DISTRICT DISASTER MANAGEMENT PLAN

(2012)

Longitude – 75” to 74’ 4” E
Latitude – 31’ to 31’ 5 N
Area – 5739 Sq. Km.

District Kangra, Himachal Pradesh.

PREPARED BY:-

DISTRICT DISASTER MANAGEMENT AUTHORITY (DDMA)
Kangra

UNDER

The Government of India- UNDP
Disaster Risk Reduction (DRR) Programme
(2009-12)

Contents **Page No.**

CHAPTER – 1
INTRODUCTION

Vagaries of nature can cause disaster of such magnitude and such intensity that it becomes impossible to respond unless there is preparedness to cope with the effect in the pre-as well as post-disaster period. Preparedness is the best response to such situation in order to mitigate the effects and to reduce losses in terms of life and property. With increasing anthropogenic pressures, natural disaster have become all the more unpredictable and the fury unleashed by natural forces on human kind all the more ferocious causing far greater loss of life and property. While there is no doubt that human kind has now got to make amends by restoring ecological balance, it is also true that human kind has got to be prepared for the worst. Increased population densities, environmental degradation, and global warming adding to poverty make the impacts of natural hazards worse.

In the International decade for natural Disaster Reduction a world Conference on natural Disaster Reduction was organized in 1994 under the aegis of the united Nation in partnership with non-governmental organization (NGOs), the scientific community, business, industry and media to deliberate on reduction of human suffering due to natural disasters. It was concluded that disaster prevention, mitigation, preparedness and relief along with environmental protection and sustainable development are closely interrelated and hence nation should incorporate them in their development plans.

1.1 Paradigm Shift in Disaster Management

On 23rd December, 2005, the Government of India took a defining step by enacting the Disaster Management Act, 2005, which envisaged creation of the National Disaster Management Authority (NDMA) headed by the Prime Minister, State Disaster Management Authorities (SDMA) headed by the Chief Ministers, and District Disaster Management Authorities (DDMA) headed by the District Magistrates or Deputy Commissioners as the case may be, to spearhead and adopt a holistic and integrated approach to disaster management (DM). There will be a paradigm shift, from the erstwhile relief-centric response to a proactive prevention, mitigation and preparedness-driven approach for conserving development gains and to minimize loss of life, livelihood and property.

1.2 Section 2 (e) of the Act defines disaster management as follows

“Section 2(e) "disaster management" means a continuous and integrated process of planning, organising, coordinating and implementing measures which are necessary or expedient for-

(i) prevention of danger or threat of any disaster;
(ii) mitigation or reduction of risk of any disaster or its severity or consequences;
(iii) capacity-building;
(iv) preparedness to deal with any disaster;
(v) prompt response to any threatening disaster situation or disaster;
(vi) assessing the severity or magnitude of effects of any disaster;
(vii) evacuation, rescue and relief;

(viii) rehabilitation and reconstruction;"

The definition encompasses the cycle of disaster management which has the elements of pre-disaster phase such as prevention, mitigation, preparedness and capacity building. The SDMA and DDMA in the State was created on 1.6.2007 and these authorities would bring out a qualitative change in dealing with disaster in the State.

1.3 Objectives of the DDMP:

The main objective of the District Disaster Management Plan (DDMP) is to prevent loss of life and property through preparedness, prevention, mitigation and quick and coordinated response. The Disaster Management Plan provides for uniformity in approach and perception of the various issues at hand thus avoiding undue complications. The plan at the same time provides for the coordination mechanisms for different agencies right from the field level to the District Head Quarter and beyond. Thus, it ensures efficiency in terms of response and optimal utilization of resources. Moreover it keeps the administration in a state of readiness to face any eventuality.

The DDMP is an attempt at preparing a multi-disaster action plan essentially concentrating on institutional setup and provides for hazard specific roles and responsibilities of primary and secondary agencies. It identifies the operational structure and the coordination mechanisms, the roles and responsibilities of various agencies along with the standards of service expected from them, the information and monitoring tools and modes of communication, and the monitoring and evaluation components.

Disaster risk reduction should be part of every-day decision making. This framework assists in the efforts of administration and communities to become more resilient to, and cope better with the hazards that threaten their development gains. The DDMP recognizes a close link between development and disasters and comes out with practical ways as how disaster risk reduction (DRR) issues can be integrated into development planning, policies and programmes.

1.4 Introduction to Kangra District

Kangra is a town in Kangra District of Himachal Pradesh state in northern India, and lends its name to the district of the same name. Kangra was called Nagarkot in ancient history. It is a town at the confluence of the Bener River and Majhi River. The headquarte of the district is in Dharamsala which is also a tourist spot and is now home-in-exile to the Dalai Lama. Another important town is Palampur which is 40kms away from Dharamsala and famous for its picturesque tea gardens. Many ancient temples like the Jawalaji Temple, Brijeshwari temple, Cahamunda temple, Baba Baroh and Baijanith temple are found here. Kangra fort is also a popular tourist attraction.

In 1905, Distt Kangra experienced one of the giant earthquakes of the recorded seismic history of India having a magnitude of 8.0 on Richter scale in which 20,000 persons lost their lives. The towns of Kangra and Dharamshala were razed to the ground and no Government functionary there was left alive even to reports the happenings to the higher authorities. Therefore this plan has been made to deal with worst case scenario with full involvement of community.

Today with latest technology and resources we are better prepared to deal with such catastrophe. How ever all these resources require integration under unified plan to be more effective and clear in purpose. With passing of Disaster Management Act.2005 and with inclusion of disaster management in the seventh schedule of the Constitution due importance has been given to Disaster Management and each district is required to make an integrated Distt Disaster Management Plan.

The objective of this plan is to formulate an integrated District level Disaster Management Plan for Distt Kangra to integrate Distt. Resources to mitigate risk of disasters identified are prepared to deal with them, build capacities to handle them efficiently and effectively, to have prompt and integrated response in case of disaster by speedy planned evacuation, search and rescue, medical aid and restoration of essential services, finally to initiate rapid recovery by effective rehabilitation and reconstruction.

This plan deals with detailed hazards, risk and vulnerability analysis , integrated institutional mechanism to implement the plan , resource inventory, mitigation plan, response plan , reconstruction plan, standard operating procedures for different committees and Govt. Departments, budgetary and financial allotments, modalities for monitoring, periodic evolution and update.

This plan has been prepared by Distt Administration by upgrading the previous plan. Endeavour is to make the plan simple and short so that even a lay man can understand it. This plan has been kept open ended to assimilate all the new inputs and feedbacks so that it evolves with time. Mechanism has been incorporated in plan to get quarterly inputs and the complete plan to be reviewed annually.

1.5 District Kangra Profile

1.5.1 Location

The Kangra District of Himachal Pradesh is situated in the Western Himalayas between 31°2 to 32°5 N and 75° to 77°45 E. The altitude of the district ranges from 427 to 6401m above mean sea level, with the lowest being in the plains areas bordering Gurdaspur district of Punjab in the west and Una and Hamirpur districts of H.P to the south while the highest being amidst the Dhauladhar mountain range which forms the border with Chamba and Kullu districts. The district has considerable diversity in its soils, physiography, land use patterns and cropping systems. On the basis of these, the district has further been divided into five sub-regions i.e. Pir Panjal, Dhauladhar, Kangra Shiwalik, Kangra Valley and Beas Basin.

1.5.2 Area

The district has a geographical area of 5,739 km. which constitutes 10.31% of the geographical area of the State. According to 2001 census, the total population of the district was 13, 39,030, which is the highest in the state (22.50% of the population).

1.5.3 Physiography, Natural Resources and Land Use

The picturesque valley of Kangra sheltered by the sublime Dhauladhar range is nestled in the Western part of the lower Himalayas. The varying altitudinal range provides a mosaic of physiographic features resulting in highly diverse natural vegetation intercepted by serpentine perennial streams at times. These natural resources constitute the lifeline of the people. The importance of the forests for the livelihood of the hill people in providing them firewood, timber, fodder, herbs and several other raw materials for certain industries can hardly be overemphasized. In addition to these direct benefits, the forests help in perpetuating the ecological sustainability through lessened soil erosion and flash floods. Further, the natural vegetation augments the aesthetic value of Kangra valley when gushing streams traverse these greenwoods at places. Eco-tourism and adventure sports are other spill over of these natural resource endowments.

1.5.4 Climate

The climate of the district varies from sub-tropical in low hills and valleys to sub-humid in the mid hills and getting temperate in high hills. The district receives an average annual rainfall of about 205 cm that goes up from about 100 cm in southern parts to about 250 cm in north eastern areas. Most of the rainfall, about 80 per cent, is received during June to September months. Average annual rainfall in the district during the last one and a half decade is given in Table 3.1. In contrast, the average annual rainfall in the state during the same period was 1254.6 mm. Snowfall is also received in northern parts around Dharamshala, Palampur and Baijnath areas. Average maximum temperature ranges from about 35.0 degree Celsius in southern parts to around 25.0 degree Celsius in northern areas.

Climate data for Dharamshala

Month	Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sep	Oct	Nov	Dec	Year
Average high °C (°F)	13.5 (56.3)	17.8 (64.0)	21.6 (70.9)	26.9 (80.4)	29.1 (84.4)	30.5 (86.9)	27.2 (81.0)	26.1 (79.0)	24.6 (76.3)	23.7 (74.7)	19.8 (67.6)	16.4 (61.5)	23.1 (73.6)
Average low °C (°F)	5.1 (41.2)	10.3 (50.5)	14.7 (58.5)	16.3 (61.3)	20.1 (68.2)	22.9 (73.2)	21.4 (70.5)	20.2 (68.4)	17.5 (63.5)	14.8 (58.6)	10.7 (51.3)	7.4 (45.3)	15.1 (59.2)
Precipitation mm (inches)	114.5 (4.508)	100.7 (3.965)	98.8 (3.89)	48.6 (1.913)	59.1 (2.327)	202.7 (7.98)	959.7 (37.783)	909.2 (35.795)	404.8 (15.937)	66.3 (2.61)	16.7 (0.657)	54.0 (2.126)	3,054.4 (120.252)

Source: http://www.bbc.co.uk/weather/world/city_guides/results.shtml?tt=TT004930

1.5.5 Geography

District has varied geography with Northern plains of India just touching the S.W. of district, the Shiwalik range, the Mountain range of Dhauladhar and the Himalayan range of Pir Panjal N.E.

a) Altitude various from 427 to 6401 Mtr above MSL.

b) Rivers/Rivulets:-
i) Beas:- Runs along E to SW along border of district.
ii) Ravi:- Originate in Bara Bhangal area in and flows to Kangra district.
iii) Major rivulets:- (Perennial) Uhl, Luni, Binva, Neogal, Banganga, Gaj, Bhul, Hehar, Chakki, Tall.
Note:- All rivers and rivulets may be in spate during Monsoon season.
iv) Beas Basin: - This basin has dried up after construction of Pong Dam and large area has been reclaimed by inhabitants. This area is prone to floods when ever excess water is released from Pong Dam.

1.5.6 Topography

Kangra district has a mountainous terrain with highly undulating landforms. The Altitude ranges from about 550 metres to 5,500 metres above mean sea level (amsl),

The rise being gradual to about 1,500 metres amsl whence after it becomes abrupt. The district has a maximum length of about150 km from Baijnath block to Indora block in east-west direction. It extends to a distance of about 100 km from Rait to Pragpur block in the north-south direction. The entire territory is mountainous with the exception of the erstwhile Nurpur tehsil (covering the blocks of Nurpur, Indora, Fatehpur and parts of Nagrota Surian), which accounts for roughly 15 per cent of the Area is total area of the district. Deep valleys lying between ranges of varying elevations characterize the mountainous portion, which comprises the bulk of the territory.
Altitudinally, the district has three distinct zones. These are:

1. Low hills and valley areas up to an elevation of about 900 metres a.m.s.l. This portion accounts for about 49.0 per cent of the total area in the district.
2. Mid hills extending from 900 metres to 1,500 metres a.m.s.l. This is nearly 16.0 per cent of the district area.
3. High hills rising from about 1,500 metres to 5500 metres a.m.s.l account for the remaining 35.0 per cent of the entire area.

1.5.7 Changer (Dry) region

This area is a unique feature between valley area and Shiwalik foot hills which falls under the rain shadow area therefore is quite dry and hence the name. The population is Sparse agriculture is rain based and susceptible to droughts.The other two areas which require mention are man made which have changed the topography of district.

1.5.8 Pong Dam reservoir and wet land area

Area 75268 hectare which was created by the construction of Pongdam (on the river Beas). This basin has dried up after construction of Pong Dam and large area has reclaimed by the inhabitants. This area is prone to floods whenever excess water is released from Pong Dam.

1.5.9 Economy

The Economy of Kangra District consists mostly of agriculture and farming. Tea cultivation plays a vital in the economy. "Kangra Tea" is fasmous worldwide for its rich aroma, colour and taste. A few other industries that have been established in the region, including water packaging, construction materials, and potato chips.

The areas of Palampur and Baijnath are surrounded by lush, green tea estates. Tourism is also an important part of the economy, with Bir in particular becoming a strong hub for ecotourism and aerosports.

1.5.10 Administrative Setup

Administrative Division	**Distt. Headquarters**	**Dharamshala**
	Sub Division (8 Nos.)	Dharamshala ,Kangra Palampur,Baijnath Nurpur, Dehra Jwali , Jai Singhpur
	Tehsils 18 Nos.	(i)Nurpur (ii)Indora (iii)Fatehpur (iv)Jawali (v)Shahpur (vi)Dharamshala (vii)Kangra (viii)Baroh (ix)Dehra Gopipur (x)Jaswan (xi)Khundian (xii)Jai Singhpur (xiii)Palampur (xiv)Baijnath (xv)Jawalamukhi (xvi) Rakkar (xvii) Multhan (New Tehsil) (xviii)Nagrota Bagwan (in Notification)
	SubTehsils **3** Nos.	i) Har Chakian (ii) Thural (iii) Dehra (iv) Nagrota Surian
	Kanoongo circle	48 Nos.
	Patwar circle	519 Nos.
	Development Blocks	15 Nos

1.5.11 Demography

Population As per 2011 Census	
Total	1,507223 Nos.
Male	7,48,559 Nos.
Female	7,58,664 Nos.
Rural	1420864 Nos.
Urban	86359 Nos.
Sex Ratio	1,025 (No. of females per 1000 males)
0-6 population	Total = 160865: Male – 85888; Female – 74977 (873 No. of females per 1000 males)
Density of Population	233 per sq. km.

Other Demographic details	
Total Nos.of workers	3,36,649 (25.14% of population)
Total Nos.of house hold	2,72,487 Nos.
Total census villages	3908 (249 uninhabited)
Gram Panchayat	760 Nos.
Towns	7 Nos.
Cantonment Board	1 No.

1.5.12Education (Human resource)

Litracy rate as per 2011 census	
Total	86.49 %
Male	92.55 %
Female	80.62%

Institution strength			
Institution	**Nos.**	**Teachers**	**Students**
Govt. & Non Govt. Colleges	29		
Primary Schools	1761	4215	68757
Middle School	395	1520	26961
Secondary	400	4295	76618
Agricultural University	01		
Medical College Tanda	01		
Ayurvedic College Paprola	01		

Land utilization area	Total Area In Acre
Total Cultivated land	127401
Horticulture Land	3441
Tea	1190
Orchard	3068
Non-cultivated land	218078
Forest Land	232212

Livelihood	
Agriculture	Vegetables, Pulses, Wheat, Rice,
Horticulture	Mango, Tea, Pears, Apple (in upper part of Kangra)
Manufacturing	**Major: Handlooms and Handicrafts** (These are household activities. Shawls, Pattis, Carpets are woven on Handllooms and Wooden/Metal Craft depicting various features of Tibetan Art is prevalent in district Kangra) **Minor: Fabrications** (Steel and Wooden Furniture, Food Processing, Auto Repair, Oil Extraction Units, Wool Carding etc.)
Service	Government, Private, Business,
Tourism	

Industries	
Total units	7435 Nos (small scale)
Total workers	25048 Nos.
Production in Rs.	
Hosiery	Rs. 290.2 Lac.
Rolled steel	934954 Nos (2003-04)
Poultry	Rs.350.6 Lac
Pipes	Rs. 48 Lac.
Brass ware	Rs.102 Lac.

Banks	
Commercial	153 Nos.
Co-operative	94 Nos.

Travel Infrastructure	
Air	Air Port at Gagal (Kangra) Commecting Air Port at Pathankot Punjab.
Rail	Single narrow gage line from Pthankot (Punjab) to Jogindernagar (Distt.Mandi) passes through district as shown in map. Rail Junction at Pathankot & Delhi-Jammu Route
Roads	National High way passing through Distt. NH-1-A-Jalandhar to Shrinagar-Short stretch NH-20-from Pathankot to Mandi. N-88 – From Matour to Shimla.

CHAPTER - 2
HAZARD PROFILE OF THE DISTRICT

District Kangra is prone to various hazards both natural and manmade. In the District the geological hazard, mainly earthquakes, landslides and soil erosion are most critical, the flash flood, cloud burst, drought and forest fire is also hydro metrological hazard.

The road accident, wind storm, epidemic and domestic fire could also occur but cause damage locally only.

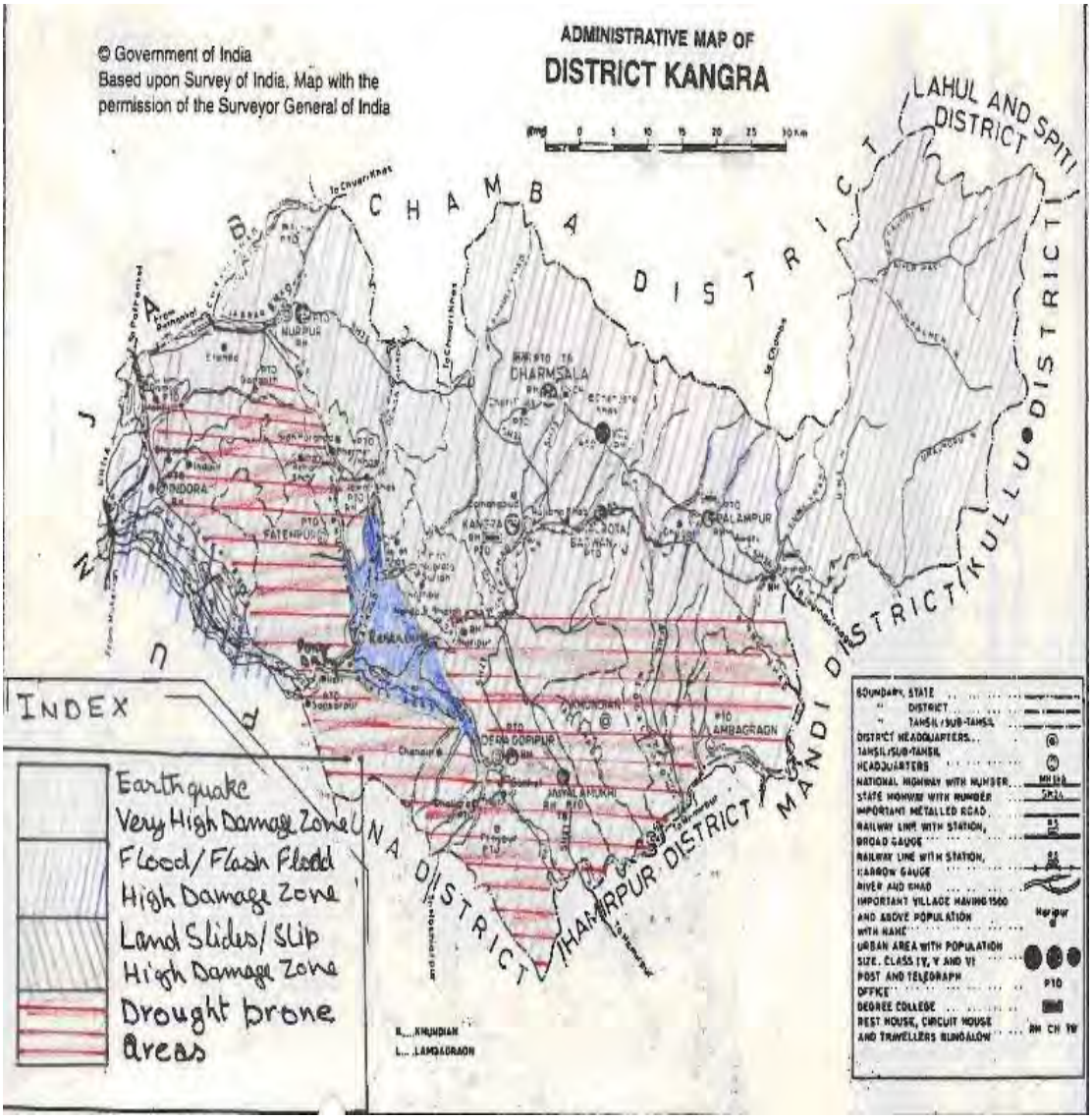


Fig: 1 All type hazards map of District Kangra

2.1 Natural Hazards:

2.1.1 Earthquake

The whole district is prone to severe earthquake hazard. It has been subjected in 1905 to one of the giant earthquakes recorded in seismic history of India having a Magnitude of 8.0 on the open ended Richter Scale in which 20000 persons had lost their lives, the town of Kangra and Dharamshala were razed to the ground and no-government functionary there was left alive even to report the happenings to higher authorities. It had shaken area of more than 416000 sq. Km in and around the present Himachal Pradesh. Other most damaging earthquakes of the Kangra region include that of 1968, 1978, and 1986 and district has been shaken every year by earthquake having a magnitude of 4 and above on the Richter scale. As per the BIS seismic zoning map 98.6% area of Kangra is liable to the severest design intensity of MSK IX.

2.1.2 Landslides

The hills and mountains of District Kangra are liable to suffer land slides during monsoons and also in high intensity earthquake. The vulnerability of the geologically young and not so stable steep slopes in various Dholadhar, Chamba Dhar ranges, has been increasing at a rapid rate in the recent decades due to inappropriate human activity like deforestation, road cutting, terracing and changes in agricultural crops requiring more intense watering etc.

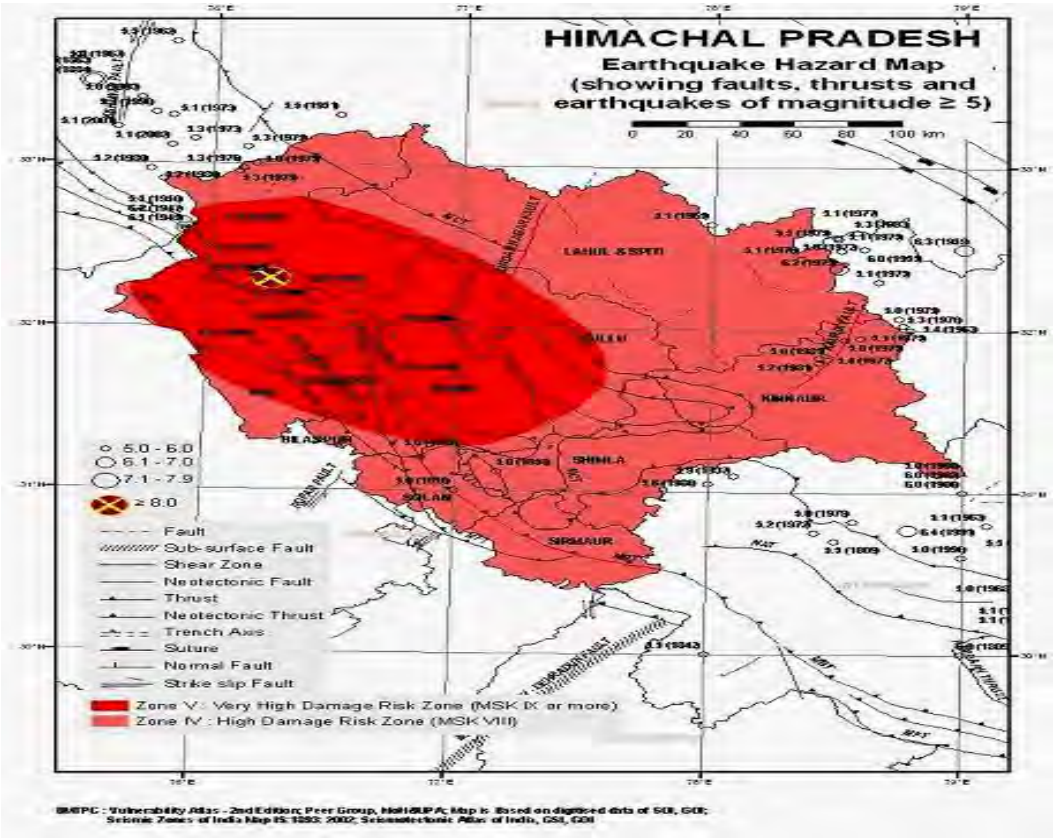


Fig: 2 Earthquake hazard map of Himachal Pradesh

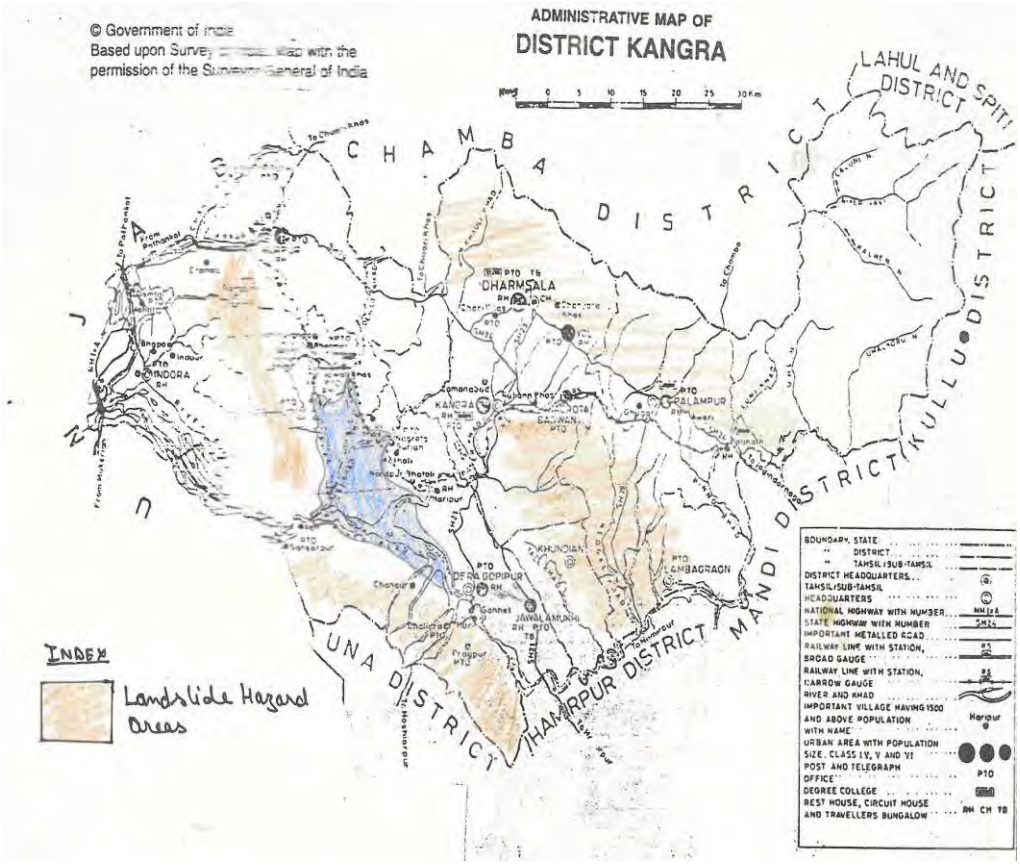


Fig: 3 Landslide hazard map of District Kangra

2.1.3 Flood & flash flood

River Beas and its tributaries constitute the main drainage system in Kangra district except for the extreme north-eastern part in Bara Bhangal area where it forms a part of the river, Ravi. Generally, the drainage system is marked by structural and slope conditions. The Beas River enters the district near village Harsi from the east and flows towards the west before it leaves Kangra (and Himachal Pradesh) at Mirthal in Punjab. The major southernly flowing tributaries are Neugal, Awa, Binnu, Baner, Naker, Gaj and Dehar *khads*. All these *khads* being snowfed are perennial. Northernly flowing streams are ephemeral. The various *khads*/streams and their catchment areas are given in below Table. Banganga, Dehar, Neogal and Awa originate from high Dhauladhar ranges in the north. Banganga, Gaj, Dehar, Bohl and Nand *Khads* join the Pong reservoir directly, while Neugal and Awa join the Beas River in the upstream of Nadaun. These *khads* have deep valleys in the hilly area. The valleys are wide in the Kangra valley region where the slope/gradient of the rivers is gentle. The course of these rivers is structurally controlled. The gradient and flow are being utilized both for irrigation and power generations. A number of micro hydel projects are under construction on these *khads*. The water of these rivers is also used for irrigation by diverting its flows through *kuhls* (gravity channels). The northerly flowing tributaries '*choes*' are ephemeral and have flash floods during the monsoons. The width of these stream channels varies from less than a kilometre to more than 2 km. The channel areas are generally devoid of vegetation. The important *khads* are Pragpur, Nalsuha, Chanour and Dada Siba.

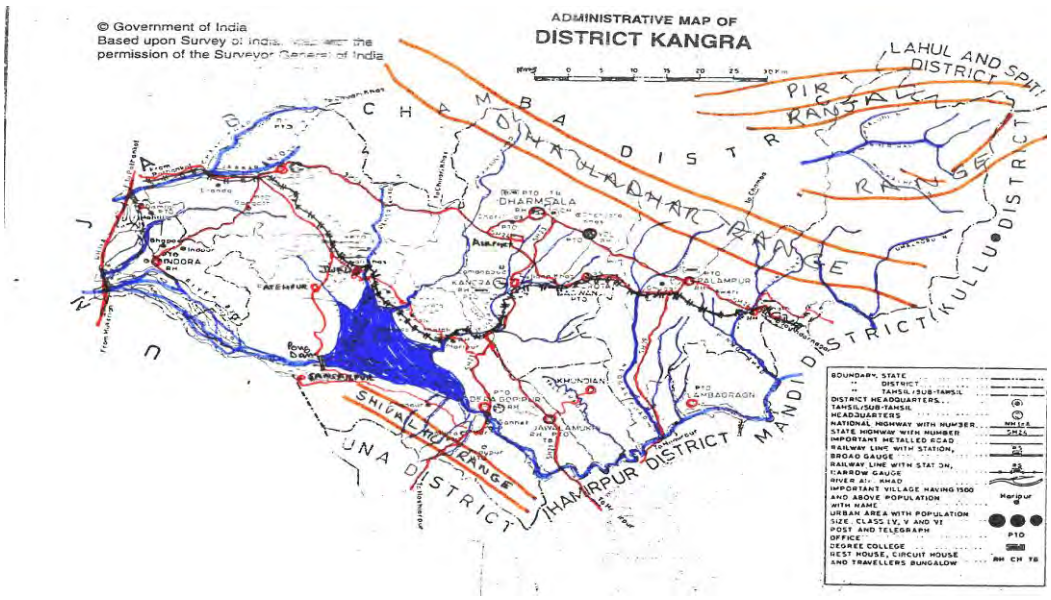
Table: 1 Main Tributaries of Beas River in Kangra District

Sr. No.	Name of River/ *Khad*	Catchment Area (sq km)	Remarks
1	Nand khad	**39**	Joins directly
2	Buhl khad	104	Pong Dam
3	Dehar khad	477	Pong Dam
4	Gaj khad	616	Pong Dam
5	Bunner khad	782	Pong Dam
6	Pola khad	47	Pong Dam
7	Naker khad	184	Joins Beas river
8	Neogal khad	--	Joins Beas river
9	Binno	--	Joins Beas river

The occurrence of water related natural disasters especially floods and flash floods are common in most of the district Kangra. Flood mainly occurs due to over-topping of rivers, heavy rainfall, melting of snow and bank erosion because of steep slopes of river. On the other hand, another type of flood which is most common in the district is flash-flood. The flash floods are extreme events that are sudden, severe and short lived. It is a sudden and often destructive surge of water down a narrow channel or sloping ground, usually caused by heavy rainfall[1]. Flash-floods are mostly the result of cloudbursts or blockage of river channel due to landslides. The flood problem in the state is mainly during the months of June to August when the south west monsoon is in progress and snow is melting in the higher reaches.

Floods are one of the worst disasters of the district that not only causes huge economic loss in the form of damage to houses, public utilities, and property but also many human lives and cattle heads are also lost. Almost all rivulets of the district carry heavy discharge during the monsoon when their catchments receive intense and heavy rainfall. Pong dam also prone to flood during rainy season. Major Tehsils wrap by Pong dam are fathehpur, Jawali, Indora and jaswan Kotla.

Fig: 4 Flash flood/ flood hazard map of District Kangra



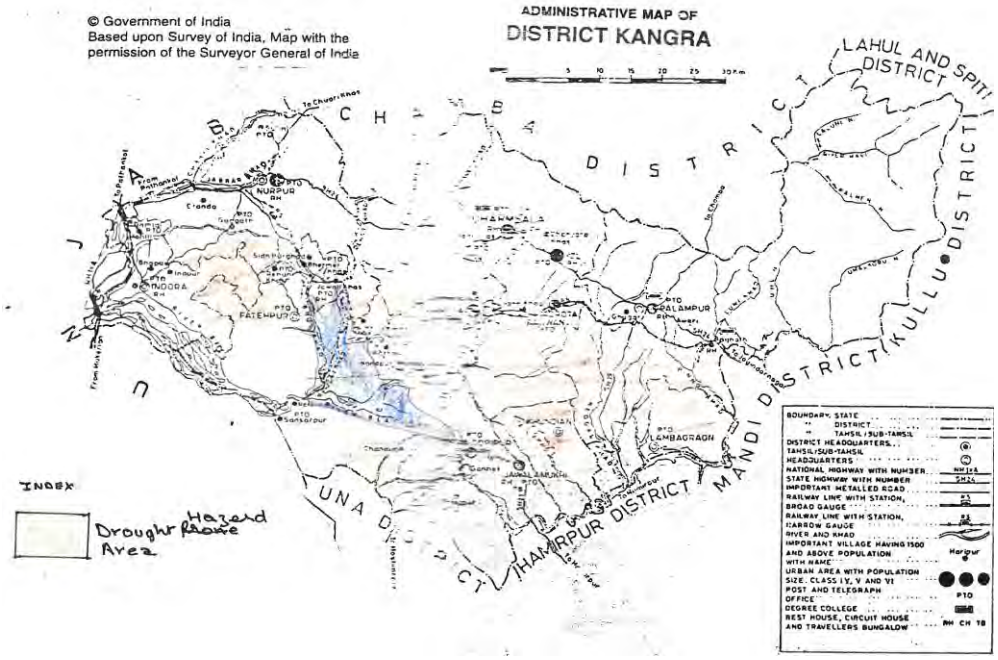
2.1.4 Cloud Burst

Most of the part of district Kangra is hilly and it is prone to Cloud burst and build floods in local water channel during rainy season. Main affected tehsils are Palumpur, Baijnath, upper region of Shahpur, Multhan and upper part of Dharamshala etc.

2.1.5 Drought

The crops of maize, rice (Dhan), wheat, vegetables and orchards have been affected due to uncertain rain and climatic changes in the area. The drought has also damaged cash crops like tomato, carrot, Potato, cauliflower, and cabbage. These crops depend on water sources, which are fed by the monsoons. Moreover Low belt region and rain shadow area of changar region of district is prone to drought whenever there is lean monsoon/ winter rain season because agriculture depends for irrigation on the rain. Major damage in district was occurred in April 1994. Main area was Jawalamukhi and Dehra.

Fig: 5 Drought hazard map of District Kangra



2.1.6 Wind Storm

Wind storm is regular phenomena in entire district during summer season. Wind imparts both hilly and plain of the district. No major loss has been reported or recorded in this district on account of windstorm.

Fig: 6 Wind hazard map of Himachal Pradesh & District Kangra

2.2 Man- Made Hazards

2.2.1 Forest Fire

Kangra district has four forest divisions, namely, Dharamshala, Dehra, Nurpur and Palampur. In addition, two forest blocks are under the control of Una forest division. The forests of the district can be classified into seven broad types as follows:

i) Dry Alpine Forests: These forests are mainly concentrated in Chhota Bhangal and Bara Bhangal areas of Baijnath block. The vegetation in these open forests is primarily xerophytic e.g. *Juniper, Artemesia, Lonicera, Cotoneaster.*

ii) Moist Alpine Scrub Forests: These forests are found below the snow-line but above the tree growth line. Generally, grass is found on the southern aspect and scrub on the northern aspect. *Salix, Lonicera* and *Viburnum* are the main plant species found in these forests. Many medicinal herbs and plants like *guggal, karru and aconite* are found in these forests.

iii) Sub-Alpine Forests: These forests occur below the moist Alpine forests but above the altitude of 3,500m. *Betula utilis* and Kharsu are the two main species found in these forests. At certain heights, Himalayan temperate park lands, which are characterized by grassland having scattered mis-shapen and often moribund trees of Kharsu oak, maple, etc., are used as grazing grounds by migratory herds of sheep and goats.

iv) Himalayan Moist Temperate Forests: A large area of the district, having an elevation of more than 1,500 m above mean sea level, is covered with Himalayan moist temperate forests. *Cedrus deodara* is the most valuable species of these forests. Spruce and silver firs are also found in areas of mixed coniferous forests. Such forests occur in Kangra and Palampur tehsils.

v) Wet Temperate Forests: These forests are found mainly in Dharamshala, Kangra and Palampur areas. *Chil* and *Kail* are two important species of these wet hill slopes. Ban oak and

silver fir is also found at certain places. Deodar is also found in association withthese trees at many places. Bamboo groves are also found on the lower west slopes.

vi) Sub-Tropical Pine Forests: These forests of *Pinus roxburghii* occur at elevations between 1,000 to 2,200 m above mean sea level. Lower or Shiwalik chil pine and upper or Himalayan *chil* pine occur extensively in Kangra, Dehra and Nurpur areas.

vii) Sub-Tropical Broad-Leaved Hill Forests: These forests occur in the sub-tropical areas of the district below 1,000 m above mean sea level, *viz*. Dehra and Pragpur and Indora areas. *Khair*, *tun, siris*, *kachnar, beul*, *bamboo* and other broad-leaved plants dominate these forests.

2.2.2 Forest area by legal status

According to legal classification, the area under
Forests in the district are 284.18 thousand hectares which is 49.2 per cent of the total geographical area (Table). But the actual forest area is 143.3 thousand hectares which accounts for a quarter of the total geographical area in the district.

Table: 2 Forest Area in Kangra by Legal Classification, 2010-11 (ha)

Sr. No.	Classification	Division				Total
		D/shala	Dehra	Nurpur	Palampur	
1	Reserved forest	138.77	3310.40	4151.84	-	7601.01
2	Demarcated protected forest	33339.52	2737.20	5964.74	12909.39	84950.80
3	Un-demarcated protected forest	2735.20	7745.02	26344.75	103308.91	164433.87
4	Un class	-	15623.47	16612.89	18299	50454.35
5	Others*	628.09	4704.05	224.00	1186	6742.77
	Total	**61141.58**	**34120.14**	**53298.21**	**135622.87**	**284182.80**

Fig: 7 Forest map of Himachal Pradesh and Distrcit Kangra

Mostly Forest fire occurs in summer period from April to June. The forest fires destroys the existing vegetation, killing plants, numerous insects, small animals and reptiles essential for balancing the eco-system. The local myth in the area is that lush green grass grows after fire. On the contrary, the ash content increases the acidic nature of the soil, thereby leading to soil erosion. Continuous fires in fact make the grass coarser. Relatively, forest fires destroy the natural binding of rocks, leading later to landslides in the area. The major reason for the forest fire is hot summers and large number of pine trees plantation. Since the fires normally break out in inaccessible and mountainous regions, fire stations are of nominal help. Main region of forest fire area are

Table: 3 Fire Sensitive Areas in District Kangra

D/Shala	Total Forest area	Fire Sensitive Forests, Plantations (in ha)		
		Chil	Plantn	Total
	253233	24049	35502	59552

Circle-Wise Fire Lines, Sensitive Beats & Private Ghasanis

D/Shala	Fire Lines		No. of Sensitive Beats	Ghasanis near Fire Sensitive Forest	
	No.	Length in Km.		No.	Area ha
	56	146	171	127	124

2.2.3 Road Accidents

Main reason of road accident is high frequency of vehicles on state Highway because it is connected to tourist places in entire district. Congested link road and reckless driving in the district also lead to road accidents in this reason. Unplanned construction of roads in rural area, over speed on state highway and lack of safety measures are also same of the reasons for road accidents. The road accidents are frequent mostly of vehicles coming from other states that carry passengers in trucks in ties and occasionally accidents take place. Para and hang-gliding also take place and case of snake bites an electrocution are also reported from here and there.

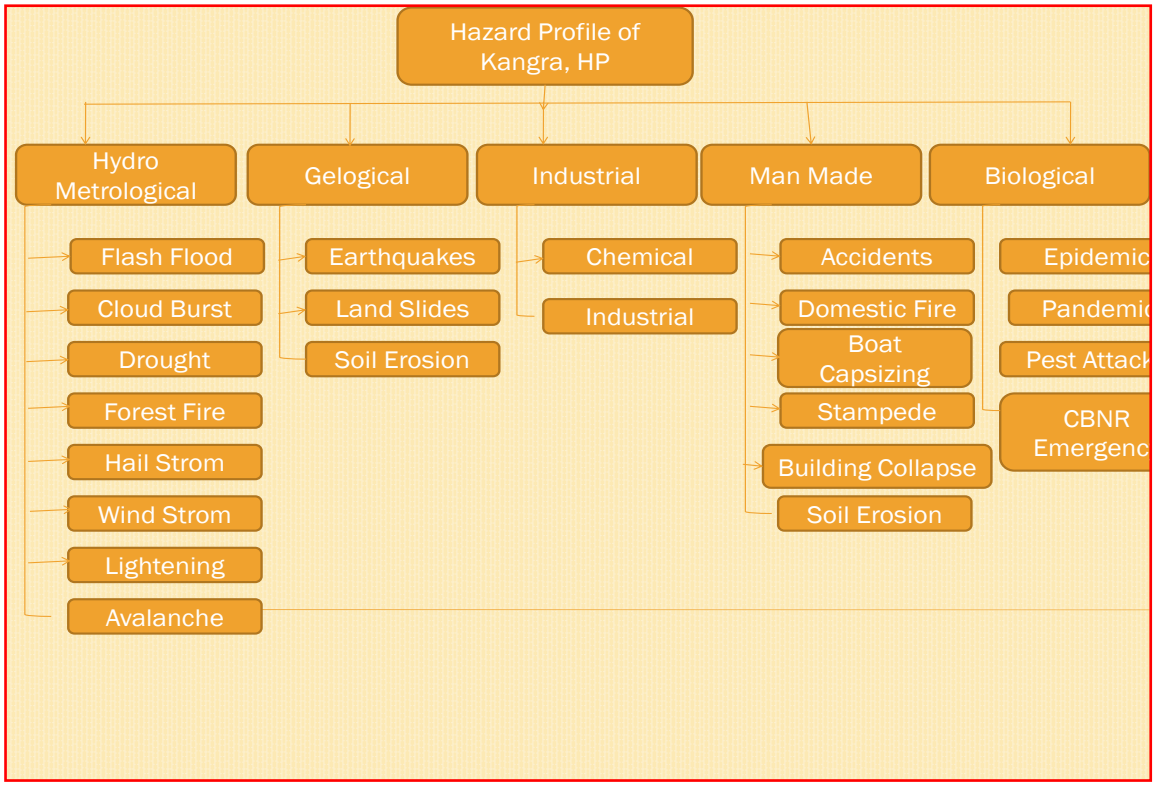
2.2.4 Stampede

Himachal Pradesh is known as Dev Bhumi (land of God) and Kangra has lots of temples in all parts of the district. During the festivals and fairs these temples are visited by thousands of pilgrims. These heavy rushes are managed by the Home Guards and Police Department. There is no other strong mechanism to deal with the situation.

2.2.5 Industrial

Kangra has small scale industries in Nurpur, Kangra, and Palampur etc. In the period of 2001 one person lost his life and seven were injured due to the blast in the industry at Nurpur sub-division. All industries are following prevention norms regarding the hazards and no major industrial disaster has occurred in the district.

Fig: 8 The diagrammatic representation of hazards profile of District is as under:



2.3 HISTORY OF DISASTERS

2.3.1 Previous Disaster and its impact on District Kangra

Natural disasters occur when forces of nature damage the environment and manmade structures. If people live in the area, natural disasters can cause a great deal of human suffering. As a result of disasters, people may be injured or killed, or may lose their homes and possessions. The impact is so great that the affected community often must depend on outside help in order to cope with the results. Examples of natural forces that can cause widespread human suffering include earthquakes, floods, landslide, wilderness fires, and extreme hot or cold temperatures. Between 1975 and 1996, natural disasters worldwide cost 3 million lives and affected at least 800 million others.

