02844	223042	7567001646
2	Talaja	B.G.Varma	02842	222042	7567001823
3	Sihor	S.J.Chavada	02846	222009	7567001683
4	Palitana	K.K.Pandya	02848	243326	7567001737
5	Gariyadhar	V.B.Makwana	02843	252922	7567001910
6	Vallabhipur	Smt.U.S.Parmar (I/C)	02841	222435	7567001868
7	Bhavnagar (Rural)	N.L.Damor	0278	2421885	7567001743
8	Ghogha	N.L.Damor (I/C)	0278	2882323	7567001895
9	Umralla	K.M.Solanki (I/C)	02843	235230	7567001922
10	Jesar	M.K.Joliya (I/C)	02845	281400	9727769875

Datailes of Taluka Development Officer

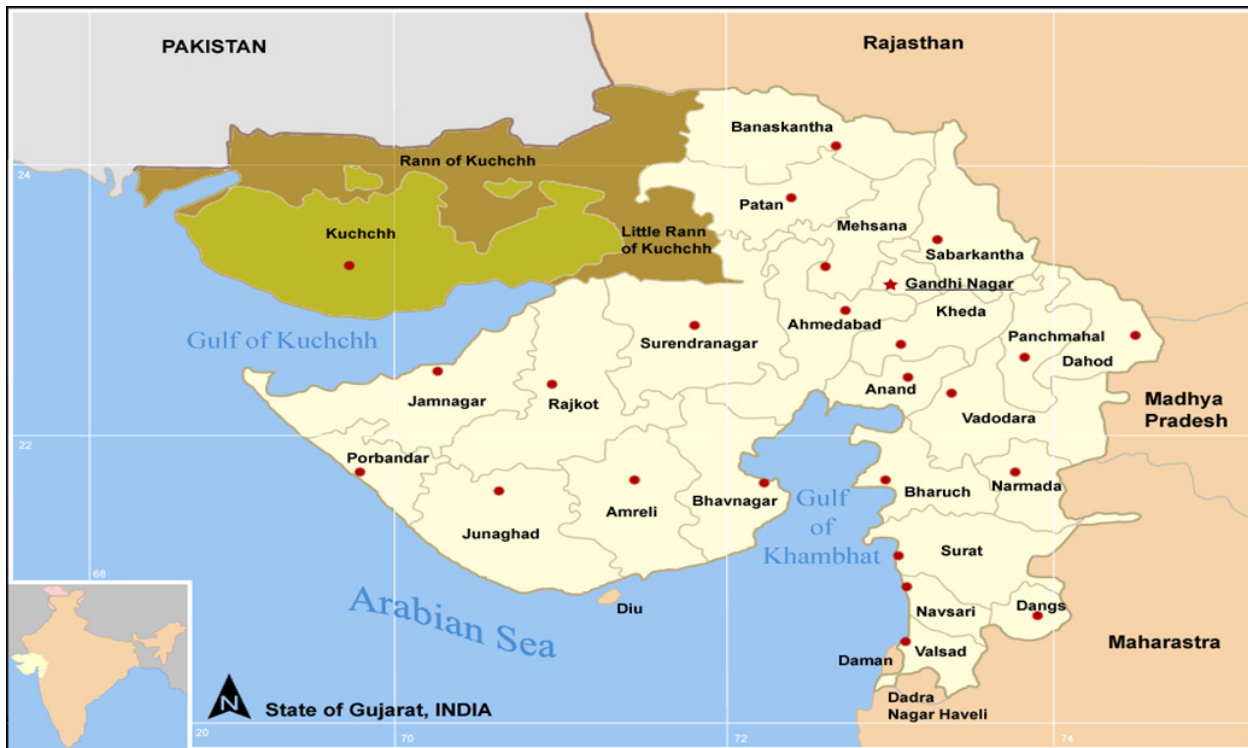
Sr. No.	Taluka Name	Officer Name	Taluka Code No.	Fone No.	Mobile No.
1	Mahuva	P.B.Vala	02844	223968	7567018926
2	Talaja	Bhagirathsinh Gohil	02842	222036	7567018948
3	Sihor	V.G.Pandya	02846	222029	7567012759
4	Palitana	B.D.Gohil	02848	242451	7567012714
5	Gariyadhar	R.B.Visani	02843	252934	7567012743
6	Vallabhipur	D.N.Satani	02841	222423	7567012766
7	Bhavnagar (Rural)	D.N.Satani (I/C)	0278	2421898	7567012852
8	Ghogha	K.P.Parmar	0278	2882339	7567019728
9	Umralla	D.N.Satani (I/C)	02843	235596	7567012707
10	Jesar	R.S.Gosai	02845	223968	9427248421