Kangra also had a panic experience with great disaster in 1905 and it also faced unpredictable seasonally number of disasters. Available data is on the disaster is as follows:

Table: 4 Earthquakes

Year	Main Places	Richter scale	Persons Killed	Property loss
4th April 1905	Dharamshala, Palumpur, Kangra Mclodganj, chadi village	8.0	20,000	1,00,000 houses destroyed
15th June 1978	Dharamshala	5.0	-	-
26th April 1986	Narghota, Naddi, Kaned, Sukar and Khanyara	5.7	06	About Rs. 65 crore

Table: 5 Road accidents

Year	Case occurred	Persons Killed	Persons injured	Vehicle Involved
2009-10	569	154	1089	569
2010-11	602	106	1,076	--

Table: 6 Cloud burst 2009

Year	Case occurred	Persons Killed	Persons injured	Livestock killed	Infrastructure loss
2009	01	2 (women)	01	17 (Goats)	09 (8 Houses & 01 Cow shed)

Table: 7 Snake Bite

Year	Persons Killed	Livestock killed
2008	52	50
2009	20	98
2010	72	104
2011	97	-

Table: 8 Domestic Fires

Year	Places/ No. of incidents occur		
	Dharamshala	Kangra	Palumpur
2009	25	36	52
2010	22	32	50
2011	27	33	25

Table: 9 Forest Fire

Year	Places/ No. of incidents occur		
	Dharamshala	Kangra	Palampur
2009	64	17	50
2010	79	08	31
2011	40	05	18

Table: 10 Heavy rain damage

Year	Persons Killed	Livestock killed	Houses Loss	Cow shed Loss
2007	11	105	297	233
2008	11	504	1187	1715
2009	05	42	160	59
2010	03	45	690	263
2011	09	88	1040	985

(Source: Revenue Department Distt. Kangra)

Table: 11 Flash flood loss in 2001

Area affected (in ha.)	Population Affected	Damage to crops (in ha)	Value (in lacs)	Damaged to houses	Value (in lacs)	Cattle lost Nos.	Human Lives loss	Damage of public utilities	Total damage crops, houses, properties (in lacs)
780	25000	262	34.00	55	29.00	150	17 (12 persons in luni khad July 2000 & 5 persons in Binwa khad Aug. 2001)	1764.00	1827.00

CHAPTER – 3
VULNERABILITY, RISK ANALYSIS AND CAPACITY ANALYSIS

Kangra district is highly vulnerable to certain natural and man made disasters. The Kangra district is prone to major disasters like: Earthquake, Landslide, flash floods, fire accidents, drought, road accidents, Industrial hazard, and stampede.

3.1 Earthquakes

From the analysis of the map below it is clear that these areas are prone to seismic activity. The valleys of Dehra, Gaj, Baner and Neagal tributaries, formed along the lineaments transverse to the Himalayan trend could be the future loci of the seismic activity in the area as these lineaments have remained active in the past.
Thus the possibility of having any major earthquake along the transverse lineament within the upper Shiwaliks or in the middle and lower Shiwaliks on the east and south eastern side cannot be ruled out.

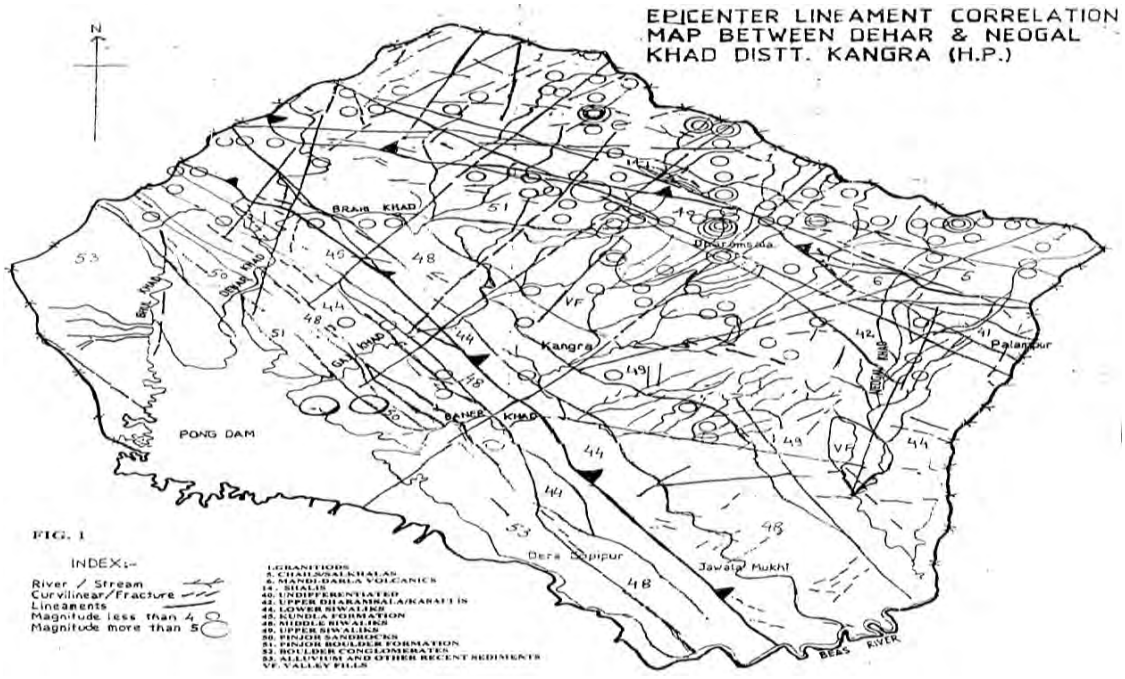


Fig: 9 Concentration of earthquakes in Kangra

3.1.1 Physical Vulnerability

The risk of any region depends on the exposed vulnerable elements in that area. Major important elements management plan is the inventory of important facilities and wide road network to reach each and every house in town and village. If road network will not be wide it is difficult to approach the area during an earthquake. In order to prepare the earthquake risk map of Kangra district it is important to prepare different vulnerable elements in different layers in GIS format. Especially old building and road network in Kotwali bazar, Kangra Mandir Bazar. The age and construction material used of the building are more important to decide their vulnerability. Further Macleodganj town is most vulnerable to such hazard because it is situated not only south of MBT but an active fault is also passing in NW-SE direction crossing through the centre of the Macleodganj Bazar and

extending up to Naddi after passing through the Dal lake. During 1905 Kangra earthquake the whole of Fortsythganj and Macleodganj was devastated. The road network in surrounding villages is also very poor; it is very difficult to even take ambulance at each house, which will be great hindrance to earthquake disaster management. Second most important aspect is use of building code in different coming up constructions.

As per the housing statistics contained in the below table 12, 59.9% of the building stock of the district falls in Category A which is highly susceptible to earthquake damage. A lot of wood is used in the house construction in the district hence the houses are also vulnerable to fire hazard resulting due to earthquake shaking. Steep slopes in the district would result into landslides and block the arteries of the district resulting in delay in emergency response.

Distribution of House by Predominant Materials of Roof and Wall and Level of Damage Risk

State: HIMACHAL PRADESH **District: Kangra**

Wall/Roof		Census Houses		Level of Risk under								
				EQ Zone				Wind Velocity m/s				Flood Prone Area in %
				V	IV	III	II	55&50	47	44 & 39	33	
		No. of Houses	%	Area in %				Area in %				
				97.8	2.2					100		
WALL												
A1-Mud Unburnt Brick Wall	Rural	2,96,650	58.9									
	Urban	5,123	1.0									
	Total	**301,773**	**59.9**	**VH**	**H**					**M**		
A2- Stone Wall	Rural	2,3110	4.6									
	Urban	2,675	0.5									
	Total	**25,785**	**5.1**	**VH**	**H**					**L**		
Total-Category-A 327,558			65.1									
B-Burnt Bricks Wall	Rural	145,653	28.9									
	Urban	18,332	3.6									
	Total	**163,985**	**32.5**	**H**	**M**					**L**		
Total-Category-B 163,985			32.6									
C1-Concrete Wall	Rural	700	0.1									
	Urban	148	-									
	Total	**848**	**0.1**	**M**	**L**					**VL**		
C2-Wood Wall	Rural	2,289	0.5									
	Urban	404	0.1									
	Total	**2,693**	**0.6**	**M**	**L**					**M**		
Total-Category-C			0.7									

3,541												
X-Other Material	Rural	7,662	1.5									
	Urban		0.2									
	Total	**8,419**	**1.7**	**M**	**VL**					**M**		
Total-Category-X 8,419			1.7									
TOTAL BUILDINGS			503,503									
ROOF												
R1-Light Weight Sloping Roof	Rural	33,355	6.6									
R1-Light Weight Sloping Roof	Urban	6,014	1.2									
R2-Heavy Weight Sloping Roof	**Total**	**39,369**	**7.8**	M	**M**					**H**		
	Rural	319,656	63.5									
R2-Heavy Weight Sloping Roof	Urban	5,911	1.2									
R3-Flat Roof	**Total**	325,567	64.7		**M**					**L**		
	Rural	**123,053**	**24.4**									
R3-Flat Roof	Urban	15514	3.1									
	Total	138567	27.5	***Damage Risk as per that for the wall supporting it***								
TOTAL BUILDINGS			41,453									

Probable Maximum Precipitation at a station of the district in 24 hrs is 720mm

Housing Category : Wall Types

Category-A: Buildings in field-stone, rural structures, unburnt brick houses, clay houses.
Category-B : Ordinary brick building: buildings of the large block &prefabricated type, half-timbered structures, building in natural hewn stone.
Category-C :Reinforced building well built wooden structures.
Category-X : Other materials not covered in A,B,C. These are generally light.

Notes: 1. Flood prone area failure that protected area which may have more severe damage under failure of protection works. In some other areas the local damage , may be secure under heavy rains and chocked drainage. 2.Damage Risk for wall types is indicated assuming heavy flat roof in categories A, Band C (Reinforced Concrete)buildings. 3. Source of Housing Data: Census of Housing, GOI,2001

Housing Category : Roof Type

Category-R1- Light Weight (Grass, Thatch,Bamboo,Wood,Mud,Plastic,Polythene,GI Metal,Absbestos Sheets, Other Material)
Category-R2-Heavy Weight(Tiles, Slate)
Category-R3-Flat Roof (Brick,Stone,Concrete)

EQ Zone V: Very High Damage Risk Zone[MSK>IX]
EQ Zone IV : High Damage Risk Zone[MSK VIII]
EQ Zone III : Moderate Damage Risk Zone[MSK<VII]
EQ Zone II : Low Damage Risk Zone [MSK<VI]
Level of Risk : VH=Very High ; H=High;
M=Moderate; L=Low; VL=Very Low

Fig: 10 Distribution of houses by predominant roof, wall etc. material

3.1.2 Prof Bilham states that his new Global Positioning System (GPS) data readings reveal.....,

"the Indian plate is slowly burrowing under the Tibetan plateau. Studies on where the relative movement of the Tibetan plateau was slowest, indicates where compression is building up, and a rupture is eventually likely to occur, I expected this to be in the Pir Panchal range, to the south of the Kashmer Valley, but instead it was in the Zanskar range to the north."

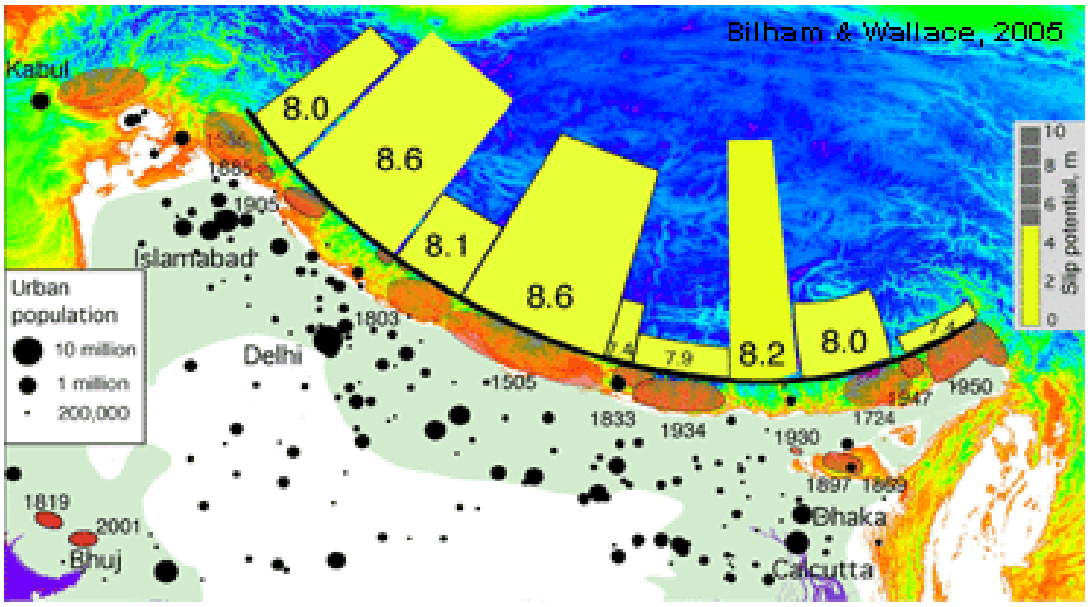


Fig: 11: Probable built-up stress and likely magnitude of earthquakes in different regions of the Himalayas

3.1.3 Prediction of future earthquake in the Himalayas (Source Roger & Bilham).

Dr. Anand S Arya (Department of Earthquake Engineering, University of Roorkee has worked out a hypothetical recurrence of earthquake of M 8.0 in Kangra area of Himachal Pradesh (like that of 1905). The scenario highlights the disastrous situation that could have developed if the repeat earthquake had occurred in the census year 1991. The results are obtained for two cases of all buildings being of traditional construction (i) without earthquake safety features, (ii) with earthquake resistant features as per the Indian Standard Building Codes.

3.1.4 It is seen that

If all the 18, 15, 858 houses are without earthquake safety provisions, the direct losses will amount to Rs. 51.04 billion. Since about 65,000 lives may be lost and 399,695 houses ruined completely, the trauma will be too great and cost of emergency relief will be exorbitant.

If all the houses were made earthquake resistant as per IS: 4326 and IS: 13928, when built initially, the direct losses will amount only to Rs. 19.6 billion. The extra cost of earthquake safe provision for all houses would only be Rs. 6.35 billion. Hence, the lives lost

will only be a net saving of Rs. 25.09 billion or about 50%. Besides, the lives lost will only be one-fifth and totally ruined houses reduced to about one-fourth. The damage scenario brings out clearly the economic and other social benefits of pre-earthquake preventive measures.

Table: 12 Losses in magnitude 8.0 hypothetical earthquake if occurred again in Kangra, Himachal Pradesh in 1991 (total housing units in the affected area -1,815,858)

Sr. No.	Item	Scenario if all the buildings are without earthquake resistance		Scenario of all buildings are with earthquake resistance	
		Physical Damage	Loss in INR* (million)	Physical Damage	Loss in INR* (million)
1.	Loss of lives	65,000	6,500	12,000	1,200
2.	Total collapses of buildings (G5)	1,36,339	9,540	8,298	580
3.	Destroyed buildings (G4) 2+3 Buildings to rebuild	2,63,356 3,99,695	18,430 27,970	94,997 1,03,295	6,650 7,230
4.	Heavily damaged buildings (G3; to repair and retrofit)	9,15,602	12,820	3,12,382	4,370
5.	Moderately damaged buildings (G2; to repair and retrofit)	3,57,510	3,750	6,48,040	6,800
	Total Loss		**51,040**		**19,600**

*INR-Indian rupees, 1US$INR 40.0 in 1997; G5, G4, G3, G2 are grades of damage defined in MSK Intensity scale.Loses estimated in 1997 at 1997 costs.
Source: Arya As, 12th World Conference on Earthquake Engineering, Aukland, 31st January-4th February, paper No.2824.

The damage and loss scenario could be more disastrous now as the population of the State and district Kangra and built-up environment has increased many times since 1991. Present estimate of devastation in a repeat hypothetical earthquake is that (a) loss of more than 340,000 lives will occur if the earthquake will happen at midnight of winter months and half of this number if it will occur in the morning when people are awake and sleeping, (b) the urban facilities particularly hospitals, schools, communication buildings, transportation routes in the hilly region and water supply facilities will be badly damaged. The fragility of the present situation was amply demonstrated by the rather small earthquake of M=5.7 occurring on April 26, 1986 causing economic loss of about Rs. 66.00 crore.

3.1.5 Social Vulnerability

The worse impact of earthquake was faced by this region but at present the community of district Kangra has forgot the effect of 1905 earthquake. Simultaneously community oftenly face many seasonal hazards like flash flood, landslide, forest fire etc. But they are hardly prepared and aware to deal with these hazards properly. Kangra has 2595 number of people with various disabilities as per the detail given below. Their disability would a serious impediment for their safety during disasters which can further be exacerbated by the terrain of the district.

Table: 13: Detail of Person with Disability (PWD) in District Kangra (2001 Census)

Type of disability	Total disabled
Visual Challenged	11128
Hearing impaired	3064
Speech	2763
Physical Challenged	9996
Mentally	4287
Total	**2,594**

(a) Flash Floods

The district being in hilly and plain terrain, the flood and landslide problem are common in nature due to Pong dam on the Beas River and local khad are result of flash flood during the rainy season. These result huge loss of lives and properties. The 7 persons were dead in the flood on 24th September 1988. People live their lives near Beas River due to availability of fertile land there but in rainy season they are shifted to safe place by administration. It put terrible impact on lively hood, live stock, infrastructure and property.

(b) Landslides

As earlier mentioned the district is highly prone to landslide hazard. District Kangra

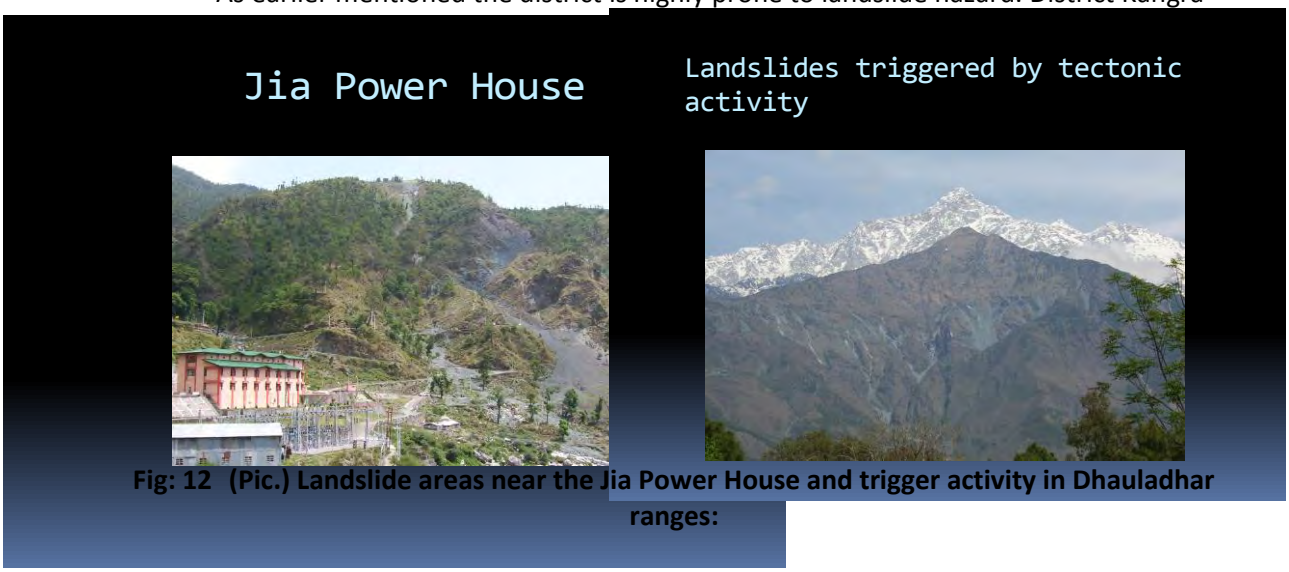


Fig: 12 (Pic.) Landslide areas near the Jia Power House and trigger activity in Dhauladhar ranges:

(c) Overall Vulnerability of the District

On the basis of above analysis the overall vulnerability of the district is very high. The figure below which the HP State Council for Environment, Science and Technology has

compiled for the State shows Kangra to be very high vulnerable district for hazard susceptibility.

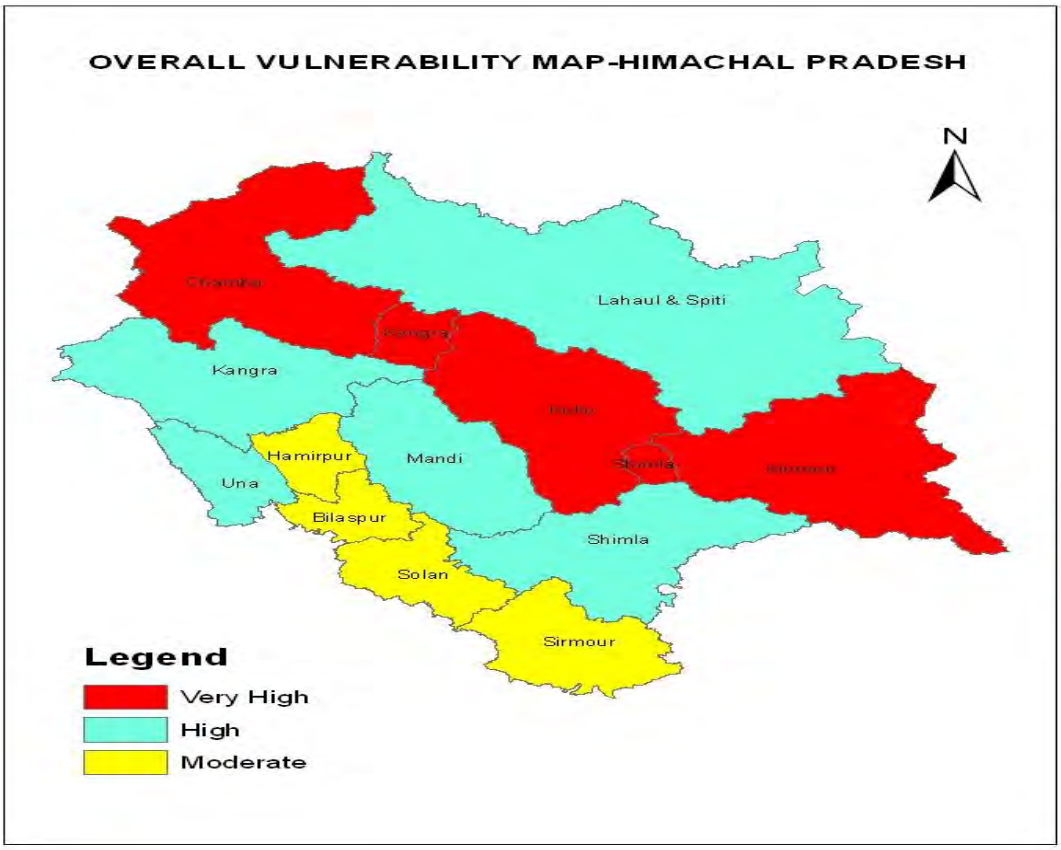


Fig: 13 Overall Vulnerability of Himachal Pradesh Source: HP state Council for Env. Sc. & Tech

Table: 14 Showing overall Vulnerability of District Kangra to various Hazards

Elements at Risk	Degree of Vulnerability to Various Hazard								
	Earthquake	Landslide	Flash Floods/ GLOF	Snow Avalanche	Drought	Forest Fires	Domestic Fires	Dam Failure	Road Accidents
Community	Very High	High	Very High	Low	High	High	Very High	High	High
Infrastructure	Very High	Very High	Very High	Low	Moderate	Moderate	Low	High	Low
Houses	Very High	Very High	High	Low	Low	Low	Very High	High	Nil
Social Sector	Very High	High	Moderate	Low	Moderate	Low	Very High	Low	High
Livelihood Sector	Very High	High	Moderate	Low	Very High	High	High	High	Low
Environment	Very High	Very High	Very High	Low	Very High	Very High	Very High	Very High	Low

3.1.6 Capacity Analysis

The vulnerability of the district to various hazards is high to very high. In view of the hazard and vulnerability profile of the district the capacity analysis of the district to deal with various disasters is important.

3.1.7 Fire Stations

District Kangra has five fire stations Dharamshala, Palumpur, Kangra, Jawala ji and Nurpur. But these fire stations have limited resources to deal with forest fire during summer season. Some areas of district are situated between the dense pine forest and during the forest fire they loose property as well as life. Due to inadequacy of fire fighting equipments in fire department they are unable to overcome from these situations. These fire stations can be trained and equipped for multi-hazard response.

3.1.8 Home Guards Network

Ninth Battalion of Home Guards, training centre is stationed at Dhanotu distt. Kangra with the total strength of 917. This human resource is trained in DM. But they are deployed for non-disaster duty. Sometime they are unable to provide there service for disaster related matters. In the month October 2012 HG is making new recruitment against the 600 vacancies. Present deployed cops details as below:

Table: 15 Home Gurds strength in District Kangra

Sr. No.	Place (Coy.)	Strength	Man	Women
1	Dharamshala	231	139	92

	(2 Coy.)			
2	Palumpur	110	110	-
3	Indora	100	110	-
4	Nurpur	110	110	-
5	Kangra	110		
6	Shahpur	110	110	-
7	Dehra	110	110	-
8	Technical	26		

Table: 16 Police Network in Kangra

District Kangra has one Police training centre at Daroh and 12 Police stations and 19 Police posts. One Coy. of 3rd Battalion IRB also situated at Sakoh.

Sr.No.	*Name of Station*	Inspr.	S.I.	ASI	HC	Cs.
1	Dharamshala (P.S.)	1	2	7	6	28
2	Mcloadganj (P.S.)	-	1	2	3	9
3	Yol (P. P.)	-	-	1	2	8
4	Baijnath (P.S.)	1	2	4	5	18
5	Dehra (P.S.)	-	2	5	4	23
6	Terrace (P. P.)	-	-	1	1	09
7	Haripur (P.S.)	-	1	1	4	13
8	Ranital (P. P.)	-	-	1	1	6
9	Nagrota Surian (P.P.)	-	-	1	1	5
10	Indora (P. P.)	1	2	6	5	21
11	Damtal (P. P.)		-	1	3	8
12	Thakurdawara (P. P.)	-	-	1	2	7
13	Dhangpir (P. P.)	-	-	1	1	1
14	Jawalamukhi (P.S.)	1	2	2	4	19
15	Khundian (P. P.)	-	-	1	1	5
16	Kangra (P.S)	1	5	5	5	19
17	Nagrota Bagwan (P. P.)	-	-	2	2	14
18	Gaggal (P. P.)	-	-	1	3	8
19	Jawali (P.S.)	1	2	3	6	18
20	Fatehpur (P. P.)	-	1	1	3	7
21	Lambagaon (P.S.)	-	1	3	4	16
22	Thural (P. P.)	-	-	1	1	5
23	Nurpur (P.S.)	1	4	3	6	32
24	Rahan (P. P.)		-	1	2	11
25	Gangath (P. P.)	-	-	1	2	5
26	Palampur (P.S.)	1	3	3	6	21
27	Panchrukhi (P.P.)	-	-	1	4	7
28	Bhawarana (P.S.)	-	1	3	5	14
29	Shahpur (P.S.)	-	2	4	6	19
30	Kotla (P.P.)		-	1	1	8
31	Rakkar (PP)	-	-	1	1	5

3.1.9 Medical Facilities

The status of medical institutions, workforce is given in the following table.

Table: 17 Health Infrastructures in Kangra

Medical	
Allopathic	i) Tanda Medical College - 1 ii) Regional Hospital- iii) Civil Hospital-7 iv) Community health centre-13 v) Primary Health Centre-77 Private Hospital/Nursing Homes - 19
Ayurvedic	College /Hospital-1 Distt. Hospital-1 iii) Dispensary -231(includes homopathy and Unani)
Veterinary	i) Hospital - 37 ii) Dispensaries -108 iii) Mobile vet dispensary - 8

3.1.10 Army Network and Central Paramilitary Forces

The district has good presence of army at Yoll cantt Dharamshala 9th Core Army, one unit at Palumpur and SSB at Sapri. Both have good coordination with the local administration. During the disaster these army plays valuable role to save the victims. They have full equipments and trained manpower to deal with any type of disaster. Recently in Palumpur bus accident Army reached firstly along with equipments and rescues the victims.

3.1.11 Power Projects

The district has five power projects under the HPSEB Palumpur circle. These projects are Khouli HEP 12.00 MW, Gaj HEP 10.5 MW, Banner HEP 12.00 MW and Binwa HEP 6.00 MW. The project management has trained manpower and has machinery and equipment too to deal with emergencies. These resources can be requisitioned by the district administration during emergencies.

3.1.12 EWS Network

District Kangra have no any machinery mechanism for Early Warning System. All departments have manual mechanism e.g. security guard, VHF etc. for early warning the power projects have their own networks too. The IMD department has also installed rain and snow gauges and temperature monitoring equipment at Naddi. However, the lack of coordination and mechanism of sharing information is a serious impediment in acting timely on the information so received.

3.1.13 Community Feeling

Majority of the population of the district is villager. There is a strong community feeling amongst the local population. Strong community feeling increase resilience of the community to responds better to disasters.

3.1.14 CBOs and NGOs

There are not many NGOs working in the district. However many community based organisations are in existence. Their training and orientation has not been done. However, their networking and orientation in DM is under way. The list of NGOs/CBOs working in the district is at **Annexure C.**

3.1.15 Landing Sites

The list of landing sites which can be of immense help in disaster is given at **Annexure – G.** However, non-availability of re-fuelling facility in the area may hinder the smooth operations of air relief operations.

3.1.16 Equipment and Machinery – Resource Inventory

The list of equipment, machinery and manpower available in the district at **Annexure – H.**

3.2 Important Gaps in Existing Capacity to deal with Disasters

3.2.1 Social level Gaps

- ✓ Lack of pre-planning to deal with any disaster at local level
- ✓ Require trained people at village and town level
- ✓ Unavailability of strong mechanism for Early Warning System
- ✓ Lacking of participation of local NGOs/SHGs and other local bodies
- ✓ Unplanned development and not even iota of involvement of DRR integration in development planning and programmes
- ✓ Lacking of holistic approach for planning in pre-disaster period
- ✓ Inadequate facility of health at village level
- ✓ Lack of clarity of roles of various departments and stakeholders
- ✓ No involvement of local people to save forests

3.2.2 Physical Level Gaps

- ✓ Lacking of earthquake resistance buildings
- ✓ Unavailability of road at village level
- ✓ Presence of dilapidated buildings and trees are in populated areas. Similar situation exist for many life line buildings as well.
- ✓ Congested pedestrian/road in city/ town
- ✓ Lack of specialised SAR equipment and big machineries
- ✓ Life line buildings e.g. Hospital and schools are not pre-planned to handle the any huge disaster
- ✓ Communication – land and mobile based communication only

- ✓ The district control room is not equipped and no trained manpower to handle it

3.2.3 Economic Level Gaps

- ✓ Lacking of fund at district level
- ✓ No efforts have been taken to transfer the risk by way of insurance etc.
- ✓ Unavailability of insurance in agriculture area

CHAPTER – 4
INSTITUTIONAL MECHANISM

4.1 National Level

The Disaster Management Act, 2005 lays down institutional, legal, financial and coordination mechanisms at the National, State, District and Local levels. These institutions are not parallel structures and will work in close harmony. The new institutional framework is expected to usher in a paradigm shift in DM from erstwhile relief centric approach to a proactive regime that lays greater emphasis on preparedness, prevention and mitigation. The NDMA, as the apex body at national level for disaster management, is headed by the Prime Minister. The Act also provides for the National Executive (NEC) at the National level. The NEC comprises the Union Home Secretary as Chairperson, and the Secretaries to the GoI in the Ministries/Departments of Agriculture, Atomic Energy, Defence, Drinking Water Supply, Environment and Forests, Finance (Expenditure), Health, Power, Rural Development, Science & Technology, Space, Telecommunications, Urban Development, Water Resources and the Chief of the Integrated Defense Staff of the Chiefs of Staff Committee as members. Secretaries in the Ministry of External Affairs, Earth Sciences, Human Resource Development, Mines, Shipping, Road Transport & Highways, and the Secretary, NDMA will be special invitees to the meetings of the NEC. The NEC is the executive committee of the NDMA, and is mandated to assist the NDMA in the discharge of its functions and also ensure compliance of the directions issued by the Central Government. The NEC is to coordinate the response in the event of any threatening disaster situation or disaster.

4.2 State Level

At the State level, the State Disaster Management Authority under the chairmanship of the Chief Minister stood constituted on 1.6.2007 and has the responsibility of policies, plans and guidelines for DM and coordinating their implementation for ensuring timely, effective and coordinated response to disasters. The Chief Secretary is the Chief Executive Officer of the SDMA. Besides, the SDMA has seven other members. The SDMA will, inter alia approve the State Plan in accordance with the guidelines laid down by the NDMA, approve DMPs prepared by the departments of the State Government, lay down guidelines to be followed by the departments of the Government of the State for the purpose of integration of measures for prevention of disasters and mitigation in their development plans and projects , coordinate the implementation of the State Plan, recommend provision of funds for mitigation, preparedness measures, review the developmental plans of the different Departments of the State to ensure the integration of prevention, preparedness and mitigation measures and review the measures being taken for mitigation, capacity building and preparedness by the departments. The State Authority shall lay down detailed guidelines for providing standards of relief to persons affected by disaster in the State. The State Executive Committee (SEC) headed by the Chief Secretary and four other Secretaries as its members shall be there to assist the SDMA in the performance of its functions. The SEC will further provide necessary technical assistance or give advice to District Authorities and local authorities for carrying out their functions effectively, advise the State Government regarding all financial matters in relation to disaster management, examine the construction, in any local area in the State and, if it is of the opinion that the standards laid for such construction for the prevention of disaster is not being or has not been followed, may direct the District Authority or the local authority, as the case may be, to take such action as may be necessary to secure compliance of such standards, lay down, review and

update State level response plans and guidelines and ensure that the district level plans are prepared, reviewed and updated, ensure that communication systems are in order and the disaster management drills are carried out periodically. The SEC will also provide information to the NDMA relating to different aspects of DM.

4.3 State and District Crisis Management Group

The crisis management group at State and districts level has been constituted for the State. The State Crisis Management Group (SCMG) is headed by the Chief Secretary. The SCMG shall normally handle all crisis situation and advice and guide the District Crisis Management Group (DCMG) also. The DCMG is headed by the District Magistrate and is responsible for on-scene management of the incident emergency.

4.4 District Disaster Management Authority (DDMA)

The DDMA for the district has been notified on 1.6.2007 as under:-

i)	Deputy Commissioner	-	Chairman
ii)	Superintendent of Police	-	Member
iii)	Chief Medical Officer	-	Member
iv)	Superintendent Engineer (I & PH)	-	Member
v)	Superintendent Engineer (Power)	-	Member
vi)	Superintendent Engineer (PWD)	-	Member
vii)	Chairman Zila Parishad	-	Member
viii)	Additional District Magistrate	-	Member Secretary

The roles and responsibilities of the DDMA have been elaborated in Section 30 of the DM Act, 2005. The DDMA will act as the planning, coordinating and implementing body for DM at the District level and take all necessary measures for the purposes of DM in accordance with the guidelines laid down by the NDMA and SDMA. It will, inter alia prepare the District DM plan for the District and monitor the implementation of the National Policy, the State Policy, the National Plan, the State Plan and the District Plan. The DDMA will also ensure that the guidelines for prevention, mitigation, preparedness and response measures laid down by the NDMA and the SDMA are followed by all the Departments of the State Government at the District level and the local authorities in the District. The DDMA will further ensure that the areas in the district vulnerable to disasters are identified and measures for the prevention of disasters and the mitigation of its effects are taken, ensure that the guidelines for prevention of disasters, mitigation of its effects, preparedness and response measures as laid down by the National Authority and the State Authority are followed by all departments, lay down guidelines for prevention of disaster management plans by the department of the Government at the districts level and local authorities in the district, monitor the implementation of disaster management plans prepared by the Departments of the Government at the district level, lay down guidelines to be followed by the Departments of the Government at the district level for purposes of integration of measures for prevention of disasters and mitigation in their development plans and projects and monitor the implementation of the same, review the state of capabilities and preparedness level for responding to any disaster or threatening disaster situation at the district level and take steps for their up gradation as may be necessary, organize and coordinate specialised training programmes for different levels of officers, employees and voluntary rescue workers in the district, facilitate community training and awareness programmes for prevention of disaster or mitigation with the support of local authorities, governmental and non-governmental organisations, set up, maintain, review and upgrade

the mechanism for early warnings and dissemination of proper information to public, prepare, review and update district level response plan and guidelines.

The DDMA will also coordinate response to any threatening disaster situation or disaster, coordinate with, and provide necessary technical assistance or give advice to the local authorities in the district for carrying out their functions, examine the construction in any area in the district and issue direction the concerned authority to take such action as may be necessary to secure compliance of such standards as may be required for the area, and identify buildings and places which could, in the event of any threatening disaster situation or disaster, be used as relief centers or camps and make arrangements for water supply and sanitation in such buildings or places, establish stockpiles of relief and rescue materials or ensure preparedness to make such materials available at a short notice. The DDMA will encourage the involvement of non-governmental organisations and voluntary social-welfare institutions working at the grassroots level in the district for disaster management ensure communication systems are in order, and disaster management drills are carried out periodically.

4.5 Local Authorities

For the purpose of this Policy, local authorities would include Panchayati Raj Institutions (PRI), Municipalities, District and Cantonment Institutional and Legal Arrangements Boards, and Town Planning Authorities which control and manage civic services. These bodies will ensure capacity building of their officers and employees for managing disasters, carry out relief, rehabilitation and reconstruction activities in the affected areas and will prepare DM Plans in consonance with the guidelines of the NDMA, SDMAs and DDMAs. Specific institutional framework for dealing with disaster management issues in mega cities will be put in place.

4.6 Role of State Government Departments at District Level

It shall be the responsibility of every department of the Government to prepare DMP with respect to their respective departments as per the guidelines issued by DDMA, take measures necessary for prevention of disasters, mitigation, and preparedness and capacity-building in accordance with the guidelines laid down by the National Authority, the State Authority and the District Authority. The departments will inter alia integrate into its development plans and projects, the measures for prevention of disaster and mitigation, allocate funds for prevention of disaster, mitigation, capacity-building and preparedness, respond effectively and promptly to any threatening disaster situation or disaster in accordance with the DMP and director issued by the SEC or the DDMA, review the enactments administered by it, its policies, rules and regulations with a view to incorporate therein the provisions necessary for prevention of disasters, mitigation or preparedness, provide assistance, as required, by the National Executive Committee, the State Executive Committee and District Authorities, for drawing up mitigation, preparedness and response plans, capacity-building, data collection and identification and training of personnel in relation to disaster management, assessing the damage from any disaster, and carrying out rehabilitation and reconstruction.

The department will also make provision for resources in consultation with the State/District Authority for the implementation of the District Plan by its authorities at the district level, make available its resources to the National Executive Committee or the State

Executive Committee or the District Authorities for the purposes of responding promptly and effectively to any disaster in the State, including measures for- providing emergency communication with a vulnerable or affected area, transporting personnel and relief goods to and from the affected area, providing evacuation, rescue, temporary shelter or other immediate relief, carrying out evacuation of persons or live-stock from an area of any threatening disaster situation or disaster, setting up temporary bridges, jetties and landing places, and providing drinking water, essential provisions, healthcare and services in an affected area and such other actions as may be necessary for disaster management.

4.7 District Administration

At the District level, DDMAs will act as the District planning, coordinating and implementing body for disaster management and will take all measures for the purposes of disaster management in the District in accordance with the guidelines laid down by NDMA and SDMA or the SEC.

4.8 Other Institutional Arrangements

4.8.1 Armed Forces

Conceptually, the Armed Forces are called upon to assist the civil administration only when the situation is beyond their coping capability. In practice, however, the Armed Forces form an important part of the Government's response capacity and are immediate responders in all serious disaster situations. On account of their vast potential to meet any adverse challenge, speed of operational response and the resources and capabilities at their disposal, the Armed Forces have historically played a major role in emergency support functions. These include communication, search and rescue operations, health and medical facilities, and transportation, especially in the immediate aftermath of a disaster. Airlift, heli-lift and movement of assistance to neighboring countries primarily fall within the expertise and domain of the Armed Forces. The Armed Forces will participate in imparting training to trainers and DM managers, especially in CBRN aspects, heli-insertion, high-altitude rescue, watermanship and training of paramedics. At the National level, the Chief of the Integrated Defense Staff to the Chairman Chiefs of Staff Committee has already been included in the NEC. Similarly, at the State and District levels, the local representatives of the Armed Forces will be included in their executive committees to ensure closer coordination and cohesion.

4.8.2 Central Paramilitary Forces

The Central Paramilitary Forces (CPMFs), which are also the Armed Forces of the Union, play a key role at the time of immediate response to disasters. Besides contributing to the NDRF, they will develop adequate disaster management capabilities within their own forces and respond to disasters which may occur in the areas where they are posted. The local representatives of the CPMFs located in the district will be co-opted/invited in the DDMA meeting for better coordination.

4.8.3 State Police Forces and India Reserve Battalions

The State Police Forces and the India Reserve Battalions are crucial for immediate responders to disasters. The existing Police Forces located in the district will be trained in

advanced SAR and MFA techniques so that their services can be utilised in disaster situations/events.
The overall institutional structure for DM is as under:-

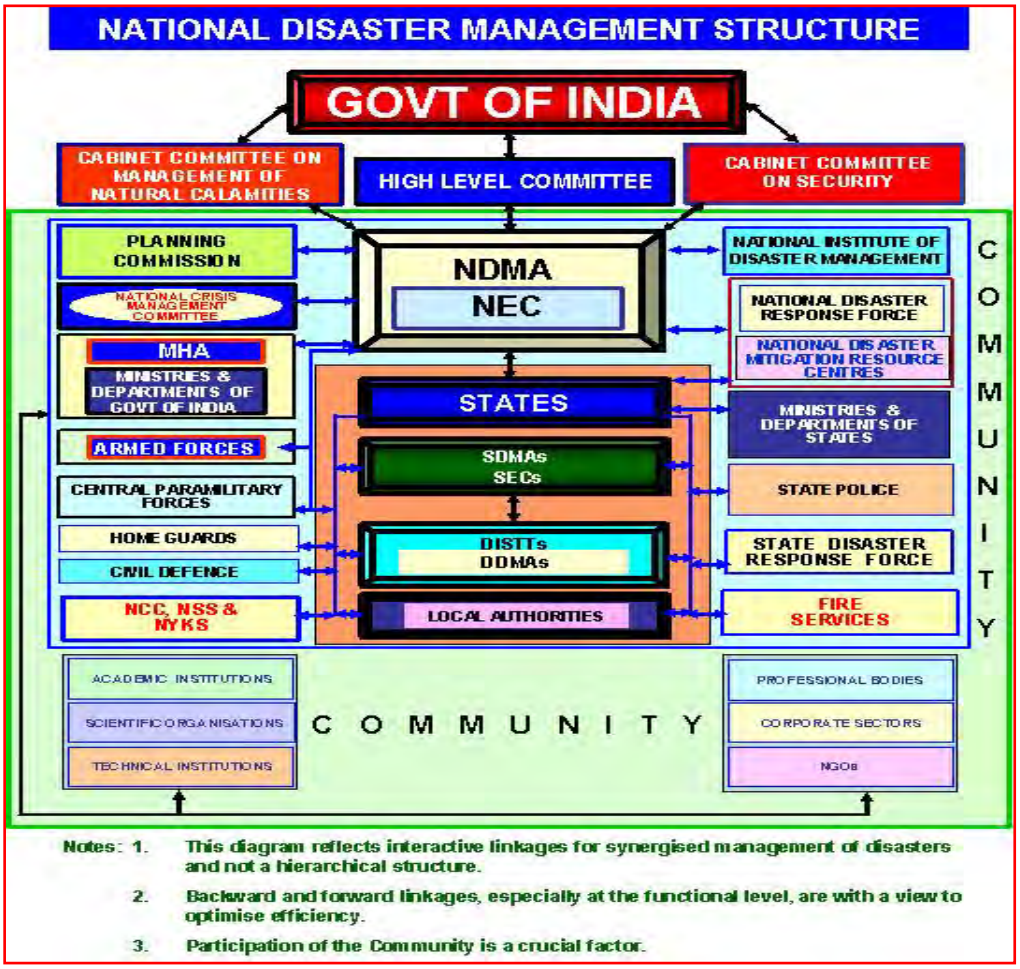


Fig: 14 Disaster Management Structure

4.8.4 Fire Services and Home Guards

The Home Guards and Fire Services will be assigned an effective role in the field of disaster management. They will be deployed for community preparedness, conduct of mock drill and public awareness. A culture of voluntary reporting to duty stations in the event of any disaster will be promoted. The Fire Services upgraded to acquire multi-hazard rescue capability. The existing set up of these services would be strengthened to take up the new role more effectively.

4.9 Role of National Cadet Corps (NCC), National Service Scheme (NSS), Nehru Yuva Kentra Sangathan (NYKS), Scouts and Guides, Youth and Women Organisations.

NCC, NSS, NYKS, Scouts and Guides, Mahilla and Yuvak Mandals as organisations would be roped in DM. They will be trained in search and rescue (SAR) and medical first aid

(MFA) and other aspects of DM as per the need. The potential of these organisation would be also be used for education and awareness generation in DM. And a database of trained personnel would be created and uploaded regularly in the DDMA website.

4.9.1 Role of District Collector in Disaster Management

The Act prescribes responsibilities to various authorities at all levels. The roles and responsibilities of DDMA has been elaborated in Section 30, 31, 33, and 34 of the Act. Keeping in view the provisions of the Act, the District Collector, the Chairman of the DDMA shall ensure the following:-

i. Preparation of the Disaster Management Plan (DDMP) for the District with the assistance of the DDMA and other experts as per the provisions of the Act, guidelines issued by the NDMA, SDMA and the State Executive Committee (SEC);
ii. Preparation of DMP by the departments of the Government and other agencies based on the DDMP;
iii. Periodic mock drill to test the efficacy of the DMPs;
iv. Integration of Disaster Risk Reduction (DRR) into development programmes and policies of all departments;
v. To monitor the implementation of the DDMA and regular updation of the same;
vi. Setting up the district control room and making it function effectively;
vii. Earmarking and entrusting responsibility to the various departments including Emergency Support Functions (ESF) and appointment of Nodal Officers by various departments to perform the ESFs;
viii. Coordination with all the line departments of the State, Central, Armed Forces and other agencies;
ix. Periodic review of preparedness of departments at all levels;
x. To liaise with the Government periodically about the disaster and the action taken;
xi. Integrating the MARG (Mutual Aid and Response Group) of the industrial belt with the disaster management committee;
xii. Equip and prepare the district machinery before the disaster;
xiii. Identification of building/open spaces for relief camps and setting up relief camps and transit camps whenever needed;
xiv. Conducting relief and rescue operations;
xv. Establishing GO-NGO Coordination during normal time so that it works during emergencies and to coordinate the actions of NGOs/CBOs, relief agencies and departments for effective disaster response and relief;
xvi. Organizing Training and conducting mock drills to the Government officials, community and other stakeholders;
xvii. Ensure public awareness on all the hazards which the district face regularly;
xviii. Transmission of Early Warning alters to the vulnerable community with the effective means of communication;
xix. Maintaining the supply of essential commodities;
xx. Stocking of minimum essential relief material for ready availability; and
xxi. Any other action which is needed for the requirement of the situation or to comply with the provisions of the DM Act and instructions issues by the NDMA, SDMA or the SEC.

4.9.2 District Emergency Operation Centre (DEOC)

The District Collector would be assisted to perform the roles assigned to him and the DDAMA by the District Emergency Operation Centre (Control Room). The DEOC would perform the following functions:-

i. District control room would be the nerve centre for the disaster management;
ii. To monitor, coordinate and implement the actions for disaster management;
iii. Activate the ESF in the event of a disaster and coordinate the actions of various departments/agencies;
iv. Ensure that all warning, communication systems and instruments are in working conditions;
v. Receive information on a routine basis from the district departments on the vulnerability of the various places and villages (parts of the districts);
vi. Receive reports on the preparedness of the district level departments and the resources at their disposal to arrange and meet their requirements;
vii. Upgrade the Disaster Management Action according to the changing scenario;
viii. Maintain a web-based inventory of all resources through the India Disaster Resource Network (IDRN);
ix. Provide information to the Relief Commissioner' Office of the disaster/emergencies/accidents taking place in the district regularly and maintain a database of disasters and losses caused by them;
x. Monitor preparedness measures and training activities;
xi. Providing information at district level, local level and disaster prone areas through appropriate media;
xii. Brief the media of the situations and prepare day to day reports during the disasters;
xiii. To report the actual scenario and the action taken by the District Administration;
xiv. Maintain a database of trained personnel and volunteers who could be contacted at any time;
xv. Liaise with on-site operation centre, State EOC and other emergency services.

The Assistant Commissioner to Deputy Commissioner shall be the Nodal Officer for Disaster Management would be in-charge of the DEOC. The design, layout, equipment and operation of the DEOC would be as per the EOC Manual prepared at the State level.

4.9.3 Measures to be taken for Disaster Management

Generally speaking the following measure would help in dealing with disasters in the district:-

i) Preparation of Disaster Management Plans at District and local Level
ii) Implementing of Disaster Management Plans
iii) Holding regular meetings at District and Sub-Division level to reviewing the readiness of the administrative machinery to deal with disasters.
iv) Constitution of Relief Committees at all levels.
v) Regular training programmes of Government functionaries, PRIs, ULBs and other stakeholders in various facets of disaster management.
vi) Public awareness and education in disaster management.
vii) Community training and empowerment
viii) Taking preventive and mitigation measures for the identified hazards
ix) Integration of Disaster Risk Reduction (DRR) into on-going development programmes of all departments.
x) Establishing effective early warning system for the vulnerable areas and communities.

xi) Improving the response capacities of the search and rescue teams.
xii) Conducting regular mock drills

4.10 Action during Disasters

The following would be the broad guidelines for actions during disasters:-

a) Assess the full extent of the disaster/calamity and the damages/losses incurred
b) Plan and supervise search and rescue operations
c) Allocate clear responsibilities to the officers and provide them necessary resources along with necessary delegations
d) Mobilise resources from outside the district if the situation so warrants
e) Finalise the relief to be provided to the affected persons and ensure its timely distribution
f) Collect and maintain full information of the disaster and steps taken to tackle it
g) Document the disaster including the lessons learnt
h) Last but not least, keeping informing the higher authorities about the whole incident

CHAPTER – 5
MITIGATION STRATEGY FOR THE DISTRICT

The adverse effects of disasters can be minimised if mitigation policies, plans, and projects are undertaken. Keeping in view the hazard and vulnerability profile of the district the following mitigation actions would be taken to mitigate the impacts of various hazards.

5.1 Action Plan for Earthquake Mitigation

i. Revision and adoption of model building bye-laws for construction both in urban and rural area.
ii. Wide dissemination of earthquake-resistant building codes, the National Building Code 2005, and other safety codes.
iii. Training of trainers in professional and technical institutions.
iv. Training professionals like engineers, architects, and masons in earthquake resistant construction.
v. Launching demonstration projects to disseminate earthquake-resistant techniques.
vi. Launching public awareness campaigns on seismic safety and risk reduction and sensitising all stakeholders to earthquake mitigation.
vii. Establishing appropriate mechanisms for compliance review of all construction designs submitted to ULBs.
viii. Undertaking mandatory technical audits of structural designs of major projects by the respective competent authorities.
ix. Developing an inventory of the existing built environment.
x. Assessing the seismic risk and vulnerability of the existing built environment by carrying out structural safety audits of all critical lifeline structures.
xi. Developing seismic strengthening and retrofitting standards and guidelines for existing critical lifeline structures.
xii. Undertaking seismic strengthening and retrofitting of critical lifeline structures, initially as pilot projects and then extending the exercise to the other structures (as detailed in a phased manner.
xiii. Preparation of DM plans by schools, hospitals, main buildings visited by large number of public etc., and carrying out mock drills for enhancing preparedness.
xiv. Strengthening the EOC network and flow of information.
xv. Streamlining the mobilisation of communities, civil society partners, the corporate sector and other stakeholders.
xvi. Preparing community and village level DM plans, with specific reference to management of earthquakes.
xvii. Carrying out the vulnerability assessment of earthquake-prone areas and creating an inventory of resources for effective response.
xviii. Introducing earthquake safety education in schools, colleges and universities and conducting mock drills in these institutions.
xix. Strengthening earthquake safety research and development in professional technical institutions.
xx. Preparing documentation on lessons from previous earthquakes and their wide dissemination.
xxi. Developing an appropriate mechanism for licensing and certification of professionals in earthquake-resistant construction techniques by collaborating with professional bodies.

xxii. Preparing an action plan for the up gradation of the capabilities of the IMD and BIS with clear roadmaps and milestones.
xxiii. Developing appropriate risk transfer instruments by collaborating with insurance companies and financial institutions.
xxiv. Operationalising the local companies of Home Guards and IRBs/Police for disaster response.
xxv. Strengthening the medical preparedness for effective earthquake response, etc.
xxvi. Enforcement and monitoring of compliance of earthquake-resistant building codes, town planning bye-laws and other safety regulations.

5.2 Land Slide Mitigation

The main features to be included in the plan are:

i. Revision of town planning bye-laws and adoption of model land use bye-laws in hilly areas.
ii. Wide dissemination of model land use practices in hilly areas.
iii. Training of trainers in professional and technical institutions.
iv. Training of professionals like engineers and geologists for landslide mapping, investigation techniques, analysis, and observational practices.
v. Launching public awareness campaigns on landslide hazard and risk reduction, and sensitising all stakeholders on landslide hazard mitigation.
vi. Establishing appropriate mechanisms for compliance reviews of all land use bye-laws in hilly areas.
vii. Preparing an inventory of existing landslides, active or inactive, in the area.
viii. Developing an inventory of the existing built environment in areas around existing landslides and in high hazard zones as per the LHZ maps.
ix. Assessing the status of risk and vulnerability of the existing built environment.
x. Preparation of DM plans by educational and health institutes/organisations, government offices, etc., and carrying out mock drills for enhancing preparedness in vulnerable areas.
xi. Strengthening the EOC and communication network.
xii. Streamlining the mobilisation of communities, government agencies, the corporate sector, and other stakeholders.
xiii. Preparing community and village level DM plans, with specific reference to the management of landslides.

5.3 Management of Drought

The salient features of mitigation plan will be:

i. A Drought Management Cell (DMC) will be established in the Local Agriculture Department.
ii. Drought management plans for the entire season will be prepared by the Agriculture Department well in advance in the month of May, based on the long season forecast issued by IMD in April and also the previous season's rain fall.
iii. Drought management plans will be prepared block wise.
iv. As the season progresses from June onwards, the DMC will review the plans prepared earlier at the onset of the monsoon and revise the strategy if required.
v. Weekly monitoring of the season and crop condition from June onwards till the end of the season and make necessary midseason corrections as and when required.

vi. The DMC will make use of the frontier techniques like remote sensing and GIS while providing the inputs to the DDMA.

vii. A sound database will be created and updated regularly on weather, crop conditions, input supply, credit, insurance and market information, fodder supply etc. in order to assist the DDMA for Drought declaration and Management.

viii. Awareness will be brought among the farmers on drought regulations and enforcement.

5.4 Managing Chemical, Biological, Radiological and Nuclear Emergencies – Contamination of Water Supply.

To manage an incident of CBRN contamination of water supply, a modal SOP as given under may be referred to:

5.4.1 Incident Reporting

Any breach of security or suspected event of accidental or intentional contamination should be communicated to the officer in charge of the water facility through quickest possible means. Subsequently, he will inform the same to local police, law enforcement and intelligence agencies, and request for physical quarantine of the contamination site. The incident should also be reported to all pre-identified nodal agencies with request to remain at stand by.

5.4.2 Site Characterization

Water facility in charge along with law enforcement agencies would visit the site and make on site inspection for identification of physical evidences to confirm the incident. Police & Law enforcement agencies would collect and preserve physical evidences for further investigation and necessary action. Water facility in charge will also make an initial hazard assessment based on available evidences for determining potential need for specialized men, material, techniques or equipment. Based on the findings of initial site evaluation, both to and fro water supply should be stopped immediately.

5.4.3 Preliminary Screening

Trained personnel would be deployed for sample collection and spot testing as described in this document. Sample should be collected from the nearest point. Sample collected should be divided into two, one for spot testing and another for laboratory testing. First set should be subjected to spot testing by prescribed methods. Once the incident and nature of contamination is established the same should be communicated to district administration in precise and clear language for activating their crisis management plan. Following positive screening, second half of the sample should be immediately sent to pre identified reference laboratories.

5.4.4 Risk Communication

District administration in association with disaster management authority will make public pronouncement of contamination event in clear and precise language along with requisite precautions to be taken. All care to be taken to avoid undue panic situation.

5.4.5 Alternate Supply

The Water facility manager in association with district administration would make alternate supply arrangements. In absence of alternate supply, water should be decontaminated through the technique of reverse osmosis. The mobile water purification van developed by DRDO could be utilized for same.

5.4.6 Decontamination

Supply lines and storage facilities should be decontaminated using appropriate and available technology. Do not try to decontaminate water that has been exposed to chemical agents by using chemicals; rather it should be purified through the systems based on Reverse Osmosis and Carbon Columns. Such a system has been developed by Defense Laboratory, Jodhpur and is named as Water Purification System (WPS) and it is suitable for purification of water including that contaminated by CBRN agents.

5.4.7 Restoration of supply

Following repair and decontamination of facility, a fresh water sample should be retested and certified for public consumption.

5.5 Psycho-Social Care and Mental Health Support (PSSMHS)

i) Strengthening of District Counseling Centers under the Department of Social Welfare & Child Development.
ii) Integrating with DM mental health plans and Health/Hospital DM Plans.
iii) Integrating with all training in the area of Psychology, Social Work, Mental Health, Emergency Medical Response, Hospital Administration, Nursing and Paramedics.
iv) Inclusion in the CBDM Plan and training of PRI team members.
v) Developing awareness material for the community.
vi) Evolve a mechanism for community outreach education programmes on PSSMHS.
vii) Creation of a core group of master trainers at district level.

5.6 Early Warning System for Flash Floods/GLOFs

Forecasting and early warning helps in mitigating the effects of disasters. The loss of life and property can be considerably reduced with accurate and timely warning. Climate-meteorological disaster such as flash floods, GLOF, avalanches etc. be predicted with certain degree of accuracy.

i) A network of rain/snow gauges would be strengthened in the district.
ii) Tie-up with IMD, CWC would be strengthened so that EWS can be effectively communicated to the vulnerable community.
iii) Community networking would be done to communicate the EWS to the vulnerable sections.
iv) Modern media would be utilized to communicate the EWS.
v) Tie-up for sharing of information would be done with the power projects.
vi) For GLOF related events arrangement would be made with the Chinese authorities through Government of India for timely sharing of information.
vii) ICT tools need to be used for data receptions, forecasting and timely dissemination.

5.7 Mitigation Strategy for Fires

i) Vulnerable habitations would be identified and mitigation actions would be taken to avoid/reduce incidents of domestic fires.
ii) Community education would be initiated to reduce and mitigate fire incidents.
iii) Fire and emergency services would be strengthened in the district.
iv) Fire insurance would be promoted to transfer the risk.
v) Community would be involved in tackling forest fires and their participation would be ensured.

5.8 Training and Capacity Building

a) Training and orientation of Government official would be carried out immediately and in a time frame for the same would be prepared.
b) Training would be carried out as per the training needs assessment of various departments.
c) Regular refresher courses would be organized at regular intervals.
d) The training would be practical in nature and would focus on skill up-gradation.
e) The capacity of the departmental training institutes would be upgraded so that they can take up training on DM.
f) The community, CBOs, NGOs would be targeted for training and capacity building.
g) A Cadre of local volunteers would be created who would be trained in various aspects of DM such as SAR, MFA etc.
h) The list of trained officials would be maintained and uploaded in the DDMA website and regularly updated.
i) New entrants to the Government services would be trained and oriented to DM at the entry level training.
j) Safe construction practices needs to be promoted and for this local masons, bar benders, carpenters, construction supervisors, contractors would be specifically trained and targeted.

5.9 Public Awareness

a) Focused and targeted public awareness programmes would be launched on various aspects of DM.
b) Hazard specific do's and don'ts would be communicated to the local population in the simplest language.
c) Traditional modes of promoting knowledge and awareness would be adopted such as use of folk songs, *nukad nataks*, etc.
d) Community would be targeted through local fairs and festivals.
e) Documentaries in local language would be screened through local cable networks etc. and mass media would be roped to promote education and awareness.

5.10 Institutional Strengthening

Disasters can be effectively handled and their adverse effects minimized only when the institutional strengthening is done. The departments which have role in emergencies such as fire, police, home guards, health, PWD, I & P, revenue etc. would be strengthened and equipped so that their capacity to deal with disasters is increased. Specific actions would include:

a) The DDMA would be made functional and active.
b) DEOC would be set-up
c) Network of fire services would be increased and they would be equipped to deal with other emergencies too.
d) Home Guards companies would be equipped to deal with and respond to emergencies.
e) SAR equipment would also be given to police and fire stations.
f) Local units of police force would be trained in specialized SAR operations.

5.11 Climate Change Adaptation

There are evidences to indicate that Himalayas are warming at a higher rate than the global average rate. It is a matter of great concern as the region has more snow and ice than any other region in the world outside the Polar caps, Himalayas are the maker of climate of much of the South Asia, and the Himalayas glaciers are receding faster than glaciers of the other parts of world. Alpine ecosystems are particularly vulnerable to warming. It may also affect recreational tourism like skiing. Many important forest species are likely to fail to regenerate if the synchrony between their seed ripening and commencement of monsoon rains is broken due to the climate change. Therefore, climate change is likely to impact our glacial reserves, water balance, agriculture, forestry, bio-diversity and human and animal health. There are definite indications that climate change would increase the frequency and intensity of natural disasters like cyclones, floods, cloudbursts, flash floods and droughts in the coming years. In order to meet these challenges in a sustained and effective manner, synergies in our approach and strategies for climate change adaptation and disaster risk reduction shall be encouraged and promoted.

5.12 Medical Preparedness and Mass Casualty Management

Medical preparedness is a crucial component of any DM Plan. DM plans for all the hospitals to handle mass casualty and incorporating training and capacity building of medical teams, paramedics in trauma and psycho-social care, mass causality management and triage would be prepared and integrated with DDMP. The NDMA has formulated policy guidelines to enhance capacity in emergency medical response and mass casualty management and the department will use these guidelines for medical preparedness. The plans should inter-alia include safety of structural and non-structural elements in hospital, evacuation plan, provision of alternative hospital and identification of open spaces which could be used as open hospitals to handle the rush of disaster victims. The medical authorities will be encouraged to formulate appropriate procedures for treatment of casualties by private hospitals during disasters. The hospital DMPs will also address post-disaster disease surveillance systems, networking with hospitals, referral institutions and accessing services and facilities such as availability of ambulances and blood banks. The medical DMP will also have provision for mobile surgical teams, mobile hospitals and heli-ambulances for

evacuation of patients There is a need to focus on creating adequate mortuary facilities. Proper and speedy disposal of dead bodies and animal carcasses deserves due weight age. Web-enabled database of blood donors will be prepared to facilitate arrangement of blood supply chains during emergencies. For this purpose networking with Red Cross and NGOs would be worked out.

5.13 Communications and Information Technology (IT) Tools for DM

Use of modern communication and information technology tools is crucial for effective and efficient disaster management. The communication and IT tools would be utilised for compiling of information, dissemination, and for spread of forecasting and early warnings. The digital mapping of resources would be done and the same would be hosted in web-based portals for easy access and retrieval. These tools can be used in the following areas:

a) Creating decision support system for the policy makers, disaster managers and responsible officers at all levels;
b) Real time dissemination of early warning to the all the stakeholders –authorities, DMTs, QRTs, threatened community etc.;
c) Information and broadcasting mediums such as television, radios, FM stations etc. can be used keeping in view their geographical reach and availability;
d) Emergency communication system during disasters; and
e) Collecting and collating information on damage and needs assessment.

5.14 Setting up and strengthening of the Emergency Operations Centers

In line with the national emergency communication plan and national disaster management information and communication system, emergency operation centers (EOCs) would be set-up at the district level. Provision of mobile emergency operation vehicles may be made. EOCs at main locations can also be considered. The EOCs would have fail-safe communication network with multiple levels of built-in redundancy having communication to ensure voice, data and video transfer. Development of Ham Radios network in the district would be encouraged so that it can be utilised during emergency. For last mile connectivity and control of the operations at the disaster hit areas, availability of portable platforms will be catered for. Use of community radios, FM Channels, bulk SMS system and voice messaging system would be made for the last mile connectivity.

5.15 Training, Simulation and Mock Drills

Efficacy of DMPs are tested and refined through training, seminars and mock drills. The DDMA and Local Authorities in association with the SDMA and NDMA will also conduct mock drills in different parts of the district to test the efficacy of the plans so prepared. District authorities will be encouraged to generate a culture of preparedness and quick response. Involvement of all the stakeholders and community at large numbers may be ensured to make the mock exercises as a means of awareness generation and community preparation. The inputs and lessons learnt during the mock exercises will be utilised to upgrade and improve the DMPs.

5.16 Partnerships for Mitigation and Preparedness

5.16.1 Community Based Disaster Preparedness

Communities are not only the first to be affected in disasters but also the first responders. Community participation ensures local ownership, addresses local needs, and promotes volunteerism and mutual help to prevent and minimise damage. The community participation for DM would be promoted on the moto of "self-help", "help thy neighbour" and "help thy community". The needs of the elderly, women, children and differently able persons require special attention. Women and youth will be encouraged to participate in decision making committees and action groups for management of disasters. Networking of youth and women based organisation would be done and they will be trained in the various aspects of response such as first aid, search and rescue, management of community shelters, psycho-social counselling, distribution of relief and accessing support from government/agencies etc. Community plans will be dovetailed into the Panchayat, Block and District plans.

5.16.2 Mobilising Stakeholders' Participation

The DDMA will coordinate with Home Guards, NCC, NYKS, NSS, sports and youth clubs, women based organisations, and faith based organisations and local Non-Governmental Organisations (NGOs), CSOs etc. for DM. They will be trained in various aspects of DM more particularly in SAR and MFA. They will also be encouraged to empower the community and generate awareness through their respective institutional mechanisms. Efforts to promote voluntary involvement will be actively encouraged.

5.16.3 Corporate Social Responsibility (CSR) and Public-Private Partnership (PPP)

Historically, the corporate sector has been supporting disaster relief and rehabilitation activities. However, the involvement of corporate entities in disaster risk reduction activities is not significant. PPP between the Government and private sector would also be encouraged to leverage the strengths of the latter in disaster management. The DDMA would need to network with the corporate entities to strengthen and formalise their role in the DM process for ensuring safety of the communities. The corporate sector also needs to be roped up for on-site and off-site emergency plans for hydro-power projects. The role of corporate sector for awareness generation and local capacity building is also important and efforts would be made to involve corporate sector in this effort.

5.16.4 Media Partnership

The media plays a critical role in information and knowledge dissemination in all phases of DM. The versatile potential of both electronic and print media needs to be fully utilised. Effective partnership with the media will be worked out in the field of community awareness, early warning and dissemination, and education regarding various disasters. The use of vernacular media would be harnessed for community education, awareness and preparedness at the local level. The DPRO in consultation with the DDMA would take appropriate steps in this direction.

CHAPTER – 6
RESPONSE PLAN

There is need of a response structure to activate the Disaster Management Plan (DDMP) once a disaster strikes. In Kangra District the Deputy Commissioner shall be the focal point acting as a Responsible Officer for directing, supervision, and monitoring the DDMP. The Deputy Commissioner shall function with the assistance of the District Emergency Operation Centre (DEOC) to be activated to its full capacity at time of disaster and shall be the nodal center for disaster management. All information regarding disaster situations shall at once be communicated to the District Emergency Operation Centre (DEOC). The DEOC would work as per the EOC manual.

6.1 Role of Emergency Operation Centre (EOC) on occurrence of disaster

The EOC will function to its fullest capacity on the occurrence of disaster. The district EOC will be fully activated during Level 0 and Level 1 disasters. The activation would come into effect either on occurrence of disaster or on receipt of 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 SDO (Civil) or any other agencies on the occurrence of a disaster, all community preparedness measures including counter-disaster measures will be put into operation. The Deputy Commissioner will assume the role of the Chief of Operations for Disaster Management.

The occurrence of Level 1 and Level 2 disaster will be communicated to the following by means of telephone and subsequently fax:-

i) Governor;
ii) Chief Minister;
iii) Revenue Minister;
iv) MPs and MLAs from affected areas;
v) Chief Secretary
vi) State Disaster Management Authority
vii) Relief Commissioner
viii) NEOC
ix) Joint Secretary, NDM, Ministry of Home Affairs, GOI.

The disaster/emergency would be communicated to the following DM, SP, CMO, SDM, Commandant Home Guard, Fire Officer immediately on phone. A written report about the disaster/event would be sent to the DM by the local agency/ authority where disaster took place.

The occurrence of disaster shall be immediately communicated to the members of District Disaster Management Authority at district and sub-division level and other stakeholders such as NGOs, trained SAR volunteers through SMS gateway for which specific provision of group mobile directory would be made. The directory would be grouped according to the disaster specific response groups. All the messages received in and sent out of the EOC will be entered into the message register.

The occurrence of disaster would essentially mean the following activities have to be undertaken:

a) Expand the Emergency Operations Centre to include Branch arrangements with responsibilities for specific tasks depending on the nature of disaster and extent of its impact.

b) Establish an on-going VSAT, wireless communication and hotline contact with the Divisional Commissioner, and Collector/s of the affected district/s.

[The EOC in its expanded form will continue to operate as long as the need for emergency relief and operations continue and the long-terms plans for rehabilitation are finalized].

6.2 Branch Officers/Nodal Officers

Branch arrangements would be activated only on the occurrence of major disaster in and it would provide for division of tasks, information gathering and record keeping and accountability of the Branch officer to the Responsible Officer for specific functions. Each Branch should have a Branch Officer of the rank of Deputy Secretary or Joint Secretary at the State Level and Head of Office of the concerned department at the District level assigned.

i) The Branch/Nodal Officers for Operations, Services, Logistics, Communication and Information Management, Resource Branches will be from the Revenue Deptt.
ii) For Health Branch, the officer will be from the Public Health Deptt.
iii) For Public works and Engineering, the officer will be from the Public Works Deptt.
iv) For adequate water supply, the officer will be from I & PH Deptt.
v) For Food and Supply, the officer will be from Food & Public Distribution Deptt.
vi) For Law and Order, the officer will be from Police Deptt.

All Branch/Nodal Officers will work under the overall supervision and administrative control of the Responsible Officer. All the decisions taken in the DEOC during emergency have to be approved by the District Magistrate/ Sub Divisional Magistrate.

6.3 Besides the above the DEOC would also do the following functions

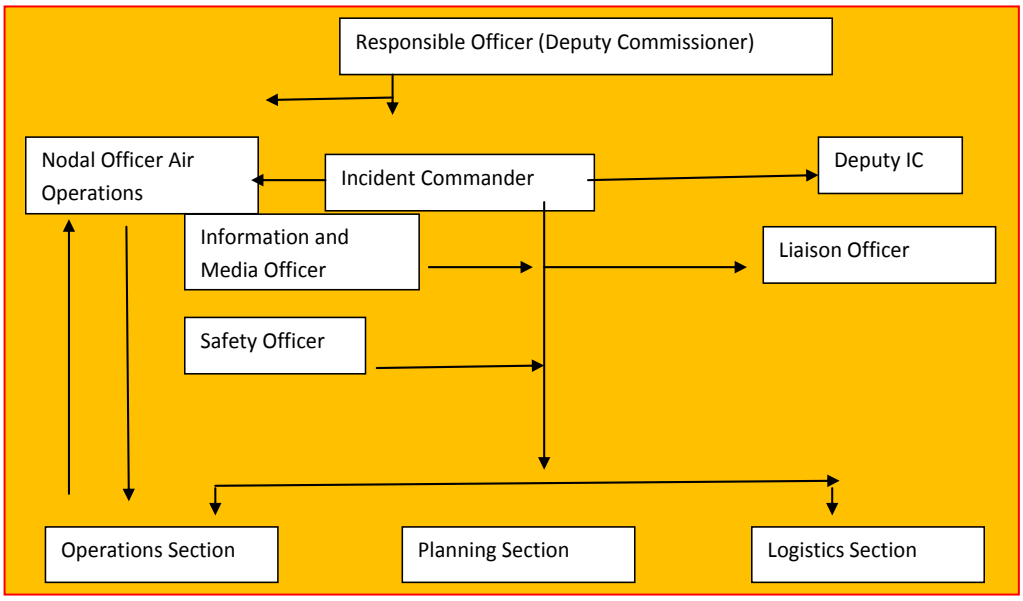
a) Assimilation and dissemination of information.
b) Liaise between Disaster site and State Head Quarter.
c) Monitoring, coordinate and implement the DDMP.
d) Coordinate actions and response of different departments and agencies.
e) Coordinate relief and rehabilitations operations
f) Hold press briefings.

The DEOC would function through Emergency Support Functions (ESFs). The ESF Plan for the district has been prepared and placed at Annexure – K. The response for search and rescue, medical, arrangements for logistics, communication, food, water, temporary shelter etc. would be as per the ESF plan prepared for the district. The primary agency responsible for a particular ESF would act a coordinator and seek necessary assistance from the secondary agency. If the assistance of the secondary agencies involves the requisitioning from the Deputy Commissioners office, the primary agency would place a request to this effect with the DEOC.

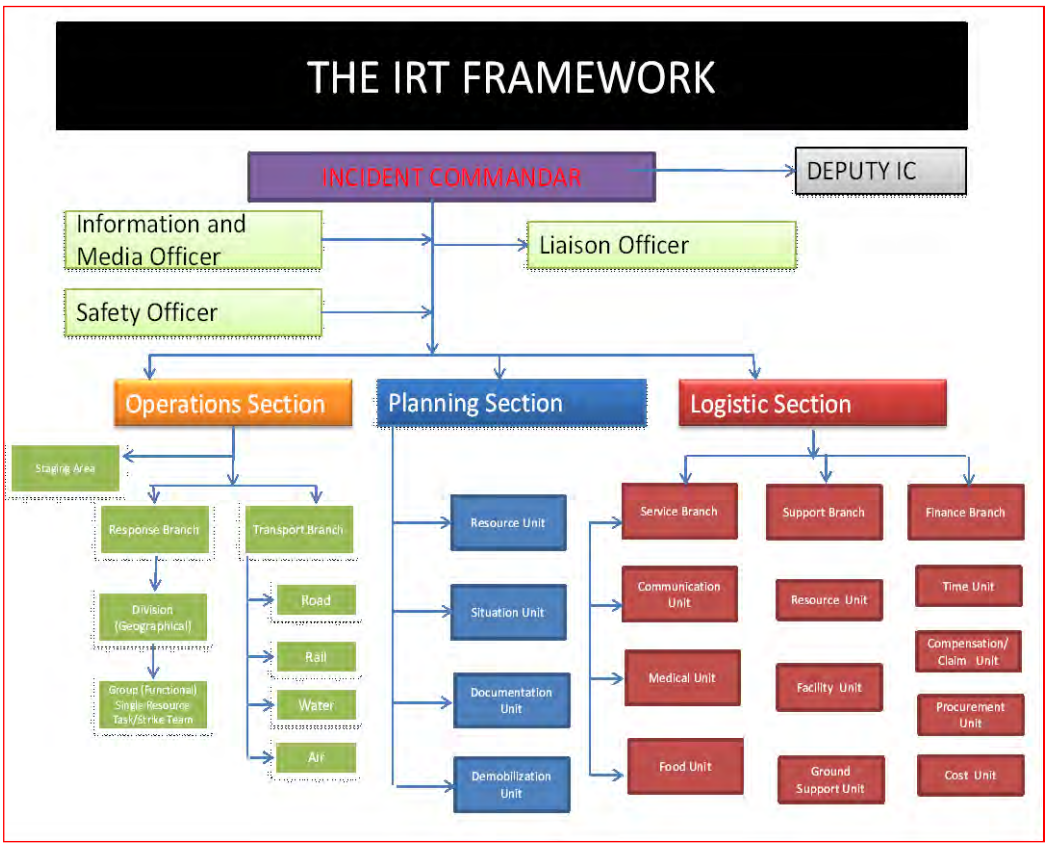
6.4 Response Structure

The response structure would be based on Incident Response System (IRS) as per the Guidelines issued by the NDMA. The IRS system would work through various service divisions. The IRS system would contract and expand depending upon the nature and magnitude of emergency/disaster. The IRS structure would work at District, Sub-Division,

Tehsil, Block level. IRS Structure for District level is given in Figure 25. Deputy Commissioner (Responsible Officer) works through Incident Commanders and Incident Response Teams.



6.5 Incident Response Structure (IRS) Leadership



The response structure would run parallel from district to village/panchayat level on the basis of ESF plan for various departments and agencies. The IRS would be headed at the district level by the Deputy Commissioner, Sub-division level by the Sub-Divisional Officer (Civil), Tehsil (where Tehsil and Sub-Division is not co-terminus) by the Tehsildar, at the MC

level by the Chairman of the ULB and at the Panchayat level by the Panchayat Pradhan. The officers/officials of various departments would be provided the ESF at the appropriate level.

Emergency Warning and Dissemination

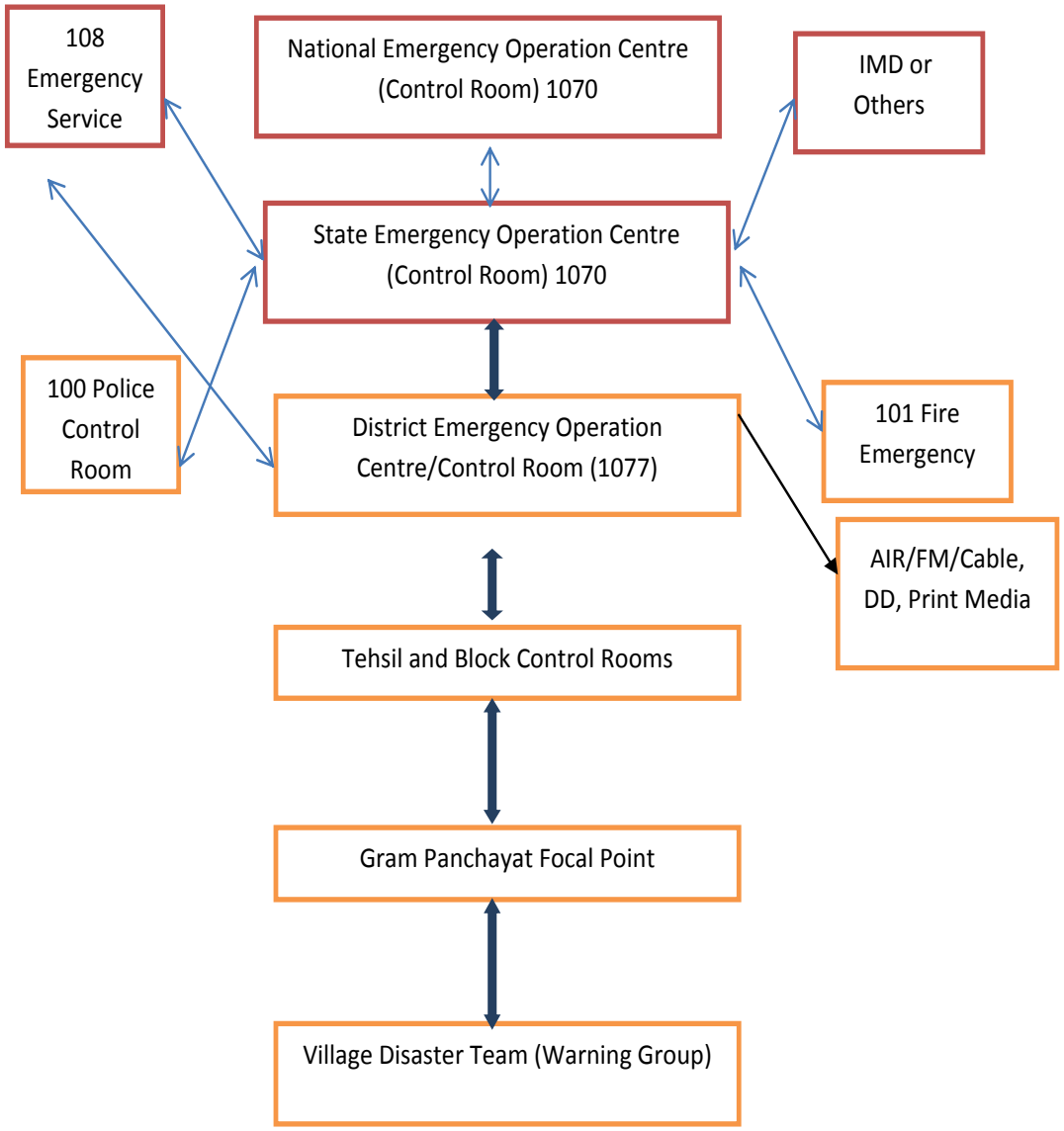


Fig: 17 Flow chart of Early Warning System

The EOC would utilize the ICT tools and various other modes available for early transmission of early warning to the vulnerable groups and also activate the responders.

The bulk group messaging services would also be utilized to alert the vulnerable groups and activate the SAR parties and all the responders. A model of early warning dissemination is given in fig 27 above. The timely flow of early warning system from the source to the targeted stakeholder is very important. The dissemination of early warning should be institutionalized so that it reaches the stakeholders in minimum possible time by recognized means of communication.

6.6 Rapid Damage Assessment and Reporting

The response to disaster would be more effective if the damage assessment is immediate and timely. The field staff and agencies of various departments would communicate the damage/loss to the DEOC at the earliest. Initially first information report would be sent which would be followed by the detailed damage assessment reports. The formats for damage assessment are given in the annexures.

6.7 Response Plan vis a vis Various Disasters

6.7.1 Drought

6.7.1.1 Response Action of Administration

- The DC shall ensure calling to tenders through advertisement in at least one English and one vernacular newspaper by end of April for supply of potable drinking water throughout the district.
- The DC shall ensure identification of suppliers and fixation of rates for transportation of drinking water through tankers/tractors Sub-division wise by the first week of April in case of poor rainfall during the preceding winter and otherwise by end of May.
- The DC shall authorize the SDMs for issuing orders for supply of drinking water through tankers as per need.
- The DC shall identify nearest market in adjoining district/ state from where fodder (Straw is easily available and direct SDMs to advise people to procure fodder from such place.
- The DC shall submit report to the Government regarding crop loss due to drought and seek funds for utilization in employment generation.
- The DC shall submit report to Government with regard to situation of drinking water supply.
- The DC in consultation with Animal Husbandry dept. shall assess requirement of fodder on the occurrence of drought and submit report to the Government.
- The DC shall constitute joint emergency Sub-Division level and Tehsil level teams consisting of Executive Magistrate, Doctor, SDO (I&PH) for monitoring outbreak of water borne diseases.
- The DC shall issue direction regarding cleaning of Traditional water Bodies prior to onset of summer and succeeding rainy season.
- The DC shall review availability of stock in all fair price shops in view of crop failure.
- The DC shall issue prohibitory orders with regard to sale of over ripe/rotten fruits and vegetables.
- The Health Department shall ensure stocking of medicines for water borne diseases in all health institutions.
- The I & PH Department shall ensure availability of Chlorine tablets and bleaching powder at the village/ Panchayats level.
- The DC shall converge various programmes and schemes of government for tackling drought situations.

6.7.1.2 Response Action of SDM

- SDM shall submit weekly report regarding drinking water availability in respective jurisdiction from first week of May to the DC.

- SDM shall prepare route chat for distribution of drinking water in consultation with the Executive Engineer I&PH department.
- SDM shall identify source of drinking water in consolation with the I&PH dept. from where shall take their supply.
- SDM shall direct deployment of water tankers for supply of drinking water.
- SDM shall monitor smooth supply of water through tankers. There shall be made at least two trips in a day by the tankers.
- SDM shall keep record of movement of water tankers in coordination with the I&PH dept.
- SDM shall constitute a team comprising of panchayat Pradhan, Patwari and Veterinary Doctors at local level for verification of fodder procured.
- SDM shall ensure proper voucher/ invoice/ bill produced for providing transport subsidy as per relief manual.
- SDM shall have the drinking water transportation bills verified through the I&PH dept. and release payment for the same.

6.7.1.3 Response Action by I&PH

- The XEN shall submitted weekly reports of status of water supply in departmental schemes from the week of May to the Superintendent Engineer.
- The SE shall compile status of water in the district and submit same to the DC on weekly basis.
- The XEN shall submitted demand of supply of water through tankers to the SDM.
- The XEN shall identify source for filling of water tanker.
- The XEN shall ensure chlorination of such water supply.
- The XEN shall ensure purification of natural water sources and all departmental schemes.
- The XEN shall deploy personal (eg. Water guard) with each tanker to ensure proper and equitable distribution of water.
- The XEN shall maintain a register of movement and supply by each tanker which shall be verified by officer authorized by him.
- The XEN shall try to install more hand pumps in areas which chronically face water scarcity during summer.

6.7.1.4 Response Action by Agriculture Department

- The Agriculture Officer shall monitor the situation for impact of drought on crop growth and consequent yield.
- The Agri. Officer shall submit weekly report starting from last week of May and first week of January regard to status of Kharif and Rabi crops.
- The Agri. Officer shall prepare contingency plan for any crop failure due to drought and submit same to the Government and DC.
- The Agri. Officer in view of drought shall organize extensive field camps to advise farmers on alternative crop and strategies.

6.7.1.5 Response Action by Horticulture Department

- The Deputy Director Horticulture shall monitor the situation for impact of drought on tree growth and consequent fruit yield.
- The Deputy Director shall submit weekly report starting from last week of May and first week of January with regard to status of fruit beating trees.

- The Deputy Director shall prepare contingency plan for any crop failure due to drought and submit same to the Government and DC.
- The Deputy Director shall view of drought shall organize extensive crop and strategies.

6.7.1.6 Response Action by Health Department

- The CMO shall ensure all medical institutions are stocked with adequate medicines, especially for water borne diseases.
- The CMO shall constitute emergency medical teams at all PHC level to attend to outbreak of any epidemic (eg. Water borne disease.).
- The CMO shall convene a meeting under the DC of all concerned departments including Revenue, Rural Deptt. I&PH, Ayurveda with regard to prevention of water borne diseases.
- The CMO shall ensure issuance of notification banning sale of over ripe/rotten and uncovered fruits/vegetables/flood by the District Magistrate.

6.7.2 Road Accident

6.7.2.1 Response Action by SDM

- The SDM shall immediately inform the DC of occurrence of accident.
- The SDM shall immediately direct SHO concern to rush Police personnel to sport.
- The SDM shall immediately direct the Tehsildars/Naib-Tehsildar to rush to the spot.
- The SDM shall immediately put the Health Dept. on the alert by information CMO/BMO concerned.
- The SDM shall depend upon the magnitude of the accident request for assistance from Commandant Home Guard, PWD etc.
- The SDM shall depend upon the magnitude rush to the spot of the accident.
- The SDM shall arrange for search & rescue on the spot taking assistance of Police, Home Guard, Fire Brigade, PRIs, NGOs and local population.
- The SDM shall evacuate people directly involved in the accident and also general public if it is deemed necessary.
- The SDM shall direct the health dept. to depute ambulance and paramedical and medical staff to the spot immediately for on the spot treatment and first aid.
- The SDM shall arrange for dead van if so required.
- The SDM shall coordinate between the Police, Health dept. Victims and their kith and kin for search and rescue, low and order, traffic management post shall coordinate with the health dept. For conduct of immediate post mortem and early handing over of dead bodies to kith and kin.
- The SDM shall ensure submission of a brief and comprehensive detailed report of the accident within 12 Hrs to the DC. The report shall contain the following information.

  - Location and details of vehicle involved in the accident.
  - Prima facie cause of accident.
  - Detail of passengers with identification if any.
  - Detail of relief provided in from of medicines and cash.

- The SDM shall keep the DC informed on action being taken on the spot from time to time.

6.7.2.2 Response Action for Health Department

- The CMO on receiving information regarding the accident shall immediately put on casualty/ emergency ward of District Hospital for referred cases.
- The CMO shall inform the BMO concerned and the SMO of the concerned sub-divisional hospital for similar action.
- The CMO shall arrange for immediate movement of ambulance with medical and paramedical staff to the site of accident.
- The CMO shall ensure portable stretchers are available site for evacuation on the injured and the dead.
- The CMO shall ensure availability of first Aid on the spot.
- The CMO shall depute doctors from surrounding PHC/CHC to the CHC where the injured have been evacuated if staff strength is not enough at that health institution.
- The CMO shall maintain a detail of victims admitted to various health institutions including those referred to specialized health institutions outside the district. The CMO submit in writing to the DC such detail including status if health within 12 Hrs. in consultation with the SDM.

6.7.2.3 Response Action of SHO

- The SHO shall immediately inform the SDM, SP and DC regarding the incident with details of site.
- The SHO shall immediately deputy a team of police personal to the site
- Depending upon the magnitude, the SHO shall rush to the site and personally coordinate search and rescue, evacuation, traffic regulation, low and order.
- The SHO shall communicate factual information to the SP on reaching the spot on the following.

  - Exact location
  - Prima facie cause of accident
  - Vehicles involved, transport company
  - No. of injured
  - No. of fatalities
  - Status of driver and conductor
  - Status of injured

- The SHO shall arrange for search and rescue in consultation with the SDM.
- The SHO shall ensure smooth movement of traffic.
- The SHO shall divert the traffic if required in consultation with the SDM.
- The SHO shall arrange for a guard to protect the property of the victims at the site.
- The SHO shall take necessary legal action as low and also initiate an inquiry into the causes of the accident.
- The SHO shall arrange for early post mortems and quick release of bodies to the kith and kin.
- The SHO shall submit a brief and comprehensive report regarding the accident in consultation with the SDM to the SP with in 12 Hrs of the accident.