Datailes of Chief Officer

Sr. No.	City Name	Officer Name	Taluka Code No.	Fone No.	Mobile No.
1	Mahuva	S.K.Khuman	02844	222318	9723811161
2	Talaja	J.B.Jani	02842	223173	9426336133
3	Palitana	B.R.Baral	02848	242555	9879008536
4	Gariyadhar	Kanaksinh Gohil	02843	250053	9913935870
5	Sihor	P.P.Yadav	02846	222024	9825656251
6	Vallabhipur	J.L.Dave	02841	222432	9426245770

Maps

State map showing Bhavnagar district

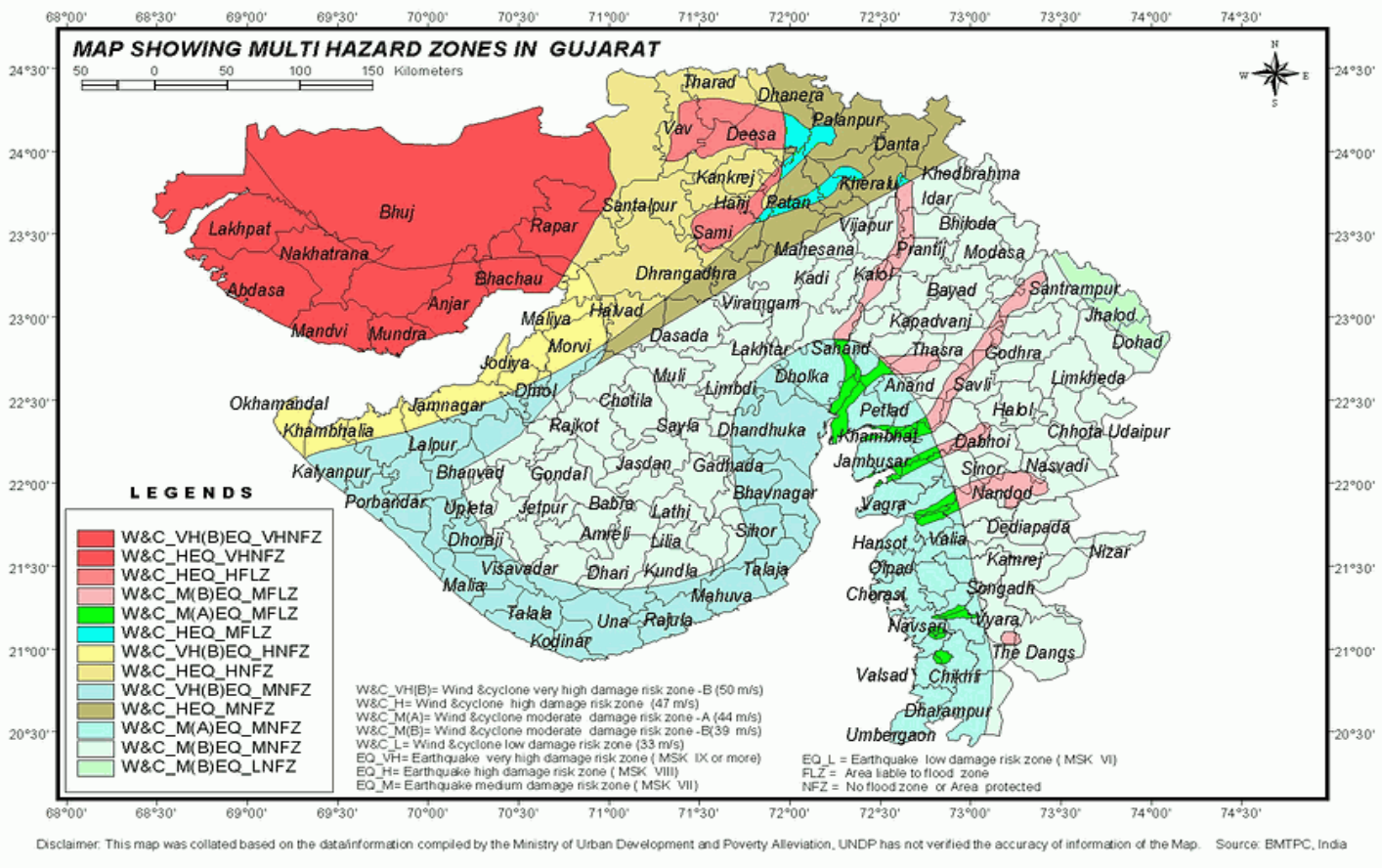


Bhavnagar District Map



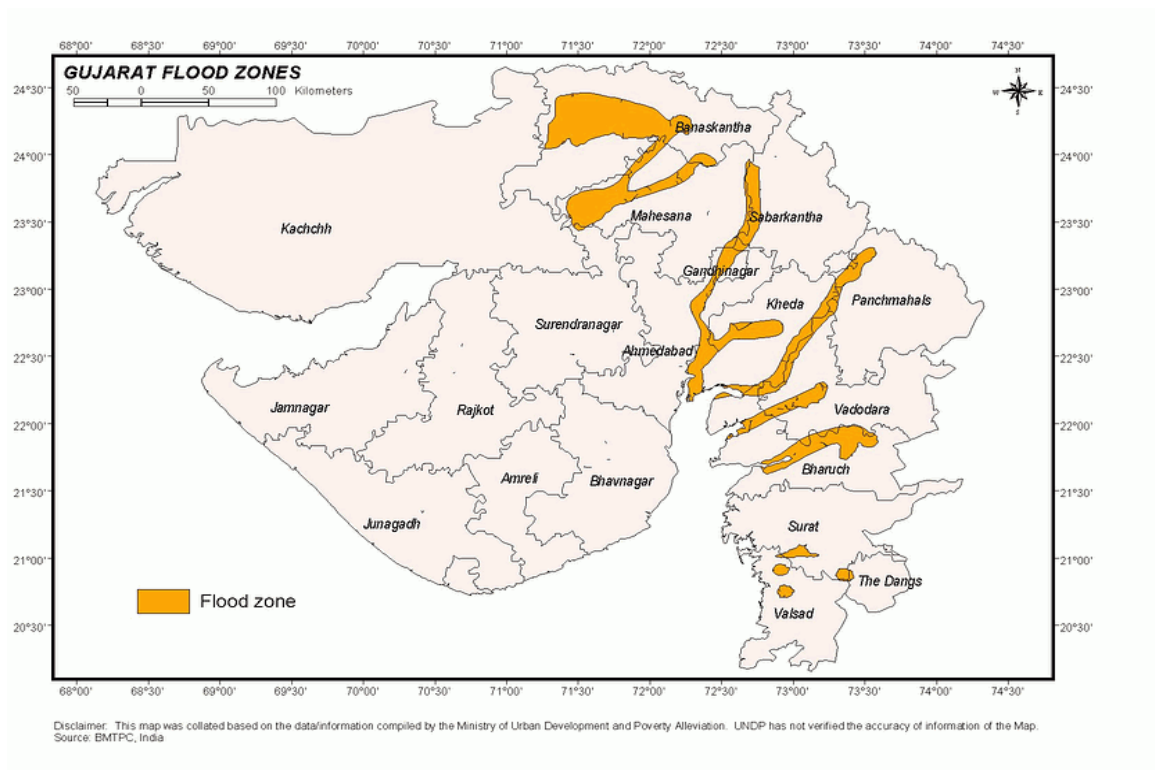
Hazard Maps

Multi - Hazard Map Of Gujarat

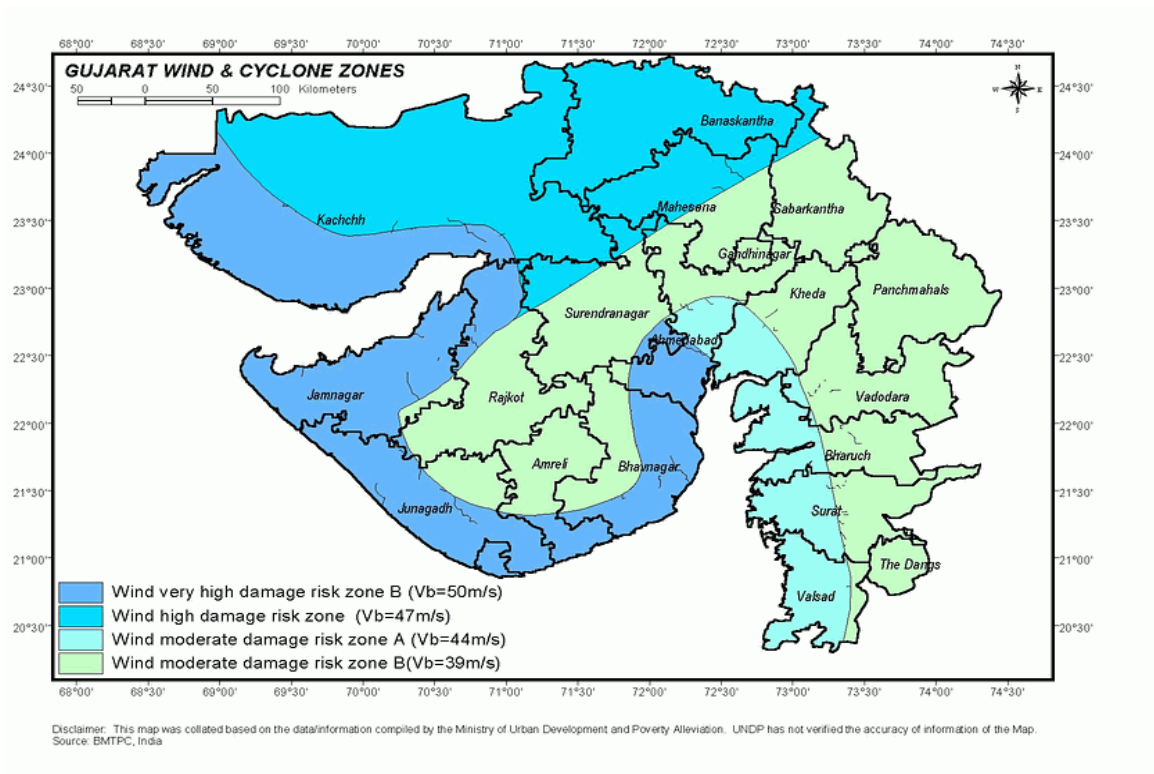


Multi Hazard Map of Gujarat

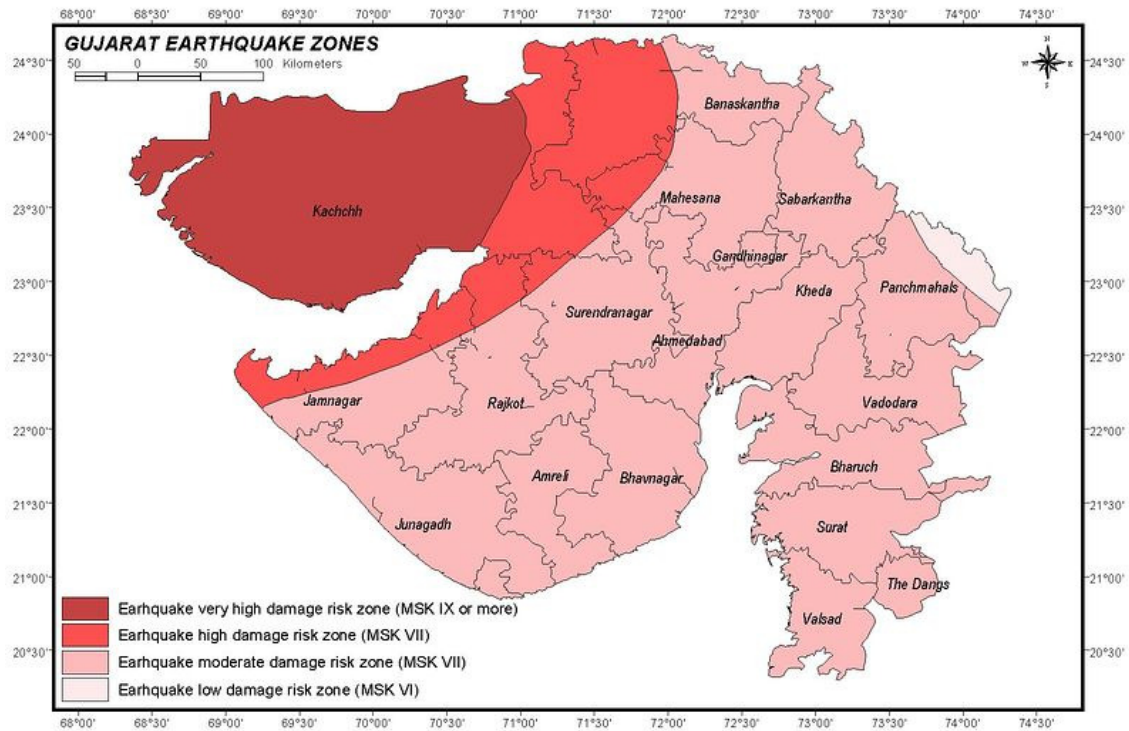
Gujarat Flood zone hazard Map



Gujarat cyclone zone hazard map



Gujarat Earthquake zone hazard map



Disclaimer: This map was collated based on the data/information compiled by the Ministry of Urban Development and Poverty Alleviation. UNDP has not verified the accuracy of information of the Map.
Source: BMTPC, India

Dos and don'ts in various disaster

Cyclone Safety

A cyclone is a storm accompanied by high-speed whistling and howling 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 kilometers 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 bends and plucks 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 kachha 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, than Stay indoors! Get under a heavy desk or table and hang on to it.
- If fire breaks out, drop on the floor and crawl towards the exist

- If you are out doors during the quake, keep away from buildings, trees and electricity lines. Walk towards open places, in a calm and composed manner.
- If you are driving, quickly but carefully move your car as far out of traffic as possible and stop. Do not stop on or under a bridge or overpass or under trees, light posts, power lines, or signs. Stay inside the car until shaking stops
- If you are in a school, get under a desk or table and hold on

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

Dos

- 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 unburst 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

Gujarat State Disaster Management Authority

**District Emergency Operation Center
District Collector Office
Bhavnagar**