6.7.2.4 Response Action of PWD

- The XEN concerned shall provide equipment and manpower to the SDM at the accident site on request.
- Equipment such as crane, JCB, Bulldozer, Gas cutter etc shall be provided by the XEN as per request of the SDM.
- The XEN/SDO/JE shall supervise such operations at site depending upon the magnitude of the accident as assessed by the SDM.
- The XEN shall ensure manpower is provided at site on the request of the SDM.

6.7.2.5 Response Action of Home Guards

- The Commandant shall ensure movement of fire brigade immediately to the site when called for by the SDM.
- The Commandant shall provide manpower for assistance in search and rescue, removal of dead, traffic management, first aid etc.

6.7.3 Earthquake Response Plan

4th April 1905 Great Kangra Earthquake: Kangra has faced three major earthquakes in twentieth century. An earthquake having magnitude 8.0 struck the Kangra region of Northwest Himalaya on 4th April, 1905 and caused widespread damage by killing 19,500 peoples and loss to live stock and property in the valley.

Kangra earthquake is highly tectonic and seismically active. The current sense of motion determined from the fault plane solution of the 1986b Dharamshala earthquake is the indication of thrust faulting on a southwest dipping plane striking northwest-southeast. The Kangra earthquake was also a part of the same recognized tectonic trend. The destruction covered a vast area but the isoseismics were reported to be elongated in the southeast direction and narrowed in the northeast and the northwest direction.

14th June 1978 Dharamshala Earthquake: A moderate earthquake of magnitude 5.0 rocked Dharamsala region on 14th June, 1978. The earthquake was felt in the Kangra Dharamshala and Chamba region. No causality had been reported. The maximum intensity of earthquake was recorded to be VI on MM scale around Dharamshala.

26th April, 1986 Dharamshala Earthquake: An earthquake of magnitude 5.7 mb triggered in the Kangra-Dharamshala region (H.P.) on 26th April, 1986 at 1:05 IST (07:35 GMT). This had caused widespread damage to the Dharamshala town.

Richter Magnitudes and measurable earthquake effects.

6.7.3.1 Earthquake Intensity

Intensity is the measure of the shaking and damage caused by the earthquake. Unlike values of magnitude, rating the intensity of an earthquake's effects does not require any instrumental measurement, and the earthquake intensity value changes from location to location, in general decreasing with distance from the earthquake source.

The Modified Mercalli Intensity (MMI) scale is the most commonly-used earthquake intensity measurement. It describes the severity of an earthquake in terms of its effects on the earth's surface and on man and built structures. Intensity ratings are expressed as Roman numerals between I and XII.

Table: 18 Modified Intensity (MMI) scale and description of effects and corresponding peak ground accelerations (PGA) with respect to BIS Seismic Zone

Zone	MMI	PGA(g)	Earthquake effects
	I	<0.002	Not felt except by a very few under especially favorable circumstances.
	II	0.002-0.003	Felt only by a few persons at rest, especially on upper floors of buildings. Delicately suspended objects may swing.
	III	0.004-0.007	Felt quite noticeably indoors, especially on upper floors of buildings, but many people do not recognize it as an earthquake. Standing automobiles may rock slightly. Vibrations felt like passing of truck.
II (MMI VI and Lower)	IV	0.015-0.020	During the day felt indoors by many, outdoors by few. At night some awakened. Dishes, windows, doors disturbed, walls make creaking sound. Sensation like heavy truck striking a building. Standing automobiles rocked noticeably.
	V	0.030-0.040	Felt by nearly everyone, many awakened. Some dishes, windows and so on broken; cracked plaster in a few places, unstable objects overturned. Disturbances of trees, poles and other tall objects sometimes noticed. Pendulum clocks may stop.
	VI	0.060-0.070	Felt by all, many frightened and run outdoors. Some heavy furniture moved; a few instances of fallen plaster and damaged chimneys. Damage slight.
III	VII	0.100-0.150	Everybody runs outdoors. Damage negligible in buildings of good design and construction; slight to moderate in well-built ordinary structures; considerable in poorly built or badly designed structures; some chimneys broken. Noticed by persons driving cars.
IV	VIII	0.250-0.300	Damage slight in specially designed structures; considerable in ordinary substantial buildings with partial collapse; great in poorly built structures. Panel walls thrown out of frame structures. Fall of chimneys, factory stacks, columns, monuments, walls. Heavy furniture overturned. Sand and mud ejected in small amounts. Change in well water, Persons driving cars disturbed.
V (MMI IX and above)	IX	0.500-0.550	Damage considerable in specially designed structures; well-designed frame structures thrown out of plumb; damage great in substantial buildings, with partial collapse. Buildings shifted off foundations. Ground cracked conspicuously. Underground pipes broken.
	X	>0.600	Some well- built wooden structures destroyed; most masonry and frame structures destroyed with foundations; ground badly cracked. Rain bent. Landslides considerable from river banks and steep slopes. Shifted sand and mud. Water splashed, slopped over banks.
	XI		
	XII		Few, if any, (masonry) structures remain standing. Bridges destroyed. Broad fissures in the ground. Underground pipelines

			completely out of service. Earth slumps and land slips in soft ground. Rails bent gently. Damage total. Waves seen on ground surface. Lines of sight and level distorted. Objects thrown into the air.

Source: Federal Emergency Management Agency (FEMA)

6.7.4 Likely Impacts of an Earthquake

6.7.4.1 Primary Effects

- Extensive damage to structures,
- Multiple injuries and deaths,
- Disruption to air operations
- Major road closures
- Disruption in railway operations
- Damage to public utilities – power, water, telecommunications etc.

6.7.4.2 Secondary Effects

- Dam Burst/Flash floods
- Urban/Wild fire
- Hazardous Material Incidents
- Accidents – Road, Railways

6.7.5 Response Plan

6.7.5.1 Levels of earthquakes

With the help of firsthand information or disaster communication system and remote sensing satellite information, the disasters have to be categorized into any of the following four levels.

6.7.5.2 L0 level disaster

This is a no disaster situation i.e. normal times when the disaster management system should be maintaining a close watch over the state of preparedness. Mock drills at various levels have to be undertaken to check the preparedness. Earthquakes of magnitude less than 5.0 may occur. Earthquakes of magnitude less than 5.0 and almost no area affected (generally non-damaging) and do not require much attention. However, effort should be made at local level to find out damage/loss if any and to take appropriate actions. This is the most important period for disaster prevention, preparedness and mitigation when these activities are taken up actively.

6.7.5.3 L1 level disaster

The L1 level disaster is designated when earthquakes of magnitude greater than 5.0 and less than 6.0 occur. When reported from any quarter, necessary actions are set into action, without formal orders from anywhere, some basic initial management response

steps alerting all concerned according to a predetermined procedure. Generally district administration should be able to manage earthquake disaster of this level.

6.7.5.4 L2 level disaster

The L2 level disaster is designated when earthquakes of magnitude greater than 6.0 and less than 6.7 occur. This should entail triggering off some basic initial management response steps, which would be set into motion without formal orders from any quarters. The mitigation, relief and rescue operations would swing into action simultaneously. The State Government is likely to be involved in relief and response measures.

6.7.5.5 L3 level disaster

The L3 level disaster is designated when earthquakes of magnitude greater than 6.7 occur. Large scale deaths and destruction is likely to take place. The assistance of Central Government, its Agencies, NDRF and Armed Forces may be required to deal with the situation.

6.7.6 Measures To Be Taken In Case Of Earthquake Disaster By The Districts

6.7.6.1 Real Time Information on Earthquake

The IMD has been designated to monitor seismic activity in and around the country and notify the user agencies including the State Governments about the magnitude and epicenter of the earthquake as soon as it occurs. The district EOCs can also obtain information about occurrence of earthquake either directly contacting the IMD office or checking up with IMD website.

6.7.6.2 Impact Assessment

i. EOCs/Control Rooms at the District and Sub-division and Tehsil Level would be activated fully and response mechanism as per ESF Plan would be put into motion automatically on the basis of information on the magnitude and epicenter of the earthquake.
ii. District Administration will gather information regarding the deaths, injuries and damages to the buildings/infrastructures.
iii. District Administration, if need be, will conduct an aerial survey to determine the scope of the damage, casualties, and the status of key facilities.
iv. District Administration will identify areas and assess the requirement of NDRF teams for urban search and rescue operations. The priority of conducting these operations will be established by the DDMAs.
v. The Deputy Commissioner (s) will send FIR as per SOPs to the State EOC and State EOCs would send consolidated FIR to the NEOC.

6.7.6.3 Deployment of Search and Rescue Teams

i. As an immediate measure District Administration would deploy local SAR teams of Civil Defence/Home Guards, Police, and Local Volunteers etc.

ii. Requirement of Armed Forces – Army, Air Force, CPMFs, NDRF etc. would be worked out by the respective DDMAs and requisitioning placed by the DM or the SRC/State Government as the case may be.
iii. The ESF Department/District Administration shall arrange for local transportation (from airport/railway station to affected site) of NDRF teams and supplies POL etc. for their equipment/vehicles of NDRF.
iv. District and local authorities shall control traffic to ensure that NDRF teams/other SAR and relief teams could reach the earthquake affected areas without delay.
v. ESF Department/District Administration shall provide access routes for transportation of NDRF, other SAR and Relief Teams to the affected sites. If need be, roads and bridges will be repaired or reinforced even on a temporary basis or emergency detours be provided.
vi. State Government in consultation with DG NDRF/JS, DM Division, MHA, shall make arrangement for deployment of USAR Teams from foreign countries to districts.

6.7.6.4 Emergency Medical Relief

i. Chief Medical officer of the district in consultation with Department of Health and Family Welfare and Ayurveda would activate their respective emergency medical plan forthwith.
ii. NDRF teams are also trained in Emergency Medical Services (EMS) such as Medical First Response techniques with basic knowledge of life saving of disaster victims Each NDRF battalion has 9 Doctors and 90 paramedics. NDRF teams shall provide EMS to the areas of their deployment during post disaster phase.
iii. Ministry of Defence would be requested to provide QRMTs, mobile field hospitals, ARMVs and Heli-ambulances. They will be activated to reach the earthquake affected areas immediately along with dressing material, splints, portable X-ray machines, mobile operation theatres, resuscitation equipment and life-saving drugs, etc.
iv. Chief Medical Officer at the district level coordinates with the Department of Health and Family Welfare at the State Level for medical assistance required for the District.

6.7.6.5 Supply of Relief Materials to affected Districts

i. The DDMAs would assess requirement of relief items and material required for the affected areas. It would also project its demand to the State Government.
ii. The ESF departments both at the district and state level would arrange to supply relief material to the affected locations.
iii. The Revenue Department at the State level would consolidate demands received from the districts and would coordinate with Central Relief Commissioner for central assistance, if any.
iv. The DDMAs/districts would appoint Nodal Officers at airports/helipads to coordinate receipt and channelization of relief material. Adequate arrangement would be made the transportation of relief material to different parts of the district.
v. A mechanism would be put in place for proper accounting for and distribution of the relief material received in the district.

6.7.6.6 Establishment and Running of Relief Camps

i. District administration would establish relief camps as per requirement.
ii. ESF departments would arrangement for all basic amenities in these camps.
iii. These relief camps would be run and managed by the PRIs and ULBs.
iv. Temporary shelters would be constructed as per requirement by the PWD, HIMUDA, UD and the RD.

6.7.6.7 Repair and Restoration of Roads, Communication, Electricity and Water Supply

i. The Public Works Department would undertake repair, build temporary bridges, access ways and other temporary structures for restoration of National and State Highways and other roads.
ii. The PWD would also repair damaged helipads and make temporary helipads as per requirement.
iii. Communication network would invariably be damaged in an earthquake. The BSNL and other service providers would take immediate steps to restore communication in the affected areas. Secondary ESF departments/agencies for communication would also provide communication facilities for disaster communication and relief.
iv. NDRF, if called, would be requested to set-up mobile communication facility at the site so that rescue and relief operations are conducted smoothly.
v. HP SEB Limited would take immediate steps for restoration of electricity supply to the affected areas.
vi. The I & PH Department would restore water supply to the affected areas and would also ensure supply of water through other means till water supply is not fully restored through pipelines.

6.7.6.8 Earthquake Damage Assessment of Public Building and Infrastructure and Individual Houses

All Departments would constitute teams of officers/technical persons to:-

i. Inspect buildings and structures that are critical to emergency services operations and mass care activities. Designate those that may be occupied and identify/mark those that are unsafe.
ii. Inspect buildings and structures that may threaten safety. Identify/mark those that are unsafe and may not be occupied.

Table:19 Criteria for damage and usability classification of buildings

Damage & usability category	Usability category	Damage state	Damage degree	Damage description	Note
I	Usable	None: Slight non-structural damage, very isolated or negligible structural damage	1	Non visible damage to structural elements. Possible appearance of fine cracks in the wall and ceiling mortar. Non-structural and structural damage barely visible.	Buildings classified as damage degree 1 and 2 are without decreased seismic capacity and do not pose a danger to human life. These buildings are immediately usable, or usable after removal of local hazards such as cracked chimneys, attics and gable walls.
			2	Cracks in the wall and ceiling mortar. Displacement of large patches of mortar from wall and ceiling surfaces. Considerable cracks, or partial failure of chimneys, attics and gable walls. Disturbance, partial sliding, sliding or collapse of roof covering. Cracks in structural elements such as columns, beams and reinforced-concrete walls.	
II	Temporarily unusable	Severe: Extensive non-structural damage considerable structural	3	Diagonal or other cracks in supporting walls, walls between windows and similar structural elements. Large cracks in reinforced structural elements such as	Buildings classified as damage degree 3 and 4 are of significantly decreased seismic capacity. Limited entry to the building is permitted, and it is usable before repair and strengthening. The needs for supporting and protection of the building and its surroundings should be considered.

		damage yet repairable structural system.		columns, beams and reinforced concrete walls. Partially failed or failed chimneys, attics or gable walls. Disturbance, sliding and collapse of roof covering.	
			4	Large cracks with or without detachment of walls, with crushed material from walls between windows and similar elements of structural walls. Large cracks with small dislocation of reinforced-concrete structural elements columns, beams and walls. Slight dislocation of structural elements and the whole building.	
III	Unusable	Total: destroyed or partially or totally collapse structural system.	5	Structural elements and their connections are extremely damaged and dislocated. Large number of crushed structural elements. Considerable dislocation of the entire building and roof structure. Partially or completely failed buildings.	Buildings classified as damage degree 5 are u*nsafe and risk sudden collapse*. Entry is prohibited. Protection of streets and neighboring buildings or urgent demolition is required. Decision on demolition should be based on an economic study that considers repair and strengthening as one of the possible alternatives.

iii. Inspect less critical damaged structures. Designate those that may be occupied and indentify/mark those that are unsafe to occupy.
iv. District Administration shall constitute teams of qualified technical personnel for damage assessment of individual houses. These teams shall also identify/certify those houses that are unsafe and may not be occupied.
v. The State Government in consultation with the IITs and NITs develop guidelines for assessment of damaged individual housing units.
vi. The State Government in consultation with the IITs/NITs develop guidelines for repair/retrofitting of earthquake damages housing units.
vii. Criteria for damage and usability classification of houses would be as per the table given hereunder:-

6.7.6.9 Information Management and Helpline

i. District Administration shall set up Emergency Information Centre (EIC) at the DEOCs level or other suitable location for release of consolidated information to all stakeholders including Media at the District Level.
ii. Helpline would be established at DEOCs or other suitable location for providing information about victims to the next of kin, friends and others.
iii. EIC shall maintain all records and document of all major actions taken in managing the incident.

6.7.6.10 Prevention of Human Trafficking of Widows/Orphans

District Program Officer (ICDS) shall set-up monitoring and coordination mechanism in the affected area for prevention of human trafficking of women and children.

6.7.6.11 Identification and Disposal of Dead Bodies

Superintendent of Police shall deploy forensic teams and equipment for DNA Fingerprinting of victims in mass casualty cases. The Department would also coordinate with Police Headquarters for assistance as per requirement. While disposing of unclaimed/unidentified dead bodies NDMA Guidelines shall be followed.

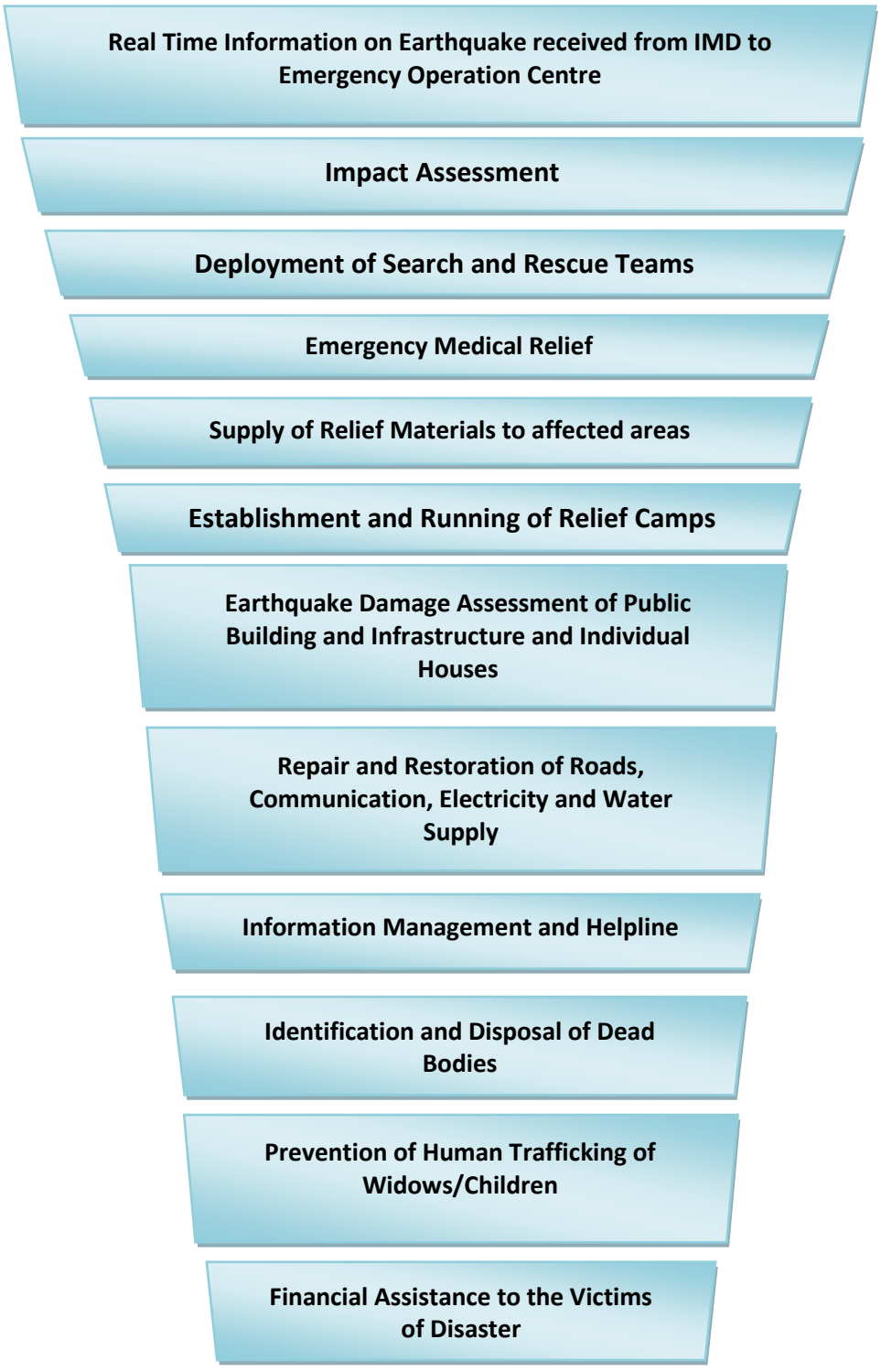
6.7.6.12 Psycho-social Support

- Chief Medical Officer of the district shall arrange to provide psycho-social support to the victims of disaster and train volunteers for this job.
- Chief Medical Officer of the district shall assess the requirement of central assistance for providing psycho-social support to the victims and coordinate with state office for the same.

6.7.6.13 Financial Assistance to the Victims of Disaster

- The victims/dependants of victims shall be provided disaster relief assistance as per the HP DM and Relief Manual, 2012 and as per additional assistance guidelines issued by the Government in such cases.
- The damage and needs assessment carried out by the District administration shall be sent to the State Government for seeking grants under SDRF or Chief Minister's Relief Fund.

7.7.7 STANDARD OPERATING PROCEDURES



6.7.8 Flash Flood/Flood Response Plan

6.7.8.1 Flood/Flash flood Vulnerability of District

District Kangra is prone to floods and flash floods. Many rivulets/streams flow in different parts of the District. These rivers and streams carry huge load of water mainly during rainy season and many a times loss of life and property results. The issue of floods is intimately connected to monsoon season in the District and heavy rains cause wise spread damage to the infrastructure in the District. There are many cases of loss of life and cattle. Damage to agriculture land and crops – agriculture and horticulture is also wise spread. Big reservoirs have also been constructed in District and sudden release of water leads to submergence of areas downstream. Moreover, dam failure due to disasters or terrorist attack can also pose a serious risk to the State.

6.7.8.2 Likely Impact

- Extensive damage to structure
- Multiple injuries and deaths
- Major road closures
- Damage to public utilities – power, water, telecom etc.
- Loss of land

6.7.8.3 Early Warning (EW) and Preparedness

i) Central Water Commission (CWC) is the nodal agency for issuing alerts and forecasts about the floods. The CWC should be installed EWS in the River Beas and has been issuing daily bulletins on water level in the river. The IMD office Dharamshala (Naddi) issues weather forecasts (heavy rains etc.) on daily basis. The EW agencies would send alerts as per the SOPs prepared at the State and National level.
ii) National Remote Sensing Agency (NRSA) also monitors landslides and blockages of rivers which may cause flooding. Tie up with the NRSC Hyderabad would be made by CWC once there is any information of blockade of river and threat of floods. The local administration would be kept updated on the situation.
iii) The HP State Council for Science, Technology and Environment will also monitor the potential dangerous lakes and keep the State Government abreast of any dangerous situation. The council shall also assist districts in assessing the severity of submergence due to release of excess water downstream the dams.
iv) The district EOCs shall keep the public updated about the forecasts on heavy rains and early warning alerts on floods through electronic and other means.

6.7.8.4 Flood Response Planning and Impact Assessment

i) EOCs/Control Rooms at district and local level shall be fully activated and response/ESF mechanism put into motion.
ii) The district authorities will assess the impact of damage and organize response mobilizing the local teams. The DM will also place requirement for state assistance. Requisitioning for NDRF or CPMFs/Army will also be done under intimation to the State Government.

iii) District Administration, if need be, will conduct an aerial survey to determine the scope of damage, casualties, and the status of key facilities.
iv) District administration will identify areas and assess the requirement of NDRF teams for SAR operations. The priority for conducting these operations will be established by the District Administration.
v) District administration shall arrange for local transportation (from airport/railway station to the affected area) of NDRF teams and supplies of POL etc. for equipment/vehicles of the NDRF.
vi) The DM will send FIR to the State EOC.
vii) SRC will coordinate with JS (DM), MHA for central assistance and deployment of Army/Air Force including helicopters for SAR and relief operations.

6.7.8.5 Emergency Medical Relief

i. The CMO of the District will dispatch a team of medical specialists to the affected site with medicines etc. and prepare the nearest hospital for receiving the victims. 108 medical responses will be activated too.
ii. NDRF teams are also trained in Emergency Medical Services (EMS) such as Medical First Response techniques with basic knowledge of life saving of disaster victims Each NDRF battalion has 9 Doctors and 90 paramedics. NDRF teams, if deployed, shall provide EMS to the areas of their deployment during post disaster phase.
iii. The Chief Medical Officer at District Level would coordinate with its counterpart at the State level for medical assistance required for the District.

6.7.8.6 Supply of Relief Material to the affected Areas

i) DDMA will assess requirement of relief material for the affected and mobilise the local reserves. It will also place its requirement for relief material with the SRC. It will also assess demand for helicopter for relief distribution, if the access through road is cut off.
ii) In case of deployment of helicopter for relief, a senior officer of the DA will be appointed as nodal officer to coordinate with the Air Force/Helicopter authorities.
iii) Provision of temporary shelter will be made for those whose houses have been affected/ damaged.

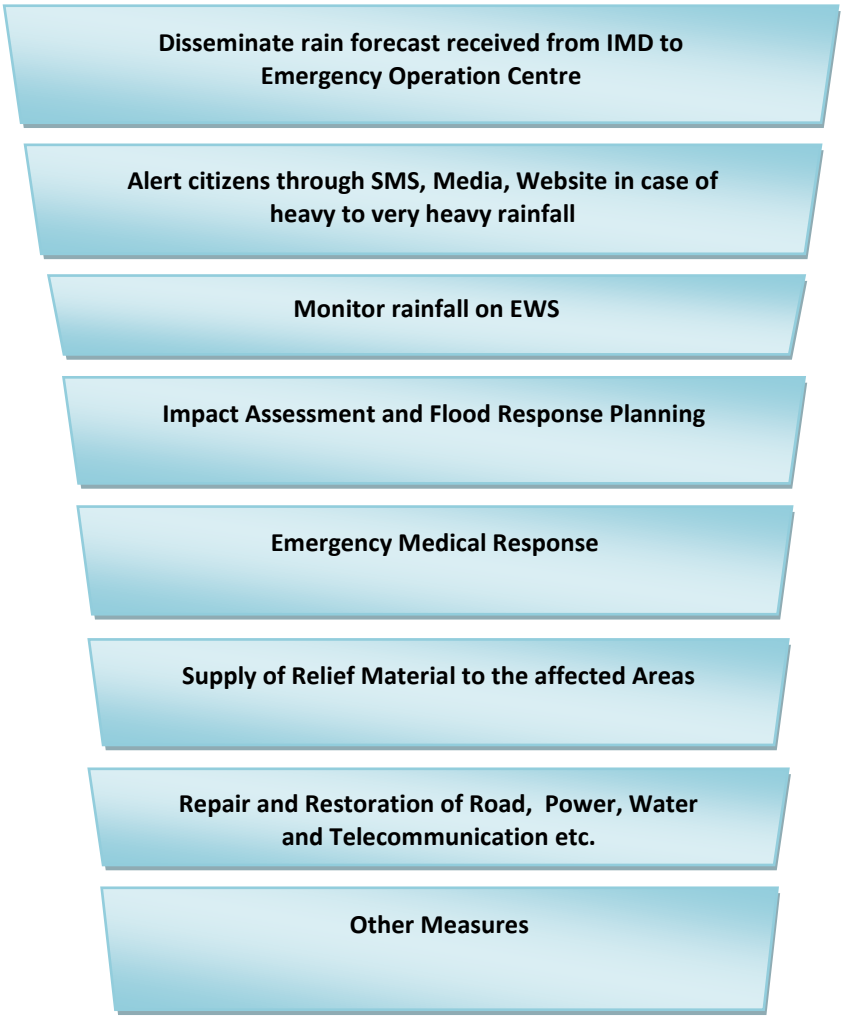
6.7.8.7 Repair and Restoration of Road, Power, Water and Telecommunication etc.

i. The PWD will repair and restore the affected roads immediately. The department may take assistance of secondary ESF agencies, if need be.
ii. The damaged water supply, electricity and telecommunication lines will be restored by the respective departments forthwith.

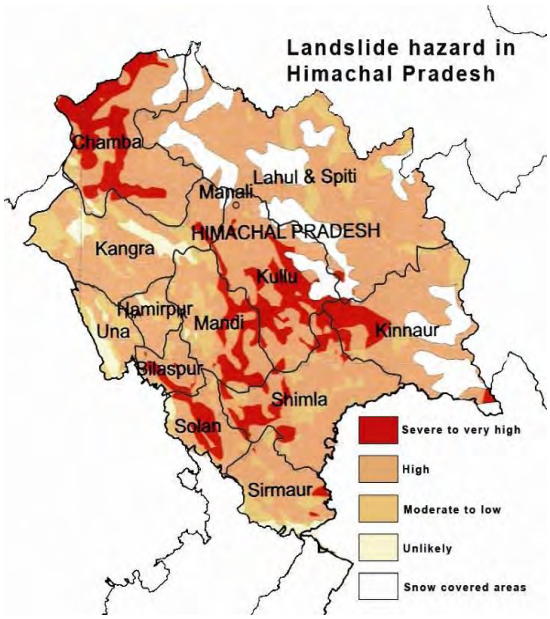
6.7.8.8 Other Measures

i. Environment Impact Assessment. Department of Environment and Forest will get the environment impact assessment carried out for the affected area.
ii. Safety Assessment of Dams. The CWC shall deploy structural engineers/experts for safety assessment of dams wherever necessary.

STANDARD OPERATING PROCEDURES



6.7.9 Landslide Response Plan



6.7.9.1 Landslide Vulnerability

Landslide is the most common hazard in Kangra, which causes immense risk to life and property. Almost every year the District is affected by one or more major landslides affecting the society in many ways. Loss of life, damage of houses, roads, means of communication, agricultural land, are some of the major consequences of landslides. The fragile nature of rocks forming the mountains, along with the climatic conditions and various anthropogenic activities has made the state vulnerable to the Landslides.

Landslide Vulnerable areas in Himachal Pradesh (District area in square kilometres)

District	Severe to very high	High	Moderate to low	Unlikely	Total area
Kangra	123	3698	1233	557	5611

6.7.10 Likely Impact

6.7.10.1 Primary Impacts

- Multiple injuries and deaths;
- Impact on hydroelectric and multi-purpose projects;
- Extensive damage to roads and highways;
- Major road closures;
- Damage to habitations leading to relocation of population and establishments;
- Loss of cultivable lands;
- Adverse effect on environment; and
- Creation of artificial lakes.

6.7.10.2 Secondary Impact

Landslide may result in blocking courses of relatively large natural drainages with or without the formation of artificial lakes. Such artificial lakes created due to landslides may result in flooding upstream and downstream.

6.7.11 Real Time Information on Landslide and Impact Assessment

i) The GSI, the Nodal Agency, shall monitor landslides for identified sites and notify about the impending landslide to all the user agencies and departments of the state and district administration.
ii) Earthquakes may trigger landslides and therefore, IMD shall communicate the occurrence of an earthquake magnitude and epicenter of the earthquake to GSI for initial assessment of earthquake induced landslide.
iii) PWD, BRO, Forest Department shall notify the District EOC about the occurrence of the landslide along with preliminary information on location, magnitude, damage caused, etc. The District EOC shall notify the SEOC and GSI if the magnitude of the landslide is huge and the assistance of the central agencies is required.

6.7.12 Landslide Response Planning

i. The DEOC/Sub-Division control room will establish contact with the site and obtain information regarding deaths, injuries, damages to building/infrastructure, environment etc. and communicate the same to all designated/ESF departments/authorities for appropriate action.
ii. District/local administration shall mobilize local SAR teams and further identify areas and assess the requirement of SDRF/NDRF teams for urban search and rescue operations. The priority for conducting these operations shall be established by the district administration.
iii. The DC shall also send FIR to the State EOC and requisition for NDRF and other state/central resources. The SRC shall also coordinate and follow up with the Central Government for its assistance and resources, if so required.

6.7.13 Deployment of Search and Rescue (SAR) Teams of NDRF, Army, etc.

i. The NDRF, Army etc. if requisitioned by the district will be deployed for search and rescue operations as per assessment of the situation.
ii. The BRO by virtue of its capabilities and location will also be deployed for SAR operations in the affected area.
iii. The district administration shall arrange for transport (form railway station or airport) of NDRF teams and supply POL etc. for equipment, vehicles of NDRF.
iv. DC/SRC will also coordinate with JS MHA (DM Division) for deployment of Army, if required.

6.7.14 Emergency Logistics

i. Specialised heavy earthmoving and SAR equipment will be required immediately after a landslide to clear debris and carry out search and rescue operations of trapped people in huge masses of debris.
ii. The PWD will immediately move its machinery and men to the locations.
iii. The equipment available with CPWD, power projects, and private sector would also be mobilized as per requirement.
iv. SRC will coordinate with JS (DM), MHA for mobilization of earthmoving equipment from SAIL, BEML etc. to the effected site, if need be.

6.7.15 Emergency Medical Relief

i. The CMO will dispatch a team of medical specialists to the affected site with medicines etc. and prepare the nearest hospital for receiving the victims. 108 medical response will be activated too.
ii. NDRF teams are also trained in Emergency Medical Services (EMS) such as Medical First Response techniques with basic knowledge of life saving of disaster victims Each NDRF battalion has 9 Doctors and 90 paramedics. NDRF teams, if deployed, shall provide EMS to the areas of their deployment during post disaster phase.
iii. The Chief District Medical Officer at the District Level would coordinate with its counterpart at the State level for medical assistance required for the District.

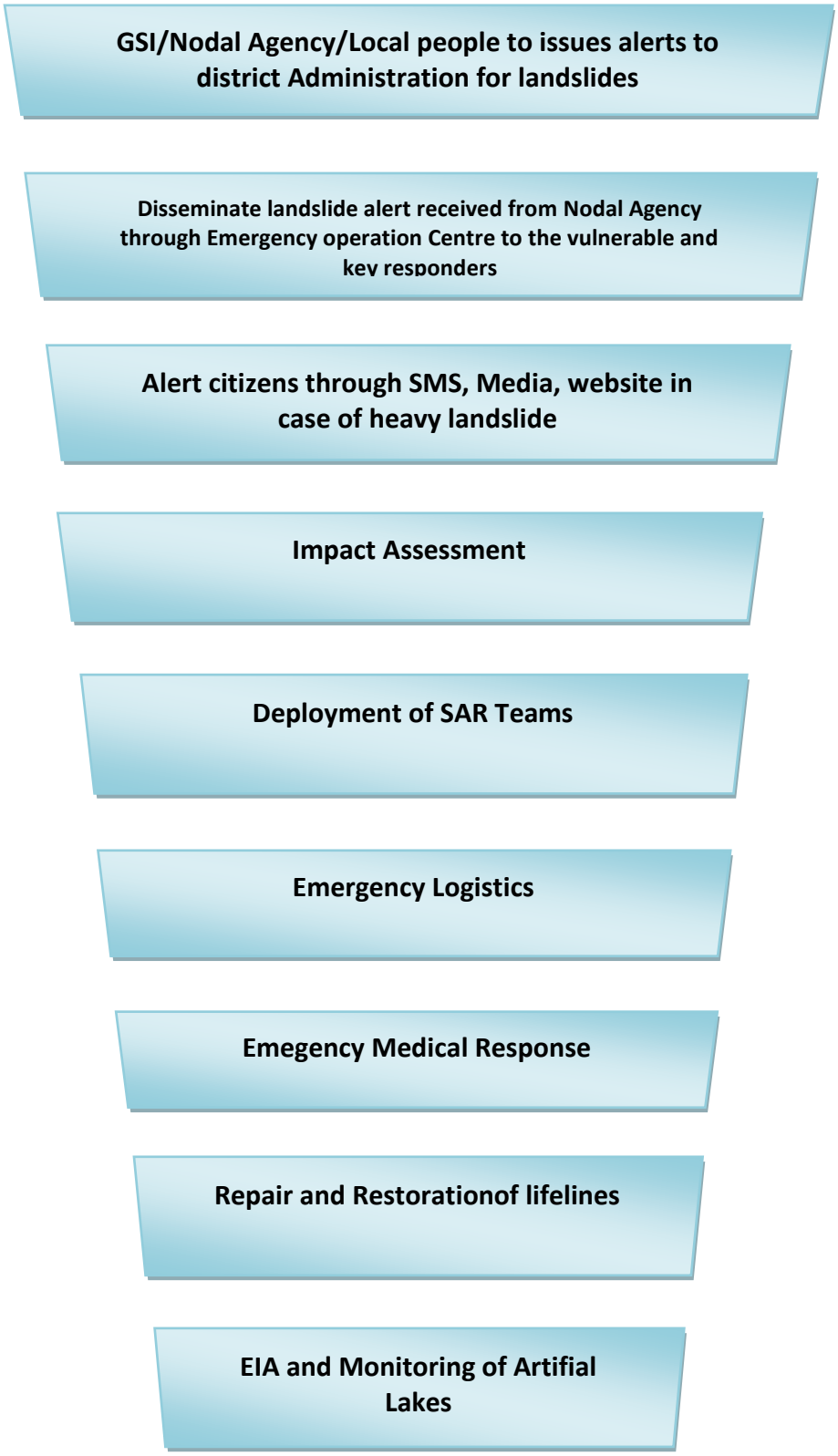
6.7.16 Repair and Restoration of Road, Power, Water and Telecommunication etc.

i. The PWD will repair and restore the affected roads immediately. The department may take assistance of secondary ESF agencies, if need be.
ii. The damaged water supply, electricity and telecommunication lines will be restored by the respective departments forthwith.

6.7.17 Other Measures

i. Environment Impact Assessment. Department of Environment and Forest will get the environment impact assessment carried out for the affected area.
ii. Technical Assistance. The GSI will be requested to provide trained professionals, technical experts to state Government for geo-technical studies and remedial measures for stabilization of slopes.
iii. Monitoring of Artificial Lakes. The NRSC/ISRO/HP State Council of Environment, Science and Technology/CWC shall monitor through application of space technology and provide information regarding formation of any artificial lakes, if any, due to landslide in higher/inaccessible reaches.

STANDARD OPERATING PROCEDURES



CHAPTER-7
Relief, Recovery, Rehabilitation, and Reconstruction Plan

7.1 Approach

Relief, rehabilitation, reconstruction and recovery are important phases of post disaster response. Relief is no longer perceived only as gratuitous assistance or provision of emergency relief supplies on time. It is on the contrary, viewed as an overarching system of facilitation of assistance to the victims of disaster for their rehabilitation in States and ensuring social safety and security of the affected persons. The relief needs to be prompt, adequate and of approved standards.

The recovery phase starts after the immediate threat to human life has subsided. During reconstruction it is recommended to consider the location or construction material of the property. The approach to the reconstruction process has to be comprehensive so as to convert adversity into opportunity. Incorporating disaster resilient features to 'build back better' will be the guiding principle. This phase requires the most patient and painstaking effort by all concerned. The administration, the stakeholders and the communities need to stay focused on the needs of this phase, as, with the passage of time, the sense of urgency gets diluted. The appropriate choice of technology and project impact assessment needs to be carried out to establish that the projects contemplated do not create any side effects on the physical, socio-cultural or economic environment of the communities in the affected areas or in their neighbourhood. The involvement of community in decision making is important. Systems for providing psychosocial support and trauma counselling would be developed for implementation during the reconstruction and recovery phase.

7.2 Relief

The victims of disaster would need to be provided relief as per the relief code of the State. Displaced population may require to be housed in temporary shelters. The DDMAs would identify locations for setting up temporary camps and make an inventory in advance and make inventory of them. Use of premises of educational institutions for setting up relief camps need to be discouraged as it hampers early recovery. Relief camps will have adequate provision of drinking water, and bathing, sanitation and essential health care facilities. The PRIs, ULBs, CSOs and CBOs shall be trained in handling and running relief camps. The disaster affected population can also be roped in to manage community kitchens. Guidelines/SOPs for efficient governance of relief camps such as identification cards, rationing, entitlement, management of donations, procurement, packaging, transportation and storage etc. may be issued in advance. The stock-piling of essential relief material at suitable locations is also important. Pre-contracting of relief supplied with agencies is important during pre-disaster phase.

In case of devastating disaster extreme weather conditions can be life threatening or when the period of stay in temporary shelters is likely to be long and uncertain, construction of site specific befitting the local environment, ecology and culture, immediate shelters with suitable sanitary facility will be undertaken to ensure a reasonable quality of life to the affected people. The DDMAs in consultation with the SDMA will plan such shelters which are cost effective and as per the local needs with multi-use potential. Pre-identification of their availability, supply and testing in the local conditions will be done.

The relief supplies would pay attention to the needs of special categories such as pregnant or lactating mothers, infants, newborns, adolescents, and aged people.

7.3 Food and Nutrition

People affected by disasters may be deprived of food and therefore food aid shall be provided to sustain life. The following measures shall be taken:

i) Where necessary free distributions of food shall be made to those who need the food most.
ii) The food distribution will be discontinued as soon as possible.
iii) Wherever possible dry rations shall be provided for home cooking.
iv) Community Kitchen for mass feeding shall be organised only for an initial short period following a major disaster particularly where affected people do not have the means to cook.
v) While providing food assistance, local food practices shall be kept in mind and commodities being provided must be carefully chosen, in consultation with the affected population.
vi) Foods must be of good quality, safe to consume, and appropriate and acceptable to recipients.
vii) Rations for general food distributions shall be adopted to bridge the gap between the affected population's requirements and their own food resources.
viii) Food distributed should be of appropriate quality and fit for human consumption.
ix) Food should be stored, prepared and consumed in a safe and appropriate manner at both household and community levels.
x) Food should be distributed in a responsive, transparent, equitable manner.
xi) NGOs, CBOs and other social organizations should be involved for supplementing the efforts of the Government.
xii) The nutritional needs of the population should be met and malnutrition and micronutrient deficiencies of identified at risk groups addressed.

7.4 Water

Water supply is invariably affected in natural disasters. Safe drinking water might not be available particularly in hydro-meteorological disasters. The following measures shall be taken by the Irrigation and Public Health Department:

i) The Department shall identify alternative sources of water and make necessary arrangements for supply to the affected population.
ii) The Department shall ensure that affected people have adequate facilities and supplies to collect, store and use sufficient quantities of water for drinking, cooking and personal hygiene.
iii) It shall be ensured that drinking water supplied conforms to the prescribed quality standards.
iv) It shall be ensured that water made available for personal and domestic hygiene should not cause any risk to health.

7.5 Health

During post disaster phase many factors increase the risk of diseases and epidemics. These include poverty, insecurity, overcrowding, inadequate quantity and quality of water, poor environmental and sanitary conditions, inadequate shelter and food supply.

7.6 Medical Response

Medical response has to be quick and effective. The execution of medical response plans and deployment of medical resources warrant special attention at the State and District level in most of the situations. The following measures shall be taken by the Health Authorities:

i) A mechanism for quick identification of factors affecting the health of the affected people shall be established for surveillance and reporting.
ii) An assessment of the health and nutritional status of the affected population shall be done by experts with experience of emergencies and, if possible, local knowledge.
iii) The voluntary deployment of the nearest medical resources to the disaster site, irrespective of the administrative boundaries, will be warranted.
iv) Mobile medical hospitals and other resources available with the Central Government shall be provided to the States/UTs.
v) Adequate supply of medicines, disinfectants etc. shall be made.
vi) Where necessary inoculation shall be done.
vii) Vaccination of the children and pregnant women shall be undertaken.
viii) Vector-borne diseases are a major cause of sickness and death in many disaster situations. Vector control measures shall be undertaken.
ix) Water borne diseases may cause sickness and deaths and therefore adequate measures shall be taken to prevent such outbreaks.

7.7 Mental Health Services

Disasters cause tremendous mental trauma to the survivors. Psychosocial support and mental health services should be made available immediately in the aftermath of disaster so as to reduce the stress and trauma of the affected community and facilitate speedy recovery. The following measures shall be undertaken by Health Department:

i) A Nodal Mental Health Officer shall be designated for each affected District.
ii) Rapid needs assessment of psycho-social support shall be carried out by the Nodal Officer/ Health Department.
iii) Trained man power for psycho-social and mental health services shall be mobilized and deputed for psycho-social first aid and transfer of critically ill persons to referral hospitals.
iv) Psycho-social first aid shall be given to the affected community/population by the trained community level workers and relief and rescue workers.
v) Psycho-social first aid givers shall be sensitized to local, cultural, traditional and ethical values and practices.
vi) Psycho-social support and mental health Services shall be arranged in relief camps set-up in the post disaster phase.
vii) Where large number of disaster victims have to be provided psychosocial support a referral system for long term treatment shall be followed.
viii) The services of NGOs and CBOs may be requisitioned for providing psycho-social support and mental health services to the survivors of the disasters.
ix) Community practices such as mass prayers, religious discourse etc. should be organized with four preventive and promotive mental health services.

7.8 Clothings and Utensils

During disasters, people lose their clothing and utensils. The following measures shall be taken by State/District authorities:

i) The people affected by the disaster shall be provided with sufficient clothings, blankets etc. to ensure their dignity, safety and well-being.
ii) Each disaster-affected household shall be provided with cooking and eating utensils.

7.9 Shelter

In a major disaster a large number of people are rendered homeless. In such situations shelter becomes a critical factor for survival of the affected people in the initial stages of a disaster. Further, shelter becomes essential for safety and security and for protection from the adverse climatic conditions. Shelter is also important for human dignity and for sustaining family and community life in difficult circumstances. The following measures shall be taken by District authorities for providing shelter to the affected people:-

i) Disaster affected people who have lost their dwelling units or where such units have been rendered damaged/useless shall be provided sufficient covered space for shelter.
ii) Disaster affected households shall be provided access to appropriate means artificial lighting to ensure personal security.
iii) Disaster-affected households shall be provided with necessary tools, equipment and materials for repair, reconstruction and maintenance for safe use of their shelter.

7.10 Relief Camp

The following steps shall be taken for setting up relief camps in the affected areas:

i) Adequate numbers of buildings or open space shall be identified where relief camps can be set up during emergency.
ii) The use of premises of educational institutions for setting up relief camps shall be discouraged.
iii) One member of the Incident Response Team of the district trained in running and management of relief camps will be deputed for management of relief camps.
iv) The requirements for operation of relief camps shall be worked out in detail in advance.
v) Agencies to supply the necessary stores will be identified in the pre-disaster phase.
vi) The temporary relief camps will have adequate provision of drinking water and bathing, sanitation and essential health-care facilities.
vii) Adequate security arrangements shall be made by local police.
viii) Adequate lighting arrangements shall be made in the Camp Area including at water points, toilets and other common areas.
ix) Wherever feasible, special task forces from amongst the disaster affected families will be set up to explore the possibility of provision of food through community kitchens, provision of education through the restoration of schools and anganwadis.
x) Efficient governance systems like entitlement cards, identification cards, bank accounts for cash transfers etc. shall be developed.

7.11 Sanitation and Hygiene

Sanitation services are crucial to prevent an outbreak of epidemics in post disaster phase. Therefore a constant monitoring of any such possibilities will be necessary. It should be ensured that disaster-affected households have access to sufficient hygiene measures. Soap, detergents, sanitary napkins and other sanitary items should be made available to ensure personal hygiene, health, dignity and well-being. In the relief camps, toilets should be sited, designed, constructed and maintained in such a way as to be comfortable, hygienic and safe to use.

7.12 Provision of Intermediate Shelters

In the case of devastating disasters such as earthquake where extreme weather conditions can be life-threatening or when the period of stay in temporary shelters is likely to be long and uncertain, the construction of intermediate shelters with suitable sanitary facilities will be undertaken to ensure a reasonable quality of life to the affected people. Such shelters shall be designed to be cost effective and as per local needs.

7.13 Management of Relief Supplies

Speedy supplies of relief materials shall be ensured in relief operations. A supply chain management system shall be developed. Standard Protocols shall be put in place for ensuring the procurement, packaging, transportation, storage and distribution of relief items. A mechanism shall be developed for receiving donations in cash or kind and their distribution.

7.14 Transparency In Relief

SDMAs/DDMAs shall take all appropriate measures for transparency in the relief operations. Affected people shall be apprised of the nature and quantum of relief admissible to them. Proper formats will be developed to acknowledge the receipt of relief materials and their further distribution.

7.15 Owner Driven Construction

Reconstruction plans and designing of houses need to be participatory process involving the affected community, NGO, corporate sector and the Government. Having a clear cut policy on entitlement, criteria for GIA and land ownership, relocation, exchange of land will facilitate speedy reconstruction. After the planning process is over, while the owner driven construction is preferred option, participation of NGO, corporate sector and technical experts will be encouraged to ensure safe and better reconstruction. Reconstruction programme will be within the confines and the qualitative specifications laid down by the Government. In order to have acceptability for the safe and quality standards it will be better if the safe construction norms, designs and guidelines are finalised during normalcy so that community is well aware of them. Services of CBO, CSOs, and faith based organisation may be taken for this purpose to gain acceptance.

7.16 Reconstruction of Social Infrastructure

Essential services, social infrastructure and intermediate shelters/camps will be established in the shortest possible time. For permanent reconstruction, ideally, the work including the construction of houses must be completed within two to three years. State Government and Departments of State Government should create dedicated project teams to speed up the reconstruction process. Involvement of PRIs and ULBs for reconstruction at local level will be encouraged.

7.17 Socio-Economic Rehabilitation

Disasters destroy development and livelihood sources. In the post disaster situation there is great need to generate temporary livelihood options for the affected community. The relief and reconstruction programmes would be used to generate livelihood options for the needy. Ongoing or new programmes may be launched which may help the affected community to earn their livelihood. It would be ensured that such programmes result in the creation of assets, infrastructure, and amenities community and equally important is that such assets are hazard resistant, durable, and sustainable. Disasters may also end up in destroying the existing village or housing sites and re-settlement in the existing locations may no longer be possible. Possible sites for re-location of habitation would be identified.

7.18 Linking Recovery with Safe Development/Reconstruction – 'Building back Better'

It will be ensured that the post disaster development/reconstruction does not end up in re-building the existing vulnerability. The reconstruction phase would be utilised to incorporate the building codes, safe construction practices, and zoning regulations. Contingency plans for reconstruction in highly disaster prone areas would be drawn out during the period of normalcy, which may include architectural and structural designs in consultation with the various stakeholders. Emphasis will be laid on plugging the gaps in the social and economic infrastructure and infirmities in the backward and forward linkages. Efforts will be made to support and enhance the viability of livelihood systems, education, health care facilities, care of the elderly, women and children, etc. Other aspects warranting attention will be roads, housing, drinking water sources, provision for sanitary facilities, availability of credit, supply of agricultural inputs, upgradation of technologies in the on-farm and off-farm activities, storage, processing, marketing, etc.

CHAPTER - 8
LINKING WITH DEVELOPMENT PLAN

The Disaster Management Act mandated us to take measures for prevention/mitigation of disasters and to ensure that appropriate preparedness measures for integration of disaster management into development plans and projects are taken and further allocation of funds for prevention, mitigation, preparedness for disaster and capacity building are also made available. Since disaster management is not a function of DM department alone but of all departments hence mitigation concern must be addressed by the respective departments in all aspects of development. The issue of DRR integration is also contained in the National Policy on Disaster Management, 2009.

8.1Introduction – Disaster and Development

Natural disaster risk is intimately connected to processes of human development. Disasters put development at risk. At the same time, the development choices made by individuals, communities and nations can generate new disaster risk. But this need not be the case. Human development can also contribute to a serious reduction in disaster risk. The destruction of infrastructure and the erosion of livelihoods are direct outcomes of disaster. But disaster losses interact with and can also aggravate other financial, political, health and environmental shocks. Such disaster losses may setback social investments aiming to ameliorate poverty and hunger, provide access to education, health services, safe housing, drinking water and sanitation or to protect the environment as well as the economic investments that provide employment and income.

8.2 How can development increase disaster risk?

There are many examples of the drive for economic growth and social improvement generating new disaster risks. Rapid and unplanned urbanisation is an example. The growth of informal settlements and inner city slums, whether fuelled by international migration or internal migration from smaller urban settlements or the countryside, has led to the growth of unstable living environments. These settlements are often located in ravines, or steep slopes, along flood plains, sinking areas or adjacent to noxious or dangerous industrial or transport facilities. Rural livelihoods are put at risk by the local impacts of global climate change or environmental degradation. Coping capacity for some people has been undermined by the need to compete in a globalising economy, which at present rewards productive specialisation and intensification over diversity and sustainability.

8.3 Can development planning incorporate disaster risk?

The frequency with which our country and state experience natural disaster should certainly place disaster risk at the forefront of development planners' minds. This agenda differentiates from two types of disaster risk management. *Prospective disaster risk management* should be integrated into sustainable development planning. Development programmes and projects need to be reviewed for their potential to reduce or aggravate vulnerability and hazard. *Compensatory disaster risk management* (such as disaster preparedness and response) stands alongside development planning and is focussed on the amelioration of existing vulnerability and reduction of natural hazard that has accumulated through past development pathways. Compensatory policy is necessary to reduce

contemporary risk, but prospective policy is required for medium – to long-term disaster risk reduction.

8.4 The Legal Context

The DM Act mandated the DDMA to "lay down guidelines to be followed by the departments of the Government of the State for the purposes of integration of measures for prevention of disasters and mitigation in their development plans and projects and provide necessary technical assistance therefor" and to "review the development plans of the different departments of the State and ensure that prevention and mitigation measures are integrated therein". Under Section 38 (2) (e) of the Act the State Government is to ensure that the integration of measures for prevention of disaster or mitigation have been incorporated by the departments of the Government of the State in their development plans and projects. The State Government is further to ensure integration of measures to reduce or mitigate the vulnerability of different parts of the State to different disasters in the state development plan {38 (2) (f}.

The Act also prescribes for preparation of District Plan and for incorporation of measures suggesting as to how mitigation shall be integrated into development plans and projects. The Act states that the DMPs shall prescribe "the manner in which the mitigation measures shall be integrated with the development plans and projects". The DMPs of departments at State and district level shall also have provisions for prevention of disaster and mitigation of its effects or both in the development plans and programmes as provided for in the State DMP and as is assigned to the department or agency concerned.

8.5 Mainstreaming DRR into Development

Mainstreaming has three purposes

- To make certain that all the development programmes and projects that originate from or funded by Government are designated with evident consideration for potential disaster risks to resist hazard impact
- To make certain that all the development programmes and projects that originate from or are funded by Government do not inadvertently increase vulnerability to disaster in all sectors: social, physical, economic and environment.
- To make certain that all the disaster relief and rehabilitation programmes and projects that originate or are funded by Government are designed to contribute to development aims and to reduce future disaster risk.

8.6 Mainstreaming DRR into Development Sectors

DRR refers to the measures used to reduce direct, indirect and intangible disaster losses. The measures may be technical, economic or social. DRR encompasses the two aspects of a disaster reduction strategy: 'mitigation' and 'preparedness'. Mitigation refers to measures aimed at reducing the risk, impact or effects of a disaster or threatening disaster situation, whereas, preparedness refers to the measures undertaken to ensure the readiness and ability of a society to forecast and take precautionary measures in advance of imminent threat, and respond and cope with the effects of a disaster by organising and delivering timely and effective rescue, relief and other post-disaster assistance. 'Mainstreaming DRR' describes a process to fully incorporate the concerns of disaster preparedness, prevention and mitigation into development and post disaster recovery policy and practice. It means

completely institutionalizing DRR within the development and recovery agenda. Accordingly, the following broad objectives of mainstreaming DRR into Development will be encouraged:

- Ongoing schemes and projects of the Ministries and Departments of GoI and State Governments, as well as of all Government agencies and Institutions, including Public Sector Undertakings, will be selectively audited by designated government agencies for ensuring that they have addressed the disaster risk and vulnerability profiles of the local areas where such schemes and activities are being undertaken.
- At conceptualization or funding stage itself, the developments schemes will be designed with consideration of any potential hazardous impact associated with it and incorporate measures for mitigation of the same.
- All the development schemes will be pragmatic, incorporating the awareness of local disaster risk and vulnerability, and ensuring that the schemes have addressed these concerns and included specific provisions for mitigating such disaster concerns; and
- DDMAs will ensure that all the disaster relief and recovery programmes and projects that originate from or are funded by any agency satisfy developmental aims and reduce future disaster risks.

8.7Approaches for mainstreaming

There are three suggested approaches of mainstreaming disaster management into the development process and disaster management plans-

1. Structural Measures
2. Non Structural Measures
3. Disaster Mitigation Projects

Based on the suggested approaches the specific action would involve:-

a. Adopting a Sectoral approach and identification of Key sectors for mainstreaming.
b. Within each sector, key programmes/projects would have to be identified.
c. This has to be followed by indentifying the entry points within the programmes/projects for integration.
d. It would also involve work at the policy and planning level be it national, state and district level.
e. It would also need a close coordination with State Planning Commission and Finance Department for promoting DRR into all development programmmes and involve working with different departments to mainstream DRR into the Departmental Plans and policies.
f. Advocacy would have to be done for allocation of dedicated budget for DRR within the Departmental plans.
g. Further appropriate guidelines for different sectors would have to be development and for it to be effective and sustainable it has DRR would have to be ultimately integrated to the development plans of various departments at the district and sub-district levels.

8.8Illustrations of Mainstreaming DRR into ongoing Flagship Programmes

More specifically, as mentioned in the agenda some of the following flagship programmes for Government of India could be used as an entry point for mainstreaming the DRR in development plans and the following steps may be undertaken:-

Sr. No.	Name of The Programme	Depart-ment/ Sector	Proposed Strategies for DRR Integration into the Flagship Programmes
1.	Indira Awas Yojana	Rural Development	Inclusion of such measures like application of Hazard resistant design in construction of IAY houses, appropriate sitting of IAY housing in guideline of IAY Development of model design for lAY houses which could be easily referred to by DRDAs at district level and used for community awareness depending on the geographical location. Capacity Building of Rural masons on safe construction. Capacity Building of PRIs. Community Awareness. Capacity Building Programmes for DRDA officials on Disaster Risk Reduction issues.
2.	Mahatma Gandhi National Employment Guarantee scheme	Rural Develop-ment	Utilisation of MGNREGS funds to reduce the vulnerability of Panchayat vis a vis natural hazards such as landslide, drought, forest fire, cloud burst, flash floods, earthquake etc. Giving priority to those works which reduce the vulnerability of area over the works which enhances the vulnerability of the area to natural hazards. Identified works are available which take into account the hazard profile and offer continuous employment opportunities in the event of disasters to ensure livelihood security in the event of disasters. Works which reduce disaster risk are given priority in plans-such as local mitigation works etc. Any other implements able suggestion within the ambit of the scheme.
3.	Pradhan Mantri Gram Sadak Yojana	PWD	The Master Plan for rural roads, the district rural road plan and identification of core network under the planning process of this scheme should, which the overall guidelines of its preparation, explicitly address the disaster risk reduction concerns and accord priority to connect the vulnerable habitations. The technical guidelines should explicitly provide for suitable protection and inclusion of disaster risk concerns explicitly - while provision of cross drainage, slope stabilization, protection works are already included, in multi-hazard and especially flood and landslide prone areas fair weather roads need to be upgraded on a priority basis. The maintenance guidelines are modified to ensure that in case of disasters these roads get provision for restoration to ensure all weather connectivity.
4.	Sarva Siksha Abhiyaan	Education	Development of a Policy paper of school safety. Introducing school safety as a part of the guidelines of SSA which is currently focusing on inclusive development. Developing model structurally safe designs for schools. Introducing School Safety in the Teacher's Training Curriculum. Training of Rural Engineers appointed under SSA Scheme as well as the SSA State Coordinators. Training of masons in rural areas. Construction of Technology Demonstration Units.

			Community Awareness.
5.	Jawahar Lal Nehru Urban Renewal Mission	Urban Development	Strengthening of the compliance mechanism at the detail project report submission and appraisal stage in case of infrastructure projects as well as housing scheme to ensure structural safety. Emphasis on disaster risk audit at the stage of preparation of detail project reports. Inclusion of amending of building byelaws to ensure structural safety as a mandatory reform in the Mission cities to ensure safe habitat development.(Both structural safety and fire safety norms). Inclusion of disaster management as a function of the Urban Local Bodies and allocate resources. Inclusion of Disaster Resistant features in the houses being constructed under the BSUP component as well as promote development of safe habitat. Inclusion of strategies for disaster management in the City Development Plans. Training and Capacity Building Programmes for municipal officers on disaster risk reduction.
6.	Rajiv Awas Yojana	Urban Development	Since Rajiv Awas Yojana is focusing on developing slum free cities and Capacity Building and Community Mobilization is also an important component of RAY, through this programme attempts can be made towards community level disaster preparedness as slum dwellers often become the most vulnerable community during such disasters as floods, fire and high wind speed. The 30 cities selected on a plot basis can be targeted to initiate community based disaster preparedness activities. Also the Housing Programmes to be implemented in these selected cities can ensure incorporation of hazard resistant features and safe sitting.
7.	National Rural Health Mission	Health and family welfare	Ensure that the village Health Plan and the District health plan explicitly address the disaster risk reduction concerns in the vulnerable habitations and the vulnerable districts and the disaster management plan as per DM Act 2005 takes links itself to the District and village Health plans. Provide training to the ASHA workers on disaster health preparedness and response. Strengthening of Disease Health Surveillance System in rural areas. Ensuring structural safety of the CHC/PHC and other health care service delivery centers in rural areas. Training of doctors and hospital staffs on mass casualty management and emergency medicine. Community awareness on disaster management.

The list given in the above table is an indicative one and many more line departments can be added to it. DRR planning needs to be done at Municipal and Panchayat levels with the involvement of local community representatives; and simultaneously the resource and responsibility to manage would be in the domain of the local authorities. Decentralised planning can enhance local participation along with improved efficiency and equitable benefits.

8.9 Mainstreaming DRR into Development Planning – Approaches

Disasters are basically unresolved problem of development. Development can increase vulnerability. Development can reduce vulnerability. The outcome rests on developmental choices. The seeds of disasters are often sown in development patterns: poor land use planning, environmental management and lack of regulatory mechanisms. It is due to this reason that despite having almost similar exposures disaster has greater impact on humans in developing or low developed countries than the developed countries. Therefore, disaster risk can best be addressed through integrating into the developmental planning, programmes and processes.

Mapping of hazards, identification of elements at risk and exposure data assist in quantifying risk. Thereafter risk reduction initiatives can be taken. Mainstreaming DRR is a prerequisite for safe and sustainable development. Mainstreaming as a term is used to describe the consideration of DRR elements in national and regional decision making process (Policy, planning and budgeting etc.). DRR integration leads to addition of specific measures to the development plans, programmes and strategies. Some of the key sector where mainstreaming/integration of DRR can be done with illustrations is as under:-

8.9.1 Public Infrastructure

i) Incorporate disaster risk impact assessment as a part of the planning process before the construction starts.
ii) Site analysis and risk sensitive land-use planning (either avoid development in hazard prone areas or adopt treatment and mitigation measures)
iii) Strengthen compliance to the various provisions of the codes – set up hazard safety cell for advice and monitoring
iv) Disaster resistant technologies mandatory in case of all construction using public/corporate funds.
v) Training and capacity building of the department and functionaries.

8.9.2 Housing – Rural and Urban

i) Application of hazard resistant designs
ii) Prepare construction guidelines for rural areas, Nagar Panchayats and Municipal Councils.
iii) Amendment of Building bye-laws, Zoning regulations and Development Control Regulations.
iv) Strengthening the enforcement of techno-legal and managerial regime.
v) Training of masons, engineers, architects, contractors, promoter and builders.
vi) Sensitization of the banking and financial institutions.
vii) Promotion of disaster insurance in housing sector.
viii) Having a housing reconstruction policy.

8.9.3 Health Sector

i) Ensure hospitals and health facilities are not located in hazard-prone areas.
ii) Analyze the internal and external vulnerabilities of existing health care facilities during emergencies.
iii) Retrofitting of the critical hospitals.
iv) Prepare and implement hospital preparedness plan.
v) Training of doctors on mass casualty management, trauma care and emergency medicine.
vi) Training of health workers on emergency preparedness and response.
vii) Strengthening of disease surveillance system.

8.9.4 MGNREGS – Scope of work – Some illustrations

i) Water conservation and water harvesting;
ii) Drought proofing, including forestation and tree plantation;
iii) Irrigation canals, including micro and minor irrigation works;
iv) Plantation and horticulture;
v) Renovation of traditional water bodies, including de-silting of tanks;
vi) Land development;
vii) Flood-control and protection works, including drainage in water logged areas; and
viii) Rural connectivity to provide all weather access.

8.9.5 Indira Awas Yojna

i) Study IAY housing typology and develop hazard resistant model design (taking into consideration of available local materials and culture).
ii) Training of DRDA officials and engineers.
iii) Awareness generation among villagers and PRIs members and community mobilization campaign.
iv) Construction of sample IAY units for promoting the technology.
v) Training of Masons and community members on hazard resistant technology.

CHAPTER – 9

GO-NGO AND IAG COORDINATION

INSTITUTIONAL AND LEGAL FRAMEWORK

The DM Act 2005 recognises that sometimes the development patterns that do not recognise disaster risk and vulnerability in the specific geographic areas may induce disasters. The proactive approach in the DM Act 2005 to address disaster risk and vulnerability through pre-disaster preparedness and mitigation activities also envisions accountability and multi stakeholder participation, including coordination of the activities of the NGOs at various levels. Sections 30 (2) (xix) of the Act mandate the DDMA for collaboration with stakeholder agencies including NGOs for the purpose of improving the effectiveness of DM. Similarly the Act mandates NGOs to act in an equitable and non-discriminatory manner for the purpose of assisting or protecting the disaster affected communities or for providing relief to the affected communities or while dealing with any effects of threatening disaster situations and has fixed the responsibility to monitor this on DDMAs vide section 34 (l). The above provisions ensure that the concerned DM interventions being addressed are supported and facilitated by the civil society organisations working at the grass roots and also takes care of the ground realities.

Section 30 (2) (xix) of the Act stipulates that the DDMA shall "advise, assist and coordinate the activities of the Departments of the Government at the district level, statutory bodies and other governmental and non-governmental organisations in the district engaged in the disaster management" and Section 24 (l) lays down that the DDMA shall "ensure that the non-governmental organisations carry out their activities in an equitable and non-discriminatory manner". The Act also directs the State Government under Section 38 (2) (a) to coordinate "actions of different departments of the Government of the State, the State Authority, District Authorities, local authority and other non-governmental organisations".

Sections 35 and 38 specifically emphasise the coordination of actions with NGOs. The National Policy on Disaster Management (NPDM) also states the national vision for community mobilisation and participation in DM and aims to provide momentum and sustenance through the collective efforts of all government agencies and NGOs. There is emphasis on community based disaster management, including last mile integration of the policy, plans and execution and early warning dissemination. Promoting a productive partnership with NGOs is a prominent thrust area in the NPDM.

There is a large scope for improving the engagement of NGOs in DM and on efficiently utilising their unique advantages and core competencies by strengthening humanitarian coalitions, alliances and NGO networks. There is also need to strengthen public awareness, capacity building and knowledge management through CBOs and NGOs. Institutional mechanisms for the advocacy and engagement of NGOs with government agencies on DM concerns require to be strengthened. Replication and scaling up of community level good practices has to be promoted.

9.1 Advantages of Involving NGOs

i. NGOs can play a very important role in mobilising communities and in linking PRIs/ULBs with corporate sector entities for initiating DRR related activities.

ii. The strong linkages which NGOs have with grassroots communities can be effectively harnessed for creating greater public awareness on disaster risk and vulnerability, initiating appropriate strategies for strengthening the capacity of stakeholder groups to improve disaster preparedness, mitigation and improving the emergency response capacities of the stakeholders.

iii. In addressing the emerging concerns of climate change adaptation and mitigation, NGOs can play a very significant role in working with local communities and introducing innovative approaches based on the good practices followed in other countries.

iv. NGOs can bring in the financial resources from bi-lateral and multilateral donors for implementing pragmatic and innovative approaches to deal with disaster risk and vulnerability, by effectively integrating and converging the various government programmes, schemes and projects to create the required synergy in transforming the lives of at-risk communities.

9.2 Actions to be taken by the DDMA

i. Developing a database of NGOs, CBOs and Faith Based Organisations at all levels working in the field of disaster management and emergency response and other others focusing on geographic outreach and thematic capacities of the organisations.

ii. Developing the capacity of identified NGOs, CBOs and organisations in disaster management and emergency response.

iii. Constitution of Inter-Agency Group (IAG) for the district with an objective to:-

- Promote and institutionalise unified response strategy in humanitarian crisis.
- Mainstreaming the emergency preparedness as in integrated development strategy.
- Systematise the emergency response mechanism.
- Bringing in the culture of “working together” in emergencies and normalcy.
- Engagement in activities that will build the capacities of stakeholders and local communities to cope with calamities.

iv. Development of Criteria for membership of IAG: Any of the following criteria is proposed to become a member of the District IAG:-

- District Level agencies working in emergency response and preparedness for minimum of five years.
- International and national funding agencies supporting emergency preparedness and community led risk reduction initiatives for a minimum period of three years.
- Academic and /or research institutions actively involved on disaster related knowledge management and practices.

Membership claim may be scrutinised by a committee of the District IAG for authentication of the prospective member organisation.

Action Points

No.	Issues	Action Points
1.	Geographic spread of NGOs	Develop a database of NGOs at all levels working on disaster management focusing on geographic outreach and thematic capacities of the organisations. **(Action: DDMAs with the help of NGOs)**
2.	Volume of support provided by NGOs	Compile statistics on quantum of support provided by NGOs at all levels, both international and national. **(Action: DDMA)**
4.	Coordination	Establishing inter agency mechanisms for coordination and networking activities (information and knowledge management, training and capacity building, collaborative advocacy, quality and accountability) at all levels. **(Action: DDMA)**
5.	Accessibility	Establish protocols for cooperation and ensure access to the affected areas with support from government agencies at respective levels like NDRF and SDRF that have good logistics base to reach inaccessible areas. **(Action: DDMA, NGOs, CBOs)**
6.	Hazard and vulnerability based planning	Conduct community centric hazard and vulnerability analysis at all levels, and develop disaster management plans in accordance. **(Action: DDMA, NGOs)**
7.	Community participation	Ensure community participation in assessment, planning, implementation and monitoring of activities at all levels. **(Action: DDMA, NGOs, CBOs)**
8.	Mainstreaming of Disability Issues in DM	Support the most vulnerable groups through mitigation activities as well as disaster preparedness and response, with a particular focus on the special needs of the Persons with Disabilities (PWDs). **(Action: DDMA, NGOs)**
9.	Gender Mainstreaming	Make women's as well as men's concerns and experiences an integral dimension in the design, implementation, monitoring and evaluation of policies and programs such that inequalities between men and women are not perpetuated through the routine operations of DM. **(Action: DDMA)**
10.	Focus on most vulnerable rather than only on epicentre	National level: Advocate with all actors to reach out to gap areas State level: Coordinate among actors to identify gap Areas District and Local level: Ensure targeting with equity and outreach to all excluded areas. **(Action: District NGO Task Forces in DM)**
11.	Rural-urban diversity	Develop the capacities of NGOs or specialised civil society agencies at all levels to manage urban as well as rural disasters and accordingly make investments. **(Action: DDMAs)**
12.	Adherence to standards	National level: Develop minimum standards for India State level: Develop minimum standards for the state District and Local level: Develop capacities for adherence to minimum standards through collective and coordinated efforts of all stakeholders **(Action: DDMA, NGOs, CBOs)**
13.	Transparency and accountability	Develop an agreed framework of accountability for all levels and mechanisms to bring in transparency. **(Action: DDMA)**

14.	Do No Harm	Advocacy at all levels on Do No Harm through disaster response and development interventions. **(Action: District NGO Task Forces in DM)**
15.	Exit strategy	Ensure that the NGO programmes have an exit strategy to link with long term recovery/rehab/development programs of other NGOs or the government. **(Action: District NGO Task Forces in DM)**

(Source: NDMA Guidelines on the Role of NGOs in Disaster Management)

9.3 Coordination of Actions of Other Actors

Disasters affect all aspect of human life and all aspects of development. Therefore, Disaster Management is a multi-agency function. It involves actions by all departments, organisation and agencies. In short, it involves all departments of the State Government, Central Government, Armed Forces, civil society and commercial organisation (NGOS, CBOs, Faith Based Organisation, Traders Organisations, and Corporate Sector), international organisations working in the field of disaster response, UN Agencies etc. It is therefore, important that roles and responsibilities of each stakeholder is laid down during normal time and coordination mechanism worked out so that the same works during emergencies. It is must that regular meetings with all the stakeholders are held at least once in six months or a year. And all stakeholders are also associated in the mock drills to test their preparedness and clarity of roles and responsibility.

CHAPTER – 10
FINANCIAL MECHANISM

With change of paradigm shift in DM from the relief-centric to proactive approach of prevention, mitigation, capacity building, preparedness, response, evacuation, rescue, relief, rehabilitation and reconstruction, effort would be made to mainstream and integrate disaster risk reduction and emergency response in development process, plans and programmes of the Government at all levels. This would be done by involving all the stakeholders – Government organisations, research and academic institutions, private sector, industries, civil society organisation and community. DDMA will ensure mainstreaming of disaster risk reduction in the developmental agenda of all existing and new developmental programmes and projects which shall incorporate disaster resilient specifications in design and construction. Due weightage will be given to these factors while allocating resources. Project, which help in reducing the existing vulnerability of the area would be given preference over projects which are likely to enhance it.

10.1 Disaster Response and Mitigation Funds

District Disaster Response Funds and District Disaster Mitigation funds would be created at the District Level as mandated in the Act (Section 48). The disaster response funds at the district level would be applied by the DDMA towards meeting expenses for emergency response, relief, rehabilitation in accordance with the guidelines and norms laid down by the Government of India and the State Government. The mitigation funds shall be applied by the DDMAs for the purpose of mitigation as per the HP DM Rules, 2011.

10.2 Responsibilities of the State Departments and Agencies

All State Government Departments, Boards, Corporations, PRIs and ULBS will prepare their DM plans including the financial projections to support these plans. The necessary financial allocations will be made as part of their annual budgetary allocations, and ongoing programmes. They will also identify mitigation projects and project them for funding in consultation with the SDMA/DDMA to the appropriate funding agency. The guidelines issued by the NDMA Vis a Vis various disasters may be consulted while preparing mitigation projects.

10.3 Techno-Financial Regime

Considering that the assistance provided by the Government for rescue, relief, rehabilitation and reconstruction needs cannot compensate for massive losses on account of disasters, new financial tools such as catastrophe risk financing, risk insurance, catastrophe bonds, micro-finance and insurance etc., will be promoted with innovative fiscal incentives to cover such losses of individuals, communities and the corporate sector. In this regard, the Environmental Relief Fund under the Public Liability Insurance Act, 1991, enacted for providing relief to chemical accident victims is worth mentioning. Some financial practices such as disaster risk insurance, micro-finance and micro-insurance, warranty on newly constructed houses and structures and linking safe construction with home loans will be considered for adoption.

CHAPTER – 11
KNOWLEDGE MANAGEMENT

There is a need to create a network of knowledge institutions in the field of DM, to share their experiences and knowledge. The DDMA would forge ties with knowledge institutions such as NITs, IITs, CBRI, SASE, ICIMOD, GSI, CWC, IMD, Wadia Institute of Himalayan Geology Dehradun, etc., and UN Agencies and other national and international agencies dealing with emergency response will be done to utilise their experience and knowledge for DM in the district.

In acknowledgment of the need for a knowledge sharing platform on DM, and to facilitate interaction and dialogue with related areas of expertise, the DDMA website within the district website would be created. It will connect all Government Departments, statutory agencies, research organisations/institutions and humanitarian organisations to share collectively and individually their knowledge and technical expertise. ICT would be utilised to disseminate knowledge to the stakeholder so that they can benefit from it.

11.1 Documentation of Best Practices

The indigenous technical knowledge would be documented and promoted. And in the immediate aftermath of any disaster or incident, field studies will be carried out, with the help of experts wherever needed, as an institutional measure. These studies will concentrate on identifying gaps in the existing prevention and mitigation measures and also evaluate the status of preparedness and response. Similarly, the lessons of past disasters will also be compiled and documented. The recovery and reconstruction process will also be analysed for further refining the DM processes and training needs.

CHAPTER - 12
MONITORING AND EVALUATION

The following monitoring and evaluation procedure would be followed to make the plan functional and a living document:-

a) The DDMA shall regularly review the implementation of the plan.
b) In order to improve the plan the DDMA would check the efficacy of the plan after any major disaster/emergency in the district and see what did work and what did not work and make amendments to the plan accordingly.
c) As per Sub Section (4) of Section 31 of the Disaster Management Act, 2005 the plan would be reviewed and updated annually and the year in which the plan has been reviewed would be clearly mentioned in shape of header in each page of the plan.
d) Resource inventory of the district fed into the IDRN would be regularly updated and appended to the plan.
e) Names and contact details of the officers/officials who are the nodal officers or the incharge of resources to be updated on regular basis.
f) A soft copy of the plan would always be kept in the DDMA website for reference by all concerned.
g) A Copy of the plan would be sent to all the stakeholder departments, agencies and organisations so that they know their role and responsibilities and they are also prepare their own plans.
h) Regular Mock Drills should be conducted to test the efficacy of the plan and check the level of preparedness of various departments and other stakeholders.
i) Regular training and orientation of the officers/officials responsible to implement the plan should be done so that it becomes and useful document to the district administration.
j) Regular interaction and meetings with the CPMFs and Army or any other central government agency would be done by the DDMA should that there is no problem of coordination during disasters. The representatives of these organisations should be invited as expert for the DDMA meeting. A copy of the DDMP should also be shared with them.
k) The DEOC would assist the DDMA in keeping the plan in updated form and collecting, collating and processing the information.
l) The DDMP would be comprehensively reviewed in the year 2013 latest by March and incorporating feedback from the departments and field officers.

ANNEXURES

Annexure – A

IMPORTANT TELEPHONE NUMBERS (DISTRICT ADMINISTRATION)

Emergency Numbers

Police	100
Fire	101
Ambulance	108
Disaster Control Room	1077

Distt. Level	STD Code	Office No.	Residence	Mobile
D.C.	01892	223323	224950	98050-02455
		222103	224555	
ADC		223322	226832	94180-66667
ADM		223321	226272	98169-61100
AC		223319	224879	98164-42637
SP		2222440	224942	94184-70001
ASP		222150	222040	94180-44222
CMO		224874	222860	94180-23786
MS (Hospital)		222189		
PWD				
Chief Engineer, Dharamshala		224948	226551	94180-18454
SE PWD Palampur		230566	230565	94180-73391
SE PWD Nurpur		220098	220097	94181-59286
SE PWD Shahpur (NH)		238663	239311	
Ex.Engineer PWD		224946	226275	94184-73193
IPH				
SE IPH Dharamshala		222473	226475	
SE IPH Nurpur		220194	220195	94180-07270
SE IPH Shahnehar		256688		
Ex.IPH Dharamshala		222049	226749	
Electricity				
Chief Engineer		224907	226835	94180- 43944
SE-Elec.Kangra		265720	265201	
SE-Elec.Palampur		230575	230574	
Xen. Elec. Dharamshala		224997	226749	94184-79564
Forest				
Conservator Forest		224959	222396	94184-63015
DFO		224887	222039	94184-74111
BSNL				
GM BSNL		228600	228666	94180-55555
HRTC				
RM HRTC		222855		
RTO		222055		94180-67223
31 MTN.Div.Hq.				
Station Commander Dharamshala		221912	224924	

Station Commandant Yol Cantt		224923	224924	
Air Port Gagal		232374		98824-04926
Railway		226711		
S.M. Kangra		265026		
S.M Nagrota Bagwan		252279		
S.M. Maranda		238003		
S.M. Dharamshala		226711		
S.M. Palampur		230050		
UN:				
United Nation Disaster Response Organization		4122 73332010		
Geneva		4122 7346011		

Annexure – B

Nodal officers list for Disaster Management Committee

Sr. No.	Department	Post	Nodal Officer Name	Contact No. Email- address	Place
1	Electricity	Superintendent Engineer	S.E. Er. R.S. Badhwar	Mobile 94180-88358 Base line 01892-265720 Email- seopk@hpseb.in	Dharamshala
2	Health	Medical Officer	Dr. G.R. Koushal	Mobile 94180-93762 Base line 01892-223565 Email- drgrkaushal@gmail.com	Dharamshala
3	Agricultural	Dy. Director	Sh. Bihari Lal	Mobile 94182-69127 Base line 01894-230528 Email- dakangra@y mail.com	Palampur
4	Industry	Manager	Sh.Rajesh Kumar	Mobile 94181-03101 Base line 01892-223242 Email- rajeshkharwal@rediffmail.com	Dharamshala
5	Police	Addt. SP (L&O)	Sh. Jog Raj	Mobile 94180-80931 Base line 01892-2221501 Email- sp-kan-hp@nic.in	Dharamshala
6	Food &supply	Food & Supply Officer	Sh. Balwant Singh	Mobile No- 94181-21187	Dharamshala
7	PWD	Executive Engineer	Sh. Devi Chand	Mobile No- 94184-73193 Base line 01892-224946	Dharamshala
8	DPRO	DPRO	Sh. B.R. Chouhan	Mobile 98057-12219 Base line 01892-222319(O) 228810 (R) Email- dprokgr222319@yahoo.com, dprokgr@gmail.com	Dharamshala

ANNEXURE – C

Non-Government Organization (NGO) District Kangra

Sr. No.	Name of NGO	Address	Contact No.
1	Asha	Smt. Sunita Sharma w/o Dr. Sushil Sharma Vill Bhand P.O. Sungal Tea Estate Tehsil-Palampur District Kangra (HP)	9418080132 9418161549
2	Gramin Seva Ashram	Sh. Kulwant Sharma P.O. Bharwana Tehsil Palampur Distt Kangra (HP)	98163-33513
3	SWARG Society	Smt. Arun Somal Vill. Junat P.O. Baroona Tehsil – Fatehpur District Kangra	94180-15489
4	Uday Bharti	Sita Niwas Kathyara Guga Saloha Tehsil – Palampur Distt.- Kangra (HP)	9418400033
5	CORD	Dr. Kashma Metre National Director CORD Vill. Tapoovan P.O. Baroona Tehsil – Dharmshala (HP) tapovan@vsul.com	Offi.- 01892-236987, 09816655592
6	Himachal Childern & Dev.org.	Tea Estate Jikkar P.O. Garoh Tehsil Shapur Distt. Kangra	Sarika Katoch 98160-75594
7	Uthan		
8	Changar Ssnskriti Kala Manch Talwara Distt. Kangra	Via Lmba Gaon, The. Jai Singhpur Kangra	01894-227138 98164-33918
9	Kangra Mhila Sbha	VPO Raith Teh Saper Kangra	
10	New Chmunda Pickle societies for rural development	Village Sugar P.O Bundel Teh Palumpur Kangra	
11	Jalapa Primary School Samiti	V.P.O. Thural Teh Palumpur Kangra	
12	Mhila Upbhokta Sanchar	V.P.O. & The Panchmukhi Kangra	01894-254223
13	Gram Shiksha Sanchar Samiti	Jaisingh Pur Kangra	
14	Society for Animal, Human welfare and Environment Protection	House No. 169, Bindraban housing Board Colony, Bindraban Palampur Kangra	01894-231534 94180-40256 sahweo@gmail.com
15	SANI SEWA SADAN	Nehru Chowk, Palumpur Kangra	98171-64052

ANNEXURE – D

CONTACT NO. OF NCC/NSSS
LIST OF NCC & NSS

Sr. No.	Name of School/College	Name of Principal	Number of Students	Contact No. of Principal	Name and detail of Teacher I/c
			NCC		
1	PGC Dharamshala	Pro. Satish Chander Sharma	100	01892-224894 9410-12933	Maj. SK Chawala 094180-44030
2	CSKHPKV Palumpur		100		Capt. Ashok Sharma 98168-00972
3	GSSS (B) Dharmshala	Ms. Nina Tahkur	50	94180-33991	T/O Sanjay Kapoor 94183-64764
4	GSSS (G) Dharmshala	Sh. Rajesh Shrama	50	01892-223186	Urmilla Thakur 9418079500
5	GSSS Palumpur	Ms. Kanchan Jayoti	100	01894-234920 9418111436	T/O Paras 94185-93544
6	GSSS Paprola	Sh. S.S. Katwal	100	01894-342279 94188-35408	F/O Subhash Rana 94182-50040
7	GSSS Harchakian	Sh. Tilk Raj Raina	100	01892-256191	T/O Joginder Singh 98163-03673
8	GSSS Jaisinghpur	Sh. Karan Chand Shrama	100	01894-228805	C/T Prince Jashrotia 94185-32535
9	AFCV Yol	Sh. O.S. Rana	100	01892-236794 98053-64114	F/O Manohar Lal 9418654259
10	GSSS Shapur	Sh. Ashwni Dhiman	100	01892-238310 94181-52869	F/O Jatinder Kumar 94180-17638
11	GSSS Krishana Naggar	Sh. Arvind Shrama	100	01894-265066	T/O Dolly Mehta 94183-13168
12	GSSS Sarimolag	Sh. Vijay Jaswal	100	01894-252590 94188-78150	C/T Rajesh Kumar 94181-21725
13	GSSS Chadihar		50		C/T Manish Kumar 94185-28980
14	GSSS Lambagoan		50		C/T Shashi Kumar 1598164-55652
15	GSSS Rait	Ms. Darshna Kumari	100	01892-238541	T/O Mukesh kumar 9418087287
16	GSSS Pandol	Sh. Balwant Singh	100	94180-04422	T/O Daruv chand 94590-76813
17	GSSS Nagrota Bagwan	Sr. Ravinder Kumar	100	94180-81586	S/O Jagdish Chand Rana 94183-01051
18	GAV SS Kangra		100		F/O Ravinder Kumnar 98168 53431
19	GSSS Chari	Sh. Archana Aggrwal	100	01892-278327 98164-52168	T/O Rakesh Katoch 9418026923
20	GSSS Baijnath		100		F/O Amar Singh Rana 9418289857
21	GSSS Serathana		100		S/O Swaran Kumar 9816291442
22	GSSS Bhawarana	Ms. Nicki Gupta	100	01894-247013 94180-00561	S/O Uttam Chand Rana 9418088077
23	GSSS Bhullana		100		F/O Suresh Kumar

					9418123054
24	GSSS Jawalamukhi		100		T/O Ashwani Kumar 9418088077
25	KV Yol Cantt		100		C/T Rajinder Singh 9418473314
26	GSSS Rehlu	Sh. Onkar Singh	100	01892-237422 94180-54299	C/T Aseem Aggerwal 9459416489
27	JNV Paprola	Sh. Sukhvinder	50	01892-263602	C/T Vinay kumar 9882096755
28	Rainbow International Nagrota Bugwan		100		C/T Ravi Bhardhawaj 9418185611
29	GAV Public Kangra		50		C/T Shailesh 9882115969
30	GSSS Kutiara	Sh. Ramswrup	100	01970-273856 94184-63012	C/T Shivneder 9418673434

List of NSS Teacher and Student of CSKHPKV, Palampur

Sr. No	Name of Institute	Name of Principal	Contact No. & email address	Name of Teacher	Contact No. & email address	No. of Student
1	College of Agricultural Palampur -176062 Distt. Kangra	Dr. Pradeep Kumar Sharma	Ph.No. 01894-230371 Mob. 09816031397 psharma@hillagric.ernet.in	Dr. N.K. Sankhyan	094180-16269 nks1998@rediffmail.com	150
2	College of Home Science CSK-HPRV, Palumpur-176062 H.P.	Dr. S.R. Malhotra	Ph.No. 01894-230397 Fax.No. 01894-234274 Mob. 94181-38358 s_rekha1@yahoo.co.in	Dr. Anupama Sandal	Mob. 094181-05037 asandal@rediffmail.co.in	60
3	College of Basic Science, CSK-HPRV, Palumpur-176062 H.P.	Dr. G.L. Bansal	Ph.No. 01894-230311 Fax.No. 01894-230311 Mob. 94181-93799 glbansal@hillagric.ernet.in	Dr. K.P. Singh	Mob. 098161-85727	150
4	Dr. G. C. Negi College of Veterinary and Animal Science, Palampur H.P.	Dr A.C. Varshneya	Ph.No. 01894-230327 Mob. 94180-19754 varshneya@gmail.com	Dr. Dinesh Krofa	Mob. 94181-64535 dkrofa@yahoo.co.in	50

Palampur NSS Teachers and Students List

Sr. No.	Name of School	Name of Principal	Phone Number
1	AERLA	Ridku Ram	9418360690
2	ALAMPUR	Mohan Singh Dogra	9418035267
3	AVERI	Senh Lata	9805825884
4	BADHAL THORE	Jagdev Singh Kaushal Re-employed	9459215362
5	BAGLI	Sudershan Kumar	9418130795
6	BAIJNATH	Suresh Kumar Sharma	01894262266
7	BALAKRUPI	Pushpa Rana	9816401515
8	BALLAH	Asha Sood	9418071037, 9816119037
9	BALUGALOA	Anil Kumar	01970-288242
10	BARANDA	Asha Rani Choudhary	9448967871
11	BAROH	Kewal Krishan Sharma	01892259357
12	BAHADPUR	Kamlesh Chand	9418711743
13	BASANTPUR	Vikram Jeet Sharma	01893-240112, 01893-240155
14	BATHRA		94182-96773
15	BATHU TIPPRI	Inderjeet Singh	01970-53708, 9418453708
16	BHADWAR	Jagan Nath	01893-235050, 98821-05531
17	BHALI	Pardeep Kumar	9418474366
18	BHARMAR	Bhagi Rath	9316533270
19	BHAROLI KOIIALA	Davinder Singh	9418634447
20	BHAWARNA	Nishi Gupta	9418000561
21	BHULLANA	Madan Lal	9418338745
22	BOHAR KAWALU	Anjula Katoch	01892214167
23	BTC NURPUR(G)	Anuradha sexena	
24	BUNDLA	Asha Rani	9418790813
25	CHACHIAN	Rama Sharma	9418889521, 01894-252371
26	CHANOUR	Krian Sharma	9418478192
27	CHARRI	Archana Aggrwal	9816452168
28	DADA SIBA	Kuldeep Singh	9816223220
29	DADH	Savita Sharma	9816874230
30	DAH KULARA	Vipan Kumar Gupta	9418090914
31	DAINKWAN	Balbir Singh	9816429040
32	DARI	Kamla Saberwal	01892224390
33	DAROH	Bikram Singh Guleria	9816979886
34	DAULATPUR	Subhash Chand Katoch (Re-emp.)	9816206891
35	DEHRA	Deepak Raj Kaushal	01970250336
36	DEOL	Parmod Singh Rana	9418936770
37	DHALIARA	Shashi Kiran	9736502761
38	DHAMETA	Sham Lal	9418750356
39	DHARAMSHALA(BOYS)	Neena Thakur	01892211237
40	DHARAMSHALA(GIRLS)	Rajeev Sharma	9816339409
41	DHEERA	Pran Krishan Sharma	9816055623
42	DHUGIARI	Ranjeet Kumari	9418484274

43	DURGELLA	Naresh Kumar	01892237998
44	FATEHPUR	Purshotam Chand Rana	9816533720
45	F.D.S.S. MANMIANI		
46	FORSYTHGANG	Surinder Kumar	9418011095
47	GANDER	Vinod Kumar	9418919501
48	GANGNATH	Tek Singh jaswal	9418477207
49	GANOH	Som Raj Garg	9418451017
50	GARHJAMULA	Aruna Rana	9478066458
51	GARLI	Bakshi Ram	01970246760
52	GHALLOUR	Raj Rani Rana	9418603178
53	GHANIARA	Kaushal Kumar	9418044792
54	GHARJAROT	Rajinder Singh	01893253348
55	GIORA	Subhash Sharma	9418466777
56	GUGLARA	Jagdish Singh	
57	HARCHAKIAN	Tilak Raj Raina	9418006714
58	HARIPUR	Anita Gupta	9418006714
59	HARSAR	Rajni Devi	01893264430
60	INDORA	Prabhati Devi	9418467671
61	JASINGHPUR	Karam Datt	0197225653
62	JASSAI	Vijay Parakash	9816607530
63	JAWALAMUKHI	Arti Sood	01970233728
64	JAWALI	Joginder Singh	9816279734
65	KACHHIARI	Mastan Singh	01892262136
66	KALIARA	Iswar Dass Sharma	01892231913
67	KANDBARI	Ranjeet Kumar	9418030477
68	KAROA	Poonam Rana	9418290119
69	KATHOG	Joginder Singh	9418540366
70	KHALET	Neelam Katoch	9418470684
71	KHANIARA KIIAS	Madhu Kamal	01892246009
72	KHERA	Suresh Chand	9816363103
73	KHUNDIAN	Bisheswar Ghalotra	9816786216
74	KOTHAR RANITAL	Veena Chhabra	9805106155
75	KOTLA	Kamal Kumar Sanhtra	9816523683
76	KOTLA BEHAR	Vinod Kumar	9418937442
77	KRISHNA NAGPUR	Arvind Kumar Sharma	01894265066
78	KUTIARA	Ram Sawroop	94184630121
79	LADORI	Chander Rekha	9418912672
80	LAGROO	Desh Raj	9418477244
81	LAHLA	Ram Swroop	9418787821
82	LAMBAGAON	Parveen Chand	9418004029
83	LODHWAN	Vinod Kumar	9418453344
84	LOHARDI	Satish Kumar	9418430689
85	LUNG	Kusum	9418390035
86	MAJHEEN	Milap Chand Dhiman	9418018816
87	MANDAL	Meena sharma	9418108242
88	MATLAHAR	Lalit Kumar	9418079551
89	MOHTLI	Prithvi Raj	9625277004
90	MUHAL	Nirmal Kishore	9418108242
91	NAGROTA BAGWAN (GIRLS)	Suresh Kumar	01892226894
92	NAGROTA BAGWAN (BOYS)	Ravinder Singh	01892252289
93	NAGROTA SURIAN	Usha Rani	01893265303
94	NANDROOL	Raj Kumari	9418476854
95	NAURA	Puran Chand	01894222015

96	NEW KANGRA	Dev Raj	9418122347
97	NURPUR(B)	Nirmala devi	9418316206
98	PAHRA	Rabit Chand Katoch	01894255798
99	PARAUR	Kudeep Singh Guleria	01894255049
100	PALAMPUR CO- EDU.	Kanchan Jyoti	01894234920
101	PALAMPUR GIRLS	Anil Nag	01894231123
102	PAPROLA	Suman Singh Katwal	01894234816, 9418835408
103	PAPROLA(JNV)		
104	PATHIAR	Amar Nath	01894233548
105	PRAGPUR	Manjushree Parmar	9459083030
106	RAIT	Darshna Devi	9418024799
107	RAJA KA TALAB	Prem Chand	9418484988
108	RAJHOON	Jaswinder Singh	9816429277
109	RAJIANA	Sneh Lata	9418334451
110	RAJOL	Netar Singh	9816215756
111	RAJPUR	Bodh Vati	9418033826
112	RAKKAR(DEHRA)	Anuradha Sood	
113	REHAN	Rajinder Parshad	8805359615
114	REHLU	Onkar Singh	9418054299
115	REY	Virender Singh rana	8894821555
116	SADWAN	Bichitr Singh	9418452817
117	SAKRI(B/NATH)	Rama sharma	9418246510
118	SALAL	Gopal Singh Saini	9418564518
119	SAMLOTI	Desh Raj	9418363642
120	SANHOON	Shanti Parakash Sharma	01894278369
122	SANSAI	Ramesh Kumar	9418464341
123	SANSARPUR TERRECE	Mulak Raj	9471791365
124	SEHWAN	Bhagwan Singh	9805642953
125	SERATHANA	Kanchan Bala	9816204224
126	SHAHPU	Ashwani Kumar	9418152869
127	SIDHPUR GHAR	Suresh Kumar	8679334486
128	SULIALI	Som Lata	01893234619
129	SULLAH	Milap Chand	9459285218
130	SUNHI	Kahan Chand Randawa	9418218063
131	SURANI	Raj Kumar Re –Emp.	9418184624
132	TANG NARWANA	Ram Singh	9418166995
133	THAKURDWARA	Santosh Kumari	9417286906
134	THURAL	Jagjeet Kumar	9817681525
135	TIHRI	Vijay Kumar	9418034634
136	ZANANABAD	Om Prakash	9418233518

Annexure - E

ULB list of Kanga

Sr. No.	Name	Designation	Contact Number
	M. C. Nurpur		01893-220075
1	Ms. Mahajan	President	098162-00005
2	Sh.Yash Pal Saga	Vice Chairman	098162-00421
3	Sh. Lalit Kumar	Executive Officer	01893-220075, 94181-42121
4	Sh. Ram Kanwar	Junior Engineer	94180-94192
	M. C. Jawalmukhi		01970-222256
1	Ms. Anil Prabha	President	98055-70277
2	Sh. Anish Sood	Vice Chairman	94180-88274
3	Sh. Jag Pal ThaKur	Executive Officer	01970-222256, 94184-83739
4	Sh. Kamal Kant	Junior Engineer	94187-97675
	M. C. Dharamshala		
1	Ms. Kamla Patiyal	President	98163-55540
2	Sh.Onkar Singh Nehria	Vice Chairman	94181-30383
3	Sh.R.S. Verma	Executive Officer	94180-88366
4	Sh.Surinder	Junior Engineer	98052-92737
5	Sh.Rajeev Puri	Junior Engineer	94592-89073
	M. C. Palumpur		01894-230895
1	Sh.Balwant Singh Thakur	President	94181-55798
2	Sh.Yash Mahajan	Vice Chairman	94180-45499
3	Sh.Chaman Lal	Executive Officer	01894-230895, 94180-16016
4	Ms. Sudesh Kumari	Ward Member	94182-09190
5	Ms. Reeta Jamwal	Ward Member	94187-88863
6	Sh. Ballier Chadda	Junior Engineer	94182-29478
7	Sh. Tilak Raj	Junior Engineer	94181-25390
	M. C. Nagrota Bagwan		
1	Ms. Himadri	President	94181-05288
2	Sh. Arun Kumar	Vice Chairman	
3	Sh. D.R. Choudhry	Executive Officer	01892-252284 94181-12778
4	Joginder Singh	Junior Engineer	94180-19785

Annexure - F

IMPORTANT CONTACT DETAILS FOR DISASTER RESPONSE
DISASTER MANAGEMENT DIVISION, MINISTRY OF HOME AFFAIRS
(for reporting of grave disaster and for requisitioning of Army, Air force and NDRF)

Name of Officer/Designation	Tel(Office)	Tel (Residence)	Mobile No.	Email id
R. K. Singh HOME SECRETARY	23092989 23093031 23093003 (Fax)	24103058		hshso@nic.in
A.E. Ahmad SECRETARY (Border Management)	23092440 23092717 (Fax)	24602518		secybm@nic.in
Ravindra Kumar Srivastava Joint Secretary (Disaster Management)	24638206 24610906 (Fax)	26874825		jsdm@nic.in
Dev Kumar Director (Disaster Management-I)	24642853	26266708	9871087616	
J P Mishra Director (NDM –II)	24642381			
Sanjay Aggarwal Director (NDM – III)	24642381			
Control Room (Disaster Management)	23093563 23093564 23093566	23093750(Fax)		
Toll Free No. (MHA, C/R)	011-1070			

NATIONAL DISASTER MANAGEMENT AUTHORITY
(For reporting of grave emergencies and request for specialized response)

Name of Officer/Designation	Tel(Office)	Tel (Residence)	Mobile No.	Email id
M. Shashidhar Reddy, MLA, Vice Chairman	011-26701701 011-26701704 011-26701706 (Fax)			vc@ndma.gov.in
Dr. Sutanu Behuria Secretary	011-26701710			secretary@ndma.gov.in
Shri Amit Jha, JS (Admn)	011-26701718	011-26109395	09717873412	amitjha@ndma.gov.in
Shri P K Tripathi, Advisor & JS(Mitigation)	011-26701816		09868889697	pktripathi@ndma.gov.in
Sujata Saunik, JS (PP)	011-26701817			jsadm@ndma.gov.in
Control Room	011-26701723 to 728	011-26701729 -30		

Contact Details Of NDRF Officers (NDRF Head Quarter)
(For Specialized response during disasters)

Name	Designation	Address	Tele.	Fax.	Mobile	E-mail.
Shri Rajiv , IPS	DG	**Directorate General** , National Disaster Response Force (NDRF) Sector-1 R K Puram, New Delhi -66	011-26712851 011-26161442	011-26105912.	09818916161	dg-ndrf@nic.in
Shri Mukul Goel	IG	**Directorate General** , National Disaster Response Force (NDRF) Sector-1 R K Puram, New Delhi -66	011-26160252 011-26113014	011-26105912.	09871115726	-
Shri Rakesh Ranjan	Dy Commandant (Proc)	**Directorate General** , National Disaster Response Force (NDRF) Sector-1 R K Puram, New Delhi -66	011-26107921	011-26105912.	08860136649	rakeshbsf@gmail.com
Shri Om Parkash	Inspector Control Room	**Directorate General** , National Disaster Response Force (NDRF) Sector-1 R K Puram, New Delhi -66	011-26107953	011-26105912.	08010072169	

NDRF BNS

Name	Designation	Address	Tele.	Fax.	Mobile	E-mail.
Sh. R.K.Verma	Commandant	**7th Bn NDRF,** Bibiwala Road, Bhatinda(Punjab)	0164-2246030	0164-2246570	09417802032	comdt.27thbn@itbp.gov.in, 7thbnndrfbathinda@gmail.com
Sh.Jaipal Yadav	Commandant	**8th Bn NDRF**, Greater Noida,Distt.G.B.Nagar, UP	0120-2351101, 0120-2351087	0120-2351105	09968610011	eighthndrf@yahoo.com, jpyadav1960@yahoo.com

Note: The NDRF Bhatinda is responsible for Himachal for normal disasters and UP based battalion for CBNR emergencies.

SNOW & AVALANCHE STUDY ESTABLISHMENT (CHANDIGARH) (DRDO) (0172)
(For snow avalanche early warning and related issues)

Name of Officer/Designation and Location of Deployment	Tel(Office)	Tel (Residence)	Mobile No.	Email id
A.Ganju Jt. Dir.	2699804-806	2705990	09872083177	2699802
Rajesh Chand Thakur, T.O(B)			09417049754	

16.1.4 GEOLOGICAL SURVEY OF INDIA
(For landslide related issues)

Name of Officer/Designation and Location of Deployment	Tel(Office)	Tel (Residence)	Mobile No.	Email id
N.L. Sharma, Director Geological Survey of India Plot No 3 Dakshin Marg Sector 33B Chandigarh - 160020	0172- 2622529 0172- 2621945 (Fax)	0172-2661002		gsichd@sancharnet.in

INDIAN METEROLOGICAL DEPARTMENT (SHIMLA)
(for weather related early warning and data)

Name of Officer/Designation and Location of Deployment	Tel (Office)	Tel (Residence)	Mobile No.	Email id
Manmohan Singh, Director	0177-2626211	0177-2626490	9816127668	mm_sandhu@yahoo.co.in
R.K. Lakhanpal, Asstt Meteorologist	0177-2624976	0177-2652408	9418277093	
Ranvir Singh	0177-2624976		9418061077	ranvir_10@yahoo.com
Harminder Dutta, Caretaker (VOR)	0177-2624976		9418119123	harminder.dutta@imd.gov.in

CENTRAL WATER COMMISSION (SHIMLA)
(For floods/flash floods and early warning thereof)

Name of Officer/Designation and Location of Deployment	Tel(Office)	Tel (Residence)	Mobile No.	Email id
Director (M&A) CWC, Block 10, First Floor Commercial Complex, Kasumpti Shimla 171009	0177-2624036 0177-2624224 (Fax)	0177-2625307		
Ex, Engineer, Snow Hydrology Divn CWC, Block 9, First Floor Commercial Complex, Kasumpti Shimla 171009	0177-26230260 0177-2623026 (Fax)	0177-2628247		

ARMY HQR (EXCHANGE NOS-23010131/23018197)
(For requisition of army during disasters)

Name of Officer/Designation and Location of Deployment	Tel (Office)	Tel (Residence)	Mobile No.	Email id
DGMO	23011506, E-33170 Fax 23011506	23011506 , E-33172		
ADGMO (A)	23011611,E-33174 Fax 23011617	24615208, E-35251		
ADGMO (B)	23014891, E-33176 Fax 23011617	26142269 E-39124		
Dir MO – 6	23018034, E-33220 Fax 23011617		9818106439	
GSO-I MO - 6	23019739, E-33221 Fax 23011617		E-39823 9810431696	
DirOL – 2	23335218, 23018530 E-35221	23339055		

ARMY TRAINING COMMAND, SHIMLA
(For Army assistance)

Name	Designation	Contact No.	Address
Army Exchange		0177 2804590 to 2804592	Shimla - 3

AIR HQR (EXCHANGE NO-23010231)
(For requisition of Air force in disasters)

Name of Officer/Designation and Location of Deployment	Tel(Office)	Tel(Residence)	Mobile No.	Email id
ACAS (Ops)	23014424, 23010231/7528 Fax 23017627	24672974	9871213393	
PD Ops (Off) (T&H)	23110231/7559,23016354 Fax 23016354	24642195	9871097909	
Dir Ops (T)	23010231/7545,2305857	23098030		
Dir Ops (H)	23010231/7551,Fax 23016354	25674906		
JD Ops (LS)	23010231/7546,Fax 23016354		9818220586	
JD Ops (H)	13010231/7552, Fax 23792973		9868468583	

CIVIL MILITARY LIASON FOR DISASTER RELIEF OPERATION (AIR) CONTACT DETAILS OF AIR FORCE STATION SARSAWA, SAHARANPUR, UTTAR PRADESH
(For Requisition and Deployment of Helicopters in Disasters)

Name	Designation	Contact No.	Address
Mr. Bhanu Johri	Group Captain and Station Incharge	Tel No. 01331 244919-207 Fax No. 01331 - 244822	AF Stn, Sarsawa Saharanpur (UP), PIN - 247232
Mr. Vineet Sharma	Wing Commander, Chief Operations Officer	As Above Cell No. + 91 7599342240	As Above

CENTRAL CRISIS GROUP
(National Level)
(For industrial and chemical disasters)

Name of Officer/Designation and Location of Deployment	Tel(Office)	Tel (Residence)	Mobile No.	Email id
Sh. Vijai Sharma, **Secretary,** Ministry of Environment & Forests, Paryavaran Bhavan, CGO Complex, Lodi Road, New Delhi-110003.	011-24361896 011-24360721 011-24360721 (Fax)	011-26883988		Vijay.sharma@nic.in
Sh. Rajiv Gauba, Joint Secretary, Ministry of Environment & Forests,Paryavaran Bhavan,CGO Complex, Lodi Road, New Delhi-110003.	011-24360634 011-24363577 (Fax)	0177-26192110	09871374660	

All India Radio
(For broadcasting services)

Name	Designation	Contact No.	Address
Mr. T K Tawal	Station Director	0177 2801899 (Office); Residence – 2831281, Fax 0177 2801899; email – airshimla@yahoo.com	Ambedkar Chowk, Shimla - 4
Mr. Devinder Mahindru	Programme Executive	0177 2563038 – O; 0177 2831748	As Above

HQ, CE (P) DEEPAK,
(For Boarder Roads)

Name	Designation	Contact No.	Address
Mr. IR Mathur	Chief Engineer	0177 2830986 (Office); Residence – 2831850	Minto Court, Shimla - 4
Col. SS Pathania	-	0177 2633602 – O; 0177 2831748	As Above

INDO-TIBETAN BOARDER POLICE, TARADEVI, SHIMLA - 10
(For Requisition and Deployment in Disasters)

Name	Designation	Contact No.	Address
Sh. A S Chawla	DIG	0177 2830601 (O); 2830602 (Resi) Email – dighpitbp@sancharnet.in	Taradevi, Shimla - 10
	Staff Officer ADM to DIG	0177 2831010 (O), 2830604	As Above

BHARAT SANCHAR NIGAM LIMITED, HP CIRCLE SHIMLA - 10
(For communication related issues)

Name	Designation	Contact No.	Address
Mr. Rakesh Kapoor	Chief General Manager	0177 2620220 (O); 2625325 (Fax)	SDA Complex, Kasumpti
Mr. A V Chaturvedi	General Manager, Mobiles	0177 2673999 (O), 2673923 (Fax)	As Above
Mr. Prem Singh	General Manager, Telecom	0177 2800666 (O); 2800777 (Fax)	

INDIAN OIL CORPORATION
(For POL and LPG)

Name	Designation	Contact No.	Address
Mr. Piyush Mittal	Divisional Manager Sales	0177 2625768 (O); 2621706 2623158 (Fax)	Block No. 21, SDA Complex, Shimla.
Mr. Mukesh Kumar	Manager, LPG	0177 2623133 (O), 2671350 (R)	As Above
Mr. Rajan Berry	Deputy Manager Sales	0177 2625363 (O)	As Above

CENTRAL PUBLIC WORKS DEPARTMENT
(For road clearance, machinery and manpower)

Name	Designation	Contact No.	Address
Mr. Gurba Singh	SE	0177 2657531 (O); 2804696 (R), Cell - 9418004466 2652476 (Fax); email – sesccshimla@yaoo.com	CPWD, Kennedy Cottage, Shimla - 4
Mr. J K Goel	XEN Planning	0177 2658131 (O), Cell - 09318050506	As Above
Mr. M P Singh	XEN	0177 2652830 (O), 2652412 (R)	As Above

ANNEUXRE G

LIST OF HELIPADS IN DISTRICT KANGRA

POLICE GROUND DHARAMSHALA			
Latitude	32D	10M	35 S
Longitude	76D	18M	28S
YOL(DHARAMSHALA)			
Latitude	32D	11M	04S
Longitude	76D	23M	08S
GAGGAL Altitude759.57 Meters			
Latitude	32D	12M	
Longitude	76D	16M	
GANDHI GROUND (KANGRA)			
Latitude	32D	05M	30S
Longitude	76D	15M	49S
NAGROTA BAGWAN (GANDHI MAIDAN)			
Latitude	32D	16M	15S
Longitude	76D	20M	15S
HOLTA (PALAMPUR) Altitude 1271 Metes			
Latitude	32D	07M	
Longitude	76D	34M	
NAURA			
Latitude	31D	59M	44S
Longitude	76D	29M	12S
JAISINGHPUR (CHAUGAN)			
Latitude	31D	54M	03S
Longitude	76D	35M	57S
SAPRI (JAWALAJI)			
Latitude	81D	53M	15S
Longitude	76D	18M	05S
NURPUR (CHAUGAN)			
Latitude	32D	18M	09S
Longitude	75D	48M	12S
BADUKHAR			
Latitude	32D	02M	45S
Longitude	75D	49M	48S
RAJA KA TALAB			
Latitude	32D	12M	49S
Longitude	76D	55M	00S
REHAN STADIUM Altitude 547 Meters			
Latitude	32D	10 M(North)	
Longitude	75D	55 M (East)	
JAWALI			
Latitude	32D	08M	36S
Longitude	76D	00M	38S
SUJANPURTIHRA			
Latitude	31D	50M	00S
Longitude	76D	30M	35S
SHAHPUR			
Latitude	32D	12M	50S

Longitude	75D	10M	58S
PALAMPUR (AGRICULTURE UNIVERSITY) Altitude 1272 Meters			
Latitude	32D	06M	
Longitude	76D	33M	
SANSARPUR TERRACE (GOVT. SSS)			
Latitude	31D	56M	35S
Longitude	75D	55M	45S
DHALIARA (GOVT. SSS)			
Latitude	31D	51M	00S
Longitude	76D	11M	30S
DEHRA			
Latitude	31D	52M	30S
Longitude	76D	13M	00S
Helipad Bara Bhangal.			
Latitude	32D	19M	50S
Longitude	76D	48M	27S
Indira Gandhi Stadium, Ustehar Height 980Mtrs. Accuracy 7Mtrs.			
Latitude	N 32 02"	24-6"	50S
Longitude	E 76	32"	25-9"
Helipad Sakri Height 900Mtrs. Accuracy 5Mtrs.			
Latitude	N 32 00"	21-8"	
Longitude	E 76	38"	0-6"
Sanatan Dharam College Ground Baroh.			
Latitude	N 31	59	
Longitude	E 76	18	

ANNEUXRE - H

RESOURCE INVENTORY
Equipment /Machinery in SDM Office

Incharge SDM & Tehsildar	First Aid Kits	Search Light	Rope Meter	Shovel	Life Jacket	Pick Axe	Crowbar 03 feet	Spade	Rain coat	Gum boot	Liefbouy (Tube)	Hand saw
Jawali	03	01	400	03	02	03	03	03	01	01	02	03
Nurpur	03	01	400	03	02	03	03	03	01	01	02	03
Baijnath	03	01	400	03	02	03	03	03	01	01	02	03
Palumpur	04	01	550	04	02	04	04	04	01	01	02	04
Dehra	05	01	700	05	02	05	05	05	01	01	02	05
Kangra	04	01	550	04	02	04	04	04	01	01	02	04
Jaisinghpur	02	01	250	02	02	02	02	02	01	01	02	02

Fire Officer Dharamshala

Name of Item	**Qty.**	**Name of Deptt.**	**Contact No.**
First Aid Kits	03	Fire Officer	01894-230595
Search Light	01	do	do
Rope	300 Mt	do	do
Shovel	06	do	do
Pick Axe	03	do	do
Life Jackets	06	do	do
Crowbar 03 feet	05	do	do
Crowbar 06 feet	03		
Rain coat	06	Do	do
Gum boot	06		
Liefbouy (Tube)	06		
Oxygen cylinder with kit	06		
Helmet	06		
Heavey axe	06		
Hand saw	06		
Rubber Gloves 11000 vlt.	04		
Sledge hammer	06		
Gas Cutter	02		

Search & rescue resources.
Sima Surksha Bal Training Centre Sapri,

i) Vehicle ---HMV – 3
---MMV – 3
---LMV -2
ii) Communication ---Wireless HF/VHF sets.
iii) Equipment --- Pioneer—spade, shovel, rops, cutting blades
---Generator- k oil sets available.

iv) Stores		---Tents - 10. --- Blankets – 20.
vi)Medical		--- Medical officer -- 1 MMV Ambulance—1 ---Medicines --- ---Oxygen equipment— ---Stretchers-

2nd Indian Reserve Battalion ,Sakoh at Dharamshala

i) Man power	---	GO - Man power is displayed on different duties only one Coy. Plus available at a time.
ii) Vehicle	---	LMV – (one ambulance)
iii) Communication	---	Wireless HF/VHF sets.
iv) Equipment	---	spade, shovel, ropes, cutting tool, pichover, hydrolic Jack.
	---	Search light --20.
	---	Generator --1.
	---	Stair folding --05.
v) Stores	---	Tents (EPIS) - 50
	---	Store Tent --50
	---	Tent 180 lds. –50
	---	Blankets –100
vi) Medical	---	Medical officer -- 1 LMV Ambulance—1 Stretchers --50.
	---	Mask oxygen --05
	---	First aid Kit --20.
	---	Medicine, dressings
	---	Blood perjure calf adduct

District Police

i) Communication	---	Wireless HF/VHF sets.
ii) Equipment	---	spade, shovel, ropes, pich axe.
iii) Stores		

Kangra Fire Service

i) Man Power	Station Fire Officer	1
	Sub Fire Officer	2
	Leading Fireman	8
	Fireman	32
ii) Fire vehicle	HMV	3 (ladder folding mounted)
	HMV	1
	2 wheeler	2
iii) Communication	Fixed line only.	
iv) Equipment.	Pumps set portable	3
	Breathing operates	3
	Proximity suit	3
	Fire extinguisher	30
	Fire axe	30
	Rubber gloves	10

	Cutting tool	5
	Pioneer tools=- pitch axe, shovel axe, ropes.	
v) Stores	Tarpaulin.	

Mountaineering and Allied Sports

i) Mountaineering sub centre Mechlodganj Dharamshala.

aa) Man Power	Instructor	---
	Guides	---Volunteers.
ab) Communication	VHF Wacky Talky	5
ac) Equipment	Chain pulley	2
	Torches	5
ad) Stores	Tents 2/4 Men	5
	Rack sack	20
	Sleeping Bags	20
	Jackets	20
	Rain Coat	20
	Ropes	5

Medical

Kangra Health Services.

List of Govt. Hospitals.

Sr. No.	Name of Health Clinic/Hospital	Location	Infrastructure							
			Bed	X-ray Machine	Stretchers	Artificial Respiratory System	Generator	Ambulance	Surgery	No. of Doctors and staff
1.	RPMC D/shala	D/Shala	300	Yes	Yes	Yes	Yes	Yes	Yes	90
2.	SDH	Kangra	50	Yes	Yes	---	Yes	Yes	---	15
3.	SDH	Palampur	100	Yes	Yes	---	Yes	Yes	Yes	19
4.	SDH	Dehra	100	Yes	Yes	---	Yes	Yes	Yes	15
5	SDH	Nurpur	100	Yes	Yes	---	Yes	Yes	---	13
6.	CH	B/Nath	50	Yes	Yes	---	---	Yes	---	11
7.	CH	Garh	30	Yes	Yes	---	---	---	---	05

List of Private Hospital/Clinic

Sr.No.	Name of Health Clinic	Location and Phone No.	No.of Doctors and staff	Infrastructure.						
				Beds	X-rey Machines	Strechers	Artificial respiratory system	Generator	Ambulanses	Surgery facilities
1.	Shukla Nursing Home	Ramnager D/Shala	4	--	Yes	Yes	---	Yes	Yes	Yes
2.	Mhajan HeartCare Centre	-do-	2	--	Yes	Yes	---	Yes	---	---
3.	Khanna Clinic	D/shala	2	--	Yes	---	---	---	---	---
4.	Delak Hospital	D/shala	3	--		Yes	---	Yes	Yes	---
5.	Choudhary Clinic	Birta Kangra	2	--		Yes	---	Yes	---	Yes
6.	Doctor Rama	Kangra	5	--		Yes	---	---	---	---
7.	Dr.Pahwa	Birta	2	--	Yes	Yes	---	Yes	---	---
8.	Maple leaf Hospital	Kangra	2	--	Yes	Yes	Yes	Yes	Yes	Yes
9.	Chadda Clinic	Kangra	1	--		Yes	---	Yes	---	---
10	Punchsheel	N/Bagwan	2	--	Yes	Yes	---	---	---	Yes
11.	Sood Nursing Home	Dehra	1	--	---	---	---	---	---	---
12	Sharma Clinic	N/Bagwan	1	--	---	---	---	---	---	---
13	Dr.Kundu	J/Mukhi	1	--	---	---	---	---	---	---
14	Dr.Shiv Kumar	Palampur	1	--	---	---	---	---	---	---
15	Karan	Palampur	2	--	Yes	Yes	---	Yes	---	Yes
16	Kapila	Palampur	2	--		Yes	---	---	---	---
17.	Kalyan	Palampur	1	--	---	---	---	---	---	---
18	Rotaray Eye Hospital	Maranda	3	--	---	---	---	---	---	Yes
19	Sandeep Mhajan	Kangra	2	--	---	---	---	Yes	---	Yes
20	Forty Hospital	Kangra	5	yes	yes	yes	yes	yes	yes	yes

List of Block Medical Officer

Sr.No.	BMO	Contact Person	Contact Number.
1.	Jawalamukhi	Dr. Sunil (Officiate)	01970-222237, 94180-95196
2.	Dadasiba	Dr. Sunil Gautam	98163-53771
3.	Nagrota Bagwan	Dr. Vinod Chaudhary	94181-56572
4.	Shapur	Dr. Mohan Singh	94180-79491
5.	Mahakal	Dr. Raj Kumar	01894-265301, 265701 94181-56572
6.	Tiara	Dr. R.S. Rana	01892-222313, 94180-85966
7.	Bhawarna	Dr. S.K. Sood	01894-247158, 94181-17876
8.	Gangath	Dr. Neerja Gupta	01893-275042, 94181-05697
9.	Indora	Dr. B.M. Gupta	01893-241239, 241022 94184-85637
10.	Nagrota Surian	Dr. Sushil Sharma	01893-265045, 265042 94180-17631
11.	Thural	Dr. Dinesh Mehta	01894-276634 94181-22474
12.	Gopalpur	Dr. S.K. Sood	01894-252226 94184-54543
13.	Palampur (SMO)	Dr. B.B. Katoch	01894-234101 94180-73786
14.	Nurpur (SMO)	Dr. Raman Sharma	01893-220036, 220999 941180-16440
15.	Dehra (SMO)	Dr. Gurmit	01970-233105,233074 94182-53450
16.	Kangra (SMO)		01892265054 94180-933360
17.	Baijnath (SMO)	Dr. D.D. Rana	01894-263166, 263656 94180-19474

List of Private Doctors.

Sr.No.	Name	Contact Number		Location	Speciality
		Office	Residence		
1.	Dr.C.L.Chadda	265355	---	Kangra	Nursing Home
2.	Dr.Rama	---	---	Kangra	Nursing Home
3.	Dr.R.K.Choudhary	265302	265380	Birta	Surgery
4.	Dr.Pahwa	265119	---	Birta	Surgery
5.	Dr. Pual	265096	265090	Kangra	Gyne Surgery
6.	Dr.V.P.Mhajan	224480	222680	D/Shala	Heart Care
7.	Dr.Prem Shukla	---	---	D/shala	Gyne +Surgery
8.	Dr.Shiv Kumar	---	---	Palampur	Gyne
9.	Dr.Karan	---	---	Palampur	Surgery
10.	Dr.Kapila	---	---	Palampur	Medicine
11.	Dr.Kalyan	---	---	Palampur	Medicine
12	V.K.Dhiman	252351	---	N/Bagwan	Orthopedic
13.	Dr.Sood	---	---	N/Bagwan	Nursing Home
14.	Dr.Kundu	---	---	J/Mukhi	Nursing Home
15.	Dr.N.K.Sharma	---	---	N/Bagwan	Sdytric
16.	Dr.Dutta	---	---	Nurpur	Eyes
17.	Dr.Shiv Kumar	---	---	Maranda	Eyes
18.	Dr.Sandeep Mhajan	---	---	Kangra	Eyes Hospital
19.	J.K.Sood	---	---	Paprola	Clinic
20.	Dr.Tripta Sood	---	---	Paprola	Clinic
21.	Dr.Bhatnagar	---	---	Paprola	Clinic
22.	Dr.Choudhary	---	---	Jasur	Clinic
23.	Dr.V.P.Sharma	252268	---	N/Bagwan	Clinic
24.	Dr.Jas Rai	---	---	Kangra	Clinic
25.	Dr.Kulbhushan	---	---	Kangra	Medicine

List of Hospitals
Kangra Ayurvadic Service

Ayurvadic Collage Paprola Baijnath	**Ambulance**	**Docters**	**Bed**
	1	3	200
List of Sub Divisional Ayurvadic Medical Officer And Dispenciries			
Sr.No.	**Location (SDAMO)**	**NumberOf Dispenciries & AMO**	**No. of Docters**
1	Dharmshala	28including one Homeopathic Dispencery, One Unani Dispencery at Rajol.	30
2	Nurpur at Kandwal		28
3	Palumpur at Nasirbandla	31	32
4	Baijnath at Dharer (Tada) Kangra	26	28
5	Jaisinghpur at Balukrupi	15	17
6	Jawali at Raja ka Talab	26	28
7	Dehra	50	52

Veterinary Services.
List of Veterinary Hospitals and Veterinary Dispensary.

Sr. No.	Name Hospital	Dispensary	Contact No.
1	SDVH Palampur	7 Dispensary	9418002994
	SDVH Paprola	08	9418005286
	SDVH Jaisnghpur	04	9418225002
	VH Alampur	07	94184-60300
	VH Lambagaon	02	94184-74222
	VH Majhera	03	94180-96042
	VH Ropri	04	94180-32351
	VH Thural	04	94180-93487
	VH Dhatti	03	98166-76009
	VH Kandbari	04	94182-19222
	VH Sallana	06	94184-59995
	VH Dadh	04	94184-85047
	VH Darang	06	94180-28200
	VH Bhoura	03	
	VH Chadhair	03	9418087155
	VH Bir	03	9418091253
	VH Deol	02	9459284422
	VH Sansal	04	94184-97755
	VH Kunsal	03	94187-15645
	VH Chobin	02	94184-63187
	VH Lohardi	04	94184-80407
	VH Bhawarna	10	98161-47697
	CVD Bhouda	02	94180-44995
	CVD Garh	01	98166-42335
	CVD Khalet	03	94181-02746
	CVD Noura	08	98162-59170
	CVD Dhanag	02	94184-65858

District Red Cross Society

i) District Headquarter Dharamshala & Sub Division Dharamshala

Ambulance 4
Stretchers 4
Blood Bank with Zonal Hospital

ii) Sub Divisional Kangra.
Iii) Sub Division Palampur
iv) Sub Division Dehra
v) Sub Division Jaisingh Pur
vi) Sub Division Jawali
vii) Sub Division Nurpur

e) Blood Banks:-

i) Zonal Hospital Dharamshala 2.80 Units
40% Voluntary
60% Replacsement

Infrastructure Resources

Public Works Department

Two circle offices located in district at Palampur and Nurpur.

PWD Circle Palampur Superintending Engineer.

a) Circle Office.
b) PWD Division Palampur
i) Sub Division Palampur.
J.E.Circle
Machinery --Bulldozer -- JCB—
Vehicle --Trucks

ii) Sub Div. -- J.E.Office
iii) Sub Div --

PWD Div.Office, Baijnath

PWD Div Office.

PWD Circle Nurpur

Sub Div. ---- Nurpur
J.E. Circle------12.
Machinery --- Bulldozer- JCB --1
Vehicle ---
Stores ---
Sub-Div. Suliali
Sub-Div. Rehan.

PWD Division Fatehpur.

iii) List of Contractors

Sr.No.	Name	Bulldozers	J.C.Bs.
1	M/S R.K.Mahajan, Govt.Contractior Ward No.4 Teh. & Distt.Kangra Phone No.226410	--	5 Nos.
2.	M/S R.K. Banta Jwalamukhi, Teh. Dehra,Distt.Kangra Ph.No,. 94180-80572	--	2 Nos.
3.	Sh. Sirinder Kumar, Govt.Contractor, Vill. & P.O. Nalsuia,Tehsil Dehra, Distt. Kangra (HP)Ph.No.98160-84001	--	2 Nos.
4.	Sh. L.D. Kathuria, Jawalamukhi, Tehsil Dehra, Distt. Kangra (H.P.) Ph. No. 93187-00007.	--	1 No.
5.	Sh.Rajat Thakur,Govt.Contractor, Vill Bhol,P.O.Makran,Tehsil Jawali Distt.Kangra(H.P.)	--	1 No.
6.	Sh. Baldev Raj Govt.Contractor, Vill Dari (Dharamshala)Distt.Kangra (H.P.)	--	1 No.

7. Sh.Surinder Jamwal VPO Palampur, Distt. Kangra (H.P.) Ph.No.98160-32756 -- 1 No.
8. Sh.Sita Ram Saini Vill Man-Simbal P.O.Bhawarna,Tehsil Palampur Distt. Kangra(H.P.)ph.No.247750 -- 1 No.
9. Sh.Anil Sharma VPO Kangian,Tehsil Jaisinghpur,Distt.Kangra(H.P.) -- 1 No.
10. Sh. D.C.Chanden VPO Palampur, Distt.Kangra(H.P.)Ph.No.98160-32266 -- 1 No.
11. Sh. Navneet Thakur,Vill.Mandal P.O.Chetru,Distt.Kangra(H.P.) Ph.No.98180-35455 -- 3 Nos.
12. Sh. Navneet Sharma VPO Gaggal, Tehsil & Distt.Kangra(H.P.) Ph.No. 94180-32221 -- 2 Nos.
13. Sh.P.L.Choudhary,VPO Nagrota Bagwan,Tehsil & Distt.Kangra(H.P.) Ph.No.98170-92653 -- 1 No.
14. Sh.D.P.Sharma,VPO Ghurkari, Tehsil & Distt.Kangra(H.P.) Ph.No. 93185-66337. -- 3 Nos.
15. M/s Surendera Traders,VPO-Yol Tehsil Dharamshala Distt.Kangra (H.P.) Ph.No.94180-26021. -- 2 Nos.

Irrigation & Public Health Department

Two Circle Offices located in district at Dharamshala and Nurpur

Sr.No.	Name Of WSS	Source	Location	Area of Supply	In Charge	Tel.
1.	WSS Dharamshala Town	Khad Source	Bhater Khad near Naddi Charan Khad Near Bhagsu Nafg	Dharamshala Town and suburbs	XEN IPH Dharamshala	DMA-222049
2.	WSS Khanyara Dari Sidbari	Khad Source	Near Khanyara	Khanyara,Dari,Sidbari	XEN IPH Dharamshala	DMA-222049
3.	WSS Chamunda	Baner Khad	Near vill jia	Temple Chamunda & 58 addl. Villages	XEN IPH Dharamshala	DMA-222049
Shahpur Division						
1.	WSS Kangra	Baner Khad	Near 56 Meel	Kangra town & suburbs	XEN IPH Shahpur	SHK-238518
2.	WSS Bohdarini	Spring source	Vill.Boh	Shahpur & its adjoining villages	XEn IPH Shahpur	SHK-238518
Palampur Division						
1.	WSS Palampur & its adjoining villages	Khad source	Neugal Khad near Bandla	Palampur town & adjoining	XEN IPH Palampur	PLP-230210

				villages		
2.	WSS Binwa Baijnath	Spring source	Near village Bhatu	Baijnath and its adjoining villages	XEN IPH Palampur	PLPL-230210
3.	WSS Paprola	Binwa Khad	Near village Uttrala	Paprola and its adjoining villages	XEN IPH Palampur	PLP-230210
Thural Division.						
1.	WSS Alampur	Percolationwell	Near Alampur	Alampur and its adjoining villages	Xen IPH Thural	TUX-276715
2.	WSS Thural Bharanta	Spring source	Near vill.naun	Thural & Bharanta vill.	XEN IPH Thural	TUX-276715
3.	WSS Kahrubachhwari	Neugal Khad	Near Vill.Naun	Lahru,bacjwai and it adjoining villages	XEN IPH Thural	TUX-276715

Nurpur Circle

Dehra Division						
1.	WSS Dehra	Percolation well	Nakehar Khad	Dehra and suburbs	XEN IPH Dehra	DPP-233118
2.	WSS Jawalamukhi	Procolation well	Nakehar Khad	J/Mukhi and suburbs	XEN IPH Dehra	DPP-233118
3.	WSS Garli Pragpur	Infiltration Gallary	Seri Khad	Garli and Pragpur	XEN IPH Dehra	DPP-233118
Nurpur Division						
1.	WSS Nurpur	Infiltration	Hindora Ghrat	Nurpur	XEN IPH Nurpur	NPR-220014
2.	WSS Dheri	Percolation Well	Near Dehri Village	Reham,Raur,Chatter,Beasa and other villages	XEN IPH Nurpur	NPR-220014
3.	WSS Talara	Percolation Well	Near village Talara	Bhadwar,Tlara,Gnoh Soar	XEN IPH Nurpur	NPR-220014
4.	WSS Pundar,Bhadwari	Percolation well	Nagani Temple	Bhadwar,Jara,Nagrota, Kadroh	XEN-IPH Nurpur	NPR-220014
5.	WSS Jhikli Bhamoli Beassa	Springs source	Nagani Temple	Bhadwar,Raur,Ban,bindraban And adjoining villages	XEN IPH Nurpur	NPR-220014
Indora Division						
1.	WSS Indora	Tubewell and percolation well	Indora	Indora	XEN IPH Indora	IND-241238
2.	WSS Gangath	Percolation well	Gangath	Gangth and its adjoining villages	XEN IPH Indora	IND-241238

3.	WSS Rait,Bharanda,Beassa And Gandran	Percolation well	Nagani Khad and Ghandwal	Rit Bharanda Beasa and Ghandwal	XEN IPH Indora	IND-241238
4.	WSS Rit Attara	Tube well	Near Attara bridge on Gangath Attara road	Rit and Attara	XEN IPH Indora	IND-241238
Jawali Division						
1.	WSS Basa Nagrota Suria and Adjoing Village	Percolation well	vill Pir Bindli	Masroor,Spail Katora,Basa	XEN IPH Jawali	JWI-263313
2.	Wss Nandpur Bhatoli	Tubewell	Vill Batoli	Nandpur,Bariyal,Bhatoli & Adjoinig Villages.	XEN IPH Jawali	JWI-263313
3.	WSS Ghar Jarot	Percolation Well	Vill Gharjarot	Gharjarot,amlela & Adjoining Vill.	XEN IPH Jawali	JWI_ 263313
4	WSS Jawali	Percolation Well	On right side of Dehar brige	Jawali,Dhyan,Darkati & other Villages	XEN IPH Jawali	JWI-63313
5.	WSS Matlaher	Tubewell	Vill Matlaher	Matlhar,Jaisar,Nagrota ,Gorah.	XEN IPH Jawali	JWI-263313
6.	WSS Khabbal	Percolation	Left Bank of Dehar Khad brige	Khabbal,Bandaroo,Charar,Baldowa & others villages.	XEN IPH Jawali.	JWI-263313
7.	WSS Meranial	Percolation Well.	On Left bank of manjuhikhad Near Vill Dehri	Nial,Mara,BHarmad & iets adjoining Villages.	XEN IPH Jawali	JWI-263313

Distt Food & Supply List of Godowns

H.P STATE CIVIL SUPPLIES CORP.LTD. AREA OFFICE D/SHALA				
Sr.no.	**Name of godown**	**Storage capacity**	**Area being served**	**Telephone no.**
1.	Kandrori	350MT	FPS Attach Indora block.	098161-71849, 01893-244041
2.	Rehan	600MT	FPS Attach, Fatehpur block	094185-86584, 01893-250585
3.	Nurpur	850MT	FPS Attach, Nurpur block.	094180-35896, 01893-220606
4.	Bhadwar	290MT	FPS Attach Nurpur&N/Surian block.	098053-46303, 01893-235072
5.	Chaitru	420MT	FPS Attach Kangra block.	094180-69422, 01892-233020
6.	Shahpur	500MT	Rait block	094181-05614, 01892-237075

7.	Dari	283MT	D/Shala block	098051-43125, 01892-223570
8.	Maranda	450MT	Bhawarna block.	098161-62567, 01894-238312
9.	P/Rukhi	270MT	P/Rukhi	094184-22497, 01894-253360
10.	Paprola	360MT	Baijnath block	094181-11113, 01894-242235
11.	Thural	115MT	Lambagaon	098167-67535, 01894-276008
12.	Ranital	790MT	Kangra	098166-62030, 01892-269004
13.	Dhalara	1150MT	Pragpur	098161-72372, 01970-268900
14.	N/Surian	150MT	N/Surian	094181-01054, 01893-265975
15.	Jaurbar	240MT	Pragpur	094181-45356, 01970-276581
16.	Dheera	200MT	Sulah	094181-55759, 01894-22009
17.	Dehra	500MT	Dehra	01970-234133, 094182-92812
18.	N.Bagwan	1000MT	N.Bagwan	01892-251628, 098161-66925
19.	Lambagaon	200MT	Lambagaon	01894-228033, 094180-25496
20.	Kundian	250MT	Dehra	01970-272050, 094184-76946

Whole sale Centers and Fair prise shops

List of Whole sale centers and Inspector circle with no. of fair price shops.

FUEL AND FIRE WOOD

Sr.No.	Name of WS Godown	Inspector Circle	Name of block	No.of FPS
1.	Paprola	Baijnath	Baijnath	41
		Palmpur	Panchrukhi	1
		Total		42
2.	Panchrukhi	Baijnath	Baijnath	5
		Palampur	Panchrukhi	31
		Lambagaon	Lambagoan	13
		Bhawarna	Bhawarna	8
		Bhedu Mahadev	Sulah	1
		Total		54
3.	Rajpur	Baijnath	Baijnath	8
		Palampur	Panchrukhi	15
		Palampur	Bhawarna	7
		Bhawarna	Bhawarna	38
		BheruMahadev	Sulah	19
		Total		87
4.	Nurpur	Indora	Indora	11
		Nurpur	Nurpur	57
		Jawali	Fetehpur	4
		Total		72

5.	Rehan	Indora	Indora	5
		Nurpur	Nurpur	5
		N/Suria	N/Suria	15
		Jawali	Fatehpur	36
		Total		61
6.	Lambagoan	Lambagoan	Lambagoan	39
		BehruMahadev	Sulah	1
		Total		40
7.	Thural	Lambagoan	Lambagoan	20
		BehruMahadev	Sulah	7
		Total		27
8.	N/Bhagwan	N/Bhagwan	N/Bhagwan	57
		Bhawarna	Bhawarna	24
		Behru Mahadev	Sulah	2
		Total		83
9.	Chetru	Kangra	Kangra	36
		Rait	Rait	40
		Total		76
10.	Khundian	Dehra	Dehra	19
11.	Dehra	Dehra	Dehra	38
		Dehra	Dehra	7
		Total		47
12.	N/Suria	N/Suria	N/Suria	20
13.	Jorbar	Pragpur	Pragpur	30
14.	Pragpur	Pragpur	Pragpur	52
15	Kandrori	Jawali	Fatepur	10
		Indora	Indora	41
		Total		51
16.	Dari	N/Bhagwan	N/Bhagwan	9
		Kangra	Kangra	20
		Rait	Rait	27
17.	Bhadwar	N/Surian	N/Suria	13
		Nurpur	Nurpur	6
18.	Ranital	N/Bhagwan	N/Bhagwan	6
		Kangra	Kangra	25
		Dehra	Dehra	8
19.	Dhera	Beumahadev	Sulah	34
	Total			911

Kerosene oil
Total allotment - 1101 KL.
List of Dealers

Sr. No.	Name of dealer	Name of Company	Allotment IN KL	No.of Retailers attached with W/S Dealer
1.	Dayalu Mull Gain Chand Kangra	Ioc	180	106
2.	Nand lal & Co. Nagrota Bahwan	IOC	192	137
3.	Walia Kerosene Agencies	IOC	165	152
4.	Shiva Enterprises PakkaTiala Nurpur	IOC	156	108
5.	Koundal Kerocene Agencies	IOC	108	133

	Palmpur			
6.	Shahid Kusshal Singh & Bros Dharmshala.	IOC	156	137
7.	Kangra Distt.Wholesele Federation Dharmshala	IOC	144	113

Petroleum Products:- MS & HSD Installed Capacity

Sr.No.	Name of Company	MS(KL)	HSD(KL)	No.of P/Pumps
1.	Indion oil Corporation	675	860	32
2.	Hindustan petroleum corporation	120	180	8
3.	Bharat Petroleum Corporation	130	220	9
4.	IBP	35	75	5
	Total	960	1335	54

Gas Agencies: List of Dealers

Sr.No.	Name of Gas Agency	Total of connection	SBC	OBC	Non-Domastic	Exempt category
1.	HPSCSC Ltd.Baijnath	16347	8177	6170	30	-
2.	HPSCSC Ltd Nagrota Bagwan	22406	14207	8199	26	-
3.	HPSCSC Ltd Shahpur	26842	18702	8140	24	-
4.	HPSCSC Ltd.Nurpur	36191	19676	16515	35	-
5.	HPSCSC Ltd.Damtal	20148	6967	11181	27	-
6.	Palam gas agency Palampur	27963	18941	9022	68	184
7.	Dharmshala gas services	20457	11221	9236	135	87
8.	Tibetain Welfare Asso. Mc.Gang.	5540	2101	3439	40	-
9.	Capt. Sourab kalia Panchrukhi	10266	6102	41	17	204
10.	Umesh Gas services Droh	9508	5306	4202	36	166
11.	Chdhihar Gas Services Chadhiher	8269	3636	4625	8	-
12.	R K Indain Gas Agency Pragpur	4445	2738	1707	22	-
13	Shaheed Denesh Gas Services Kangra	5703	4890	813	65	-
14.	Shaheed Ashok Kumar Gas Services Fatehpur	4311	3137	1174	18	-
15.	Major Sudhir Walia Indain Gas Services Lambagaon	6302	2873	3429	27	98
16.	Anil Gas services Dharmshala	15145	9426	5719	80	-
17.	Avrol Gas Agency kangra	14137	9197	4940	42	-
18.	Sahib Gas Services Ranital	5377	3550	1825	22	-

19.	Anu Gas services Dadasibha	4200	2346	1854	15	-
20.	Shaheed Yogender Singh Gas Services Jawalamukhi	4638	2367	2271	25	-
21	Akash Gas services Dehra	21336	10849	10487	64	114
22.	Pritebha Gas Agency Khundian	1736	691	1045	10	-
23.	Pong dam Gas services N/Surian	4401	2758	1643	18	-
24	Suvidha Gas services Jawali.	5568	3946	1622	22	-
	Total	301228	175806	125422	876	853

TRANSPORT

District Kangra Road co-orpation

Sr.No.	Name of Depot	NO.Of Buses		Total	Tele.No.
		HMV	MMV		
1.	RM Pathankot	86	3	89	09186- 2220376
2.	RM Palampur	63	-	63	01894-230576
3.	RM Dharmshala	79	4	83	01892-222855
4.	RM Baijnath	69	1	70	01894-263055

Annexure - I

FLOW CHART FOR DISPOSAL OF DEAD BODIES AT DISTRICT LEVEL

1. Activate the DM Plan
2. Nodal Officer in the incident Response System will activate all other stake-holders associated with Disposal of the Dead.
3. Establish an information Centre at the site of Disaster/District HQ.
4. Inform all other Stake-holders, both in government and Non-Governmental sector, including the elected, Panchayati Raj functionaries and the community.
5. Activate search and Rescue teams of Fire & Emergency Services, Police, SDRF, Civil Defence, NDRF and NGOs for the retrieval of the injured and the dead.
6. The injured will get the priority for First Aid and evacuation to hospital.
7. Prepare a record of details of the bodies retrieved in the Dead Body Inventory Record Register, allocated individual Identification Number, photographed, and then Dead Body Identification Form initiated.
8. Associate relatives and community members for the identification of the bodies.
9. Hand over the identified bodies to the relatives or the community, and if necessary after cross-matching Dead Body Identification Form with that of the Missing Person Form, for the last rites as per local, cultural and religious denomination.
10. Unidentified or unclaimed dead bodies/body parts shall be transported to the mortuaries for proper preservation and storage at the designated sites.
11. Consult relatives, legal and forensic experts for positive identification.
12. Final disposal of unidentified bodies/body parts shall be done by District authorities after applying all the possible means of identification as per the legal provisions.
13. The bodies of foreign nationals shall be properly preserved either by embalming or chemical methods and then placed in body bags or in coffins with proper labeling. Handing over and transportation of such bodies shall take place through the Ministry of Extern Affairs, in consultation with the Consular offices of the concerned countries and other actors such as International Committee of the Red Cross, if necessary and possible.

Annexure - J

GUIDELINES FOR DISPOSAL OF ANIMAL CARCASSES

Guidelines for Burial

Burial shall be performed in the most remote area possible.
Burial areas shall be located a minimum of 300 feet down gradient from wells, springs and other water sources.
Burial shall not be made within 300 feet of streams or ponds, or in soils identified in the country soil survey as being frequently flooded.
The bottom of the pit or trench should be minimum 4 to 6 feet above the water table.
Pits or trenches shall approximately be 4 to 6 feet deep. They should have stable slopes not steeper than 1 foot vertical to 1 foot horizontal.
Animal Carcasses shall be uniformly placed in the pit or trench so that they do not exceed a maximum thickness of 2 feet. The cover over and surrounding shall be a minimum of 3 feet. The cover shall be shaped so as to drain the runoff away from the pit or trench.
The bottom of trenches left open shall be sloped to drain and shall have an outlet. All surface runoff shall be diverted from entering the trench.
Burial areas shall be inspected regularly and any subsidence or cavities filled.

Guidelines for Composting

Select site that is well drained, at least 300 feet from water sources, sinkholes, seasonal seeps or other landscape features that indicate hydrological sensitivity in the area.

Lay 24-inch bed of bulky, absorbent organic material containing sizeable pieces 4 to 6 inches long. Wood chips or hay straw work well. Ensure the base is large enough to allow for 2-foot clearance around the carcass.

Lay animal in the centre of the bed. Lance the rumen to avoid bloating and possible explosion. Explosive release of gases can result in odour problems and it will blow the cover material off the compositing carcass.

When disposing large amounts of blood or body fluid, make sure there is plenty of material to absorb the liquid. Make a depression so blood can be absorbed and then cover, if a blood spill occurs, scrape it up and put back in pile.

Cover carcass with dry, high-carbon material, old silage, sawdust or dry stall bedding (some semi-solid manure will expedite the process). Make sure all residuals are well covered to keep odours down, generate heat or keep vermin or other unwanted animals out of the window.

Let it sit for 4 to 6 months, then check to see if carcass is fully degraded.

Reuse the composted material for carcass compost pile, or remove large bones and land apply.

Site cleanliness is the most important aspect of composting; it deters scavengers, and helps control odours and keeps good neighborly relations.

Note: Animals that show signs of a neurological disease, animals that die under quarantine and those with anthrax should not be composted.

Reference: USDA Natural Resource Conservation Service, Arkansas Livestock and Poultry Commission, University of Arkansas.

FLOW CHART FOR DISPOSAL OF ANIMAL CARCASSES AT DISTRICT LEVEL

a. Activate the DM Plan.
b. Nodal Officer in the Incident Response System will activate all other stakeholders associated with the disposal of Animal Carcasses.
c. Establish an Information Centre at the site of Disaster/District HQ.
d. Inform all other Stake-holders, both in government and Non-Governmental sector, including the elected, Panchayati Raj functionaries and the community.
e. Activate Animal Carcass Retrieval teams for the recovery and retrieval of the injured livestock and the animal carcasses.
f. Injured livestock will get the priority for First Aid and evacuation to hospital.
g. Prepare a record of details of the animal carcasses retrieved.
h. Associate owners of the livestock, or their relatives and community members for the identification of the animal carcasses.
i. Hand over the identified animal carcasses to the owners for disposal at the selected site.
j. All unidentified animal carcasses will be photographed preferably before transportation for disposal.
k. Unidentified or unclaimed animal carcasses shall be transported to the designated site for disposal by District authorities as per the Disaster Plan.

Annexure – K

DISTRICT DISASTER MANAGEMENT AUTHORITY Kangra, HP.
Emergency Support Functions (ESFs) Plan at District Level

In the aftermath of a natural disaster wherein District Administration's overall coordination is needed the command, control and coordination will be carried out under the ESFs Plan. District EOC shall activate the ESFs and the concerned Department/Agency of each ESFs shall identify requirements in consultation with their counterparts in affected districts, mobilize and deploy resources to the affected areas of the district. The District EOC shall maintain a close link with the State EOC.

ESFs shall be responsible for the following:

The designated authorities for each of ESF shall constitute quick response teams and assign the specific task to each of the member.

The designated authorities for each of the ESF shall identify and earmark the resources i.e. Manpower and materials to be mobilized during the crisis.

An inventory of all the resources with details shall be maintained by each of the designated authority for each of the ESF.

The designated authority for each of the ESF will also enter into pre-contracts for supply of resources, both goods and services to meet the emergency requirements.

The designated authority for each of the ESF will be delegated with adequate administrative, legal and financial powers for undertaking the tasks assigned to them.

Primary and Secondary Agencies

The designated primary agency, acting as the State agency shall be assisted by one or more support agencies (secondary agencies) and shall be responsible for managing the activities of the ESF and assisting the district in the rescue and relief activities and ensuring that the mission is accomplished. The primary and secondary agencies have the authority to execute response operations to directly support the needs of the affected districts.

Agency for Each Emergency Support Functions and Roles to be performed

ESF No.	ESF	Primary Agency	Secondary Agency	Responsibilities of Primary Agency	Activities for Response	Role of Secondary Agency
1.	Communication	BSNL	Police Units of Armed Forces in the area	Coordination of national actions to assure the provision of telecommunication support the state and district; Coordinate the requirement of temporary telecommunication in the affected areas.	Responsible for coordination of national actions to assure the provision of telecommunication support the state and district response elements; Coordinate the requirement of temporary telecommunication in the affected areas.	Make available police wireless network at the affected locations; Coordinate for the other networks available such as Ham Radios or HPSEB network etc.; The units of armed forces in the area would provide communication network on the request of the competent authority.
2	Public Health	Department of Health and Family Welfare (CMO/MS ZH)	Department of Ayurveda (DAMO)	To coordinate, direct and integrate State level response; Direct activation of medical personnel, supplies and equipment; Coordinate the evacuation of patients; Provide human services under the Dept of health; To prepare and keep ready Mobile Hospitals and stock;	Provide systematic approach to patient care; Perform medical evaluation and treatment as needed; Maintain patient tracking system to keep record of all patients treated; Mobilization of the private health services providers for emergency response. In the event of CNBR disaster to provide for mass decontamination	To perform the same functions as assigned to the primary agency; Provide manpower to the primary agency wherever available and needed; Make available its resources to the primary agency wherever needed and available.

				To network with private health service providers; To provide for mass decontamination; Check stocks of equipment and drugs.	of the affected population; Maintain record of dead and arrange for their post mortem.	
3.	Sanitation/ Sewerage Disposal	Urban Development and Rural Development	Irrigation and Public Health	Make arrangement for proposal disposal of waste in their respective areas; Arrange adequate material and manpower to maintain cleanliness and hygiene.	Ensure cleanliness and hygiene in their respective areas; To arrange for the disposal of unclaimed bodies and keeping record thereof; Hygiene promotion with the availability of mobile toilets; To dispose off the carcass.	Repair the sewer leakages immediately; Provide bleaching powder to the primary agencies to check maintain sanitation.
4.	Power	HPSEB Ltd. (SE/XEN)	Himurja	Provide and coordinate State support until the local authorities are prepared to handle all power related problems; Identify requirements of external equipment required such as DG sets etc; Assess damage for national assistance.	Support to Local Administration; Review the total extent of damage to the power supply installations by a reconnaissance survey; To provide alternative means of power supply for emergency purposes; Dispatch emergency repair teams equipped with tools, tents and food;	Make arrangement for and to provide the alternative sources of lighting and heating to the affected populations and for the relief camps.

					Hire casual labour for the clearing of damaged poles etc.	
5.	Transport	Department of Transport (RTO)	HRTC, Civil Aviation. (RM, HRTC, DTDO)	Overall coordination of the requirement of transport; Make an inventory of vehicles available for various purposes; Coordinate and implement emergency related response and recovery functions, search and rescue and damage assessment.	Coordinate arrangement of vehicles for transportation of relief supplies from helipads/airports to the designated places; Coordinate arrangement of vehicles for transportation of SAR related activities.	Make available its fleet for the purpose of SAR, transportation of supplies, victims etc; Act as stocking place for fuel for emergency operations; Making available cranes to the Distt. Administration; To coordinate for helicopter services etc. required for transportation of injured, SAR team, relief and emergency supplies.
6.	Search and Rescue	Civil Defence, Home Guards, Fire and Emergency Services (Commandant HG)	SDRF, Armed and Para military forces, Police, Red Cross, VOs, Volunteers and 108.	Establish, maintain and manage state search and rescue response system; Coordinate search and rescue logistics during field operations; Provide status reports of SAR updates throughout the affected areas.	GIS is used to make an estimate of the damage area and the deployment of the SAR team in the area according to the priority; Discharge all ambulatory patients for the first aid which has the least danger to health and others transported to safer areas.	108 and Red Cross to make available ambulances as per requirement; SDRF, VOs and Volunteers to assist the primary agency in SAR; Armed and para military forces to provide assistance to civil authorities on demand; Police to arrange for the

						transportation and postmortem of the dead.
7.	Public Works and Engineering	HP PWD (SE/XEN)	CPWD, National Highways Authority of India, MES, BRO	Emergency clearing of debris to enable reconnaissance; Clearing of roads; Assemble casual labour; Provide a work team carrying emergency tool kits, depending on the nature of disaster, essential equipment such as Towing vehicles Earth moving equipments Cranes etc. Construct temporary roads; Keep national and other main highways clear from disaster effects such as debris etc.; Networking with private services providers for supply of earth moving equipments etc.	Establish a priority list of roads which will be opened first; Constructing major temporary shelters; Connecting locations of transit/relief camps; Adequate road signs should be installed to guide and assist the relief work; Clearing the roads connecting helipads and airports; Restoring the helipads and making them functional; Rope in the services of private service providers and secondary services if the department is unable to bear the load of work.	Making machinery and manpower available to the PWD and to keep national highways and other facilities in functional state.
8.	Information and Communication	District Collectorate	Department of IT/NIC	Operate a Disaster Welfare Information (DWI) System to	Documentation of response/ relief and recovery measures;	Render necessary assistance in terms of

		(AC/ADM)	(DIO, NIC)	collect, receive, and report and status of victims and assist family reunification; Apply GIS to speed other facilities of relief and search and rescue; Enable local authorities to establish contact with the state authorities; Coordinate planning procedures between district, the state and the centre; Provide ready formats for all reporting procedures as a standby.	Situation reports to be prepared and completed every 3-4 hours.	resources, expertise to the primary agency in performing the assigned task.
9.	Relief Supplies	Collectorate (AC/ADM)	Department of Food and Civil Supplies (DFSC, AM CSC)	To collect, process and disseminate information about an actual or potential disaster situation to facilitate the overall activities of all responders in providing assistance to an affected area in consultation; Coordinate activities involved with the emergency provisions; Temporary shelters;	Support to Local Administration; Allocate and specify type of requirements depending on need; Organize donation (material) for easy distribution before entering disaster site.	To assist the primary agency in arranging and supplying relief supplies; To assist the primary agency in running the relief camps.

				Emergency mass feeding; To coordinate bulk distribution of emergency supplies; To provide logistical and resource support to local entities; In some instances, services also may be provided to disaster workers; To coordinate damage assessment and post disaster needs assessment.		
10.	Food & Supplies	Department of Food and Public Distribution (DFSC)	Department of Cooperation (ARCS)	Requirement of food and clothing for affected population; Control the quality and quantity of food, clothing and basic medicines; Ensure the timely distribution of food and clothing to the people; Ensure that all food that is distributed is fit for human consumption.	Make emergency food and clothing supplies available to population; Ensure the provision of specific nutrients and supplementary diet for the lactating, pregnant women and infants.	Ensuring the distribution of food supplies to the affected population through the PDS network etc.
11.	Drinking water	Department of I & PH	Department of Urban	Procurement of clean drinking water;	Support to local Administration;	To assist the primary agency wherever ULB is

		(SE/XEN)	Development (Secretary SADA)	Transportation of water with minimum wastage; Special care for women with infants and pregnant women; Ensure that sewer pipes and drainage are kept separate from drinking water facilities.	Water purification installation with halogen tablets etc.	associated in the distribution of potable water.
12.	Shelter	Collectorate (AC/ADM)	HIMUDA, HP PWD, UD and Panchayati Raj	Provide adequate and appropriate shelter to all population; Quick assessment and identifying the area for the establishment of the relief camps; Identification of public buildings as possible shelters; Identifying the population which can be provided with support in their own place and need not be shifted reallocated; Locate relief camps close to open traffic and transport links.	Support to Local Administration; Locate adequate relief camps based on survey of damaged houses; Develop alternative arrangements for population living in structures that might be affected even after the disaster.	HIMUDA and HP PWD would assist the primary agency in establishing temporary shelters of larger dimensions; Department of Panchayati Raj through local Panchayats would assist the primary agency in establishing shelters of smaller dimensions.
13.	Media	Department of Public Relations	Local DD and AIR	To Provide and collect reliable information on the status of the disaster and disaster	Use and place geographical Information to guide people towards relief operation;	To assist the primary agency in discharge of its role.

		(DPRO)		victims for effective coordination of relief work at state level; Not to intrude on the privacy of individuals and families while collecting information; Coordinate with DOCs at the airport and railways for required information for international and national relief workers; Acquire accurate scientific information from the ministry of Science and Technology; Coordinate with all TV and radio networks to send news flashes for specific needs of Donation; Respect the socio-cultural and emotional state of the disaster victims while collecting information for dissemination.	Use appropriate means of disseminating information to victims of affected area; Curb the spread of rumours; Disseminate instructions to all stakeholders.	
14.	Help lines	Collectorate (AC/ADM)	Department of Public Relations	To receive distress calls from the affected people and coordinate with the control room; To facilitate the optimization of	One of the most critical needs will be having a simplified way of identifying and tracking victims and providing assistance; Identify locations for setting up	To assist the primary agency in performing its job effectively and provide its manpower and resources for the purpose.

				donations received in kind; Co-ordinate, collect, process, report and display essential elements of information and to facilitate support for planning efforts in response operations; Co-ordinate pre-planned and event-specific aerial reconnaissance operations to assess the overall disaster situation; Pre-positioning assessment teams headed by the State coordinating officer and deployment of other advance elements; Emergency clearing of debris to enable reconnaissance of the damaged areas and passage of emergency personnel and equipment for life saving property protection and health and safety.	transit and relief camps, feeding centres and setting up of the Help lines at the nodal points in the state and providing the people the information about the numbers.	
15.	Animal Care	Department of Animal Husbandry (AD AH)	Department of Panchayati Raj (DPO)	Treatment of animals; Provision of vaccination; Disposal of dead animals.	To arrange for timely care and treatment of animals in distress; Removal of dead animals to avoid outbreak of epidemics.	To assist the primary agency in performing its role.

16.	Law and Order	Police (SP)	Home Guards (Commandant Home Guards)	Having sound communication and security plan in place to coordinate law and order issues; Training to security personnel in handling disaster situations and issues related to them.	To maintain law and order; To take measure against looting and rioting; To ensure the safety and security of relief workers and material; To take specific measure for the protection of weaker and vulnerable sections of the society; To provide safety and security at relief camps and temporary shelters.	To assist the primary agency by making available manpower.
17.	Removal of trees and fuel wood	Forest (DFO)	Forest Corporation (AM FC)	Removal of fallen trees; To provide fuel wood for the relief camps and public; Have adequate storage of fuel wood and make arrangement for distribution thereof; To provide fuel wood for cremation.	Arrange for timely removal of trees obstructing the movement of traffic; Arrange for timely removal of tress which have become dangerous; Make arrangement for fuel wood for the relief camps and for general public; Provide fuel wood for mass cremation etc.	To support and supplement the efforts of the primary agency.

ANNEXURE – L

STANDARD OPERATING PROCEDURES

FOR PERFORMING ESF

BY
VARIOUS DEPARTMENTS

Operating Procedure Guidelines For Forest Department

Planning Assumptions

- There is no substitute for maintaining standards of services and regular maintenance during normal times. This affects the response of the department to any disaster situation.
- The department is required adopt appropriate measures to ensure that community participates substantially.
- For effective preparedness, the department must have a disaster response plan or disaster response procedures clearly defined in order to avoid confusion, improve efficiency in cost and time.
- Orientation and training for disaster response plan and procedures accompanied by simulated exercise will keep the department prepared for such eventualities. Special skills required during emergency operations need to be imparted to the officials and the staff. Select personnel can be deputed for training as "NODAL OFFICER – FOREST" at district level.

Action Plan Objective in a Disaster Situation

- Forest protection

Activities on Receipt of Warning or Activation of District DMAP (DDMAP)

- Within the affected district all available personnel will be made available to the District Disaster Manager. If more personnel are required, then out of station officer or those on leave may be recalled.
- All personnel required for Disaster Management should work under the overall supervision and guidance of District Disaster Manager.
- Establish communications with District control room and your departmental offices within the division.
- Appoint one officer as "NODAL OFFICER – Forest" at district level.
- Review and update precautionary measures and procedures and review with staff the precautions that have been taken to protect equipment and the post-disaster procedures to be followed.
- Fill departmental vehicles with fuel and park them in a protected area.
- Check available stocks of equipments and materials which are likely to be most needed after disaster.
- Provide information to all concerned, about disasters, likely damages, and information about ways to protect the same.
- All valuable equipments and instruments should be packed in protective covering and stored in room the most damage-proof.
- Establish work schedules to ensure that the adequate staff are available

Relief and Rehabilitation

- Assess the extent of damage to forests, nurseries and storage facilities and the requirements to salvage or replantation
- Establish contact with remote sensing department to assess damage

- Afforestation measures should be coordinated with DRDA to ensure employment assurance to disaster hit people, with Soil Conservation Officer to ensure stabilization of slopes and district control room.
- Ensure that the adequate conditions through cleaning operations are maintained to avoid water-logging and salinity in low lying areas.
- A pests and disease monitoring system should be developed to ensure that a full picture of risks is maintained.
- Plan for emergency accommodations for forest staff from outside the area.
- Information formats and monitoring checklists should be used for programme monitoring and development and for reporting to DCR. This is in addition to existing reporting system in the department.
- Establishment of a public information center with a means of communication, to assist in providing an organized source of information. The department is responsible for keeping the community informed of its potential and limitations in disaster situations.
- The NGOs and other relief organizations should be aware of the resources of the department.
- Ensure availability of fuel and fodder for disaster effected people.

OPERATING PROCEDURE GUIDELINES FOR POLICE DEPARTMENT

Planning Assumptions

- For effective preparedness the need is for the disaster response procedures to be clearly defined.
- Orientation and training for disaster response plan and procedures accompanied by simulated exercises will keep the department prepared for such eventualities. Special skills required during emergency operations need to be imparted to the officials and the staff. Select personnel can be deputed for training as “NODAL OFFICER – Police” at the district level.

Normal Time Activity

- Assess preparedness level and report the same as per the format to District Control Room every six months
- Maintain a list of disaster prone areas in the district
- Organise training on hazardous chemicals for police officers to facilitate handling of road accidents involving hazardous materials
- Designate an area, within police station to be used as public information center

Action Plan Objective in a Disaster Situation

- Maintain Law and order

Activities On Receipt of Warning or Activation of DDMAP

- Within the district, all available personnel will be made available to the District Disaster Manager. If more personnel are required, then out of station officers or those on leave may be recalled.
- All personnel required for disaster management should work under the overall supervision and guidance of District Disaster Manager.
- Establish radio communications (and assist in precautionary evacuation activities) with
- State Emergency Operations Center
- District control room

- Departmental offices
- All district level officials of the department would be asked to report to the DDM.
- Appoint one officer as "Officer–in-Charge – Police" at the district level
    - The DDM shall provide "Officer-in-Charge - Police" or the field staff as the need be, with all needed authorizations with respect to
    - Recruiting casual labourers.
    - Procuring locally needed emergency tools and equipment and needed materials.
    - Expending funds for emergency needs.
    - The "Officer-in-Charge - Police" will ensure that all field staff and other officers submit the necessary reports and statement of expenditure in a format as required by DDM
    - Provide guards as needed for supply depots such as cooperative food stores and distribution centers.
    - Identify anti-social elements and take necessary precautionary measures for confidence building.

Evacuation

- All evacuations will be ordered only by the DC, SP, Fire Brigade.
- For appropriate security and law and order, evacuation should be undertaken with assistance from community leaders.
- All evacuations should be reported to DC or District Superintendent of Police immediately.

Relief and Rehabilitation

- Immediately after the disaster, dispatch officers to systematically identify and assist people and communities in life threatening situations.
- Help identify the seriously injured people, and assist the community in organizing emergency transport of seriously injured to medical treatment centers.
- Ensure that the police stations are functioning immediately after the disaster at all required locations, as may be requested by the district control room, and that staff are available for the variety of needs that will be presented.
- Assist and encourage the community in road-clearing operations.
- Identify roads to be made one-way, to be blocked, alternate routes, overall traffic management and patrolling on all highways, and other access roads to disaster site.
- Provide Security in transit and relief camps, affected villages, hospitals and medical centers and identify areas to be cordoned off.
- Transport carrying transit passengers (that is, passengers traveling through buses and passing through the district), should be diverted away from the disaster area.
- Provide security arrangements for visiting VVIPs and VIPs.
- Assist district authorities to take necessary action against hoarders, black marketers and those found manipulating relief material.
- In conjunction with other government offices, activate a public information center to:
    - Respond to personal inquiries about the safety of relatives in the affected areas
    - Compile statistics about affected communities, deaths, complaints and needs
    - Respond to the many specific needs that will be presented

- Serve as a rumor control center
- Reassure the public

Operating Procedure Guidelines For Health Department

- There is no substitute for maintaining standards of services and regular maintenance during normal times. This affects the response of the department to any disaster situation.
- For effective preparedness, the department must have disaster response procedures clearly defined in order to avoid confusion, improve efficiency in cost and time.
- Orientation and training for disaster response plan and procedures, accompanied by simulated exercises, will keep the department prepared for such eventualities. Special skills required during disaster situations need to be imparted to the officials and the staff.
- Select personnel can be deputed for training as "NODAL OFFICER".

Action Plan Objective In A Disaster Situation

- Providing efficient and quick treatment
- Preventing outbreak of epidemics.

Activities On Receipt Of Warning Or Activation Of Ddmap

- Within the affected district all available personnel will be made available to the District Disaster Manager. If more personnel are required, then out of station officers or those on leave may be recalled.
- All personnel required for disaster management should work under the overall supervision and guidance of District Disaster Manager.
- Ensure that personnel working within the district come under the direction and control of the DDM.
- Appoint one person as "NODAL OFFICER".
- Review and update precautionary measures and procedures, and review with staff, the precautions that have been taken to protect equipment and the post-disaster procedures to be followed.
- Stock emergency medical equipment which may be required after a disaster.
- Determine type of injuries/illnesses expected and drugs and other medical items required, and accordingly ensure that extra supplies of medical items be obtained quickly.
- Provide information to all hospital staff about the disasters, likely damages and effects, and information about ways to protect life, equipment and property.
- Discharge all ambulatory patients whose release does not pose a health risk to them. If possible, they should be transported to their home areas.
- Non–ambulatory patients should be relocated to the safest areas within the hospital. The safest rooms are likely to be:
  - On Ground Floor
  - Rooms in the center of the building away from windows
  - Rooms with concrete ceilings.

- Equipment supplies such as candles, matches, lanterns and extra clothing should be provide for the comfort of the patients.
- Surgical packs should be assembled and sterilized. A large enough number should be sterilized to last four to five days. The sterilized surgical packs must be stored in protective cabinets to ensure that they do not get wet. Covering the stock with polythene is recommended as an added safety measure.
- All valuable instruments, such as surgical tools, ophthalmoscopes, portable sterilizers, CGS, dental equipments, etc., should be packed in protective coverings and store rooms considered to be the most damage-proof.
- Protect all immovable equipment, such as x-ray machines, by covering them with tarpaulins or polythene.
- All electrical equipments should be unplugged when disaster warning is received.
- Check the emergency electrical generator to ensure that it is operational and that a buffer stock of fuel exists. If an emergency generator is not available at the hospital, arrange for one on loan.
- All fracture equipment should be readied.
- If surgery is to be performed following the disaster, arrange for emergency supplies of anesthetic gases.
- Check stocks of equipments and drugs which are likely to be most needed after the disaster. These can be categorized generally as:
  - Drug used in treatment of cuts and fractures, such as tetanus toxoid, analgesics and antibiotics.
  - Drugs used for the treatment of diarrhea, water-borne diseases and flu (including oral rehydrating supplies).
  - Drugs required to treat burns and fight infections.
  - Drugs needed for detoxication including breathing equipments.
- Assess the level of medical supplies in stock, including :
  - Fissure materials
  - Surgical dressings
  - Splints
  - Plaster rolls
  - Disposable needles and syringes
  - Local antiseptics.
- Prepare an area of the hospital for receiving large number of casualties.
- Develop emergency admission procedures (With adequate record keeping).
- Orient field staff with DDMAP, standards of services, procedures including tagging.
- Hospital administrators should
  - Establish work schedules to ensure that adequate staff are available for in-patient needs.
  - Organise in-house emergency medical teams to ensure that adequate staff are available at all times to handle emergency casualties.
  - Set up teams of doctors, nurses and dressers for visiting disaster sites.

Relief And Rehabilitation

- Transport should be arranged for the transfer of seriously injured patients from villages and peripheral hospitals to general hospitals. If roads are blocked, a method should be established to request helicopter transport.
- Establish health facility and treatment centres at disaster sites.

- The provision of medical services should be coordinated by the CMO with district control room.
- Procedures should be clarified between
  - Peripheral hospitals
  - Private hospitals
  - Blood banks
  - General hospitals and
  - Health services established at transit camps, relief camps and affected villages.
- Maintain checkposts and surveillance at Transport depots and all entry and exit points from the affected area, especially during the threat or existence of an epidemic.
- An injury and disease monitoring system should be developed to ensure that a full picture of health risks is maintained.
- Monitoring should be carried out for epidemics, water and food quality and disposal of waste in transit and relief camps, feedings centers and affected villages.
- Plan for emergency accommodations for auxiliary staff from outside the area.
- Information formats and monitoring checklists should be used for programme monitoring and development and for reporting to Emergency Operations Center. This is in addition to existing reporting system in the department.
- Seek security arrangements from district police authorities to keep curious persons from entering hospital area and to protect staff from hostile actions.
- Establishment of a public information center with a means of communication to assist in providing an organized source of information. The hospital is responsible for keeping the community informed of its potential and limitations in disaster situations.
- The Local Police, rescue groups, and ambulance teams should be aware of the resources of each hospital.

Standards Of Service

Tagging

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

Whenever possible, the identification of patients should be accomplished concurrently with triage. This is done by attaching a tag to each patient, usually color-coded to indicate a given degree of injury and the priority for evacuation.

Red Tag

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

Breathing problems that cannot be treated at the site.

Cardiac arrest (witnessed).

Appreciable loss of blood (more than a litre).

Loss of consciousness.

Thoracic perforations or deep abdominal injuries.

Certain serious fractures:

a. Pelvis
b. Thorax
c. Fractures of cervical vertebrae
d. Fractures or dislocations in which no pulse can be detected below the site of the fracture or dislocation
e. Severe concussion.
f. Burns (Complicated by injury to the air passages)

Green Tag

This tag identifies those patients who receive second priority for evacuation. Such patients need care, but the injuries are not life-threatening. They fall into the following categories:

1. Second-degree burns covering more than 30 per cent of the body.
2. Third-degree burns covering 10 percent of the body.
3. Burns complicated by major lesions to soft tissue or minor fractures.
4. Third –degree burns involving such critical areas as hands, factor face but with no breathing problems present.
5. Moderate loss of blood *(500-1000cc)
6. Dorsal lesions, with or without injury to the spinal column.
7. Conscious patients with significant craniocerebral damage (serious enough to cause a subdural hematoma or mental confusion). Such patients will show one of the following signs:
   a. Secretion of spinal fluid through ear or nose
   b. Rapid increase in systolic pressure

c. Projective vomiting
d. Change in respiratory frequency
e. Pulse below 60ppm
f. Swelling or bruising beneath the eyes
g. Anisocoric pupils
h. Collapse
i. Weak or no motor response
j. Weak reaction to sensory stimulation (Profound stupor)

Yellow Tag

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

1. Minor Lesions
2. Minor fractures (fingers, teeth, etc).
3. Other minor lesions, abrasions, contusions.
4. Minor burns:
   - Second-degree burns covering less than 15% of the body
   - Third degree burns covering less than 2% of the body surface
   - First-degree burns covering less than 20% of the body, excluding hands, feet, and face.
5. Fatal Injuries
   - Second and third-degree with burns over more than 40 percent of the body with death seeming reasonably certain.
   - Second and third-degree burns over more than 40% of the body with other major lesions, as well as major cranio-cerebral lesions etc.
   - Cranial lesions with brain tissue exposed and the patient unconscious.
     - Cranio-cerebral lesions where the patient unconscious and has major fractures.
     - Lesions of the spinal column with absence of sensitivity and movement.
     - Patients over 60 years old with major lesions.

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

Black Tag

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

Evacuation Procedure under the following conditions

1) Casualties not trapped or buried. Evacuate in the following order:
   a. Red-tag casualties.
   b. Green-Tag casualties.
   c. Yellow-Tag casualties.

2) Casualties not trapped or buried. Evacuate in the following order:
   a. Red-tag casualties.
   b. Green-Tag casualties.
   c. Yellow-Tag casualties.
   d. Black-tag casualties not trapped or buried.
   e. Trapped black-tag casualties.

Vector Control Standards

Vector control programmes should be planned so as to cope with two distinct situations:

- The initial phase immediately following the disaster, when control work should concentrate on the destruction, by a physical or chemical process, of vermin on persons, their clothing, bedding and other belongings and on domestic animals. An emergency sanitation team should be available from the beginning for carrying out these disinfestations.
- The period after the disaster subsided, control work should be directed towards proper food, sanitation, safe disposals of wastes, including drainage, and general personal cleanliness.

Suggested Vector Surveillance Equipment and Supplies

- Collecting Bags
- Collecting forms
- Mouth or battery powered aspirations
- Tea strainer
- Flashlight and spare batteries
- Grease pencil
- Memo pad
- Sweep net
- Pencil
- Tweezers
- White enameled dipper
- Keys and other references
- Labels
- CDC light traps (Optional)
- Collecting vials
- Aedes aegypti Ovitrap (Optional)
- Bulb syringe or medicine dropper
- Fly grill
- Mirror

Suggested Rodent Surveillance Equipment and Supplies

- Teaching aids
- Transfer bags
- Plastic bags
- Vials

- Plastic cups
- Alcohol
- Rubber bands
- Forceps
- Scissors
- Insecticide dusting pan
- Snap traps
- Formaldehyde
- Live Traps
- Acute rodenticides
- Gloves
- Anti Coagulant rodenticides
- Flashlights and batteries.

Materials and equipment

In the absence of clear indication from field, a minimum kit comprising of the following materials and equipments should be carried by the advance party to the disaster site

1.	Equipment for pediatric intravenous use	36
2.	Tensiometers for children and adults	12
3.	Assorted ferrules Boxes	2
4.	Tracheal cannulae	36
5.	Set of laryngoscopes for infants, children And adults	1 each
6.	Endotracheal tubes, No. 7 Murphy	36
7.	Endotracheal tubes, No. 8	36
8.	Nasogastric probes	36
9.	Oxygen masks, for adults and children	2
10.	Large scissors for cutting bandages	3
11.	Plastic linings	60
12.	Phonendoscopes	15

Sterilization Unit Supplies

1.	Tracheotomy set	6
2.	Thorachotomy set	6
3.	Venous dissection set	6
4.	Set for small sutures	12
5.	Bottles for drainage of thorax	10
6.	Hand scissors No. 4	6
7.	Syringes (disposables) x 2cc	60
8.	Syringes (disposables) x 10cc	90
9.	Syringes (disposables) x 50cc	60

Ambulance Fleet

The ambulances will carry the following equipment:

1. Oxygen, Oxygen Mask, and manometer.
2. Stretchers and blankets
3. Emergency first aid kit

4. Suction equipment
5. Supplies for immobilizing fractures
6. Venoclysis equipment
7. Drugs for emergency use
8. Minimal equipment for resuscitation maneuvers

Each ambulance should be staffed by at least a physician, a nurse, a stretcher-bearer and a driver. The medical and paramedical personnel should be experienced in procedures for the management of patients in intensive care units.

Equipments and Supplies required for Vermin control for a population of 10,000

Power sprayers	2
Hand-pressured sprayers, capacity 20-30 litres	50
Dusters (hand-operated, plunger type)	50
Dusters (power-operated)	2
Space sprayer	1
Adequate supply of accessories and spare parts for the above equipment	

- Insecticides:

DDT, technical powder	0.5 tons
DDT, 75% water wettable	1-2 tons
DDT, 10% powder	1 ton
Dieldrin, 0.625 – 1.25% emulsifiable concentrate or wettable power	100 Kg
Lindane, 0.5% emulsifiable concentrate or wettable power	100 Kg
Chlordane, 2% emulsifiable concentrate or wettable power	100 Kg
Malathion, 1% emulsifiable concentrate or wettable power	100 Kg
Dichlorvos emulsion	100 litres
Rodenticides, anticoagulant type (warfarin, etc.)	1-2 Kg
Rodent traps	100
Screen for fly control	10 rolls
Garbage cans, capacity 50-100 litres	300-500

a Quantity depends on availability and on distribution points*

Operating Procedure Guidelines For Irrigation And Public Health Department

Planning Assumptions

- There is no substitute for maintaining standards of services and regular maintenance during normal times. This affects the response of the department to any disaster situation.
- Operating procedures for mobilizing community participation during various stages of disaster management. The department is required to adopt appropriate measures to ensure that community participates substantially.
- For effective preparedness, the department must have a disaster response plan or disaster response procedures clearly defined in order to avoid confusion, improve efficiency in cost and time.

- Orientation and training for disaster response plan and procedures accompanied by simulated exercise will keep the department prepared for such eventualities. Special skills required during emergency operations need to be imparted to the officials and the staff. Select personnel can be deputed for training as "NODAL OFFICER – Water supply" and "Officer-in-Charge – Water supply" at state and district level respectively.
- To the extent possible, preventive measures as recommended in the preparedness and mitigation document of DDMAP should be undertaken to improve departmental capacity to respond to a disaster.

Normal Time Activity

- Assess preparedness level and report the same as per the format to the District Control Room every six months.
- Identify flood prone rivers and areas and activate flood monitoring mechanisms.
- Mark water level gauges on rivers, dams, and reservoirs.
- Establish disaster management tool kits with at sub-divisional levels consisting of ropes, pulley blocks, jungle knives, shovels, cement in bags, concrete pans, gunny bags, cane baskets.

Action Plan Objective in a Disaster Situation

- Restoration of water supply to the affected area
- Monitor flood situation
- Monitor and protect irrigation infrastructure
- Restore damaged infrastructure

Activities on Receipt of Warning or Activation of DDMAP

- Within the affected district/sub-division all available personnel will be made available to the District Disaster Manager. If more personnel are required, then out of station officer or those on leave may be recalled.
- All personnel required for Disaster Management should work under the overall supervision and guidance of District Disaster Manager.
- Establish communications with Emergency operations Centre at State HQ, District Control Room and your departmental and field offices within the division.
- Appoint one officer as "Officer-in-Charge – Water Supply and Irrigation" at district level.
- Review and update precautionary measures and procedures and review with staff the precautions that have been taken to protect equipment and the post-disaster procedures to be followed.
- Fill departmental vehicles with fuel and park them in protected area.
- Make sure that the hospital storage tank is full and hospital is conserving water.
- Inform people to store an emergency supply of drinking water.
- Organize on the receipt of disaster warning continuous monitoring of
    - Wells
    - Intake structures
    - Pumping stations
    - Buildings above ground

  - Pumping mains
  - The treatment plant
  - Bunds of Dams
  - Irrigation Channels
- The inlet and outlet to tanks should be inspected to ensure that waterways are unobstructed by trees and vegetation.
- Any repairs/under construction activity should be well secured with sandbags, rockfalls, etc.

Relief and Rehabilitation

- Carry out emergency repair of all damages to water supply system.
- Assist health authorities to identify appropriate source of potable water.
- Identify unacceptable water sources and take necessary precautions to ensure that no water is accessed from such sources, either by sealing such arrangements or by posting department guards.
- Arrange for alternate water supply and storage in all transit camps, feeding centers, relief camps, cattle camps, and also the affected areas, till normal water supply is restored.
- Ensure that potable water supply is restored as per the standards and procedures laid down in “Standards of Potable Water”.
- Continue round the clock inspection and repair of bunds of dams, irrigation channels, control gates and overflow channels.
- Continue round the clock inspection and repair of pumps, generators, motor equipment and station building.
- Plan for emergency accommodations from staff from outside the area.
- Report all activities to the head office.
- On the recommendations of “NODAL OFFICER – “Water Supply”/ Deputy Commissioner/District Control Room
- Provide for sending additional support along with food, bedding, tents
- Send vehicles and any additional tools and equipments needed.
- Standby diesel pumps or generators should be installed in damage proof buildings.
- A standby water supply should be available in the event of damage.
- Establish procedures for emergency distribution of water if existing supply is disrupted.
- Make provisions to acquire tankers and establish other temporary means of distributing water on and emergency basis.
- Make provisions to acquire containers and storage tanks required for storing water on an emergency basis.
- Prepare plan for water distribution to all transit and relief camps, affected villages and cattle camps and ensure proper execution of these plans.
- A minimum level of stock should be maintained for emergencies, and should include extra lengths of pipe, connections, joints, hydrants and bleaching powder. Adequate tools should be on hand to carry out emergency repair.
- Make sure auxiliary generators and standby engines are in good working order.
- Acquire a buffer stock of fuel for the motors and store in a protected place.
- Establish emergency work gangs for immediate post-disaster repair.
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Standards of Services

Water Supply

Piped Water

- After any repair on the distribution system, the repaired main should be flushed and disinfected with a chlorine solution of 50 mg/litre for contact period of 24 hours, after which the main is emptied and flushed again with potable water.
- If the demand for water is urgent, or the repaid main cannot be isolated, the concentration of the disinfecting solution may be increased to 100mg/litre and the contact period reduced to 1 hour.
- At the end of disinfection operations, but before the main is put back into service, samples should be taken for bacteriological analysis and determination of chlorine residue.
- When a water treatment plant, pumping station, or distribution system is so badly damaged that operation cannot be restored for some time, other methods described in the following paragraphs must be used.
- Private System (open well or tube)
- Water from these sources, with adequate chlorination as necessary, can be connected to a distribution system or hauled to points of consumption.
- Springs and wells (non-private)
- Ground water originating from deep aquifers (such as is obtained from deep wells and certain springs) will be free from contamination if certain simple protective measures are taken.
- When springs are used as a source of water supply for disaster area, careful attention must be paid to geological formations. Limestone and certain rocks are liable to have holes and cracks, especially after earthquake that may lead to the contamination of ground water.
- A sanitary survey of the area surrounding a well site or spring is of utmost importance. This survey, which should be carried out by a qualified professional environmental health worker, should provide information on source of contamination, geological structures (with particular reference to overlying soil and rock formations) quality and quantity of ground water, direction of flow etc.
- The well selected as a source of water, should be at least 30m away from any potential source of contamination, and should be located higher than all such sources. The upper portion of the well must be protected by an external impervious casing, extending at least 3m below and 30cm above ground level. The casing should be surrounded by a concrete platform at least 1m wide, that slope to allow drainage away from the well; it should connect to the drain that will carry the spilled water away. The opening for drop pipes should be sealed to prevent outside water from entering the well. The rim of manholes should project at least 8cm above the surrounding surface, and the manhole cover must overlap this rim.
- Immediately after construction or repair, the well should be disinfected. First the casing and lining should be washed, and scrubbed with strong chlorine solution containing, 100mg of available chlorine per litre. A strong solution is then added to produce concentration of 50-100 mg/litre in the water stored in the well. After adequate agitation, the well water is left to stand for at least hours, and then pumped out. The well is then allowed to refill. When the residual chlorine of the water drops below 1 mg/litre the water may be used.
- Most of water is stated above applies also to the location and protection of springs. The following points may be added:

- The collection installation should be so built as to prevent the entrance of light.
- The overflow should be so located as to prevent the entrance of surface water at times of heavy rainfall.
- The manhole cover and gates should be locked.
- Before using the water, the collection chamber should be disinfected with a chlorine solution.
- An area within a radius of 50m around the spring should be fenced off to prevent ground surface contamination.

Surface water

- Surface water should be used as source of water supply only as a last resort.
- Measures should be taken to protect the watershed from pollution by animals and people. As it is usually difficult to enforce control regulations, the point of intake for water supply should be located above any tributary carrying grossly contaminated water. The pump intake should be screened and placed so that it will not take in mud from the stream bed or floating debris. The device can be something extremely simple, such as perforated drum fixed in the middle of the stream.

Treatment

- Water should be tested for the presence of Escherichia coli and unsafe concentrations of nitrate as soon as possible. Detection of E. coil indicates contamination by human waste and therefore requires immediate protective and corrective measures.
- Monitoring of water quality should be restored or initiated immediately. During the disaster, daily determination of the chlorine residual in public water supply is sufficient.

Disinfectation

- Chlorine and chlorine-librating compounds are the most common disinfectants. Chlorine compounds for water disinfectation are usually available in three forms:
  - Chlorinated lime or bleaching powder, which has 20% by weight of available chlorine when fresh. Its strength should always be checked before use.
  - Calcium hypochlorite, a more stable compound sold under various proprietary names. This compound contains 70% by weight of available chlorine. If properly stored in tight container and in dark cool place, it preserves its chlorine contents for considerable period.
  - Sodium hypochlorite, usually sold as solution of approximately 5% strength under a variety of proprietary names. Its use in water disinfectation is limited to small quantities and special circumstances.

Methods of chlorination

Gas chlorinator

- These machines draw chlorine gas from a cylinder containing liquid chlorine, mix it in water and inject into supply pipe. Mobile gas chlorinators are made for field use.

Hypochlorinators

- These are less heavy than gas chlorinator and more adaptable to emergency disinfection. Generally, they use a solution of calcium hypochlorite or chlorinated lime in water and discharge it into a water pipe or reservoir. They can be driven by electric motors or petrol engines and their output can be adjusted.
- Hypochlorinators are small and easy to install. They consists usually of a diaphragm pump and standard accessories, including one or more rubber-lined, solution tanks and a chlorine residual testing set. The usual strength of solution is 0.1% and it seldom rises above 0.5%

The Batch Method

- In the absence of the chlorinators, water is disinfected by batch method. This method is more likely to be used in emergencies. It involves applying a predetermined volume of chlorine solution of known strength to a fixed volume of water by means of some gravity arrangements. The strength of the batch solution should not be more than 0.65% of chlorine by weight as this is about the limit of solubility of chlorine at ordinary temperatures. For example 10g of ordinary bleaching powder (25% strength) dissolved in 5 litres of water gives a stock solution of 500mg/litre. For disinfection of drinking water, one volume of the stock solution added to 100 volumes of water gives a concentration of 5mg/litre. If after 30 minutes contact the chlorine residual is more than 0.5mg/litre this dosages could be reduced.
- After the necessary contact period, excess chlorine can removed to improve the taste by such chemicals as sulphur dioxide, activated carbon, or sodium thiosulphate. The first two are suitable for permanent installations, whereas sodium thiosulphate is more suitable for use in emergency chlorination. One tablet containing 0.5g of anhydrous sodium thiosulphate will remove 1mg/litre of chlorine from 500 litres of water.

Continuous Chlorination

- This method, in which porous containers of calcium hypochlorite or bleaching powder are immersed in water, in use mainly for wells and springs but is also applicable to other types of water supply. A free residual chlorine level of 0.7 mg/litre should be maintained in water, treated for emergency distribution. A slight taste and odor of chlorine after half an hour gives an indication that chlorination is adequate. In flooded areas where the water distribution system is still operating, higher chlorine residual should be maintained. Occasionally, an unpleasant taste develops from the reaction of chlorine with phenolic or the other organic compounds. This taste should be accepted, as it is an indication of safe disinfection.

Filtration-Disinfection

- In this method water is mixed with diatomaceous earth, then passed through the filter unit in which filtering partitions (septa) are installed. Mobile purification units using this process have been produced with capacities up to 50,000 litres per hour. They consist essentially of :
  - A centrifugal pump driven by a rope-started gasoline engine.
  - A filter (diatomic)

- A hypochlorinator
- A slurry feeder and an air compressor.
- A precoat and recirculation tank.
- A chlorine solution tank.
- Hose adapters
- Valves (pump suction, inlet, drain, outlet, flow control air release, etc) and
- A tool box. Instructions in the manuals supplied with such units must be followed.

Physical Protection

- In disaster situation, physical protection of water supplies for use, is a major consideration. In addition to such barriers as walls and fences, guards may be necessary to prevent mobs from overrunning and damaging treatment units, pumping stations, tankers, distribution stations, and temporary collection facilities. Intake structures, wells and springs should also protected against misuse. The character and extent of such protection will depend on the local situation.

Ice Supply

- Required ice should be supplied from a commercial manufacturing plant where it is made from safe water and where sanitary regulations are observed.
- It should be distributed in trucks designed for the purpose, equipped with tools for the safe handling of ice.
- After drinking water is secured within stricken areas, making water available for domestic use (such as leaning and washing) should be considered.

Coagulation-Disinfectation

- Removal of the organic matter greatly lessens the amount of chlorine needed for disinfectation. There are many factors that govern the coagulation process. These include:
  1. Hydrogen-ion concentration. The optimum pH value for coagulation is the value that the best floe formation and setting. The pH value of water changes when coagulants are used and has to be adjusted to its optimum value by addition of alkali or acids.
  2. Mixing. Coagulants must be thoroughly mixed with the water to give satisfactory results. This may be accomplished by (a) pump action, whereby the coagulant solution is added to the suction pipe of the pump and pump does the mixing; (b) the drip bottle method i.e. hanging a drip-bottle over the discharge pipe or hose of raw water that feeds the tank and letting the coagulant solution drip on to the water jet; or (c) dissolution, i.e. allowing the discharge of raw water to splash on to a basket containing solid coagulant.
  3. Coagulant dosage. The amount of the coagulant and chemicals required to adjust the pH value of water may be calculated when the pH and the type of alkalinity are known. However the optimum dosage for given water may be determined approximately using the jar test.

Coagulation-Filtration-Disinfectation

- In this method filtration is added to the procedures described above. If temporary reservoir can be arranged, it is preferable to let the water settle before filtering it. In mobile purification units, however the water is filtered through a pressure filter without setting. They usually have a capacity of 4000-7000 litres per hour, and consist essentially of:
  - A centrifugal pump directly coupled to a gasoline engine.
  - A filter (pressure, rapid and filter)
  - A hypochlorinator
  - A chemical solution tank
    (One for alum and one for soda ash)
  - A chlorine solution tank.
  - Hose adapters
  - Valves (pump suction, inlet, drain, outlet, flow control air release, etc) and
  - A tool box. Instructions in the manuals supplied with such units must be followed.

Operating Procedure Guidelines For Animal Husbandry Department

Planning Assumptions

- There is no substitute for maintaining standards of services and regular maintenance during normal times. This affects the response of the department to any disaster situation.
- Operating procedures for mobilizing community participation during various stages of disaster management have been given in section on "Areas of Community Participation". The department is required to study these and adopt appropriate measures to ensure that community participates substantially.
- For effective preparedness, the department must have a disaster response plan or disaster response procedures clearly defined in order to avoid confusion, improve efficiency in cost and time.
- Orientation and training for disaster response plan and procedures accompanied by simulated exercise will keep the department prepared for such eventualities. Special skills required during emergency operations need to be imparted to the officials and the staff. Select personnel can be deputed for training as "NODAL OFFICER – Veterinary Services" at district level respectively.
- To the extent possible, preventive measures as recommended in the preparedness and mitigation document of DDMAP should be undertaken to improve departmental capacity to respond to a disaster.
  - Hospital staff be aware of damage – proof hospital rooms/buildings.
  - A standby generator be made available for every hospital
  - At least one kerosene – powered refrigeration unit be made available for storage of drugs.
- Orientation and training for disaster response plan and procedures, accompanied by simulated exercise will keep the department prepared for such eventualities. Special skills required during disaster situation need to be imparted to the officials and the staff.

- To the extent possible, preventive measures as recommended in the preparedness and mitigation document of DMAP should be communicated to the community to prevent extensive loss of livestock.

Action Plan Objective in a Disaster Situation

- Treatment of injured cattle.
- Protection and care of abandoned/lost cattle.

Activities on Receipt of Warning or Activation of DDMAP

- Within the affected district all available personnel will be made available to the District Disaster Manager. If more personnel are required, then out of station officer or those on leave may be recalled.
- All personnel required for Disaster Management should work under the overall supervision and guidance of District Disaster Manager.
- Establish communications with
  - District control room
  - Veterinary aid centres and hospitals (including private practitioners) within the district.
- The Deputy Director, Veterinary Dept. will act as "Nodal Officer – Veterinary Services".
- Review and update precautionary measures and procedures and review with staff the precautions that have been taken to protect equipments and the post-disaster procedures to be followed.
- Fill departmental vehicles with fuel and park them in protected area.
- Stock emergency medical equipments, which may required after disaster.
- Determine what injuries/illnesses may be expected, and what drugs and other medical items will be required, in addition to the requirements of setting up cattle camps, and accordingly ensure that extra supplies of medical items and materials be obtained quickly.
- Provide information to all staff of veterinary hospitals and centers about the disasters, likely damages and effects, and information about ways to protect life, equipment and property.
- Surgical packs should be assembled and sterilized.
- Arrange for emergency supply of anesthetic drugs.
- Prepare an area of the hospital for receiving large number of injured livestock.
- Establish work schedules to ensure adequate staff are available round the clock.
- Set up teams for visiting disaster site.

Relief and Rehabilitation

- Organise transfer of injured livestock from village to veterinary aid centres wherever possible
- The provision of medical services should be coordinated by Nodal Officer-Veterinary Services with District Control Room, and cattle camps.
- Establish cattle camps and additional veterinary aid centres at disaster sites and designate an Officer-in-Charge for the camp.
- Estimate the requirement of water, fodder and animal feed, for cattle camps and organise the same.

- Ensure the adequate sanitary conditions though cleaning operations are maintained in order to avoid outbreak of any epidemic.
- An injury and disease monitoring system should be developed, to ensure that a full picture of risks is maintained.
- Plan for emergency accommodations for veterinary staff from outside the area.
- Information formats and monitoring checklists as given in Annexure should be used for programme monitoring and development and for reporting to Emergency Operations Centre. This is in addition to existing reporting system in the department.
- Establishment of public information centre with a means of communication, to assist in providing an organized source of information. The hospital is responsible for keeping the community informed of its potential and limitations, in disaster situations.
- The local police and rescue group should be aware of the resources of each veterinary aid centre and hospital.
- Provide information to all staff of veterinary hospital and centres about the disaster likely damages and effects, and information about ways to protect life, equipment and property.
- Surgical packs should be assembled and sterilized.
- Enough stock of surgical packs should be sterilized to last for four to five days.
- The sterilized packs must be stored be stored in protective cabinets to ensure that they do not get wet. Covering the stock with polythene is recommended as an added safety measure.
- All valuable equipments and instruments should be packed in protective coverings and stored in room the most damage-proof.
- Check the emergency electrical generators, to ensure that it is operational, and that a buffer stock of fuel exists. If an emergency generator is not available at the hospital, arrange for one on loan.
- Arrange for emergency supplies anesthetic drugs.
- Check stocks of equipment and drugs, which are likely to be most needed after disaster.
- Fill hospital storage tanks and encourage water savings. If no storage tank exists, water for drinking should be drawn in clean container and protected.
- Prepare an area of hospital for receiving large number of injured livestock.
- Develop emergency admission procedure (with adequate record keeping).
- Cattle camps and hospital administrator should
  - Establish work schedules to ensure that adequate staff are available
  - Set up teams of veterinary doctors, and assistants for visiting disaster sites.

Standards for Cattle Camps

1. The minimum number of cattle in the cattle camp should be about 100 and the maximum 500.
2. The cattle camp should be located at suitable sites, bearing in mind, the adequate supply of water and shade are most essential for well being of the cattle.
3. Cattle sheds constructed should not exceed 20 sq. feet per animal. Suitable arrangements for water trough and manger(s) should be made.
4. The feeding centres for cattle should be located in such a manner that
   - There is adequate supply of drinking water
   - There is sufficient shade for cattle to rest during the afternoon
   - They are located as near the rail head as possible

- They are conveniently located, not beyond a radius of 8 Km from the affected villages.

The cattle will require 6 Kg per cattle head per day of fodder, and 1 to 1½ Kg per cattle head per day, of the concentrate like Bago molasses.

Each cattle camp will have a minimum of one camp manager, two labourers and two sweepers.

Operating procedure guidelines for PWD department

Planning Assumptions

- There is no substitute for maintaining standards of services and regular maintenance during normal times. This affects the response of the department to any disaster situation.
- The department is required to adopt appropriate measures to ensure that the community participates substantially.
- For effective preparedness, the department must have a disaster response plan or disaster response procedures clearly defined in order to avoid confusion, improve efficiency in cost and time.
- Orientation and training for disaster response plan and procedures accompanied by simulated exercise will keep the department prepared for such eventualities. Special skills required during emergency operations need to be imparted to the officials and the staff. Select personnel can be deputed for training as "NODAL OFFICER – PWD" at district level respectively.
- To the extent possible, preventive measures as recommended in the preparedness and mitigation document of DDMAP should be undertaken to improve departmental capacity to respond to a disaster.

Action Plan Objective in a Disaster Situation

- Restoration of roads to their normal condition.
- Repair/reconstruction of public utilities and buildings.

Activities on Receipt of Warning or Activation of DDMAP

- Within the affected district all available personnel will be made available to the District Disaster Manager. If more personnel are required, then out of station officer or those on leave may be recalled.
- All personnel required for Disaster Management should work under the overall supervision and guidance of District Disaster Manager.
- Establish communications with District control room and your departmental offices within the division.
- All district level officials of the department would be asked to report to the Deputy Commissioner/DDM.
- Appoint one officer as "Nodal Officer - PWD" at district level.
- The "Nodal Officer - PWD" will be responsible for mobilizing staff and volunteers to clear the roads in his section, should a disaster strike.

- The "NODAL OFFICER – PWD" should be familiar with pre-disaster precautions and post disaster procedures for road clearing and for defining safe evacuation routes where necessary.
- All officers3 should be notified and should meet the staff to review emergency procedures.
- Review and update precautionary measures and procedures and review with staff the precautions that have been taken to protect equipment and the post-disaster procedures to be followed.
- Vehicles should be inspected, fuel tanks filled and batteries and electrical wiring covered as necessary.
- Extra transport vehicles should be dispatched from HQ and stationed at safe and strategic spots along routes likely to be effected.
- Heavy vehicles should be moved to areas likely to be damaged and secured in a safe place.
- Inspection of all roads, bridges, government buildings and structures must be done and structures which are endangered by the impending disaster identified.
- Emergency tool kits must be made available and should include
  - Crosscut saws
  - Axes
  - Power chain saw
  - Sharpening Files
  - Chains and tightening wrenches
  - Pulley block with chain and rope
- The designation of routes strategic to evacuation and relief should be identified and marked in close coordination with the DCR.
- Establish a priority listing of roads which will be opened first, the most important being roads to hospitals and main trunk routes.
- Give priority attention to urgent repair works in disaster affected areas.
- Identify locations for setting up transit and relief camps, feeding centers and quantity of construction materials required and inform the DCR accordingly.

Relief and Rehabilitation

- All works teams should be issued two-way communication link.
- Provide a work team carrying emergency tool kits, depending on the nature of the disaster, essential equipments such as
  - Towing vehicles
  - Earth moving equipments
  - Cranes etc.
- Each unit should mobilize a farm tractor with chain, cables and a buffer stock of fuel.
- Adequate road signs should be installed to guide and assists the drivers.
- Begin clearing roads. Assemble casual labor to work with experienced staff and divide into work gangs.
- Mobilise community assistance for road clearing by contacting community organizations.
- Undertake clearing of ditches, grass cutting, burning, removal of debris and the cutting of dangerous trees along the roadside in the affected area through maintenance engineer's staff.

- Undertake repair of all paved and unpaved road surfaces including edge metalling, potholes patching and any failure of surface, foundations in the affected areas by maintenance engineer's staff and keep monitoring their conditions.
- Undertake construction of temporary roads to serve as access to temporary transit and relief camps and medical facilities for disaster victims.
- As per the decision of the district control room, undertake construction of relief camps, feeding centres, medical facilities, cattle camps.
- An up-to-date report of all damages and repairs should be kept in the district office report book and communicate the same to the district control room.
- If possible, review of the extent of damage (by helicopter) should be arranged for the field Officer-in-Charge, in order to dispatch most efficiently road clearing crews, and determine the equipments needed.

Standards For Relief Camps

Tent Camps

- The layout of the site should meet the following specifications.
    1. 3-4 hectares of land/1000 peoples
    2. Roads of 10 meters width
    3. Minimum distance between edge of roads and tents of 2 mtrs.
    4. Minimum distance between tents of 8 mtrs.
    5. Minimum floor area/tent of 3 square meters per person.
- Water distribution in camp sites consists of
    1. Minimum capacity of tanks of 200 litres
    2. Minimum capacity per capita of 15 liters/day
    3. Maximum distance of tanks from farthest tent of 100 meters.
- Solid waste disposal containers in tent camps should be
    1. Waterproof
    2. Insect-proof and
    3. Rodent-proof
    4. The waste should be covered tightly with a plastic or metallic lid
    5. The final disposal should be by incineration or by burial.
- The capacities of solid waste units should be, 1 litre/4-8 tents; or 50-100 litres/25-50 persons.
- Excreta and liquid waste should be disposed in bore-holed or deep trench latrines in tent camps. Specifications for these are:
    1. 30-50 meters from tents.
    2. 1 seat provided/10 persons
    3. Modified soakage pits should be used for waste water by replacing layers of earth and small pebbles with layers of straw, grass or small twigs. These needs to be removed on a daily basis and burned.

Buildings

Buildings used for accommodating disaster victims should provide the following:

1. Minimum floor area of 3.5 sq. meters/person
2. Minimum air space of 10 sq. meters/person
3. Minimum air space circulation of 30 cubic meters/person/hour and
4. There should be separate washing blocks for men and women.

5. Washing facilities to be provided are:
   - 1 hand basin/10 persons
   - 1 wash bench of 4-5 meters/100 persons and 1 shower head/50 persons in temperate climates
6. Toilet accommodation in buildings housing displaced persons, should meet these requirements:
   - 1 seat/25 women
   - 1 seat plus 1 urinal/35 men
   - Maximum distance from building of 50 meters.
7. Refuse containers are to be plastic or metallic and should have closed lids. To be provided are:
   - 1 container of 50-100 liters capacity/25-50 persons.
   - Operating procedure guidelines for HPSEB

Planning Assumptions

- There is no substitute for maintaining standards of services and regular maintenance during normal times. This affects the response of the department to any disaster situation.
- The department is required to adopt appropriate measures to ensure that community participates substantially.
- For effective preparedness, the department must have a disaster response plan or disaster response procedures clearly defined in order to avoid confusion, improve efficiency in cost and time.
- Orientation and training for disaster response plan and procedures accompanied by simulated exercise will keep the department prepared for such eventualities. Special skills required during emergency operations need to be imparted to the officials and the staff. Select personnel can be deputed for training as “NODAL OFFICER – Power Supply” at district level.
- To the extent possible, preventive measures as recommended in the preparedness and mitigation document of DDMAP, should be undertaken to improve departmental capacity to respond to a disaster.

Normal Time Activities

- Assess preparedness level and report the same as per format to District Control Room every six months.
- Establish at each sub-station a disaster management tool kit comprising cable cutters, pulley blocks, jungle knives, axes, crowbars, ropes, hacksaws and spanners. Tents for work crews should also be storage.

Action Plan Objective in a Disaster Situation

- Restore the power supply and ensure uninterrupted power to all vital installation, facilities and site.

Activities on Receipt of Warning or Activation of DDMAP

- Within the affected district all available personnel will be made available to the District Disaster Manager. If more personnel are required, then out of station officer or those on leave may be recalled.
- All personnel required for Disaster Management should work under the overall supervision and guidance of District Disaster Manager.
- Establish communications with District control room and your departmental offices within the division.
- All district level officials of the department would be asked to report to the Deputy Commissioner/DDM.
- Appoint one officer as "NODAL OFFICER – Power Supply" at district level.
- Review and update precautionary measures and procedures and review with staff the precautions that have been taken to protect equipment and the post-disaster procedures to be followed.
- Assist the state authorities to make arrangements for standby generators in the following public service offices from the time of receipt of alert warning
    - Hospitals
    - Water Supply Stations
    - Collectorate
    - Police stations
    - Telecommunications buildings
- Fill departmental vehicles with fuel and park them in a protected area.
- Check emergency tool kits, assembling any additional equipment needed.
- Immediately undertake inspection from the time of receipt of alert warning of
    - High tension lines
    - Towers
    - Substations
    - Transformers
    - Insulators
    - Poles and
    - Other equipments
- Review the total extent of the damage to power supply installations by reconnaissance flight, if possible.

On the recommendations of the Deputy Commissioner/District Control Room/ "Nodal Officer– Power Supply" of the department in the district

- Instruct district staff to disconnect the main electricity supply for the affected area.
- Dispatch emergency repair gangs equipped with food, bedding, tents, and tools.

Relief and Rehabilitation

- Hire casual labourers on an emergency basis for clearing of damaged poles and salvage of conductors and insulators.
- Begin repair/reconstruction
- Assist hospital in establishing emergency supply by assembling generators and other emergency equipments, if necessary.

- Establish temporary electricity supplies for other key public facilities, public water systems, etc.
- Establish temporary electricity supplies for transit camps, feeding centres, relief camps, district control room and on access roads to the same.
- Establish temporary electricity supplies for relief material godowns.
- Compile an itemized assessment of damage, from reports made by various electrical receiving centres and sub-centres.
- Report all activities to the head office.
- Plan for emergency accommodations for staff from outside the area.
- On the recommendation of the Nodal Officer – Power Supply/Deputy Commissioner/District Control Room, at state level, HPSEB shall
    - Send cables, poles, transformers and other needed equipment
    - Send vehicles and any additional tools needed.
    - Provide additional support as required.

Operating Procedure Guidelines For Agriculture Department

Planning Assumptions

- There is no substitute for maintaining standards of services and regular maintenance during normal times. This affects the response of the department to any disaster situation.
- The department is required to adopt appropriate measures to ensure that community participates substantially.
- For effective preparedness, the department must have a disaster response plan or disaster response procedures clearly defined in order to avoid confusion, improve efficiency in cost and time.
- Orientation and training for disaster response plan and procedures accompanied by simulated exercise will keep the department prepared for such eventualities. Special skills required during emergency operations need to be imparted to the officials and the staff. Select personnel can be deputed for training as “NODAL OFFICER – Agriculture” at district level.
- To the extent possible, preventive measures as recommended in the preparedness and mitigation document of DDMAP should be communicated to the community to prevent extensive loss of crops and plantations.

Action Plan Objective in a Disaster Situation

- Restore the agricultural operations (including soil conditions)
- Crop protection
- Restore agriculture produce market.

Activities on Receipt of Warning or Activation of DDMAP

- Within the affected district all available personnel will be made available to the District Disaster Manager. If more personnel are required, then out of station officer or those on leave may be recalled.
- All personnel required for Disaster Management should work under the overall supervision and guidance of District Disaster Manager.
- Establish communications with District control room and your departmental offices within the division.
- Appoint one officer as “NODAL OFFICER – Agriculture” at district level.

- Review and update precautionary measures and procedures and review with staff the precautions that have been taken to protect equipment and the post-disaster procedures to be followed.
- Fill departmental vehicles with fuel and park them in a protected area.
- Check available stocks of equipments and materials which are likely to be most needed after disaster.
- Stock agricultural equipments which may be required after disaster
- Determine what damage, pests of diseases may be expected, and what drugs and other insecticides items will be required, in addition to requirement of setting up extension terms for crop protection, and accordingly ensure that extra supplies and materials, be obtained quickly.
- Provide information to all concerned, about disasters, likely damages to crops and plantations, and information about ways to protect the same.
- All valuable equipments and instruments should be packed in protective covering and stored in room the most damage-proof.
- All electrical equipments should be unplugged when disaster warning is received.
- Extension officers should be assisted to
    - Establish work schedules to ensure that the adequate staff are available
    - Set up the teams of extension personnel and assistants for disaster sites.

Relief and Rehabilitation

- Assess the extent of damage to soil, crop, plantation, micro-irrigation systems and storage facilities and the requirements for replantation or salvaging
- Make extensive use of soil and water testing laboratories
- Provision of agricultural services should be coordinated with irrigation department, DRDA, District Control Room
- Estimate the requirement of
    1. Seeds
    2. Fertilizers
    3. Pesticides and labour
- Organise transport, storage and distribution of the above with adequate record keeping procedures
- Ensure that the adequate conditions through cleaning operations are maintained to avoid water-logging and salinity in the low lying areas.
- A pests and disease monitoring system should be developed to ensure that a full picture of risks is maintained.
- Plan for emergency accommodations for agriculture staff from outside the area.
- Information formats and monitoring checklists as given in section on “Information and Monitoring Tools” should be used for programme monitoring and development and for reporting to DCR. This is in addition to existing reporting system in the department.
- Establishment of a public information center with a means of communication, to assist in providing an organized source of information. The department is responsible for keeping the community informed of its potential and limitations in disaster situations.
- The NGOs and other relief organizations should be aware of the resources of the department.
- Assist farmers to re-establish their contacts with agriculture produce market and ensure that appropriate prices to offer to them.

Annexure - M

First Information Report

Name of the District

Date of Report

1. Nature of Calamity
2. Date and Time of Occurrence
3. Number and Names of the areas affected
4. Population Affected
5. Number of Persons

    a) Died
    b) Missing
    c) Injured

6. Animals

    a) Affected
    b) Lost

7. Crops Affected
8. Number of houses damaged
9. Damage to Public Property

Annexure - N

Rapid Assessment Format for Disaster Management Team
[Aim to determine immediate response of the locality]

Type of Disaster_____; Date_____;
Time_____;
Team Member_____

Name of the location	
Administrative Unit and Division	
Geographical location	
Local Authorities interview(with name, address, designation)	
Estimated total population	
Worst affected areas/population **No of Blocks** **G.P** **Village**	
Areas currently inaccessible	
Type of areas affected	
Distance from the District Head Quarters(Km) **Accessibility of the areas**	
Effect on population **Primary affected population** **Children below 1 year** **Children between 1 and 5 years old** **Women** Pregnant and lactating women Elderly (above 60) Disabled Death/Reports of starvation (c) Orphans Injured Missing Homeless Number of people Number of families Displaced/Migrated	**Number**

Evacuated Destitute Need of counseling for traumatized population	 Yes/No
Building Building collapsed/wasted away Building partially collapsed/wasted away Buildings with minor damages (buildings that can be retrofitted) Number of schools affected Gravity of the damages Number of hospitals and Health Centers affected Gravity of the damages Number of Government buildings affected Gravity of the damages Any other building affected Gravity of the damages	 Number Scale 1 to 5 where 1 is no damages and 5 is completely destroyed
Infrastructure Road Damaged/destroyed Scale of the damage Location Km Railways damaged Location Km Is the railway still working Bridges damaged/collapsed Locality Villages isolated Damages to the Communication Network Damages to the Electricity Network Damages to the Telecommunication Network	Scale 1 to 5 where 1 is normal and 5 is completely destroyed/washed away Yes/No Yes/No Yes/No and scale of the damages Scale 1 to 5 where 1 is no damages and 5 is completely destroyed
Health Facilities Infrastructure damaged Hospitals Health Centers Vaccination Centers Availability of Doctors In the area In the district Availability of Paramedical staff In the area In the district Local Staff affected Doctors Paramedical Staff Conditions of equipments Specify which equipments	Number Scale 1 to 5 where 1 is no damages and 5 is completely destroyed Number Number Number Scale 1 to 5 where 1 is no damages and 5 is completely destroyed

Availability of medicines/drugs Typology Availability of Vaccinations Typology Any immunization campaign was undertaken before the disaster Possibility of diseases outbreak Other health problems	Yes/No Yes/No Yes/No Yes/No List
Water Sanitation Availability of safe drinking water Availability of sanitation facilities Availability of Disinfectant Typology Damages to the Water/Sewage systems Damages to the water supply system Availability of portable water system Agencies participating in WATSAN	 Yes/No Yes/No Yes/No Scale 1 to 5 where 1 is no damages and 5 is completely destroyed Yes/No List
Crops/Agriculture Damage Crop Damaged Typology % Of Hectare damaged In Upland/medium/low Paddy or Non paddy Irrigated or non-irrigated Normal and actual rainfall assessment Livestock loss Availability of Health services for livestock Cattle feed/folder availability Damage to agriculture infrastructure	 Mm Number Yes/No Number Tonnes Scale 1 to 5 where 1 is no damages and 5 is completely destroyed
Food/Nutrition Availability of food/stocks Family Relief PDS Community Kitchen Expected duration of the food stock Most affected groups Infant Children	 Yes/No Kg Tonnes Tonnes Kg Days To be ticked

Pregnant and lactating mothers Elderly Where are the different groups located? Levels of malnutrition? Type of food required Total quantity/ration levels required How is the food supply and nutrition situation likely to evolve in coming weeks/months?	 Days To be ticked
15.Secondary Threats Potentially hazardous sites Existence of epidemics Scarcity of Food Scarcity of Water Scarcity of Shelter Scarcity of Clothes Any other problem	 List
Response <u>Local:</u> Govt./NGOs/CSOs/Individuals Type of assistance <u>National:</u> Govt./NGOs/CSOs Type of assistance <u>International:</u> Govt./NGOs/CSOs Type of assistance	 To be ticked Description To be ticked Description To be ticked Description
Logistic and Distribution system Availability of Storage facilities Means of transport available Availability of Fuel Are there any distribution criteria already in place Availability of Manpower	 Yes/No List Yes/No Yes/No Yes/No
Priority of Needs Search and Rescue: Need of Search and Rescue Locally available Needed for neighbouring districts Needed for neighbouring states (indicate from where) Need of transportation and equipments: Boats Any other transportation(specify Special equipments(specify) Heavy equipments(specify) Need of shelter Temporary Permanents Clothing:	 Yes/No

Children Clothing	
Adult Clothing	
Winter Clothing	Estimated Quantity
Blankets	
Bed Sheets	
Food item:	
Pulses	
Grain	
Baby Food	
Specialised food	
Cattle feeds/fodder	
Water /sanitation:	
Portable water	
Chlorine powder and disinfectant	
Latrine	
Soap	
Detergent	
Insecticides	
Disinfestations of water body	
Manpower for carcass disposal	
Health:	
Medical staff	
Medicines(specify)	
IV fluid	
ORS	
Vitamin A	
Vaccines	
Mobile units(quantity to be specified)	
Cold chain system	
Education:	
Infrastructure temporary / permanent	
Teachers	
Teachers kits	
Reading materials	
Availability of mid-day meal	
Crop/Agriculture	
Need of seeds	
Fertilizer , Pesticide	
Type of Seed required	
Availability of local variety	List
Availability of resources	
Infrastructure:	
Repair of roads	Yes/No and specify location
Repair of railways and bridges	Yes/No and specify location
Power Supply	
Telecommunication	
Equipments required for restoration	
Manpower required	
	List Number of Man days

- **Observation:**
- **Source of information:**
- **Site Visit:**
- **Interaction with affected population:**
- **Assessment Carried By:**

Annexure - O

Guidelines for Requisitioning of Armed Forces in Aid of Civil Administration

Procedure for Provision of Aid

The Armed Forces are conscious of not only their constitutional responsibility in-aid to civil authority, but also, more importantly, the aspirations and the hopes of the people. Although such assistance is part of their secondary role, once the Army steps in, personnel in uniform wholeheartedly immerse themselves in the tasks in accordance with the Army's credo - **SERVICE BEFORE SELF.**

Assistance during a disaster situation is to be provided by the Defence Services with the approval and on orders of the central government. In case, the request for aid is of an emergency nature, where government sanctions for assistance is not practicable, local military authorities when approached for assistance should provide the same. This will be reported immediately to respective Services Headquarters (Operations Directorate) and normal channels taken recourse to, as early as possible.

Requisition Procedure

Any state unable to cope with a major disaster situation on its own and having deployed all its resources will request Government of India for additional assistance. Ministry of Defence will direct respective service headquarters to take executive action on approved requests. The chief secretary of state may initiate a direct request for emergency assistance, for example, helicopter for aerial reconnaissance, or formation of local headquarter (Command/Area Headquarters) or naval base or air force station.

Coordination

The responsibility for coordination of disaster relief operations at various levels is as follows:

a) Inter-service Coordination at Central Level: Cabinet secretariat (Military Wing). A case for co-opting a Tri Service RRF to cater for emergency situations within India and in the region is under consideration of COSC. This JCC would be responsible for coordination and directing all rescue/relief operations to ensure synergy of efforts of all three services in management of disasters.

b) Service Headquarters
   (i) Military Operations Directorate (MI-6) at Army Headquarters
   (ii) Director of Naval operations at Naval headquarters
   (iii) Directorate of Operations (Transport and Maritime) at Air Headquarters

c) Command and Lower Formation Headquarters: Senior General Staff Officers (Operations)

d) State Level: Service liaison officer deputed to form a part of Joint Control Centre.

e) Local Level: Nominated Commander of troops and senior civil administrator in-charge of relief.

The Armed Forces may be called upon to provide the following types of assistance:

a) Infrastructure for command and control for providing relief. This would entail provision of communications and technical manpower.
b) Search rescue and relief operations at disaster sites.
c) Provision of medical care at the incident site and evacuation of casualties.
d) Logistics support for transportation of relief materials
e) Setting up and running of relief camps
f) Construction and repair of roads and bridges to enable relief teams/ material to reach affected areas.
g) Repair, maintenance and running of essential services especially in the initial stages of disaster relief.
h) Assist in evacuation of people to safer places before and after the disaster
i) Coordinate provisioning of escorts for men, material and security of installations,
j) Stage management and handling of International relief, if requested by the civil administration.

Disaster Relief Operation

Important aspects of policy for providing disaster relief are as under:

a) Disaster relief tasks can be undertaken by local commanders. However, HQ Sub Area is to be informed at the first opportunity and then flow of information to be maintained till completion of the task.
b) Effective and efficient disaster relief by the army while at task.
c) Disaster relief tasks will be controlled and coordinated through Commanders of Static Headquarters while field units Commanders may move to disaster site for gaining firsthand knowledge and ensuring effective assistance.
d) Once situation is under control of the civil administration, army aid should be promptly de-requisitioned.
e) Adequate communication, both line and radio, will be ensured from Field Force to Command Headquarters.

Procedure to Requisition Army, and Air Force

It will be ensured by the local administration that all local resources including Home Guards, Police and others are fully utilised before assistance is sought from outside. The District Collector will assess the situation and project his requirements to the State Government. District Control Room will ensure that updated information is regularly communicated to the State Control Room, Defence Service establishments and other concerned agencies.

District Collector will apprise the State Government of additional requirements through State Control Room and Relief Commissioner of the State.

Additional assistance required for relief operations will be released to the District Collector from the state resources. If it is felt that the situation is beyond the control of state administration, the Relief commissioner will approach the Chief Secretary to get the aid from the Defence Services. Based on the final assessment, the Chief Secretary will project the requirement as under while approaching the Ministry of Defence, Government of India simultaneously for clearance of the aid:

Aid from Army: Head quarters Sub Area Commander, and Headquarters of Western Command Chandimandir.

Aid from Air Force: Sector Commander Sarsawa, Saharanpur (Contact Person: Wg. Cdr. Vineet Sharma – 07599342240; Fax No. 01331 – 244822), and Western Air Command Headquarters, Delhi.

Army authorities to be contacted for disaster relief are as under:

Co-Ordination between Civil and Army: For deployment of the Army along with civil agencies on disaster relief, co-ordination should be carried out by the district civil authorities and not by the departmental heads of the line departments like Police, Health & Family Welfare, PWD and PHED etc.

Overall Responsibility When Navy and Air Force are also being Employed: When Navy and Air Force are also involved in disaster relief along with the Army, the Army will remain overall responsible for the tasks unless specified otherwise.

Principles of Employment of Armed Forces

a) **Judicious Use of Armed Forces:** Assistance by Armed Forces should be requisitioned only when it becomes absolutely necessary and when the situation cannot be handled by the civil administration from within its resources. However, this does not imply that the response must be graduated. If the scale of disaster so dictates, all available resources must be requisitioned simultaneously.

b) **Immediate Response:** When natural and other calamities occur, the speed for rendering aid is of paramount importance. It is clear that, under such circumstances, prior sanction for assistance may not always be forthcoming. In such cases, when approached for assistance, the Army should provide the same without delay. No separate Government approval for aid rendered in connection with assistance during natural disasters and other calamities is necessary.

c) **Command of Troops:** Army units while operating under these circumstances continue to be under command of their own commanders, and assistance rendered is based on task basis.

d) **No Menial Tasks:** While assigning tasks to troops, it must be rendered that they are not employed for menial tasks e.g. troops must not be utilised for disposal of dead bodies.

e) **Requisition of Aid on Task Basis:** While requisitioning the Army, the assistance should not be asked for in terms of number of columns, engineers and medical teams. Instead, the- civil administration should spell out tasks, and leave it to army authorities to decide on the force level, equipment and methodologies to tackle the situation.

f) **Regular Liaison and Co-ordination:** In order to ensure that optimum benefit is derived out of Armed Forces employment, regular liaison and coordination needs to be done at all levels and contingency plans made and disseminated to the lowest level of civil administration and the Army.

g) **Advance Planning and Training:** Army formations located in areas prone to disaster must have detailed plans worked out to cater for all possible contingencies. Troops should be well briefed and kept ready to meet any contingency. Use of the Vulnerability Atlas where available must be made.

h) **Integration of all Available Resources:** All available resources, equipment, accommodation and medical resources with civil administration, civil firms and NGOs need to be taken into account while evolving disaster relief plans. All the resources

should be integrated to achieve optimum results. Assistance from outside agencies can be superimposed on the available resources.

i) **Early De-requisitioning:** Soon after the situation in a disaster-affected area has been brought under control of the civil administration, Armed Forces should be de-requisitioned.

Requisition For Army Aid By Civil Authorities (Natual Calamities)

Reference No. : Calamities

1. From :

2. To :

3. For Information:

4. Date and time origination of demand:

5. Situation as at area _____ an Heavy flood in area _____ due rising of rigor _____ civilians marooned. Own evacuation resources insufficient meet requirement. In view continuous heavy, rains in upper regions, more areas may be affected marooning another _____civilians of _____ region.

6. **Type of extent of aid required for**
   (i) Equipment and personal, to evacuate marooned civil.
   (ii) Medical assistance for approximately _____ civilians.
   (iii) Tentage for _____ families if available.

7. **Likely duration and period of aid required**
   for _____ days with effect from _____
   (present situation permitting)

8. **Officer in charge Army aid to contact.**

9. **Name of civil Liaison Officer detailed.**
   Mr. _____ (Telephone No.) _____

10. **Arrangement made by civil authorities to guide Army aid to place of operations.**
    Mr. _____ will meet Army aid part at _____ on receipt of information from Army authorities)

11. **Special Instructions.**
    (i) School building at _____ being made available to hourse personnel and also for medical arrangements.
    (ii) Sufficient stocks of required medicines in the present contingency being made available to treat effected civilians population.
    (iii) Road Bridge at _____ is unserviceable.

12. Please acknowledge.

Signature **Office Seal**

De-Requisition Of Army Aid (Natual Calamities)

1. **Reference No.** **Date:**

2. **From** -

3. **To** -

4. **Information** -

5. Army aid requisitioned vide our reference No. _____ of _____ is hereby de-requisitioned with effect from _____ hrs on _____.

6. Please acknowledge.

Signature **Office Seal**

Appointment

Abbreviations

ARMVs	–	Accident Relief Medical Vans
BIS	–	Bureau of Indian Standards
CBOs	–	Community Based Organisations
CBRN	–	Chemical, Biological, Radiological and Nuclear
CSR	–	Corporate Social Responsibility
CRF	–	Calamity Relief Fund
CWC	-	Central Water Commission
DDMA	–	District Disaster Management Authority
DCMC	-	District Crisis Management Committee
DM	–	Disaster Management
DMC	-	Disaster Management Cell
GIS	–	Geographic Information System
GSI	-	Geological Survey of India
GoI	–	Government of India
GPS	–	Global Positioning System
HPC	–	High Powered Committee
HIPA	-	Himachal Institute of Public Administration
IAY	–	Indira Awas Yojana
IAG	-	Inter Agency Coordination
ICIMOD	-	International Centre for Integrated Mountain Development
IRS	–	Incident Response System
ICT	–	Information and Communication Technology
IDRN	–	India Disaster Resource Network
IDKN	–	India Disaster Knowledge Network
IMD	-	Indian Meteorology Department
IITs	–	Indian Institutes of Technology
IT	–	Information Technology
ITIs	–	Industrial Training Institutes
ITK	–	Indigenous Technical Knowledge
MFA	-	Medical First Aid
MHA	–	Ministry of Home Affairs
NCC	–	National Cadet Corps
NCCF	–	National Calamity Contingency Fund
NDEM	–	National Database for Emergency Management
NDMA	–	National Disaster Management Authority
NDMF	–	National Disaster Mitigation Fun
NDRF	–	National Disaster Response Force
NEC	–	National Executive Committee
NGOs	–	Non-Governmental Organisations
NIDM	–	National Institute of Disaster Management
NITs	–	National Institutes of Technology
NSDI	–	National Spatial Data Infrastructure
NSS	–	National Service Scheme
NYKS	–	Nehru Yuva Kendra Sangathan
PPP	–	Public-Private Partnership
PRIs	–	Panchayati Raj Institutions
R&D	–	Research and Development
RH	-	Reproductive Health

SAARC	–	South Asian Association for Regional Cooperation
SAR	-	Search and Rescue
SASE	-	Snow and Avalanche Study Establishment
SCMC	-	State Crisis Management Committee
SDMA	–	State Disaster Management Authority
SDRF	–	State Disaster Response Force
SEC	–	State Executive Committee
SOPs	–	Standard Operating Procedures
ULBs	–	Urban Local Bodies
UN	–	United Nations